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# SHARĪʿAH-COMPLIANT FINTECH USAGE AMONG MICROENTREPRENEURS IN MALAYSIA: AN EXTENSION OF UTAUT MODEL

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## ABSTRACT

Fintech has been beneficial to the financial services industry and has markedly enhanced financial inclusivity. While the fintech has already made its mark, there has been somewhat limited use of sharīʿah-compliant fintech (such as P2P lending, crowdfunding, wealthtech, e-wallets) by Muslim microentrepreneurs (MEs) in Malaysia. Hence, this study examines the factors that affect sharīʿah-compliant fintech usage and its effect on income sustainability via an extended Unified Theory of Acceptance and Use of Technology (UTAUT). One hundred sixty-five (165) questionnaires were distributed to Muslim MEs who are users of sharīʿah-compliant fintech. This study reveals that performance expectancy and facilitating conditions have positive and significant effects on the use of sharīʿah-compliant fintech. The extended relationship of sharīʿah-compliant fintech adoption and income sustainability also presents a significant and positive relationship in which sharīʿah-compliant fintech has the potential to increase and, more importantly, sustain MEs' income level.

*Keywords: Fintech, Sharīʿah-compliant fintech, Muslim micro-entrepreneurs, UTAUT.*
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## I. INTRODUCTION

The COVID-19 pandemic has precipitated the adoption of digital technologies. It has since led to the mushrooming of digital business by radically shifting traditional business methods to technologically driven methods. The advent of digital technology has positively impacted Malaysia's economy as the digital economy has contributed to the growth of domestic products (GDP) in Malaysia by up to 26% (Economic Planning Unit, 2021). The Malaysian government has introduced various initiatives to enhance the digital economy ecosystem by bridging the digital divide and providing opportunities to assist 875,000 micro, small and medium enterprises (MSMEs) (SME Corp, 2020). Table 1 outlines the depth and breadth of connectivity, activities, and its impact on the Malaysian eCommerce marketplace.

**Table 1.**
**Connectivity, Activity, and E-commerce in the Digital Economy**

| Connectivity | Activities | eCommerce |
|---|---|---|
| 90.1% of households have internet connections (2019) | 81% of Malaysians are active on social media (2020) | RM16 billion eCommerce market value in Malaysia in 2019 |
| 40th in Speedtest Global Index with 81.46 Mbps fixed broadband speed (2020) | 66% of internet users use mobile banking (2019) | Food, travel, clothing, cosmetics, perfumes, and sports – the most popular categories in eCommerce |
| 135.4% mobile cellular penetration (2019) | 144 e-payment transactions per capita (2019) | 35%of MSMEs have deployed Internet of Things (IoT) solutions but mainly for building surveillance and fleet tracking |
| 93.1% population use a smartphone to access the internet (2018) | 47th Malaysia's ranking in the UN-EGDI (2020) | 44% of micro, small, and medium enterprises (MSMEs)* are using cloud computing, but more than 80% of them are using mainly for storing documents, photos, and videos |
| 70.2% of mobile subscriptions are 4G (2019) | 90% of government services are online | 50% of MSMEs are using some form of data analytics, where 70% of them are referring to spreadsheets |

Source: Bank Negara Malaysia (2021); Malaysia Social Digital Report (2020), SME Corp Report (2020)

Besides, in response to the COVID-19 pandemic, the Malaysian government has introduced short-term initiatives via Pakej Rangsangan Ekonomi Prihatin Rakyat (PRIHATIN) and Pelan Jana Semula Ekonomi Negara (PENJANA)[1]. Therefore, one of the silver linings in challenging economic conditions is the promising outlook of the digital economy. As parts of the above initiatives, the Malaysian government provides a supportive ecosystem for local enterprises to

1 Among the initiatives given under this plan are free 1GB internet to support productivity activities, digital discount voucher to encourage online spending on products from local retailers, ePENJANA RM50 e-wallet credit value per eligible Malaysia, RM700 million grants and loans to eligible firms for digitalisation adoption or subscription, RM35 million digital content funds for animation and visual effects projects, RM70 million fund for eligible MSMEs to utilise eCommerce platforms, RM1.2 billion dana PENJANA Nasional for investment to benefit start-up and matching grant for gig economy platforms that contribute to gig workers' social protection.

embrace digitalisation. This is especially true for SMEs as they have been a key employment driver, mainly by creating new firms in high-growth sectors such as information and communication technologies (ICT). Interestingly, despite its relatively small size, micro-enterprises have experienced the most rapid growth among all types of SMEs in Malaysia (Table 2).

**Table 2.**
**Census of Establishments and Enterprises 2016 and 2020**

| Type/ Census | Census of Establishments and Enterprises 2016 | Census of Establishments and Enterprises 2020 | Percentage Increase |
|---|---|---|---|
| Micro | 691,527 | 903,174 | 30.61% |
| Small | 192,013 | 229,876 | 19.72% |
| Medium | 23,525 | 18,289 | -22.26% |
| Total | 907,065 | 1,151,339 | 26.93% |

Source: Department of Statistics Malaysia (2021).

