FINTECH ADOPTION AMONG GENERATION-Z IN MALAYSIA

BY

CHAN JIAN YOU
CHIN CHEN HUN
KOO HOW SHEN

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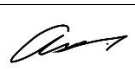
DECLARATION

We hereby declare that:

1. This undergraduate FYP is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.
2. No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.
3. Equal contribution has been made by each group member in completing the FYP.
4. The word count of this research report is 9162 words.

No	Name of student:	Student ID	Signature
1	Chan Jian You	2003548	
2	Chin Chen Hun	2003011	
3	Koo How Shen	2003694	

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DEDICATION

This study is dedicated to every person who has made an effort to make this study a success. The efforts, regardless of being direct or indirect, are priceless.

First of all, we would like to dedicate this study to UTAR. The university has provided us with resources such as E-Databases and facilities such as computer laboratories. Access to these resources and facilities allow us to conduct the study smoothly.

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CHAPTER 1: INTRODUCTION

1.1 Research background

Fintech is defined as a new financial industry that includes technology application to improve financial activities (Schueffel, 2016). Besides that, Fintech is also known as any innovations that improve financial service processes by proposing technology solutions into distinct business situations (Leong & Sung, 2018).

With the advancement of technology, technology integration is prevalent in the financial industry (Jourdan et al., 2023). There are various innovations emerge in the financial industry that have incorporated technology such as mobile payment, peer-to-peer lending, robo-advisory, insurance technology and crypto-assets have made financial services more accessible and convenient to consumers (Feyen et al., 2021).

One of the advantages and benefits of fintech is financial inclusion where everybody is given chances to access to financial services such as banking, payment and lending services without concerns on travelling (Venet, 2019). Fintech also provides cost-effective financial solutions compared to traditional financial services at the standpoints of owner as well as customer. From the standpoint of owner, fintech helps to eliminate cost spent on physical financial institution branches while leveraging digital platforms to reduce overhead costs (Nik Herda & Tye, 2023). In terms of risk management and compliance, fintech incorporates artificial intelligence (AI) to improve risk management and strengthen security measures so that the likelihood of financial fraud can be significantly reduced at the same time increasing consumer confidence on the financial system (Morshadul Hasan & Ariful Hoque, 2023).

In recent years, Malaysian Government has shown its support on fintech growth and development in which Malaysian Government takes initiatives to promote innovation, increase financial inclusion through fintech. Bank Negara Malaysia and The Securities Commision Malaysia (SC) have launched Regulatory Sandbox on October 2016 to offer regulatory framework for enabling innovation in Malaysia's financial sector (Bank Negara Malaysia, 2024). Regulatory environment enables fintech startups to experiment their products and services under authorized supervision before official launches (Bank Negara Malaysia, 2024). Furthermore, Fintech Lab is also formed by The Malaysian Global Innovation and Creativity

Centre (MaGIC) to encourage more fintech startups by providing resources and supports such as mentorship, access to funding as well as networking connections (Malaysian Global Innovation and Creativity Centre, 2021).

1.2 Problem Statement

In the current digitalized era, the convergence of technology and financial services, known as FinTech, has restructured the financial industry. Fintech has gradually dominated the central part of Malaysia's financial sector and Malaysian's daily life where fintech has contributed to an average of 5% annual economic growth for the past 5 years from 2020 (IMF, 2020).

Despite the growth in fintech usage in Malaysia, there is a problem where fintech adoption in Malaysia is still low comparing to China which has mostly fully adopted cashless payments (Xiao et al., 2023). As illustration, China displayed the highest fintech penetration rate of 87% (Guo & Zhang, 2023). Meanwhile, Malaysia has 74% of Malaysians using fintech products (The World Bank, 2021). Lower fintech adoption rate relative to Malaysia neighbour countries can be due to low fintech funding in which Malaysia falls behind Singapore and Indonesia in terms of fintech funding where Singapore occupied 43% and Indonesia at 33% of the ASEAN's total fintech funding (UOB, 2022).

Moreover, incentives and bonuses such as eBelia and eMadani given by the Malaysian government once again promote the usage of e-wallets (Gan et al., 2023). Yet, incentive-driven usage of e-wallets is short-term and diminishes after users consume the benefits. According to Ding and Chai (2015), e-wallets user retention rates decline so rapidly where only 4% of the users persist to use e-wallet applications after a year of installation.

Being the current largest age group in Malaysia, Generation-Z represent 29% of the total population in Malaysia that adds up to US$ 327 million of monthly disposable income (Fandy et al, 2020). Studies also show that Gen-Z has high engagement with mobile phones where they spend 8 hours on average daily on Internet (Fandy et al, 2020). Gen-Z's inherent familiarity with digital tools and services lays the groundwork for them to embrace fintech

innovation (Guerra-Tamez et al., 2024). Thus, it is crucial to understand Generation-Z's preference and behaviour because they were observed to be the most important group that contributes to the push towards the advancement of fintech industry.

