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(AIJBES)[www.aijbess.com](http://www.aijbess.com)DEMYSTIFYING A NEW FRAMEWORK FOR ADOPTION OF  
FINANCIAL TECHNOLOGY AMONG WOMEN MICRO  
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**DOI:** 10.35631/AJBES.518022.**This work is licensed under** [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)**Abstract:**

This is a conceptual paper to demystify a new framework for adoption of Financial Technology (FinTech) among women microenterprises (WMSME) in Peninsular Malaysia who are involved in traditional home-based businesses that rely heavily on cash on delivery as payment system. Previous epidemics experience suggests that COVID-19 impact vulnerable groups and amplify any existing social and economic inequalities that are faced by women micro enterprises (WMSME). While the Malaysian government has allocated RM230million in financing to assist women entrepreneurs affected to manage liquidity and increase business capacities, little has been done on improving the financial digital literacy that would improve the business transactions through adoption of FinTech. Because of the infectivity rate of the virus through manual cash payment, adopting FinTech that is a combination of financial services and information technology, is crucial to facilitate business transactions. The use of FinTech in Malaysia is not optimal because of the high cost to switch to technology, lack of understanding of the use of FinTech, and limited ability of rural communities to apply FinTech. It is even more difficult for WMSME that operate from home who have limited exposure to sophisticated business transactions outside their home. Factors relevant to WMSMEs are proposed as the theoretical framework to demystify the intention to adopt FinTech to suit the home-based business. Purposeful sampling in which an online survey is proposed to be used as primary data collection and subsequently analyze with statistical tools to meet the objectives of determining the relationship between perceived ease of use and intention to adopt FinTech among WMSMEs, examining the relationship between financial literacy and intention to adopt FinTech among WMSME, examining the relationship between government incentives and intention to adopt FinTech

among WMSMEs in line with the aim to demystify the fundamentals for future research and practice.

**Keywords:**

Financial Technology, Finance, Women Entrepreneurs, Micro Enterprises, Entrepreneurship

**Introduction**

The global pandemic caused by COVID-19 has left a major impact to the world and global business. Previous epidemics experience suggests that COVID-19 impact groups who are most vulnerable and amplify any existing social and economic inequalities that left devastating and disproportionate impacts on women-owned small medium enterprises (Armstrong, 2021). A recent global survey of 26,000 entrepreneurs across 50 countries reinforces this insight though its result shedding light on some of the gender disparities in the impact of COVID-19. 26 percent of the businesses were not operational and women-owned business were 5.9% more likely to have closed the businesses (Goldstein et al., 2020). Among the business challenges because of COVID-19 include a liquidity crunch, lower demand for products and services, uncertain markets, limited digital literacy and need of technical assistance or business skills development. While the government of Malaysia has allocated RM230million in financing funds to assist women entrepreneurs affected by COVID-19 to manage liquidity crunch and increase business capacities, little has been done on assessing and improving the financial digital literacy among Small Medium Enterprises (SMEs) that would improve the business transactions even though the exposure of business is supported by the availability of internet and technology.

Financial Technology (FinTech) is an innovative way to use technology in the design and delivery of financial services related to business transactions. The application of FinTech currently in Malaysia is not optimal because there were several obstacles experienced by the SMEs especially, including the high cost to switch from conventional to more sophisticated technology, and many SMEs do not understand the use of the FinTech themselves. The limited ability of rural communities to apply FinTech in the region hinders the dissemination of FinTech. This condition makes it difficult for the government to develop FinTech in the area as not many employees can support the sustainability of the modern economy (Suhartono et al., 2020). One of the reasons for not adopting FinTech is due to the capacity of SMEs acquiring funding to acquire technology. Lack of financial and legal infrastructure is a major reason why SMEs do not engage in ICT practices as broadly as bigger corporations. Despite being the backbone of the country's business environment, digital adoption among SMEs is still lagging larger enterprises (Kaur, 2021). This could become a challenge for the government to transform and digitalize SMEs despite various initiatives and incentives given to them. Although, studies exist to report the rise of the use of ICT in business, studies showing adoption of FinTech among SMEs is lacking as majority of the studies targeted SMEs in general. Studies on SMEs showed that respondents used computers (83.6 percent), mobile phones or tablets (82.3%), and internet services (73.7%) in their everyday business activities. 37.9% of SMEs are engaged in online commerce, up from 28.0% in the 3Q Survey 2017 SME Survey, with average online sales accounting for 30.0% of overall business sales. When it came to the sort of online platform utilized, Facebook topped the list with 87.7%, followed by WhatsApp (73.5%), and Instagram (64.9%). These studies showed that majority resulted in online sales in

the local market but investigation on adopting FinTech as payment system is lacking. Even if there exist a study on this, studies showed that majority of SMEs have not yet ventured into e-commerce as they stated that it is not required for their firm, and that they prefer the old method of doing business without relying on technology. Continuing to improve in technology is a vital aspect in enhancing economic growth; ongoing technical advancement is the fundamental component in boosting added value for service sectors, and innovative technologies may make new investments lucrative (Chuang, Liu & Kao, 2016). In industrialized nations, SMEs adopt ICT at a rate of over 50%. In Malaysia, however despite Malaysia having 1,151,399 SMEs by 2021, the percentage of business owners that belief in ICT is low. As reported by MPC in 2016, only 105 SMEs use ICT in their business. If this continues, it may pose problems to Malaysian SMEs to stay competitive. Malaysian SMEs, which account for more than 90% of all firms registered in the country only contribute 33% of GDP; therefore, it is perennial for Malaysian SMEs to use technology to increase their efficiency, productivity, and competitiveness. It appears to be a difficult effort for the government to sell the use of ICT inside SMEs because, even if they understand the potential benefits that technology may provide, many SMEs lack the financial and human resources needed to implement the technology (Corso et al., 2003). One reason that SMES adoption of FinTech is low is because of the SME owners' inadequate ICT literacy that makes it difficult for them to pick the right technology and grasp the tangible benefits it may provide. Their staff also have limited ICT literacy that makes FinTech adoption difficult.