The above growth signals the indispensability of micro-enterprises (MEs) to the Malaysian economy. As a result, it is also equally essential to accelerate MEs' contribution to the national GDP. Notwithstanding, studies such as Nik Azman et al. (2021) and Asiah et al. (2021) find that businesses by MEs have closed due to economic recession because of COVID-19. Moreover, Nik Abdul Aziz & Mukhtar (2021) and Clauss et al. (2020) argue that one way to shore up MEs' income sustainability and, by extension, the company as a going concern is by implementing enterprise-wide digitalisation initiatives.

### 1.1. Background

The inception of digital technology since the 1980s has been transforming the analogue-intensive industry into a technology-intensive one (Arner et al., 2016). Technology supports new ways of collaborating, organising resources, designing products, matching complex demand and offer, and developing new standards and solutions (Markus & Loebecke, 2013). Digital technology offers micro-entrepreneurs (MEs) the unique opportunity to be utilised. Among the benefits of utilising digital technology are providing new sources of profits from a high volume of sales and cost reduction (Costa & Ehrbeck, 2015), accelerating the implementation of risk-sharing (Alaa Alaabed & Mirakhor, 2017), as well as receiving a positive perception of start-up (micro) towards digital instruments (Ghazali & Yasuoka, 2018).

The infusion of new digital technologies increases the MEs' ability to engage with a more diverse and broader customer base (Hatch, 2013). For example, digital technologies assist MEs to engage with customers and stakeholders through new channels (i.e., Netflix, Facebook, Twitter, WhatsApp, and LinkedIn), connect multivariate demands and highly personalised offerings (i.e., Grab, Mycar, and Airbnb), use social media to outsource activities and crowdfunding (i.e., Upwork and Kickstarter), or test the potential of a business idea (i.e., Quirky). Digital technology assists MEs to outsource funding (i.e., peer-to-peer lending,

crowdfunding, crowdlending) by engaging with potential investors on a global scale with minimal cost (Kim & Hann, 2013).

These notwithstanding, as sharīʿah-compliance is a vital part of Muslim MEs, previous studies tend to overlook the importance of sharīʿah-compliant fintech utilisation among MEs, especially as a part of a business sustainability strategies. Besides, one of the principal issues MEs face worldwide is access (or lack thereof) to capital. As a result, MEs in Malaysia have turned to non-traditional financial intermediaries to source funding, e.g., crowdfunding and peer-to-peer lending (P2P lending). These intermediaries are a part of fintech – a combination of finance and technology – mainly utilising technological innovation to streamline financial transactions. Nevertheless, when it comes to fintech solutions in Islamic finance, sharīʿah compliance is of paramount importance. It principally includes the prohibition of *riba* (interest), *gharar* (uncertainty) and *maysir* (gambling). Therefore, within the Islamic financial system milieu, there is a need to ensure financial products and services that are fintech-based are aligned with sharīʿah.

On this note, the Malaysian government has, via both Bank Negara Malaysia and Securities Commission (SC), been facilitating efforts in establishing Malaysia as a hub for sharīʿah-compliant fintech start-ups. For instance, the SC has granted licenses to Wahed Invest as the first sharīʿah-compliant Digital Investment Management Services (DIMS) and microLEAP PLT, the first local P2P financing platform to offer sharīʿah-compliant investment notes in Malaysia. Coupled with the worldwide trend of fintech adoption, further examination of this subject matter is more critical than ever.

### 1.2. Objective

In light of the above, this study examines the factors that affect sharīʿah-compliant fintech usage and investigates the potentiality of sharīʿah-compliant fintech in ensuring income sustainability among Muslim MEs in Malaysia. Previous studies have looked at fintech in general, but only a few have looked into Islamic fintech. In other words, past research may have overlooked the importance of shariah-compliant fintech adoption among MEs, particularly as part of long-term business goals. We contribute to this line of research by focusing on Islamic fintech and hence fill the gap in the literature.

The following section of the study will discuss the underpinning theory—UTAUT. The subsequent sections explain the methodology and highlight the results and discussions. The last section concludes the paper.

## II. LITERATURE REVIEW

### 2.1. The Underpinning Theory

Previous studies have proposed several models and theories related to technology, such as the Technology Acceptance Model (TAM) by Davis (1989), the DeLone and McLean Information Systems Success Model (DMISM) by Delone & McLean (1992), the Task Technology Fit (TTF) by Goodhue & Thompson (1995) and the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003). Among these theories and models, this study adopts the UTAUT to examine

the sharīʿah-compliant fintech usage behaviour and income sustainability. The UTAUT has been validated and gained empirical support by several researchers such as Marchewka & Kostiwa (2007), Thomas et al. (2014), Nuq & Aubert (2013), Fang et al. (2014), Raman et al. (2014), and Isaac et al. (2019). Besides, the uniqueness of UTAUT stems from the combination of various concepts and frameworks from 8 different theories[2]. This indirectly strengthens the theory and improves the UTAUT's effectiveness as a predictor of behaviour. Operationally, the UTAUT measures three levels of characteristics—individual (i.e., performance expectancy and effort expectancy), organisational (i.e., facilitating condition), and social (i.e., social influence).

