

# ADOPTION OF I-FINTECH IN PROMOTING SUSTAINABLE ENTREPRENEURSHIP: EVIDENCE FROM SMES IN SELANGOR, MALAYSIA

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**Abstract.** i-FinTech is devoted to companies or entrepreneurs that combine financial services with recent, advanced technologies that comply with Shariah. However, SME's usually have limited resources in finance, skilled entrepreneurs, in-house knowledge or management. This study aims to identify whether financial literacy elements influence the adoption of i-FinTech and subsequently lead to sustainable entrepreneurship among Bumiputera SMEs in Selangor, Malaysia. A quantitative technique was employed through the use of 88 surveys distributed using convenience sampling method to Bumiputera SMEs' entrepreneurs. The data is analysed using mediation analysis through SPSS Process Macro Model 4. The results shows that i-Fintech adoption is positively and significantly influence by financial literacy and digital financial literacy. Contrary, financial management behavior is negatively influence i-Fintech adoption. Further, this study reveals that i-Fintech adoption has a complementary mediation role in the association between financial literacy and digital financial literacy towards sustainable entrepreneurship. This result indicates that Bumiputera entrepreneurs who possess both financial literacy and digital financial literacy are more likely to adopt i-FinTech, and finally end up contributing significantly to sustainable entrepreneurship. The findings should help entrepreneurs, i-Fintech service providers, researchers and regulators to have better understanding of the dynamics between the potential of i-FinTech and sustainable entrepreneurship. It is suggested that SMEs to continue to take advantage of i-fintech in carrying out their business activities to avoid the impact of business downturn and the smooth running of their business.

**Keywords:** financial literacy, financial management behavior, digital financial literacy, i-FinTech adoption, sustainable entrepreneurship

## Introduction

The power of technology applicable fastly in Islamic financial technology (i-FinTech), as it expands access to mobile financial services. According to Shaikh et al. (2020), Malaysia is already a world leader in Islamic finance, hence it has a strong position to harness the various opportunities that i-FinTech has to offer. One particular industry that Malaysian small and medium sized enterprises (SMEs) could become a world pioneer for is with i-FinTech. SME is fundamental of economy in Malaysia, so the role of SMEs is very important to increase the growth of Malaysian economy. Recently, there are increasing numbers of people who interact using technology, especially entrepreneurs from MSMEs, who adopt the tools into their business models to tap into this opportunity to enhance their income. With the existence of i-FinTech, SMEs' entrepreneurs do not necessarily bring about change but utilise the opportunities that change (in technology) creates. To ensure these entrepreneurs are sustainable, they should always search for change, responds to it, and exploits i-FinTech as an opportunity. Considering the potential of i-fintech for businesses, SMEs' entrepreneurs

need to digitise their businesses to tap into what i-fintech might be able to offer, which is also in line with the Malaysian government's vision to encourage SMEs entrepreneurs to incorporate more fintech elements into their business operations.

Studies revealed that Malaysian SMEs are progressing slow towards adoption of i-FinTech with low awareness on its value to operations. Perhaps, these entrepreneurs might think progress of i-FinTech led to creative disruption for the small businesses, especially those who were not ready to accept changes in economic activity (Ardiansyah, 2019). The main key concern is the lack of digital mindset among SMEs, which causes misconception and low understanding on how adoption of i-FinTech could enhance firms' operation and benefits them in the long run. Several studies revealed SMEs have insufficient financial literacy to access i-FinTech (Hamzah and Suhardi, 2019) because business owners will first analyse the advantages and disadvantages before deciding to engage (Sugiarti et al., 2019). Insufficient financial literacy might prevent an entrepreneur from using i-FinTech due to their lack of understanding about Islamic financial products and a lack of confidence to contact financial institutions. In addition, the fact that was found was that the awareness of SMEs' entrepreneurs to make bookkeeping for business financial management was still very low. The reason for the low awareness of SMEs actors in making budget planning is due to the thinking of that budget planning is not important and can be easily managed and there is no negative impact on the sustainability of their business even though they do not do budget planning. Besides, previous study indicated that lack of digital financial literacy as the key driving challenges coming on the way of using digital FinTech services (Neumeyer et al., 2020). In using i-FinTech, its usage must be accompanied with entrepreneurs who are digital financial literate. Entrepreneurs must possess both digital and financial literacy in order to utilize effectively the i-FinTech products and to prevent from being conned or making costly mistake.

It is suggested that the adoption rate of i-FinTech tools is reported growing but there are quite limited studies on the acceptance and adoption of i-FinTech, especially the factors that contribute to the adoption itself (Rahim et al., 2020). This study contributes to the existing literature by looking at the digital financial literacy which is often overlooked in the literature-in comparison to and in conjunction with financial literacy. Besides, the Malaysian government had implemented the National Strategy for Financial Literacy 2019-2023 to strengthen the financial literacy, foster responsible financial behaviour and healthy attitudes towards financial management to Malaysians across all ages and life stages. However, it does not focus on digital financial literacy specifically. This is a vital gap that needs to be addressed. Hence, an exploration of the extent to which digital financial literacy may deter or provide incentives to become sustainable entrepreneurs and how this relationship is moderated by the i-FinTech adoption is certainly a worthy theoretical endeavor in the context of entrepreneurship.