This study intends to focus on the Woman Micro Enterprises (WMSME) in Peninsular Malaysia as the women entrepreneurs fits the category of home-based business owners to be carefully identified for this research and fits the definition of Micro Enterprises by Small Medium Enterprises Corporation. As more business establishments digitalize the business operations, firms that are left out of this digital revolution will struggle to survive, let alone thrive (Tong & Gong, 2020). Majority of the WMSME in Malaysia are involved in home-based businesses especially during the pandemic as many women who operate homebased businesses do not require significant funding to launch the enterprises they desire (Oladipo et al., 2023). The lack of need to use technology for their home-based business is often used as reasons for not adopting technology as such businesses are seen as a "trial run" before expanding into a larger business space (Vermani & Sharma, 2021). Preliminary discussions by researchers involved in this study with many of them revealed that the home-based business is conveniently done through word-of-mouth promotion and transactions is easy with cash payment. Therefore, even though the use of technology is in the rise among entrepreneurs, the WMSME often face dilemma on whether to adopt technology especially in handling payments in their business due to the high cost involved. As the world is currently going through the biggest revolution in financial history, the introduction of FinTech has led to a great transformation in the business sector. If the WMSME do not embark on using technology in their business, this would lead them to falling behind the new practice of using FinTech for cash payments during pandemic and perhaps during post pandemic as the community gets use to using FinTech instead of carrying hard cash for payments. This is backed by claims by other academics that cutting-edge technologies, such as FinTech, offer competitive benefits in addition to improvising existing business models (Akpan et al., 2020).

Although the term entrepreneurship was first mentioned in the 17th century by Richard Cantillon in 1755, the term was reserved for men. Women entrepreneurs were only to be accepted beginning 19th century with the rise of feminism. This was further supported by the availability of internet and technology in the 21st century that allows women to be more

prevalent in the business world. However, women entrepreneurs tend to own smaller size of business, lower business growth expectations and higher discontinuance compared to the men (Winn, 2005). The reason men-entrepreneurs are more than women-entrepreneurs, being that men are responsible for the main household income, while women encounter work-home conflict and more stress and the need to strike a work-life balance running both business and family responsibility (Basit et al., 2020). Meanwhile, Farhat and Mijid (2016) revealed in their research that with the same human capital, preferences and industrial-clusters, women entrepreneurs can be at par their male counterparts as they have same survival and growth rates as well as profits generation. Hence, if the WMSME are as ready as the men entrepreneurs to adopt FinTech, it would ease the cash transactions in their businesses. This further supports the reason why WMSME is chosen.

The involvement of women entrepreneur in Malaysia has increased in the past few decades and significantly contributed to Malaysian economy development. WMSMEs continued to play an important role in economic development during the Rancangan Malaysia Ke 12 (RMKe-12) period whereby, a total of 1.2 million establishments were categorized as MSMEs, constituting 97.4% of total business establishment in 2021. However, the MSMEs remain uncompetitive due to low technology adoption, lack of skilled talent and management knowhow, as well as facing constricted access to finance. The low adoption of technology and high dependency on unskilled workers have widened the productivity gap between MSMEs and large firms and render local MSMEs uncompetitive globally (SMECorp, 2021). As majority of the Women SME in Malaysia are involved in home-based businesses especially during the pandemic, the lack of need to use technology for their home-based business is often cited as some reasons for not adopting technology. To them, their home-based business is conveniently done through word of mouth and cash payment. Therefore, even though the use of technology is in the rise among entrepreneurs and shows better business outcomes, the WSME often face dilemma on whether to adopt technology especially in handling payments in their business is needed. Stakeholders noted several barriers to digital financial inclusion such as access to resources (mobile phone, internet), cultural or social norms, and digital and financial literacy, may be higher for women (Sahay et al., 2020). As the world is currently going through the biggest revolution in financial history, the introduction of FinTech has led to a great transformation in the business sector. If the WMSME do not embark on using technology in their business, this would lead them to falling behind the new practice of using FinTech for cash payments during pandemic and post pandemic.