### 2.2. Related Studies

Performance Expectancy (PE) is the degree to which an individual believes that using a system would improve his or her job performance (Venkatesh et al., 2003). This relationship has been empirically examined by Alalwan et al. (2018), Alrajawy et al. (2016), Raman et al. (2014), Ramayah (2006), and Venkatesh et al. (2011), which suggests that PE has a positive relationship with technology use. The present study defines the degree to which MEs believe that sharīʿah-compliant fintech utilisation could enhance and improve their productivity, income, and profit. Hence, this study hypothesises that:

*$H_1$: Performance expectancy (PE) has a positive and significant relationship with sharīʿah-compliant fintech usage.*

Venkatesh et al. (2013) define Effort Expectancy (EE) as the degree of ease associated with using a given system. As examined by Martins et al. (2014), EE positively correlates to Internet banking usage. Other studies such as Fang et al (2014), Hsu et al. (2014), Venkatesh et al. (2011) also find the positive relationship between EE and technology usage. However, several studies observe a negative relationship between them. For instance, Yang & Forney (2013) find a negative relationship between EE and technology. Notwithstanding, this negative relationship might be influenced by the environment of the study, which investigates the latest technology used and sophisticated software that may inhibit the respondents' EE. In this study's context, the technology is restricted to simple and understandable sharīʿah-compliant fintech platforms such as mobile transfer and mobile banking. Hence, this study hypothesises:

*$H_2$: Effort expectancy (EE) has a positive and significant relationship with sharīʿah-compliant fintech usage.*

Facilitating Conditions (FC) are defined as the degree to which an individual believes that an organisational and technical infrastructure exists to support system usage (Venkatesh et al., 2013). In addition, MEs also need to be prepared

2 The eight theories are Theory of Reasoned Action (TRA) by Ajzen and Fishbein (1980), Theory of Planned Behavior (TPB) by Ajzen (1985), Social Cognitive Theory (SCT) by Bandura (1986), Technology Acceptance Model (TAM) by Davis (1989), combined TAM and TPB (C-TAM-TPB) by Todd and Taylor (1995), Motivational Model (MM) by Vallerand (1997), Model of PC Utilization (MPCU) by Chang and Cheung (2001) and the Diffusion of Innovation Theory (DOI) by Rogers (2002).

before incorporating sharīʿah-compliant fintech applications into their business operations. As Guo (2015) mentions, a proper backup system is necessary before being involved in digitech. Previous studies by Raman & Don (2013), Chang (2013), Wu et al. (2008) argue on the need to have an FC to predict user behaviour. In this study, the context is about the MEs' belief in the sharīʿah-compliant fintech provider's support system technology. Hence, this study hypothesises the following:

*$H_3$: Facilitating condition (FC) has a positive and significant relationship with sharīʿah-compliant fintech usage.*

Social influence (SI) is the degree to which an individual perceives others believe he or she should use a system (Venkatesh et al., 2003). Social influence could be considered the all-important factor (Martins et al., 2014). Previous studies have been using different indicators such as important people, family, friends, co-workers, superiors, and experts as proxies, and the results demonstrate a positive impact of social influence on technology usage (Gonzalez et al., 2012; Isaac et al., 2019 and Šumak et al., 2010). The study operationalises the SI construct as the degree to which the MEs perceive that people of importance believe they should use the sharīʿah-compliant fintech service. Therefore, this study hypothesises that:

*$H_4$: Social influence (SI) has a positive and significant relationship with sharīʿah-compliant fintech usage.*

Overall, the UTAUT model theorises that the above four variables (i.e., performance expectancy, effort expectancy, social influence, and facilitating conditions) are direct determinants of technological usage. Notwithstanding, the study further extends the framework by investigating the effect of sharīʿah-compliant fintech utilisation and income sustainability. Sustainable income could be defined as whether the revenue earned is enough to cover direct costs, such as financing costs, provisions for loan losses and operating expenses, and indirect costs, such as adjusted cost of capital (Brau & Woller, 2004). In other words, MEs' income sustainability is measured by excess revenue after deducting the above expenses. Therefore, this study hypothesises that:

*$H_5$: Sharīʿah-compliant fintech usage has a positive and significant relationship with income sustainability.*

### 2.3. Conceptual Framework

The proposed model consists of five hypotheses that will be tested in the following section.