This paper provide insight into how financial literacy, financial management behavior, and digital financial literacy affect the probability of becoming sustainable entrepreneur, by looking at i-Fintech adoption as mediating role. Although much research is devoted to the question of what makes a sustainable entrepreneur, empirical studies have not gone beyond the examination of how standard individual factors affect sustainable entrepreneurship. This study has reasons to believe that financial literacy, financial management behavior, and digital financial literacy may jointly play a role for the decision to adopt i-FinTech and become sustainable entrepreneurship. Thus, the need of i-FinTech studies is considered vital as it complements the robust Islamic

finance industry in Malaysia. This study aims to identify the relationship between financial literacy elements (financial literacy, financial management behavior, and digital financial literacy) and sustainable entrepreneurship with the i-FinTech adoption as a mediation variable by considering that technological adoption is often plays a pivotal role in sustainable entrepreneurship.

### ***Literature review***

Sustainable entrepreneurship is a concept that links sustainable development with business activities (Anand et al., 2021). There is no universally accepted definition of sustainable entrepreneurship as researchers have suggested various definitions over the years. Crals and Vereeck (2004) defined sustainable entrepreneurship as the continuing commitment by businesses to behave ethically and contribute to economic development while improving the quality of life of the workforce, their families, the local and global community as well as future generations. Anand et al. (2021) stated that sustainable entrepreneurship is in essence the realization of sustainability innovations aimed at the mass market and providing benefit to the larger part of society. In this same sense, Belz and Binder (2017) believed that sustainable entrepreneurship is to recognise, develop, and take advantage of opportunities by entrepreneurs to create future goods and services with social, economic and ecological benefits. Sustainable entrepreneurship practices embrace several dimensions, including the community, environment, employees, customers and suppliers (Kurucz et al., 2017). Therefore, sustainable entrepreneurs are those SMEs that support sustainable development by ensuring that businesses are done in a sustainable fashion.

### ***Islamic Fintech (i-FinTech)***

Financial technology (FinTech) is the fastest growing technology and financial sector in the financial domain (Alam et al., 2019). FinTech states the financial solution to financial difficulties backed by advanced informational technology (Hasnan, 2019). FinTech can be used for the Shariah-compliant solutions that are relevant to generation, accessible, faster, and relatively inexpensive than the other means as they are backed by advanced technology (Todorof, 2018). Islamic FinTech (i-FinTech) is developed using the principles of Islamic economics can be interpreted that the use of technology in the field of Islamic financial services. i-FinTech must observe Shariah guidelines. In general, technology is neutral from Shariah perspective, unless it is used in a instance directly conflicts with any rulings or requirements of the Shariah (Oseni and Ali, 2019). The use of i-FinTech in a particular Islamic finance product should not be such as to create harm, deception or cheating, hidden costs, nor should it inculcate any riba, gambling, gharar, or other prohibited elements such as those that make the sale invalid. The main types of services offered in i-FinTech are peer-to-peer (P2P) lending, crowdfunding, money transfer, mobile payments, and trading platforms. This study is focuses on SMEs that using i-Fintech for money transfer and mobile payments only.

### ***Financial literacy***

Financial literacy is a set of knowledge and skills that enables a person to make effective decisions with all their financial resources (Akmal and Saputra, 2016). According to Madi and Yusof (2018), financial literacy is the combination of consumers and investors' understanding of financial products and concepts and their ability and

confidence to appreciate financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being. It is knowledge, skills, and confidence that affects attitudes and behaviors to improve decision-making and financial management to achieve well-being (Andarsari and Ningtyas, 2019; Hanson and Olson, 2018). Several studies found that actual financial literacy does affect the use of FinTech services (Nguyen, 2022). Studies conducted by previous scholars such as Batubara et al. (2020), Lajuni et al. (2020), and Sardiana (2016) indicated that financial literacy significantly influences the preference of the use of i-FinTech products or services. Recently, Nughara et al. (2022) found that financial literacy has an indirect effect on the sustainability of MSMEs, with increasing financial literacy will increase the intention to use Shariah FinTech that can provide MSME sustainability. Therefore, this study conjectures the following hypotheses.