MSMEs are business enterprises involved in manufacturing, service, and other sectors that record less than RM300,000 in revenue turnover or fewer than 5 full-time staff (SME, 2021). Home based business comprise two types of businesses are categorized as (i) those that undertake most or all of their activity in the residential home and (ii) those that operate from the home, but a large proportion of their activity is conducted either at the client's premises or at outdoor sites (Reuschke & Domecka, 2018). Previous research combined both Micro and Medium Enterprises as SMEs but the focus on MSME especially women only is lacking. The current pandemic situation has seen the birth of many new WMSME due to changes in employment status of those affected by termination, closure of the places of employment, the rise in the use of digital business transactions and most importantly to ease the financial burden of the male spouses who also face similar setback especially on household bills during pandemic (Savage, 2020). Women's employment were dropping as they were more vulnerable than men's job whereby even though women make up 39% of global employment, the overall job losses accounted to 54% (Madgavkar et al., 2020). As such, the women whether they are



existing SMEs or not created businesses out of urgency to manage the household expenses. Because of this and the formality of setting up a business that will take a lot of time, many started home-based businesses that rely on traditional cash payments in their business transactions. Preliminary observation and researchers experience with the home based WMSMEs showed that some they faced losses due to customer not paying when the goods are delivered to them, or the riders lost the cash when cash payment is collected (Hazim, N., personal communication, July 2020). This is confirmed by the Subang Jaya Online Ramadhan Bazaar traders who are respondents of an ongoing joint research started in May 2020 by one of the current research members. Hence, it is imperative to study how adoption of FinTech among WMSMEs can offer some solutions for transactions related to payment. Previous studies have used the TAM model to study the behaviour of intention to adopt FinTech among SMEs, banks, etc, but because studies on WMSMEs are still lacking, this study will focus on the fundamental factors relevant to WMSMEs. This is important before more studies on similar framework advances as increasingly WMSMEs exist if the world continues to endemic stage. This supported by Nurqamarani et al. (2021) where it is important to determine the most common variables used based on the types of technology related to certain fields in order to develop more appropriate framework to study technology adoption in a specific field of technology for SME. Hence, factors relevant to WMSME is proposed as the theoretical framework to examine the fundamental factors in the hypotheses. The fundamental factors derived from the TAM model for this study includes perceived ease of use (PEOU), financial literacy (FL) and government intention (GI). PEOU, according to Ajzen (2012), can be defined as consumers' belief that FinTech is simple to use and require little effort to master. This perceived ease of use factor will affect the entrepreneur's attitude towards using FinTech. On the customers side, perceived ease of use is important in determining the consumers' intention to proceed to the next stage of the purchase. It will also determine whether the consumers will do repeat purchases (Jiwasiddi et al., 2019). FL is financial literacy which refers to the ability to understand and use a wide range of financial ideas and skills, such as personal financial management, budgeting, and investing. The lack of these abilities is referred to as financial illiteracy (Tahir et al., 2022). GI The term "government incentives" refers to financial aid provided by the government to private enterprises making investments using economic incentives. Tax abatements, revenue sharing, grants, infrastructural support, no or low-interest financing, free land, tax credits, and other financial resources are examples of incentives (Bakertilly, 2017).

This study is intended with the following research objectives in order to demystify the framework that is suitable for WMSMEs who mainly operate home-based businesses.

- i) To determine the relationship between perceived ease of use and intention to adopt FinTech among WMSMEs
- ii) To examine the relationship between financial literacy and intention to adopt FinTech among WMSMEs
- iii) To examine the relationship between government incentives and intention to adopt FinTech among WMSMEs

## Literature Review

### *Financial Technology (FinTech)*

FinTech was introduced in the early 1990s with the first project initiated by Citigroup in the banking sector to create a financial services technology consortium. The main purpose of this

project is to facilitate technological cooperation. However, during this time the banking sector did not involve regulators, consumers, and investors in this project yet until 2014.

FinTech is commonly defined as a combination of financial services and information technology. As it evolved since 1866, FinTech has transformed from linkages to digitalization, smartphone, and last mover advantage. In 1866, the financial sector saw its first age of financial globalization. This is the era of FinTech 1.0. In this era, it is the first time where finance and technology were combined through the first transatlantic cable (1866) and Fedwire (1918) to produce global financial services such as Diner's Club (1950) and Telex (1966). Then from 1967 to 2008 (FinTech 2.0 era), the financial services led by traditional financial institutions transform their services from analogue to digital. During this period the financial industry saw tremendous change in financial services such as ATM (1967), BACS (1968), CHIPS (1970), NASDAQ (1971), SWIFT (1973), Bloomberg (1981), mobile phone (1983), program trading (1987), online banking (1983), Big Bang (1986), quantitative risk management (1990), internet (1999), and global financial crisis (2008). The FinTech 3.0 era started after the global financial crisis in 2008 until the present. FinTech 3.0 saw the appearance of new companies in financial services along with existing large companies that were involved as core banking vendors. In this era also there are new financial services created such as Wealthfront (automated investment services) (2008), Bitcoin (2009), Kickstarter (crowdfunding platform) (2009), and TransferWise (P2P money transfer service) (2011).

The global financial crisis in 2008 made financial services grow through FinTech 3.0. This includes the financing gap due to increases in regulatory capital to be retained against the loan portfolio and interbank market contraction. Other than that, financial services also started to exercise operational cost reduction such as downsizing and adoption of technology. Moreover, public perception towards the formal financial institution creates new entrants to the financial service sector such as P2P financial services and trading platforms. Besides, the growth of technology such as smartphones, point-of-sales systems compliments the growth of the financial service sector (Arner, 2016).

In Malaysia, FinTech started in 2001 when the Malaysian government initiates the MyKad project. The MyKad is a national identity card for Malaysian embedded with technology that allows multifunction use such as an ATM card, e-wallet, and transit card. In 2015, Malaysia became the first country in Southeast Asia to develop and adopt a FinTech regulatory framework. This regulatory framework is important to protect the consumer's rights and to balance the company's innovation and financial stability. Furthermore, there are six equity crowdfunding platform operators licensed by the Security Commission in 2016. Bank Negara Malaysia also created financial technology sandbox framework similar to the United Kingdom, Singapore, and Australia. This financial technology sandbox allows a company to try FinTech solutions for a brief period and in a controlled living environment. The special about FinTech companies in Malaysia they are involved in Islamic finance due to the financial services environment in Malaysia being keener towards Islamic practices.