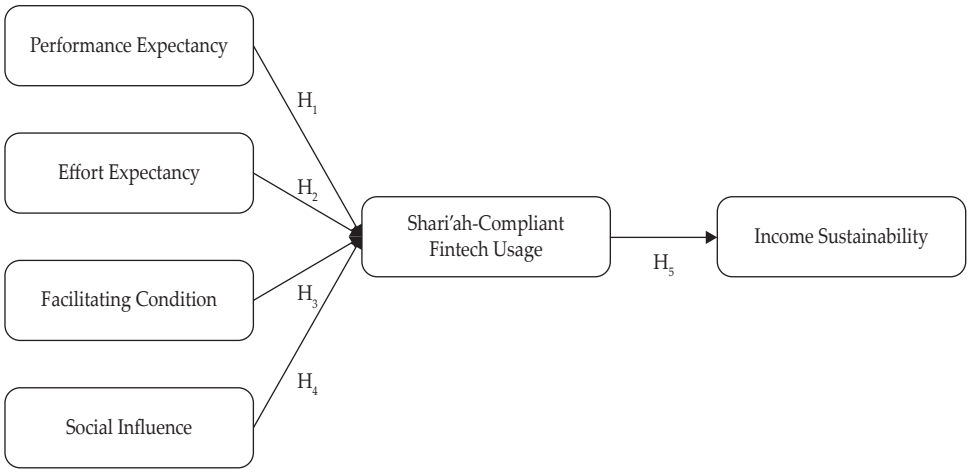


**Figure 1.**
**Conceptual Framework**

## III. METHODOLOGY

### 3.1. Data

The study compiles primary data using online, self-administered survey questionnaires from January to April 2021. The respondents of the study are Muslim MEs who adopt sharīʿah-compliant fintech solutions. The authors are cognizant of the fact that in Malaysia, there are various forms of fintech. These include, inter alia, digital payments and mobile wallets, "insurtech," lending, digital remittances, blockchain, crowdfunding, and electronic Know-Your-Customer processes. Notwithstanding, the authors opt to limit the study's scope to four of the most widely used forms of fintech in Malaysia – digital-based payments, e-wallets, lending and wealthtech[3] (Fintech News Malaysia, 2021).

The questionnaires were distributed in Peninsular Malaysia with a special focus on the states of Kelantan and Kedah. The selection was due to the high concentration of Muslim populations in these two states (Department of Statistics, 2021). According to the Department of Statistics Malaysia (2021), Bumiputera[4] made up 96% and 80% of Kelantan and Kedah residents, respectively. These percentages are markedly higher than the national average of 69.8%. However, the latest Census 2020 only specified the ethnicity but did not provide detailed data on religion. Notwithstanding, the prior Census 2010 did provide a breakdown of

3 The above four forms of fintech made up 52.32% of the total number of fintech companies in Malaysia. The detailed breakdown of the percentages are 19.19% for digital-based payments and e-wallets, and 7.07% for lending and wealthtech respectively.

4 Bumiputera literally means 'sons of the soil.'

Bumiputera into Malay and other Bumiputera (other indigenous ethnic groups such as the Orang Asli in Peninsular Malaysia and the tribal people in Sabah and Sarawak). As of 2010, the Malays made up 98.87% and 99.72% of Bumiputera in Kelantan dan Kedah. Under Article 160(2) of the Federal Constitution, a Malay is "a person who professes the religion of Islam."

The sampling method is purposive sampling, as simple random sampling would not achieve the study's objective. In order to determine the sample size, this study uses power analysis (G*Power) at the required 95% confidence level. According to the G*Power, the sample is considered sufficient as the minimum sample size required is only 98 respondents (Figure 2). Hair et al. (2010) argue that 100 is considered sufficient for a relatively small sample size. Consequently, the study distributed 165 questionnaires to MEs. However, only 125 questionnaires were returned. Out of these, 25 questionnaires were found defective, which leaves the authors with 100 useable questionnaires.

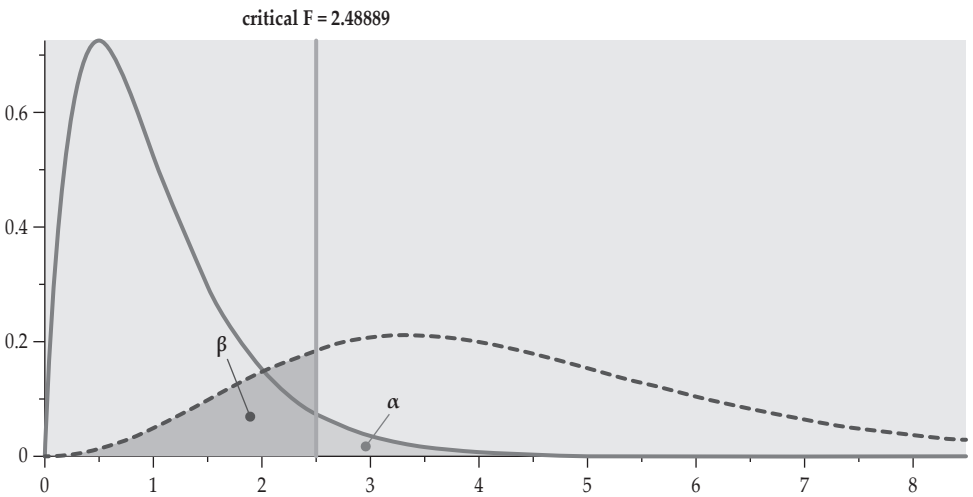


**Figure 2.**
**G*Power Sample Size**

### 3.2. Model Development

The model of this study is based on the literature reviewed in the previous section. Notwithstanding, this study extends the UTAUT model to include the income sustainability effect. It uses a 7 Likert-type rating scale which is 1 (strongly disagree), 2 (disagree), 3 (lightly disagree), 4 (neutral), 5 (lightly agree), 6 (agree) and 7 (strongly agree). As Garland (1991) indicates, as the number of scales increases, the tendency for the respondents to use the midpoint category decreases. The 7-points is an ideal number of scale point as it minimises response bias, maximises variance, maximise power, and minimise error (Allen & Seaman, 2007; Weijters, Cabooter, & Schillewaert 2010; Kulas, Stachowski, & Haynes 2008). The questionnaires related to this study's constructs are adapted from previous studies (for further detail, please see Table 3).