H<sub>1</sub>: Financial literacy significantly influence the adoption of i-FinTech among Bumiputera SMEs

H<sub>2</sub>: i-FinTech adoption mediates the influence of financial literacy towards sustainable entrepreneurship among Bumiputera SMEs

### ***Financial management behavior***

Many definitions are given in connection with financial management behavior concept, for example Sabri et al. (2020) proposed it as the determination, acquisition, allocation, and utilization of financial resources. While Mien and Thao (2015) described the behavior of financial management as a financial decision making, harmonizing individual motives and company goals. Fatoki (2014) stated that a thorough financial management is pivotal to the survival development and prosperity of small enterprises. It has been argued that a good financial management behavior of the entrepreneurs is a significant barometer of the success and growth of the enterprises in the competitive environment (Tuyisenge et al., 2015). Given that SMEs have significant impact on economic activity of most countries, a poor financial management behavior might have an adverse effect in the future of the business (Sucuahi, 2013). This is also consistent with a finding by Naqvi (2011) that argued failure factors of SMEs include poor business and financial management competencies. Besides, according to Yoshino et al. (2020), financial management behavior plays an important role in FinTech adoption. Walsh and Lim (2020) found financial management behavior as one of the key factors that influence personal financial management technology adoption. Therefore, this study predicts the following hypotheses.

H<sub>3</sub>: Financial management behavior significantly influence the adoption of i-FinTech among Bumiputera SMEs

H<sub>4</sub>: i-FinTech adoption mediates the influence of financial management behavior towards sustainable entrepreneurship among Bumiputera SMEs

### ***Digital financial literacy***

With the growth of technological financial services, digital financial literacy has become a must (Mudasih and Subroto, 2021). Yet, compared to financial literacy, the

role of digital financial literacy has not been rigorously studied in detail, if at all. Digital financial literacy is defined as acquiring the knowledge, skills, confidence, and competencies to safely use digitally delivered financial products and services, to make informed financial decisions and act in one's best financial interest per individual's economic and social circumstance (Alliance for Financial Inclusion, 2021). While according to Hague and Payton (2017), digital financial literacy is defined as the ability of individuals to apply financial functional skills to digital devices so that they can find and select information, think critically, create creativity, collaborate with others, communicate effectively and still ignore electronic security and social contexts. a growing culture. Morgan et al. (2019) proposed four dimensions of digital financial literacy, including knowledge of digital financial products and services, awareness of digital financial risks, knowledge of digital financial risk control, and knowledge of consumer rights and redress procedures. According to a study conducted by Prabawati (2019), digital financial literacy has a significant effect on entrepreneurial behavior. Similarly, Indrawati (2021) found that the level of digital financial literacy has a significant effect on buying and using financial technology products. Recently, Kakinuma (2022) revealed a mediating effect of fintech adoption on the relationship between digital financial literacy and quality of life, highlighting the importance of digital financial literacy in an increasingly digitalized society. Therefore, this study assumes the following hypotheses.

H<sub>5</sub>: Digital financial literacy significantly influences the adoption of i-FinTech among Bumiputera SMEs

H<sub>6</sub>: i-FinTech adoption mediates the influence of digital financial literacy towards sustainable entrepreneurship among Bumiputera SMEs

## **Materials and Methods**

This study employs a cross-sectional research design using quantitative approach (Bougie and Sekaran, 2019). The sampling frame is Bumiputera entrepreneurs of SMEs in Selangor, Malaysia. Specifically, there are five districts area involved in this study namely as Banting, Kuala Selangor, Petaling Jaya, Shah Alam, and Subang Jaya. This study follows a recommendation by Peng and Lai (2012) who suggest that the usual practice of studies using mediation analysis is to use the "10 times rule." This method is used to calculate the numbers of target samples using the number of complex relationships in the model to be studied. For example, if this study had seven complex relationships, then the appropriate sample size would be a minimum of 70 respondents. The convenience sampling method is used in collecting the data based on who are conveniently available to provide it (Bougie and Sekaran, 2019). A total of 100 valid questionnaires were distributed and 90 of them are returned, making a return rate of 90%. After checking all the survey received, there are two surveys were partially completed and thus excluded from the total returned eligible for analysis. The final number of accepted surveys used in the data analysis was 88 surveys.

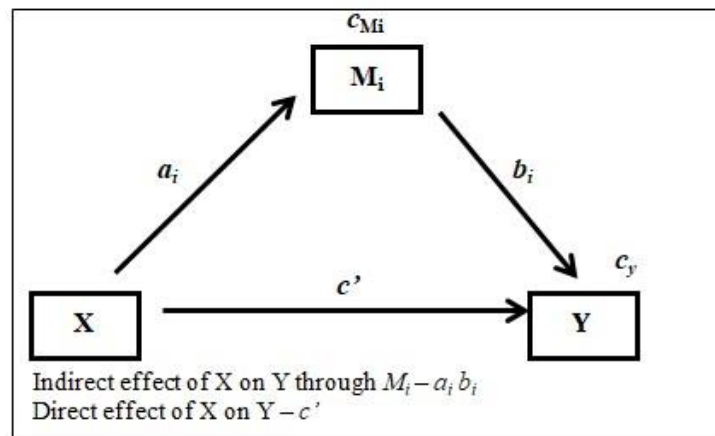
### ***Measurement of constructs***

The survey questionnaire for the present study consists of six (6) sections. Section A contains of personal information questions that related to gender, business experience,

revenue of the business, number of employees, location of respondents' SME and the use of i-Fintech. Section B focused on dependent variable to be tested which is the sustainable entrepreneurship adapted from Ploum et al. (2018). Further, Section C and Section E consists of items regards to independent variables namely as financial literacy, financial management behavior, and digital financial literacy adapted from Lyons and Kass-Hanna (2021), Ismail et al. (2017), as well as Chen and Volpe (1998), respectively. Finally, Section F presents the mediating variable of i-FinTech adoption which were operationalized based on the work of Chuang et al. (2016). All constructs are measured on a five-point Likert scale with the anchors of (1) "strongly disagree" to (5) "strongly agree".