Malaysia has one of the most established FinTech industries in Southeast Asia. To support the current significant growth of the FinTech industry, the government introduces government incentives and a favourable business environment to promote the country's FinTech industry's future innovators. In return, these FinTech companies have grown and the number of active FinTech companies also increased. Some of them have expanded their operation overseas and become major players in the region. They contribute by providing employment opportunities

and paying taxes thus driving Malaysia's economic growth. Furthermore, the FinTech companies indirectly improve the productivity of other companies that use their FinTech services for example online transactions. This growth of productivity then led to the increase of the gross domestic product (GDP) of the nation (Page, 2019).

This phenomenal growth can be an opportunity for MSMEs to digitalize their business especially WMSME as exposure to business is supported by the availability and technology. According to Ernst & Young (2019), the global adoption rate of FinTech services in 2015 is 16% and increases to 64% in 2019. The report also stated 56% of MSMEs use banking and payments FinTech services, 46% used a financing FinTech service, 93 percent prefer to use technology, and 89 percent are prepared to share their data with FinTech firms. Furthermore, 'range of functionality and features become the top reason for MSMEs to use FinTech services. The current Coronavirus Disease – 2019 (COVID-19) has changed the operating landscape of MSMEs. Since many of the WMSME rely on the use of cash as the main payment method in their business transaction and more customers are getting used to using FinTech, WMSMEs need to reconfigure their business through digitalization to survive and strive. Hence, greater synergy is required between government and WMSMEs in achieving full-scale digitalization of business. The government is expected to play a greater role in promoting FinTech among WMSMEs. This includes incentivizing FinTech services and pushing them to grab opportunities on FinTech financing. Moreover, the government is also expected to enable WMSMEs to move up the digitalization chain (Loh, 2021). FinTech companies are also expected to play important roles in promoting the adoption of FinTech services. FinTech companies can hold educational activities, such as training courses and promotions, that initiate the use of various FinTech applications to increase user familiarity, transparency, and integrity. In addition, FinTech companies must also consider user concerns by implementing measures to protect client assets and information, such as process and password authentication, and by providing information about the security of FinTech applications, unconditional compensation guarantees, and customer service that is easily accessible and educates users. This education is expected to form trust and can facilitate users' operation of a FinTech application (Candra et al., 2020).

Furthermore, a better FinTech application company can instil trust in users and educate them about the use of the application and services provided so that users can easily operate an application for the achievement of their expected goals. A FinTech company must also pay extra attention to prevent users from experiencing difficulties in access, system bottlenecks, connection breaks, service delays, and system damage that will directly reduce user confidence. FinTech industry players must strive to create informative interfaces for novice users and provide websites that are simple to use, with quick downloads, quick transaction times, simple interfaces, and a variety of financial services tailored to the needs of users, and the benefits users often have for users.

FinTech could offer a lot of benefits to WMSMEs. One of the benefits that are they promote the digital environment development that supports WMSMEs growth. Other than that, FinTech also provides an avenue for WMSMEs to access funding through blockchain technology. WMSMEs can use blockchain technology to attract potential investors through the crowdfunding platform. The crowdfunding platform allows WMSMEs to share publicly the description of their project with other MSMEs, major institutional, financial stakeholders, and the government and their agencies. The rise of digital technologies and the integration of these technologies has excellent potential for creating new business model that can propel growth

(Kumar et al., 2022). Furthermore, WMSMEs also can reduce wastage through collaboration with other companies. This collaboration enables WMSMEs to share or continually use the resources with other companies. Hence, the equipment will be fully utilized. Moreover, FinTech and blockchain technology also benefits the operations of WMSMEs. This technology makes all the transfers and transactions in the operation are transparent, visible, and traceable lead to an improvement in inventory management and reducing fraud. From the sales point of view, this technology enables WMSMEs to know their customers better through the improvement of customer identification and service customization. The most important aspect of FinTech and blockchain technology is affordable and customer-oriented solutions for WMSMEs through a pooling of computational resources and knowledge. As reported by Wamba et al. (2019), blockchain technology's transparency strongly predicts behavioral intent to utilize blockchain technology, and transparency is supported since the transactions are shared across all nodes, which fosters confidence in a community of users (Osmani et al., 2021).

The importance of financial technology to WMSME's will help in the sense of every transaction will automatically reappear whenever data has been inputted, the technology also enables to minimize the risk of errors in the calculation, because generally if the financial statements are calculated manually, for more precise results, it should be counted two to three times each to get the correct return, and the resulting error is minimal (Suhartono et al., 2020). Furthermore, the existence of FinTech will facilitate the community to access to a variety of financial products, making transactions easier and increasing financial literacy.

This research will concentrate more on the adoption of FinTech among of WMSME that are related to financial transactions and financial reporting through the point of sales applications that are locally developed such as store hub, pos-market, geniuspos, redzone solutions, and many others. This point-of-sales system is embedded with software that enables the micro-entrepreneur to overview their financial related transaction such as daily sales, inventory, and product trends that will support the entrepreneurs in making a day-to-day operational decision. Moreover, most of the systems also allow the micro-entrepreneurs to have current financial reporting such as the statement of income, balance sheet, and cash flow whenever they need it. This financial reporting will be useful for them to have strategic planning for their business.