There is lack of empirical research on the topic that mainly focuses on the Generation-Z in Malaysia where existing studies focused on millennials instead of Generation-Z. (Vaicondam, Jayabalan, Tong, Qureshi, & Khan., 2021). Besides, several studies that researched about Gen-Z in Malaysia focused on the accounting sector or solely based on e-wallet (Rosli, Saleh, Md. Ali & Abu Bakar., 2023; Azhar, Zakaria, Foo, & Aziz., 2023). In short, the purpose of this study is to investigate fintech adoption among Malaysia's Generation-Z population in order to fill a research vacuum left by prior studies.

1.3 Research Objectives

1.) To examine if there is relationship between security measures and Fintech adoption among Malaysia's Generation-Z.
2.) To examine if there is relationship between transparency and Fintech adoption among Malaysia's Generation-Z.
3.) To examine if there is relationship between regulatory environment and Fintech adoption among Malaysia's Generation-Z.
4.) To examine if there is relationship between financial literacy and Fintech adoption among Malaysia's Generation-Z.
5.) To examine if there is relationship between perceived risks and Fintech adoption among Malaysia's Generation-Z.
6.) To examine if there is relationship between social influence and Fintech adoption among Malaysia's Generation-Z.

1.4 Research Questions

1.) Is there a relationship between security measures and Fintech adoption among Generation-Z in Malaysia?

2.) Is there a relationship between transparency and Fintech adoption among Generation-Z in Malaysia?
3.) Is there a relationship between regulatory environment and Fintech adoption among Generation-Z in Malaysia?
4.) Is there a relationship between financial literacy and Fintech adoption among Generation-Z in Malaysia?
5.) Is there a relationship between perceived risk and Fintech adoption among Generation-Z in Malaysia?
6.) Is there a relationship between social influence and Fintech adoption among Generation-Z in Malaysia?

1.5 Significance of study

This study explains how security measures, transparency, regulatory environment, financial literacy, perceived risk and social influence in affecting Fintech adoption among Generation-Z in Malaysia. This study will provide insights to Fintech services providers, banking institutions and government to better understand consumers' concerns to adopt Fintech in which solutions could be prescribed accordingly to reach a milestone in the development of financial sector. At the same time, Generation-Z could benefit from using the Fintech innovations in terms of the effectiveness, efficiency, convenience of the Fintech products that are built upon Generation-Z's concerns without worrying about its security and safety.

CHAPTER 2: LITERATURE REVIEW

2.1 Theoretical Framework

The theories proposed below have been used in past studies for the explanation of relationship between Fintech adoption and its determinants which are security measures, transparency, perceived risk, social influence, regulatory environment and financial literacy. These theories include Innovation Diffusion Theory, Theory of Perceived Risk, Theory of Acceptance Model and Unified Theory of Acceptance and use of Technology (UTAUT).

2.1.1 Innovation Diffusion Theory

The Innovation Diffusion Theory was first introduced by Rogers back in 1962 and is well-known for its application in different fields including agriculture, science, sociology, marketing, internet as well as technology (Rogers, 1995). Innovation Diffusion Theory explains how different types of adopters and adoption rates affect the innovation decision process or in other words this theory argues that users' decisions for adoption are affected by the belief that they have in the innovation (Karahanna et. al., 1999). According to Rogers (2003), levels of innovation adoption can be explained by the characteristics of innovation such as relative advantage, compatibility, complexity, trialability and observability. Diffusion is a process in which an innovation is spread out and communicated through certain channels over time among the members of a social system (Rogers, 1995). As Innovation Diffusion Theory is originated in sociology, it has relation with social influence while social influence has impact on Fintech Adoption.

Social influence refers to the extent of the use of certain technology by the influence of people who are closed and important to the consumers (Venkatesh et al., 2012). In the context of fintech adoption, social influence aligns with the innovation diffusion theory as the theory emphasizes the role of social systems in diffusing innovation. For the case of Gen-Z, this network encompasses friends, families, and online communities. Positive social influence, through endorsements and shared experiences, are found to significantly reduce perceived risk associated with a new technology (Yoo et al., 2021). Conversely, negative experiences or security concerns highlighted within social networks can elevate perceived risk and hinder adoption (Huang, 2019).

This interplay between social influence and perceived risk is particularly relevant in the realm of Fintech. Fintech solutions often involve entrusting financial data and transactions to a new platform, potentially leading to heightened risk perceptions. However, positive social influence can act as a mitigating factor. For instance, Yoo et al. (2021) found that exposure to positive reviews or recommendations from trusted sources significantly decreased perceived risk and increased the willingness to adopt new mobile technologies.