**Data analysis method: Mediation analysis**

A mediation testing is used to investigate whether i-FinTech adoption can mediate the influence of financial literacy elements towards sustainable entrepreneurship among Bumiputera SMEs' entrepreneurs. The SPSS Process Macro Model 4 add-on function in SPSS is used in this current study to test the direct and indirect effects among all the variables in a model whether it is single or multiple mediator or moderator model (Hayes and Rockwood, 2016). Mediation in statistics is a hypothesised model in which the first variable influences a second variable then the second variable influences a third variable. M is a mediating variable (also called mediator) that mediates the relationship between a predictor variable, X, and an outcome variable, Y as a simple mediation model. X leads to M through path a, and M leads to Y through path b. Therefore, both path a and b have a direct effect. In the mediational effect, X leads to Y through M demonstrating indirect effect. The current study proposes a research framework where the mediating variable, i-FinTech adoption (M) mediates the relationship of predictor variables, which are financial literacy (X1), financial management behavior (X2), and digital financial literacy on the outcome variable, sustainable entrepreneurship (Y). The 'Model 4' in the model templates for SPSS and SAS Process is chosen for the current study to get the results shown in *Figure 1*.



**Figure 1.** Model template for SPSS and SAS process (Model 4).

Zhao et al. (2010) developed a procedure for analysing mediation that distinguishes between two types of non-mediation (direct-only non-mediation and no-effect non-mediation) and three types of mediation (i.e., complementary mediation, competitive mediation, and indirect-only mediation). They argued that to support a hypothesised

mediation relationship, there are two conditions should be satisfied, which are (a) the relationship between independent variable and dependent variable via mediator must be significant, and (b) the lower and upper levels of the 95% bootstrapped confidence interval must not include zero (Hair et al., 2017; Hayes and Rockwood, 2016; Zhao et al., 2010).

**Preliminary analysis assessments**

As a preliminary analysis of the data collected, the reliability assessment of the scales was carried out by calculating the values of the Cronbach’s alpha for each subscale separately. According to Bougie and Sekaran (2019), reliability coefficient test indicates how well the items in a set which positively correlated from one another. Variables can be considered as reliable if the Cronbach’s alpha value was set to 0.7 and above (Pallant, 2020; Hair et al., 2017). Table 1 depicts that the Cronbach’s alpha for all variables is ranging from the values of 0.726 to 0.935. Besides, the highest Cronbach’s alpha value is obtained for the subscales of items in the financial literacy construct ( $\alpha=0.935$ ). Hence, the internal consistencies of all constructs are considered acceptable since each reliability testing exceeds the suggested threshold. Further, the assessment of normality of the metric variables in this study involves empirical measures of a distribution’s shape characteristics (skewness and kurtosis). Data is deemed to be normally distributed if the value of skewness and kurtosis lies between  $\pm 2.00$  (Hair et al., 2017). Table 1 shows that the standard tests of normality values are between  $\pm 2.00$ , within the acceptable range of normal distribution. The result also shows that skewness and kurtosis have both positive and negative values. However, according to Pallant (2020), negative or positive skewness and kurtosis does not represent any problem until and unless they are within normal range. Therefore, this assessment confirmed that the data of this study is normally distributed.

**Table 1. Reliability and normality assessment.**

Variables	Cronbach’s Alpha	Skewness	Kurtosis	No. of items
Financial literacy	.935	-1.340	1.622	7
Financial management	.779	-0.424	-0.088	7
Financial digital literacy	.745	-0.110	-0.032	7
Islamic FinTech adoption	.726	-0.476	1.183	5
Sustainable entrepreneurship	.910	-1.842	1.152	7

Next, multicollinearity testing was done to examine the relationship among the independent variables. Multicollinearity exists when the independent variables are highly correlated, with r value of more than 0.9 (Pallant, 2020). The correlation coefficient results between the variables are indicated in Table 2. All the independent variables show at least some positive relationship with the dependent variable, and the correlations between independent variables are less than 0.9. To further check for multicollinearity, a collinearity diagnostics test (tolerance and VIF values) was conducted. As shown in Table 2, the tolerance values are greater than 0.10 and the VIF values are lower than 10; hence, no multicollinearity problem exists (Pallant, 2020).