### ***WMSMEs and FinTech***

According to DigiconAsia (2020), more than 75% of business entities in Malaysia adopted at least one FinTech service or product. In terms of usage, mobile payment and digital wallets indicate the highest usage. This adoption is driven by the need to improve the efficiencies of the business. A recent study also found that 40% of the businesses adopted FinTech services in response to the COVID-19 pandemic. However, from the perspective of WMSMEs, the study found that 25% of the WMSMEs did not plan to adopt FinTech services for the next 12 months (DigiconAsia, 2020). The reason is the WMSMEs did not see any benefits of FinTech towards their business operation especially when the size of the home-based business is small for the WMSME. They are also concerned about the cybersecurity and data privacy of their business. Besides, owning and managing a business remains a male-dominated territory. Globally, only less than one in five businesses have a woman as their top manager, only one in three businesses have a woman among their principal owners, and women are the sole or majority owners of less than 15% of businesses (World Bank, 2020).



### ***Perceived Ease of Use (PEOU)***

According to Ajzen (2012), PEOU can be defined as consumers' belief that FinTech applications are simple to use and require little effort to master. This perceived ease of use factor will affect the entrepreneur's attitude towards using and behavioural intentions to use thus these innovative technologies can be embraced by entrepreneurs. Furthermore, perceived ease of use is important in determining the consumers' intention to proceed to the next stage of the purchase. Furthermore, it is also will determine whether the consumers will do repeat purchases (Jiwasiddi et al., 2019).

According to the study conducted by Chuang et al. (2016), they discover that several PEOU criteria help to improve entrepreneurs' attitudes toward using financial technologies. Among them includes the friendliness process of operation and ease of downloading the application program. Entrepreneurs not only consider the usefulness of FinTech applications, but they also perceive the ease of use of the application because these can be essential factors that improve satisfaction.

Ease of use also can be translated to the ease in completing the transaction using the FinTech application (Chuang et al., 2016). Unlike traditional methods in completing a business transaction, a FinTech application might offer an easy, comprehensive, recorded, and timely manner process that reduce the effort of entrepreneurs. Another criterion of ease of use cited by in their study is easy to get started. FinTech applications must be developed in a way entrepreneurs found it user-friendly, and they can use the application even without reading the service manual or spending much time comprehending the application. These findings are also supported by the study conducted by Huei et al. (2014), where the study found that a positively perceived ease-of-use is contributed through clear and easy to understand, and easy to use of FinTech applications.

PEOU was introduced in the TAM model by Fred D Davies in 1989 which is an extension of Theory of Reasoned Action (Ajzen & Fishbein, 1980) where intention of using new technology is based on perceived usefulness and perceived is of use. Perceived usefulness refers to the degree to which a person believes that their work performance can be increased by using the system, for example whether the system can help them to complete a task more quickly. It r refers to the extent to which a person must make a mental or physical effort to use the technology. While the MSME has no issue in perceived usefulness evidenced by the knowledge of other business owners are using to benefit the business, the perceived ease of use may still be an important issue to be addressed for MSME hence this variable will remain to be examined in this study together with the other factors proposed by the researchers.

### ***Financial Literacy***

According to Fernando (2023), financial literacy can be defined as an understanding and application of a variety of financial abilities, such as personal financial management, budgeting, and investing. The absence of these abilities is called financial illiteracy. There is four basic knowledge in finance needed by WMSMEs to become financial literate which are the ability to keep personal expenses separate from business expenses, budget preparation, accuracy in accounting practices, and maintaining healthy cash flow (Razak, Hamdan, & Uddin, 2020). Furthermore, according to Usama and Yusoff (2019), they added the component of financial literacy which includes access to credit, financial awareness, diversification, debt management, bookkeeping, risk management, and saving. This set of skills is important to make a sound financial decision.

The results of the study by Ripain, Amirul, and Mail (2017), disclosed that the majority of MSMEs (40% of the respondents) experienced a serious problem with their financial knowledge. Low financial literacy contributes to business failure among MSMEs (Razak, Hamdan, & Uddin, 2020). Furthermore, financial illiteracy also might cause WMSMEs to face difficulties to get any funding to grow their business especially from financial institutions (Yap, 2019). Hence, MSMEs need to have financial literacy ability to ensure the survival of their business (Usama & Yusoff, 2019). This finding is also supported by the study conducted by Razak, Hamdan, and Uddin (2020) where the survival and development rate of WMSMEs depends upon their financial literacy. Furthermore, research by Usama & Yusoff (2019), indicates that most of the business failures are due to poor decision-making on financial matters. Financial literacy ability among WMSMEs enables them to cope with their financial problems (Razak, Hamdan, & Uddin, 2020). It is a critical aspect for the new venture to be a success where it will lead to higher business performance (Usama & Yusoff, 2019).

One of the methods that can be used is encouraging them to use financial technology products such as point-of-sale systems. This financial technology product must meet the economic condition and status of micro-entrepreneurs to increase the adoption rate. In most cases, the entrepreneurs are reluctant to adopt such financial technology due to the high financial commitment required. By looking at their economic condition and status allow them to be financially included to use such financial technology (Razak, Hamdan, & Uddin, 2020). Furthermore, to reduce the financial literacy gap among MSMEs, entrepreneurs need to practice financial knowledge to enhance their financial skills through financial software training and education. This will lead to higher acceptance since they are familiar with financial technology products and reduce the risk associated with using the products. Hence, the challenges faced by the government and their agencies is to educate and familiarize financial technology products among micro-entrepreneurs. Among others, the government and their agencies may conduct awareness campaigns and provide a support program to eradicate financial literacy among MSMEs. Lifting this financial literacy is crucial to motivate micro-entrepreneurs in adopting financial technology products.