**Table 3.**
**Measurement Items**

| Construct | Items | Sources |
|---|---|---|
| Performance Expectancy | I find sharīʿah-compliant fintech useful in my daily life (PE1) | Wei et al. (2021), Alghazi et al. (2021), Venkatesh et al. (2003), Luarn and Lin (2005), Venkatesh and Zhang (2010), Foon and Fah (2011), and Sripalawat et al. (2011) |
| | Using sharīʿah-compliant fintech helps me to achieve my targets (PE2) | |
| | Sharīʿah-compliant fintech can be used every time and everywhere (PE3) | |
| | Sharīʿah-compliant fintech increases my productivity (PE4) | |
| | Sharīʿah-compliant fintech allows for faster financial transactions (PE5) | |
| Effort Expectancy | Learning how to use sharīʿah-compliant fintech is easy for me (EE1) | Wei et al. (2021), Alghazi et al. (2021), Luarn and Lin (2005), Venkatesh and Zhang (2010), Foon and Fah (2011), Sripalawat et al. (2011) |
| | Sharīʿah-compliant fintech is easily understandable (EE2) | |
| | I find sharīʿah-compliant fintech tools are easy to use (EE3) | |
| | It is easy for me to become skilful at using sharīʿah-compliant fintech (EE4) | |
| | The sharīʿah-compliant fintech apps are fast (EE5) | |
| | Sharīʿah-compliant fintech's interface is user-friendly (EE6) | |
| Facilitating Condition | I have the resources to use sharīʿah-compliant fintech (FC1) | Wei et al. (2021), Alghazi et al. (2021), Venkatesh et al. (2003), Venkatesh and Zhang (2010), Sripalawat et al. (2011) |
| | Sharīʿah-compliant fintech is compatible with other technologies that I use (FC2) | |
| | I can get help from family when I have difficulties in using sharīʿah-compliant fintech (FC3) | Wei et al. (2021), Alghazi et al. (2021), Venkatesh et al. (2003), Venkatesh and Zhang (2010), Foon and Fah (2011), Sripalawat et al. (2011) |
| | Sharīʿah-compliant fintech can work 24/7 without problems (FC4) | |
| | Sharīʿah-compliant fintech is always up to date (FC5) | |
| | Sharīʿah-compliant fintech is easy to register as a new user (FC6) | |
| Social Influence | People who are important to me think that I should use sharīʿah-compliant fintech (SI1) | |
| | People who influence my behaviour think that I should use sharīʿah-compliant fintech (SI2) | |
| | People whose opinions that I value prefer that I use sharīʿah-compliant fintech (SI3) | |
| | Advertisement has influenced me to use sharīʿah-compliant fintech (SI4) | |
| | Staffs' advice influences me to use sharīʿah-compliant fintech (SI5) | |
| | The persuasion from my family and friends influences me to use sharīʿah-compliant fintech (SI6) | |
| | The usage of sharīʿah-compliant fintech is a status symbol in my environment (SI7) | |

**Table 3.**
**Measurement Items (Continued)**

| Construct | Items | Sources |
|---|---|---|
| Income Sustainability | Sharīʿah-compliant fintech assists me in keeping track of my business profit (IS1) | Chan and Owyong (2007), Anane et al. (2013), Nik Azman et al. (2016) |
| | Sharīʿah-compliant fintech enhances my business ability (IS2) | |
| | Sharīʿah-compliant fintech helps to diversify my business (IS3) | |
| | I can start up a new business using sharīʿah-compliant fintech (IS4) | |
| Sharīʿah-Compliant Fintech Usage | I use sharīʿah-compliant fintech for my daily business transactions (UT1) | Wei et al. (2021), Alghazi et al. (2021), Venkatesh and Zhang (2010), Luarn and Lin (2005), Sripalawat et al. (2011) |
| | I use sharīʿah-compliant fintech for my urgent business needs only (UT2) | |
| | I always use sharīʿah-compliant fintech to deal with my customers (UT3) | |
| | I frequently use sharīʿah-compliant fintech to achieve my capital in doing business (UT4) | |
| | I use sharīʿah-compliant fintech for business expansion (UT5) | |
| | I use sharīʿah-compliant fintech to grow my business inclusively (UT6) | |

### 3.3. Method

The data are then analysed using IBM SPSS for preliminary analysis and Structural Equation Modeling (SEM) by using Smart PLS to test the hypothesized relationships between the variables. As indicated by Albers (2010), the PLS is particularly useful at explaining and predicting the key construct of the model (interaction effect). In addition, Chin et al. (2003) indicate that PLS using product indicators was better at providing higher and presumably more accurate path estimates than multiple regression using summated indicators.

## IV. RESULTS AND ANALYSIS

### 4.1. Analysis

Based on Table 3, almost two-thirds of the surveyed Muslim MEs are married (64%). Slightly more than half of the respondents are aged 21 to 40 years old (56%), while the overwhelming majority have secondary level education (70%). Slightly less than half of the MEs (45%) earn between RM1,000 and RM 2,000 monthly, which is below the minimum wage set by the Malaysian Government of RM1,200 (for Peninsular Malaysia).