**Table 2. Pearson correlation coefficient and collinearity diagnostics results.**

	SE	FL	FM	FDL	IFA	Tolerance	VIF
SE	1	.654***	.360***	.376***	.553***		

FL	1	.506***	.434***	.296***	0.738	1.355
FM		1	.855***	.687***	0.229	4.360
FDL			1	.696***	0.246	4.063
IFA				1	0.481	2.079

*Note: Correlation is significant at \*\*\* 1% level, \*\* 5% level and \* 10% level, respectively, using two-tailed tests. SE denotes Sustainable Entrepreneurship; FL denotes Financial Literacy; FM denotes Financial Management; FDL denotes Financial Digital Literacy; IFA denotes Islamic FinTech Adoption.*

## Results and Discussion

The demographic profile in this study shows that 61.4% of the study’s participants were female, while males are 38.6%. Further, more than half of the respondents (54.5%) have a business experience of between 11 to 20 years. Besides, there are 23.9% of the respondents with business experience of more than 25 years. The revenue of respondents’ business shows that majority of them (44.3%) received less than RM100,000 per month and there are 60.2% of the respondents have employees of less than five. On the contrary, there is 10.2% of the respondents that have employees of between 51 to 75, indicating a large scale of their SME’s business. In terms of location of SMEs, majority of the respondents (30.7%) participating in this study are currently doing business in the urban area. Finally, majority of the respondents (63.6%) are the users of i-FinTech tools.

### *Perception of sustainable entrepreneurship*

This section reports the finding which relate to the perception of sustainable entrepreneurship perceived by the respondents. One sample t-test was conducted to test whether the mean of overall of perceived sustainable entrepreneurship is significantly equal to or different from a specified constant. *Table 3* shows the mean result of 4.1461 for sustainable entrepreneurship which indicates that respondents considered themselves as a sustainable entrepreneur, and it is statistically significant at 1% level. Overall, majority of the respondents reveals that they were good at identifying opportunities for sustainable development. The respondents revealed that they know how social, environmental, or societal challenges can be turned into sustainability opportunities for their company. This is consistent with an argument by several researchers that argued despite the negative contributions to social and environment, entrepreneurs are also playing a significant role in leading the business activities towards sustainability (O’Neill et al., 2011; Hockerts and Wüstenhagen, 2010). In addition, respondents also strongly agreed that they able to monitor the sustainability performance of their company and willing to take initiative to make improvements in their own practice based on norms, values, targets, and principles of sustainability. This result is consistent with a finding by Chandna and Salimath (2018) whereby they found that sustainable entrepreneur should consider factors that provide an innovative environment and thus facilitate entrepreneurial behaviour.

**Table 3.** *Perception of sustainable entrepreneurship.*

	n	Mean	One sample t-test	
			t-statistic	p-value
Sustainable Entrepreneurship	88	4.1461	60.395	<b>.000</b> ***

*Note: Result is significantly different at \*\*\* 1% level and \*\* 5% level, respectively, using two-tailed tests.*

### ***The extent of i-FinTech adoption***

This section reports and discusses the findings regards to the extent of i-FinTech adoption among entrepreneurs. One sample t-test was conducted to test whether the mean of overall i-FinTech adoption is significantly equal to or different from a specified constant. *Table 4* reveals the extent of i-FinTech adoption by all respondents participating in this study. Specifically, *Table 4* shows the mean result of 3.5318 for i-FinTech adoption which indicates that majority of the entrepreneurs in Selangor are moderately agreed to adopt i-FinTech in their business. Overall, respondents were agreed that they like the idea of using i-FinTech service and they think it is very convenient to look up information using i-FinTech service anytime and anywhere. Unfortunately, they are reluctant to use the services provided by i-FinTech as they were not ready to accept changes in economic activity. Besides, according to them, this i-FinTech facility contains various risks, one of which is the opening of opportunities for cybercrime. The highly sophisticated cyber world makes it easy for hackers to be able to track financial transactions, while security in remote areas have not yet reached the perfect safe point. An independent sample t-test was conducted to compare the extent of i-FinTech adoption among respondents based on their age group. The results in *Table 5* show that there is a statistically significant difference in the scores of i-FinTech adoption among respondents based on different age group (t-statistic=2.807\*\*), and it is significant at 5% level. The result indicates that respondents in the age group that fell less than 39 years old had the greatest intention to adopt i-FinTech as compared to the respondents in more than 40 years old group. This finding is consistent with Chong et al. (2019), Parusheva (2018) and Kolodinsky et al. (2014) which postulated that younger people are keener to accept new financial technology for the purpose of convenience in conducting transactions. Moreover, younger people have more interaction with technology which leads them to have sufficient level of ability and knowledge towards using it. On top of that, older users have a harder time in circumventing new technology, especially when conducting financial services through a technological platform.