### ***Government Incentives***

Government incentives refer to economic incentives are used to provide financial aid to private enterprises making investments (Bakertilly, 2017). Among the government incentives given to the WMSMEs in Malaysia is mean for digitalization and automation in business. In the 2020 national budget, the government allocated Ringgit Malaysia (RM) 1 billion for this purpose under the Industrial Digitalization Transformation Scheme intended to encourage digitalization activities (Lim, 2020). In an effort to accelerate digitalisation, the Malaysia Digital Economy Corporation (MDEC) launched its Digital Transformation Acceleration Programme (DTAP), aimed at offering Malaysian companies a structured approach to transformation, leveraging the expertise of its Digital Transformation Labs' and grants in the adoption of emerging digital technologies which includes Digital Economy Initiatives for entrepreneurs. Among the initiatives to be emphasized is FinTech (CompareHero, 2023).

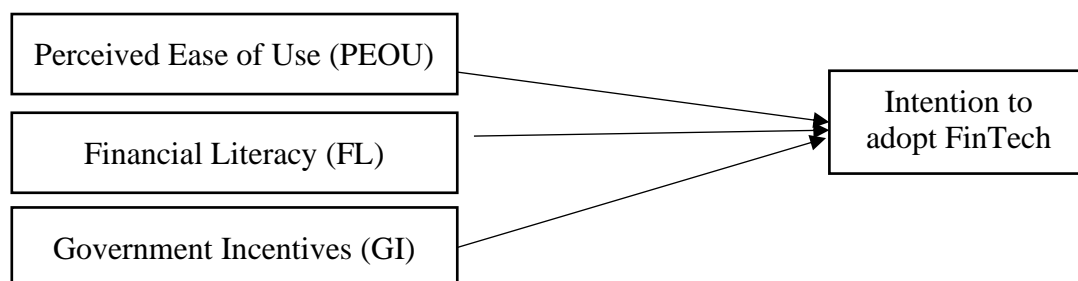
The eligibility criteria for WMSMEs to apply for this government incentive are the company must be owned at least 60% by Malaysian, the company must be registered with SSM, operate for at least one-year, minimum annual sales turnover of RM100,000 and RM50,000 for a company that operates for more than two years. This criterion will be used as a demographic profile for this study. Under this scheme, the government will issue a matching grant for the first 100,000 MSMEs worth RM500 million for the next five years. The main objective of this

incentive is to focus on increase long-term productivity and hasten the country's transition to a high-income country (Muslimin, 2020).

Previous studies conducted showed that the rate of adoption of FinTech services is still low in Malaysia. This is due to a few factors such as the perception of risks and perception of cost in the mind of WMSMEs (Christian et al., 2019). Hence, the government needs to play important role in promoting such adoption through government subsidies and incentives. These government subsidies and incentives can be in another form than financial. Non-monetary incentives, such as public recognition, awards, job title changes, and organization name changes, can be just as successful as monetary subsidies in the long run. One of the benefits gained from the government incentives on FinTech, it does allow MSMEs to operate more efficiently and improve overall competitiveness (Bakar et al 2020). Furthermore, incentives given could alleviate costs that become barriers to technology investment by WMSMEs (Aliu et al., 2019). Through government incentives, MSMEs can reduce the pressure and economic risk associated with the purchase of FinTech services. Besides that, the collaboration between government and technology partners does improve the adoption of FinTech among WMSMEs (Yap, 2020). In the broader perspective, the government efforts in infrastructure modernization and improvement in cybersecurity will help in FinTech application and software adoption.

### Proposed Theoretical Framework and Hypotheses

Based on the above discussion, the following framework and hypotheses are adopted and proposed to be initially examined. This is important as the nature of home-based businesses for the WMSME intended for the study is different than the general MSME.



**Figure 1. Proposed Theoretical Framework**

Source: (Authors, 2023)

### Hypotheses

H1 There is a direct relationship between PEOU and the intention to adopt FinTech among WMSME

H2 There is a direct relationship between Financial Literacy and the intention to adopt FinTech among WMSME

H3 There is a direct relationship between Government incentives and the intention to adopt FinTech among WMSME

## Method

Descriptive research design, which entails a one-time encounter with a group of respondents will be used for this study. The non-experimental cross-sectional study will be adopted and surveys using questionnaires will be used to obtain primary data, with the questionnaires being delivered online. This research design is suitable for the sample size as the unit of analysis to be employed during data analysis and the types of analysis are consistent with the sample size chosen (Memon et al., 2020). The data collection method and subsequent process in concluding the findings will be done in three phases; firstly, collecting data from data source; secondly, examining the data to test hypotheses using appropriate statistical method, and finally producing the results and findings.