**Table 4.**
**Profile of Respondents**

| Respondents' Demographic | | Frequency [%] |
|---|---|---|
| **Gender** | Male | 28 [28.0] |
| | Female | 72 [72.0] |
| **Marital Status** | Married | 65 [64.0] |
| | Single | 29 [32.0] |
| | Single Mother | 6 [6.0 ] |
| **Age** | 21-30 | 27 [27.0] |
| | 31-40 | 29 [29.0] |
| | 41-50 | 31 [31.0] |
| | 51-60 | 13 [13.0] |
| **Education** | No Formal Education | 7 [7.0 ] |
| | Primary School | 1 [1.0 ] |
| | Secondary School | 70 [70.0] |
| | Diploma | 21 [21.0] |
| | Bachelor's degree | 1 [1.0] |
| **Monthly Income (RM)** | 1001-2000 | 45 [45.0] |
| | 2001-3000 | 32 [32.0] |
| | 3001-4000 | 14 [14.0] |
| | 4001-5000 | 5 [5.0] |
| | 5001-6000 | 4 [4.0] |

*Note.* N=100

Thereupon, the study further reviews the measurement model. As indicated in Table 4, according to Hair et al. (2017), convergent validity is the degree to which indicators of a specific construct converge or share a high proportion of variance in common. This study assesses the convergent validity by following indicators suggested by Hair et al. (2017), where the average extracted variance (AVE) should be more than 0.5, the cut-off value for factor loading is 0.5, and all composite reliability (CR) is more than 0.7. Consequently, the item loading with less than 0.5 was dropped. Overall, the AVE is more than 0.5, and CR is higher than 0.7 after deletion. At this stage, it is concluded that the construct meets both reliability and convergent validities.

**Table 5.**
**Measurement Model**

| | Items | Loading | CR | AVE |
|---|---|---|---|---|
| Performance Expectancy | I find sharīʿah-compliant fintech useful in my daily life (PE1) | 0.896 | 0.960 | 0.826 |
| | Using sharīʿah-compliant fintech helps me to achieve my targets (PE2) | 0.890 | | |
| | Sharīʿah-compliant fintech can be used every time and everywhere (PE3) | 0.879 | | |
| | Sharīʿah-compliant fintech increases my productivity (PE4) | 0.959 | | |
| | Sharīʿah-compliant fintech allows for faster financial transactions (PE5) | 0.918 | | |

**Table 5.**
**Measurement Model (Continued)**

| | Items | Loading | CR | AVE |
|---|---|---|---|---|
| Effort Expectancy | Learning how to use sharīʿah-compliant fintech is easy for me (EE1) | 0.909 | 0.969 | 0.839 |
| | Sharīʿah-compliant fintech is easily understandable (EE2) | 0.911 | | |
| | I find sharīʿah-compliant fintech tools are easy to use (EE3) | 0.931 | | |
| | It is easy for me to become skilful at using sharīʿah-compliant fintech (EE4) | 0.926 | | |
| | The applications (apps) of sharīʿah-compliant fintech are fast (EE5) | 0.888 | | |
| | Sharīʿah-compliant fintech's interface is user-friendly (EE6) | 0.930 | | |
| Facilitating Condition | I have the resources to use sharīʿah-compliant fintech (FC1) | 0.823 | 0.939 | 0.721 |
| | Sharīʿah-compliant fintech is compatible with other technologies that I use (FC2) | 0.850 | | |
| | I can get help from family when I have difficulties using sharīʿah-compliant fintech (FC3) | 0.798 | | |
| | Sharīʿah-compliant fintech can work 24/7 without problems (FC4) | 0.934 | | |
| | Sharīʿah-compliant fintech is always up to date (FC5) | 0.813 | | |
| | Sharīʿah-compliant fintech is easy to register as a new user (FC6) | 0.870 | | |
| Social Influence | People who are important to me think that I should use sharīʿah-compliant fintech (SI1) | 0.912 | 0.926 | 0.717 |
| | People who influence my behaviour think that I should use sharīʿah-compliant fintech (SI2) | 0.904 | | |
| | People whose opinions that I value prefer that I use sharīʿah-compliant fintech (SI3) | 0.863 | | |
| | Advertisement has influenced me to use sharīʿah-compliant fintech (SI4) | 0.818 | | |
| | The usage of sharīʿah-compliant fintech is a status symbol in my environment (SI7) | 0.722 | | |
| Income Sustainability | Sharīʿah-compliant fintech assists me in keeping track of my business profit (IS1) | 0.867 | 0.964 | 0.870 |
| | Sharīʿah-compliant fintech enhances my business ability (IS2) | 0.963 | | |
| | Sharīʿah-compliant fintech helps to diversify my business (IS3) | 0.954 | | |
| | I can start up a new business using sharīʿah-compliant fintech (IS4) | 0.944 | | |
| Sharīʿah-Compliant Fintech Usage | I use sharīʿah-compliant fintech for my daily business transactions (UT1) | 0.759 | 0.962 | 0.811 |
| | I use sharīʿah-compliant fintech for my urgent business needs only (UT2) | 0.878 | | |
| | I always use sharīʿah-compliant fintech to deal with my customers (UT3) | 0.944 | | |