***Table 4. The extent of i-FinTech adoption.***

	n	Mean	One sample t-test	
			t-statistic	p-value
i-FinTech Adoption	88	3.5318	47.826	<b>.000***</b>

*Note: Result is significantly different at \*\*\* 1% level and \*\* 5% level, respectively, using two-tailed tests.*

***Table 5. The extent of i-FinTech adoption by respondents based on age group.***

Age group	n	i-FinTech Adoption		Independent Sample t-Test	
		Mean	SD	t-statistic	p-value
Less than 39 years old	37	<b>3.6865</b>	0.7111	<b>2.807</b>	<b>.038**</b>
More than 40 years old	51	3.4196	0.6636		

*Note: Results significantly different at the \*\*\* 1 percent level and \*\* 5 percent level, respectively, using two-tailed tests.*

One-way ANOVA test was conducted to compare the extent of i-FinTech adoption among respondents based on their business revenue. *Table 6* reveals that there is a statistical significance difference in the extent of i-FinTech adoption among respondents based on different business revenue (F-statistic=15.178\*\*\*). The result shows that respondents with a monthly business revenue of less than RM100,000 had the greatest intention to adopt Islamic FinTech as compared to other respondents. Perhaps, use of i-FinTech for small businesses is a more accessible alternative to financing (Lu, 2018) and i-FinTech adoption should increase the sustainability of small businesses (Pizzi et al., 2021; Arner et al., 2020). With i-FinTech, the capacity of small businesses increases and allows them to be more competitive and survive in the market.

**Table 6.** *The extent of i-FinTech adoption by respondents based on SME's revenue.*

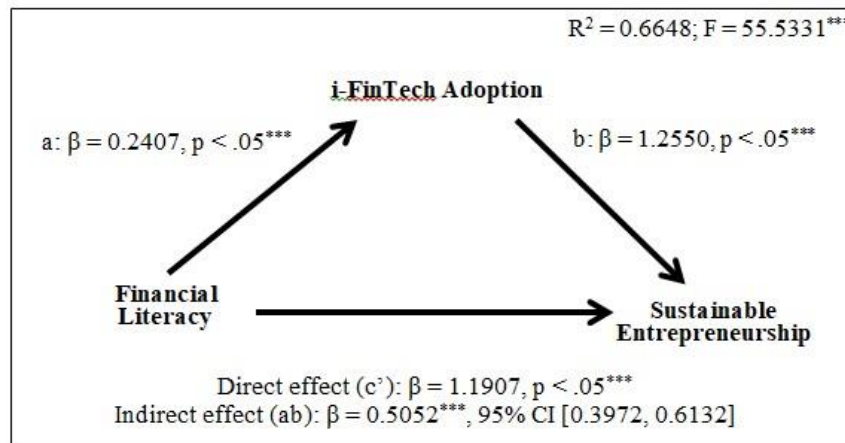
Age group	n	i-FinTech Adoption		Independent Sample t-Test	
		Mean	SD	t-statistic	p-value
Less than RM100,000	39	<b>3.8564</b>	0.5190	<b>15.178</b>	<b>.000</b> ***
RM100,001 to RM500,000	24	3.4500	0.6079		
RM500,001 to RM1 mil	17	3.4353	0.4808		
RM1 mil - RM5 mil	8	2.4000	0.8142		

*Note: Results significantly different at the \*\*\* 1 percent level and \*\* 5 percent level, respectively, using two-tailed tests.*

### ***Mediating role of i-FinTech adoption on the relationship between financial literacy elements and sustainable entrepreneurship***