## Population and Sample

The target population for this study is the WMSME in Peninsular Malaysia. A list of MSME will be obtained from SMECorp based on the registered members of National Association of Women Entrepreneurs. Based on a study by Al Mamun et al., 2019, a total of 126, 910 registered SMEs in Malaysia are women-owned and 111,571 are registered microenterprises. Using Raosoft (2010) calculation, with a margin of error of 5% and a confidence level of 95%, purposeful sampling will be used to identify 383 women entrepreneurs who have home-based business based on their recent status (active, own and manage). Purposeful sampling is suitable for this study as it is based on the researchers' decision as to who can provide the best information. This means the researchers select participants because they are related and important to the study as the sample is the subset of population required to ensure sufficient amount of information to draw conclusions (Sekaran & Bougie, 2010).

## Data Collection Method

Questionnaires will be delivered via online method whereby the researchers will distribute a link that will bring them to the questionnaire landing page when they click it. Five days will be given to them to answer the questionnaires. This is to ensure the respondents have ample time to provide feedback at their convenience since they are business owners. However, if there is no response from the respondents, a soft reminder will be given to them online, and they have another three days to complete the questionnaire. Beyond this time, if they have yet to complete the questionnaire given, the researchers will assume that they are not interested to participate and will move to another respondent. This process will be repeated until this study reached a target number of 383 responses. A dual-language system, consisting of English and Malay, will be employed to make the questionnaire easier to be completed and comprehended by the respondents. There will be two sections to the questionnaire. The demographic information of respondents will be asked in Section A which includes their type of business formation, business category, business type, gender, age, race, yearly revenues, and whether they have adopted any financial technology in their business. In Section B, there will be statements about independent variables and dependent variables that are being adapted from the origin source of statements summarized in Table 1 that require the respondents' views. The adaption is deemed necessary as the respondents for this study is WMSME and some statements from the origin source have to be modified in order to make it useful to analyze and draw conclusions for this study. Worth noting that the adaptation will require rigorous testing to test the reliability and validity of the items statement as reported by Souza et al. (2016). Therefore, each variable will be tested during the pilot study and analysis to ensure a better fit for this study.



**Table 1: Summary of Original Source of Items Statement**

Variable	Items	Source
Perceived Usefulness (PU)	<ul style="list-style-type: none"> <li>• I think using Fintech Service can make reading more efficient.</li> <li>• I think using Fintech Service will not be limited by time and location restrictions, which is helpful for me.</li> <li>• I think using Fintech Service can make life more convenient.</li> <li>• I think I can rapidly obtain information using e Fintech Service</li> <li>• Non-cash payment in this application can increase this company's marketing effectiveness.</li> <li>• Non-cash payment in this application makes this company better controlled.</li> <li>• Non-cash payment in this application useful for this company development</li> </ul>	Chuang, Liu, & Kao, 2016; Cheng, 2014
Perceived Ease of Use (PEOU)	<ul style="list-style-type: none"> <li>• I think it is easy to download application programs from the internet using Fintech Service</li> <li>• I think it is very easy to complete transactions using Fintech Service</li> <li>• I think it is easy to get started using Fintech Service without reading the service manual.</li> <li>• I think it is easy to learn Fintech Service without spending too much time</li> </ul>	Chuang, Liu, & Kao, 2016
Financial Literacy (FL)	<ul style="list-style-type: none"> <li>• Financial literacy will ensure my business prosper.</li> <li>• Financial literacy enables me to make a wise business decision.</li> <li>• Financial literacy has a positive impact on my business wealth.</li> <li>• Financial literacy enables me to expand my business.</li> </ul>	Razak, Hamdan, & Uddin, 2020
Government Incentives	<ul style="list-style-type: none"> <li>• I believe the government supports and improves the use of Fintech services.</li> <li>• I believe the government has introduced favourable legislation and regulations for Fintech services.</li> <li>• I believe the government is active in setting up all kinds of infrastructure such as the infrastructure telecom</li> </ul>	Hu, Ding, Li, Chen, & Yang, 2019

network, which has a positive role in promoting Fintech services.

- I believe the government can actively participate in promoting financial technology applications by providing promotion through social media, posters, and others training.

Intention to Adopt	• I want to use the services provided by Fintech Service	Chuang, Liu, & Kao, 2016; Cheng, 2014; Candra, Nuruttarwiyah, & Hapsari, 2020
	• I want to use Fintech Service to connect information.	
	• I will regularly use this financial technology.	
	• I will often use this financial technology.	
	• I will always use this financial technology in the future.	
	• I wish to use a fintech lending application for loaning funds.	
	• If possible, I will use a fintech lending application in business activities.	
	• I would advise others to use a fintech lending application	

Source: (Authors Compilation, 2023)

The Nominal Scale will be used to measure Section A. The most basic scale is the nominal scale, which is primarily used to identify respondents in terms of the type of business formation, business category, business type, gender, age, race, yearly revenues, and whether they have adopted any financial technology in their business. Respondents must select one of the personal information options as their response on this scale. Meanwhile, the Likert Scale will be used to assess Section B. A Likert scale or interval scale will be adopted to describe the PEOU, financial literacy, government incentives, and entrepreneur's intentions (Awang, 2012). Respondents can provide an acceptable answer on this scale if the value falls between defined intervals. The means of the answers to the variables can be calculated using this scale (Qun, Howe, Thai, Wen, & Kheng, 2012). The respondent's opinion is determined using the Likert scale whether the items are Strongly disagreed or Strongly agree on the questionnaires given. For example, 1 – “Strongly Disagree”, 2 – “Disagree”, 3 – “Neutral”, 4 – “Agree”, 5 – “Strongly Agree” (Brown, 2010).