**Table 5.**
**Measurement Model (Continued)**

| | Items | Loading | CR | AVE |
|---|---|---|---|---|
| | I frequently use sharīʿah-compliant fintech to achieve my capital in doing business (UT4) | 0.929 | | |
| | I use sharīʿah-compliant fintech for business expansion (UT5) | 0.951 | | |
| | I use sharīʿah-compliant fintech to grow my business inclusively (UT6) | 0.928 | | |

Note. Item SI5 and SI6 were deleted due to lower loading

Afterwards, the discriminant validity of the model is assessed. Ideally, items should load more strongly on their respective construct. Besides, the average variance (AVE) shared between each construct and its measures should be greater than the variance shared between the construct, and its measures should be greater than the variance shared between the construct and other constructs (Fornell & Larker, 1981). Table 6 exhibits the study's discriminant validity.

**Table 6.**
**Discriminant Validity**

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Effort Expectancy | | | | | | |
| 2. Facilitating Condition | 0.724 | | | | | |
| 3. Performance Expectancy | 0.731 | 0.618 | | | | |
| 4. Social Influence | 0.752 | 0.783 | 0.671 | | | |
| 5. Sustainable Income | 0.286 | 0.309 | 0.423 | 0.282 | | |
| 6. Sharīʿah Compliancy Fintech Usage | 0.268 | 0.302 | 0.392 | 0.256 | 0.439 | |

Then, this study proceeds with the robustness test of the model. Accordingly, as argued by Sarstedt, Ringle, Cheah, Ting, Moisescu & Radomir (2019), nonlinearity can also be used as one of the alternatives in checking the robustness of the PLS model. Ramsey's RESET (1969) is used on the latent variable scores extracted after the convergence of the original model's PLS-SEM algorithm. Table 7 shows that neither the partial regression of sharīʿah compliance fintech usage (UT) on EE, FC, PE and SI ($F(1,94)=0.039$, $p=0.842$) nor the partial regression of Income Sustainability (IS) on sharīʿah compliance fintech usage (UT) ($F(1, 97)=5.589$, $p=0.120$) is subject to nonlinearity. Therefore, this study concludes that the linear effect model is robust.

**Table 7.**
**Robustness**

| Relationship | Coefficient | *p*-value | Ramsey's RESET |
|---|---|---|---|
| **PE*PE -> UT** | 0.121 | 0.953 | (F(1,94) = 0.139, p = 0.843) |
| **EE*EE -> UT** | 0.148 | 0.966 | |
| **FC*FC -> UT** | 0.147 | 0.952 | |
| **SI*SI -> UT** | 0.135 | 0.949 | |
| **UT*UT -> IS** | 3.461 | 0.131 | (F(1, 97) = 5.589, p = 0.120) |

### 4.2. Hypothesis Testing

Subsequently, after examining the model's validity and reliability, it is critical to assess the direct hypotheses (Section 2.2). The *t*-statistics for all paths are generated using Smart PLS 3.0 bootstrapping function to test the significance level. Before the structural model examination, it is crucial to ensure no lateral collinearity issue in the structural model (Kock & Lynn, 2012). Table 8 shows that all the inner VIF values for the other independent variables for lateral multicollinearity are less than 5, which indicates that lateral multicollinearity is not a concern in the study (Hair et al., 2017).

**Table 8.**
**Lateral Collinearity Assessment**

| | Use of Technology (VIF) | Sustainable Income (VIF) |
|---|---|---|
| Sharīʿah-Compliant Fintech Usage | | 1.000 |
| Performance Expectancy | 2.157 | |
| Effort Expectancy | 2.793 | |
| Facilitating Condition | 2.531 | |
| Social Influence | 2.619 | |

Three relationships have *t*-value>2.33 and *t*-value>1.645, thus significant at 0.01 and 0.10 levels of significance (Table 9). Two relationships are found not significant (i.e., $H_2$ and $H_4$). The predictor of performance expectancy (β=0.363, $p$<0.01) shows the strongest relationship with sharīʿah-compliant fintech adoption. Nevertheless, effort expectancy (β=-0.085, $p$>0.10) and social influence (β=-0.052, $p$>0.10) shows an insignificant relationship with sharīʿah-compliant fintech usage. Therefore, only $H_1$ and $H_3$ are supported. In addition, this study further assesses the relationship between sharīʿah-compliant fintech usage and income sustainability (β=0.992, $p$<0.01), the result is significant; thus, $H_5$ is supported.