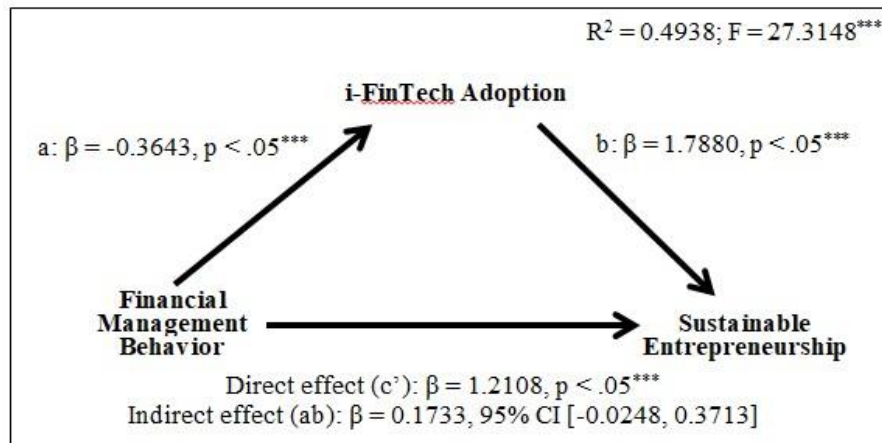
This section discusses the results of mediating testing in order to examine whether i-FinTech adoption is a possible mediator to the influence of financial literacy towards sustainable entrepreneurship among SMEs' entrepreneurs in Selangor, Malaysia. Since this study consists of three independent variables (financial literacy, financial management behavior, and digital financial literacy), therefore the model testing was divided into three (3) parts, which are Model Testing 1, Model Testing 2, and Model Testing 3. Hypothesis H1 conjectures that financial literacy significantly influence the adoption of i-FinTech among Bumiputera SMEs, while hypothesis H2 predicts that i-FinTech adoption is a potential mediator on the relationship between financial literacy towards sustainable entrepreneurship. *Figure 2* depicts the outcome of Model Testing 1 whereby the R<sup>2</sup> value of 0.6648 means that both financial literacy and i-FinTech adoption explains about 66.48% of the variance in the sustainable entrepreneurship. The result reveals that financial literacy has a positive effect on i-FinTech adoption ( $\beta=0.2407$ ,  $p<.05$ \*\*\*). Next, i-FinTech adoption does significantly predict sustainable entrepreneurship ( $\beta=1.2550$ ,  $p<.05$ \*\*\*). Further, the result shows that the direct effect of financial literacy significantly influence sustainable entrepreneurship ( $\beta=1.1907$ ,  $p<.05$ \*\*\*). Finally, the  $\beta$ -value of indirect effect of financial literacy on sustainable entrepreneurship is 0.5052 ( $p<.05$ \*\*\*) and the 95% confidence interval (CI) falls between 0.3972 and 0.6132. Since the 95% CI does not include 0, the indirect effect is statistically significant. Overall, both the direct effect and indirect effect are significant and point in the same direction, thus this is called as complementary mediation. This result indicates that having financial literacy able to stimulate i-FinTech adoption among the entrepreneurs, and finally end up contributing significantly to sustainable entrepreneurship. Therefore, H1 and H2 are supported. The result indicates that financial literacy significantly influences the preference to adopt of i-FinTech services,

its positively influence sustainable entrepreneurship. Perhaps, knowledge of finance is a fairly important aspect in increasing preferences of adopting i-FinTech services as found by Batubara et al. (2020), Lajuni et al. (2020), and Sardiana (2016).



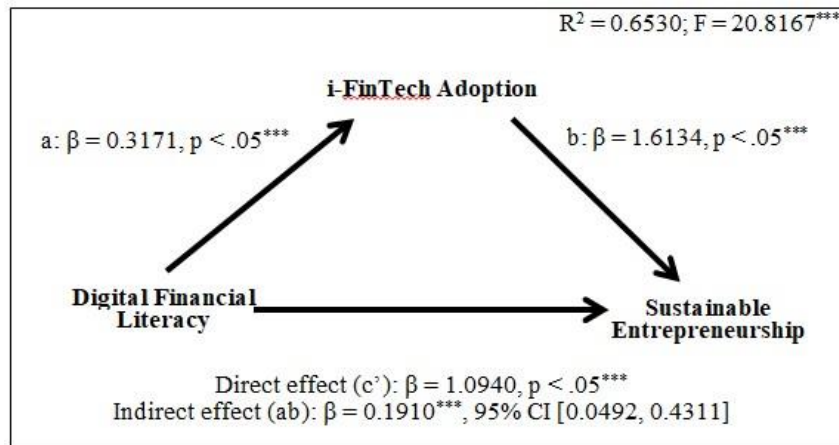
**Figure 2.** Model Testing 1 (IV is Financial Literacy).

Hypothesis H3 assumes financial management behavior significantly influence the adoption of i-FinTech among Bumiputera SMEs, while hypothesis H4 predicts that i-FinTech adoption is a potential mediator on the relationship between financial management behavior and sustainable entrepreneurship. *Figure 3* depicts the result of Model Testing 2 whereby the  $R^2$  value 0.4938 means that both financial management behavior and i-FinTech adoption explains only 49.38% of the variance in the sustainable entrepreneurship. The mediation testing reveals that financial management behavior has a negative direct effect on i-FinTech adoption ( $\beta = -0.3643, p < .05^{***}$ ), and it is significant at 1 percent level. Next, it is observed that i-FinTech adoption does significantly predict sustainable entrepreneurship ( $\beta = 1.7880, p < .05^{***}$ ). Similarly, there is a significant direct positive effect of financial management behavior on i-FinTech adoption ( $\beta = 1.2108, p < .05^{***}$ ). Contrary, the  $\beta$ -value of indirect effect of financial management behavior on sustainable entrepreneurship is 0.1173 ( $p > .05$ ) and the 95% confidence interval (CI) falls between -0.0248 and 0.3713. Since the 95% CI does include 0, the indirect effect is not significant. This finding is called as “direct-only non-mediation” because the direct effect is significant, but not the indirect effect. Therefore, hypothesis H3 is supported while hypothesis H4 is not supported. Perhaps, a negative influence on financial management behavior on i-FinTech adoption as well as missing mediation role of the i-FinTech adoption on the relationship between financial management behavior and sustainable entrepreneurship could be due to lack of awareness in managing their financial affairs of business. This is consistent with a survey conducted by Wirjono and Raharjono (2012) that revealed most SMEs entrepreneurs have very low financial management behavior as they never made any bookkeeping related to their business management. Therefore, they cannot visualize the impact of having i-FinTech services in their business.