### **Data Analysis**

Statistical Package for Social Science (SPSS) will be used to analyze descriptive and inferential sections. The descriptive analysis section will offer summaries of the sample and the measures and will show the fundamental properties of the data in the research and to report what the data indicate (Taber, 2018). This will also aid researchers to identify sample features that may impact their conclusions if any. Inferential analysis will be conducted with statistical tools using Pearson Correlation and Regression analysis. The Pearson Correlation illustrates the strength of correlations obtained by dividing the simple of the two variables by the standard

deviation product. The significance of the independent factors and the dependent variable will be shown by Pearson correlation (Sekaran, 2003).

### ***Reliability Analysis***

Data that has been collected will be tested for reliability and validity. The purpose of reliability analysis is to demonstrate the instrument's stability and consistency in measuring the idea and to assist in determining the proper measure. (Sekaran, 2003). On general reliabilities, less than 0.6 is regarded as bad, those in the 0.7 range are acceptable, and those over 0.8 are good (Sekaran, 2003). Validity refers to how accurately a method measures what it intended to do as the validity results reflect the real variations as accurately as possible. Worth noting that before a thorough analysis is conducted on the 383 respondents, a pilot study with 30 respondents will be conducted to test the instruments and to aid improvement of actual data collection and analysis. This approach is based on Lancaster, Dodd and Williamson (2004) that shows a feasibility study requires 30 or more participants to estimate a parameter.

### ***Pearson Correlation***

The Pearson Correlation illustrates the strength of correlations obtained by dividing the simple of the two variables by the standard deviation product. The significance of the independent factors and the dependent variable is shown by this Pearson correlation (Sekaran, 2003).

The correlation coefficient  $r$  indicates the strength of ties, while the coefficient of determination  $r^2$  measures it.

Depending on the type of correlation, the range of ' $r$ ' values can range from + 1 to -1. Specifically:

- The correlation would be positive if  $r$  is equal to +1;
- The correlation would be negative if  $r$  is equal to -1;
- The correlation would be uncorrelated if is equal to 0.

### ***Regression Analysis***

Regression analysis will be utilized to assess data and examine the relationships of the variables, in which the relationship involves one or more independent variables and a dependent variable. The purpose of this regression analysis is to determine the strength of the relationship between the independent and dependent variables.

The regression model describes how the dependent variable ( $Y$ ) is related to a function of the independent variables ( $X$ ) and an unknown parameter ( $\beta$ ).

$$Y \approx f(X, \beta)$$

If the value of ' $x$ ' is known, a regression equation may be used to predict the value of ' $y$ ,' where ' $y$ ' and ' $x$ ' are the two sets of measurements with a sample size of ' $n$ .'

A linear regression model will be used in regression analysis to demonstrate which factors influence an entrepreneur's intention to adopt FinTech. The dependent variable is the factor that is being forecasted as the determinant factor that the equation solves for. The independent variables are the factors that are utilized to predict the value of the dependent variable. Based on the coefficient and R-square results, this study is predicted to have all components that contribute to the dependent variables. The R-squared value indicates how close the data are to

the fitted regression line. For multiple regression, it is also known as the coefficient of determination or the coefficient of multiple determination. R-squared is a simple term with a basic meaning. A linear model may explain a certain proportion of the variation in a response variable.  $R\text{-squared} = \text{Total variation} / \text{Explained variation}$  The R-squared value is always between 0 and 100%. R-squared is a measure of how well a model fits the data in general. The greater the R-squared, the better.

- 0% implies that the model does not explain any of the variability in the response data around its mean.
- 100% indicates that the model explains all the variability of the response data around its mean.

### Limitations

This study is limited to WMSME in Peninsular Malaysia who have home-based businesses that will be obtained from SMECorp based on registered members of Malaysian Association of Women Entrepreneurs. Budget, time, resources and other constraints may also affect sample size considerations proposed for this study (Bartlett et al., (2001) Furthermore, the study will be restricted to the WMSME who started the home-based business during pandemic and who are still currently own, manage and active in their business. Apart from that, there is also limitations in terms of the variable selection as this study will only investigate perceived ease of use, financial literacy and government incentive.

### Conclusion

This conceptual paper contributes to literature on financial literacy and financial technology among WMSME since more emphasis is being placed on women's financial empowerment as one of the sustainable development goals (Esmaeilpour Moghadam & Karami 2023). The framework in this study proposed the initial investigation on the hypotheses in which it will determine whether the current framework is suitable for WMSME in home-based businesses as it will also highlight their financial and business inclusion during post COVID-19 era. As pointed out by Sahay et al.(2020), FinTech can help to mitigate the economic impact of COVID-19 and support the recovery in many ways, including by: (i) Ensuring continued access to financial services; (ii) Delivering government support effectively and securely; and (iii) Supporting consumption, innovation and productivity through digital economy developments. FinTech appears to be closing gender gaps. Therefore, special attention would need to be paid to ensure that women are not left behind during and post COVID-19 crisis. It is expected that once the actual data collection is carried out in this study, more variables will surface that is unique to home-based businesses and whether there is new development in the FinTech industry that may arise out of post pandemic practices. This can then determine whether a moderating or mediating factor will play its part in the relationship proposed in this paper and whether a mixed method or comparative study can be proposed for future. It is hoped that the results from this study and future research will encapsulate the nature of home-based businesses for WMSME as the popularity of home-based businesses is increasing post pandemic and whether the same framework exist for adoption of FinTech for SME in general.

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