**Table 9.**
**Hypothesis Testing**

| | Relationship | Std Beta | Std Error | t-value | Decision |
|---|---|---|---|---|---|
| $H_1$ | Performance Expectancy -> Sharīʿah-Compliant Fintech Usage | 0.363 | 0.150 | 2.227*** | Supported |
| $H_2$ | Effort Expectancy -> Sharīʿah-Compliant Fintech Usage | 0.085 | 0.154 | 0.554 | Not Supported |
| $H_3$ | Facilitating Condition -> Sharīʿah-Compliant Fintech Usage | 0.187 | 0.142 | 1.319* | Supported |
| $H_4$ | Social Influence -> Sharīʿah-Compliant Fintech Usage | 0.052 | 0.155 | 0.338 | Not Supported |
| $H_5$ | Use of Technology -> Income Sustainability | 0.992 | 0.003 | 2.240*** | Supported |

Note: ***p<0.01, *p<0.10

## V. DISCUSSION

One of the major findings is that MEs believe sharīʿah-compliant fintech will help their business sustainability. Moreover, the study also finds performance expectancy (PE) has a positive and significant effect on sharīʿah-compliant fintech utilisation. This effect is also documented by previous studies such as Moghavvemi et al. (2012). They find a positive effect of performance expectancy and facilitating condition (FC) on technology used. This is relevant because once MEs found sharīʿah-compliant fintech a useful platform, it would increase and improve their productivity, income, and profit. Furthermore, this finding also bodes well with the Malaysian government's push for digital technology utilisation among MEs.

The results show that effort expectancy (EE) and social influence (SI) are positively related to sharīʿah-compliant fintech usage. However, the results for both relationships are not significant. The findings may be partly attributable to respondents' education level, which are mostly consisted of secondary school leavers that may contribute to the lack of understanding of sharīʿah-compliant fintech's benefits (Fang et al., 2014). In other words, some Muslim MEs might face a digital illiteracy issue that affects their understanding, and subsequently, their use of sharī◎ah-compliant fintech applications. Although sharīʿah-compliant fintech interface is user-friendly, Muslim MEs may lack the necessary skills in its technological operation, which could be a major factor hindering them from using it.

In terms of social influence, as mentioned earlier, the more family, friends, and co-workers think that using sharīʿah-compliant fintech is a good idea, the more Muslim MEs will use sharīʿah-compliant fintech. However, even though social influence has been found to have a positive relationship with technology usage, this study finds that the influence of family, friends, and co-workers towards sharīʿah-compliant fintech adoption is not significant. The authors believe that there is an element of implicit endorsement in using sharīʿah-compliant fintech services. Stated differently, Muslim MEs have their standpoint regarding fintech applications. Most of the respondents are baby boomers and Gen-X (about 50%), who mostly make independent decisions based on individual behaviours and attitudes (Lu, Yao & Yu, 2005). The authors also believe that the age gap creates a different outcome in the approach (and its subsequent usage) of sharīʿah-compliant fintech service. This is especially true as the later generations, such as Gen-Y or Millennials and Gen-Z, are what the generational cohort's expert, Dr Alexis Abramson, termed "digital natives" (BBC, 2021) and thus, are more adept at using sharīʿah-compliant fintech.

In addition, the relationship between sharīʿah-compliant fintech utilisation towards sustainable income shows a significant relationship. Stated differently, Muslim MEs believe that the adoption of sharīʿah-compliant fintech assists in increasing, diversifying, expanding, and, more importantly, sustaining their income level. The following quote by Marwan Forzley, co-founder and CEO of Veem, sums up the essential role that can be played by fintech (and by extension, sharīʿah-compliant fintech):

> *Small businesses are looking to outsource complexity to somebody else because they have enough to worry about. [...] SMBs want to rely on providers and operators that will make their lives simple and easy.*

The authors believe that if sharīʿah-compliant fintech continues to make MEs' lives 'simpler and easier,' its utilisation could be very influential in ensuring ME's income sustainability.

## VI. CONCLUSION AND RECOMMENDATION

### 6.1. Conclusion

This study analyses the utilisation of sharīʿah-compliant fintech among Muslim MEs in Malaysia and its impacts on their income sustainability. Two significant factors play an important role in influencing Muslim MEs towards sharīʿah-compliant fintech usage, namely performance expectancy and facilitating conditions. Specifically, it appears that Muslim MEs believed sharīʿah-compliant fintech services offer a significant effect on their income generation capabilities as sharīʿah-compliant fintech services are gaining traction, acceptance as well as critical support from the government. The study also finds that MEs have been incorporating sharīʿah-compliant fintech in their business sustainability strategies. The authors also believe that the next critical area, which sharīʿah-compliant fintech can address, is the inaccessibility to a cheap source of funds.

### 6.2. Recommendation

Given the huge opportunities that sharīʿah-compliant fintech can offer to Muslim MEs, this study investigates the possible barriers and implications of sharīʿah-compliant fintech on performances of MEs in Malaysia, focusing on the Muslim MEs located in the states of Kelantan and Kedah. So, future studies might focus on other states of Muslim MEs in Malaysia. While confirming that sharīʿah-compliant fintech adoption will bring about income sustainability to MEs, some barriers are also observed. Lower education level is among the critical issues leading to lower technology adoption. Hence, government agencies (especially under the Ministry of Entrepreneur Development and Cooperatives), third sector or Islamic social finance institutions (e.g., *zakat* and *waqf*), NGOs should offer more training, mentoring, and hand-holding opportunities to Muslim MEs with a special focus on harnessing the potentiality of sharīʿah-compliant fintech.

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