**Figure 3.** Model testing 2 (IV is financial management behavior).

Hypothesis H5 assumes digital financial literacy significantly influences the adoption of i-FinTech among Bumiputera SMEs, while hypothesis H6 predicts that i-FinTech adoption is a potential mediator on the relationship between digital financial literacy towards sustainable entrepreneurship. *Figure 4* depicts the outcome of Model Testing 3 whereby the  $R^2$  value of 0.6530 means that both digital financial literacy and i-FinTech adoption explains about 65.30% of the variance in the sustainable entrepreneurship. The mediation testing result reveals that digital financial literacy has a positive effect on i-FinTech adoption ( $\beta=0.3171, p<.05^{***}$ ). Next, i-FinTech adoption does significantly predict sustainable entrepreneurship ( $\beta=1.6134, p<.05^{***}$ ). Further, the result shows that the direct effect of digital financial literacy is significantly influence sustainable entrepreneurship ( $\beta=1.0940, p<.05^{***}$ ). Finally, the  $\beta$ -value of indirect effect of digital financial literacy on sustainable entrepreneurship is 0.1910 ( $p<.05^{***}$ ) and the 95% confidence interval (CI) falls between 0.0492 and 0.4311. Since the 95% CI does not include 0, the indirect effect is statistically significant. This result indicates a complementary mediation as both the direct effect and indirect effect are significant and point in the same direction. Hence H3 is supported. This can be said that entrepreneurs who possesses digital financial literacy are more likely to adopt i-FinTech, and finally end up contributing significantly to sustainable entrepreneurship. This result indicates that the growing digitalization of everyday life and financial decisions is necessarily accompanied by increased levels of digital financial literacy, and this is true even among entrepreneurs. This result is consistent with Kakinuma (2022) that found fintech adoption has a mediating effect on the relationship between digital financial literacy and quality of life, highlighting the importance of digital financial literacy in an increasingly digitalized society.



**Figure 4.** Model testing 3 (IV is digital financial literacy).

## Conclusion

Sustainable entrepreneurship has been an important issue for SMEs businesses, especially those who are still in the startup stage. Unfortunately, slow progress towards i-FinTech adoption with low awareness on its value to operations is the main problem faced by the Malaysian SMEs' entrepreneurs so far. This study provides an empirical solution to the problem of SMEs sustainable entrepreneurship by empirically tested the influence of financial literacy elements on the adoption of i-FinTech applications for Bumiputera SMEs businesses and its implications for sustainable entrepreneurship. The important finding from this study was prove a positive influence of financial literacy and digital financial literacy towards i-FinTech adoption. On a contrary, financial management behavior has a negative influence on the adoption of i-FinTech. Further, this study reveals that i-Fintech adoption has a complementary mediation role in the association between financial literacy and digital financial literacy towards sustainable entrepreneurship. This result indicates that Bumiputera entrepreneurs who possess both financial literacy and digital financial literacy are more likely to adopt i-FinTech, and finally end up contributing significantly to sustainable entrepreneurship. Based on these results, this study suggests that every entrepreneur should explore the digital world in order to recover from the difficult moments of Covid-19. For that, entrepreneurs must change their mindset to accept that i-FinTech could help the entrepreneurs to sustain their business. Besides, improvement in financial literacy and digital financial literacy could speed the i-FinTech adoption, and thereby promote financial inclusion. The results emphasize the need to redefine traditional financial literacy to include digital financial literacy, with important implications for countries considering both financial and digital literacy as a dual approach to improving entrepreneurs' long-run financial resilience.

The findings need to be interpreted with consideration for its limitations. First, the responses of this survey are representative of Bumiputera SMEs in limited location, namely four district areas of Selangor only, which do not represent Malaysia as a whole, as many small business entrepreneurs are scattered outside Selangor. Therefore, the generalizability of the research is limited, especially when it is related to the determinants of i-FinTech adoption. One area for further research might be to conduct the study using a larger sample and a broader geographical base. Second, the selection for the determinants of i-FinTech adoption is not exhaustive. There may be other

predictors that may contribute or be a reason of i-FinTech adoption which might provide more insight. Thus, further research may consider to include other predictors such as social capital, government support, or perceived ease of use to enrich findings in various perspectives. Third, the self-reported behavior on which this study relied are vulnerable to response bias. There is an uncertainty regarding the accuracy of responses because self-reports of financial knowledge possession and their intention for i-FinTech adoption may be less accurate. To reduce response bias, it is suggested for future research to use in-depth techniques applied to secondary data sources such as interviews or observations. This might help researcher to explore certain aspects that cannot be discovered using survey questionnaire.

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### **Conflict of interest**

The authors confirm that there is no conflict of interest involve with any parties in this research study.

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