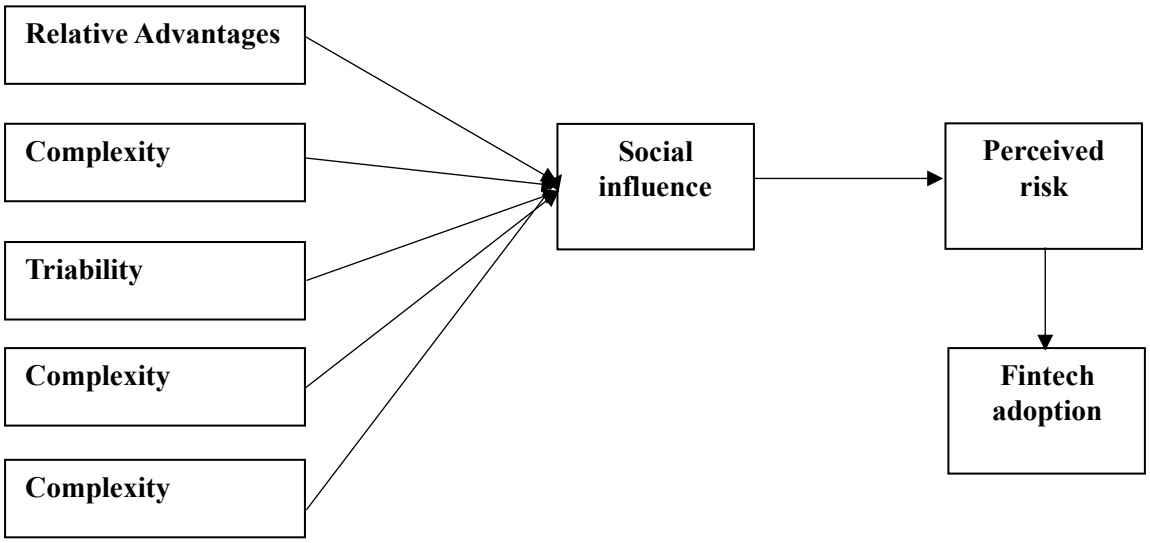

Figure 1: Innovation Diffusion theory
(Source: Adapted from Roger, 1983)

2.1.3 Theory of Perceived Risk

According to Ryu's study in 2018, perceived risk, introduced by Bauer (1960) is defined as a consumer's perspective of the uncertainty and the possible negative consequences regarding the FinTech adoption. Fintech adoption is shown to have negative relationship with perceived risks, according to the study. Indicating that the perceived risk is a barrier to people adopting FinTech, where it can impact the intention of FinTech usage. Theory of Perceived Risk introduced by Bauer in 1960 is used in this study in relation with Innovation Diffusion Theory (Zhang & Yu, 2020). Innovation Diffusion Theory divides the factors of fintech adoption into product factors and consumer factors. Product factors mainly refer to perceived product safety and product quality (Siu & Wong, 2002). Meanwhile, consumer factors consist

of cultural, social, personal and psychological factors (Shaza Nabilah et al., 2021). Even if consumers adopt fintech due to social influence suggested by Innovation Diffusion Theory, they still tend to expose to different risks when choosing or adopting new fintech products which result in asymmetric information as well as risk perceptions that might differ depending on different types of customers (Guo, 2022).

The theory of perceived risk includes four major factors to measure perceived risk, which is financial, legal, security and operational risks. Where legal risk is the biggest concern for consumers that provides the largest negative impact among the other risks. (Solarz & Swacha-Lech, 2021).

Financial risk in FinTech refers to potential financial loss in most financial transitions of FinTech. Secondly, Legal risks in FinTech refers to unregulated status or lack of regulation in FinTech. Third, security risks can be known as potential losses due to fraudulent or hacking activities that compromises the security of financial transactions in FinTech. These activities cause financial losses and privacy issues to FinTech users. Lastly, operational risks are potential losses from insufficient or failure in internal processes, employees and systems in FinTech companies.

Study by Suryono et al (2019), mentioned that peer to peer lending system is a common security system for fintech, but it lacks clear legal definitions and responsibilities among the parties involved. This creates ambiguity and potential disputes regarding who is liable for defaults and how conflicts should be resolved. An article from Anugerah and Indriani (2018) show their own concerns about data protection and privacy in fintech of Indonesia. It shows the risks of cyber-attacks and data breaches due to the use of consumer data in financial technology. Additionally, it raises concerns about the lack of comprehensive legal frameworks for data protection and privacy.

To further illustrate this, if problems arising in FinTech companies remained unsolved, it will repel users from adopting their FinTech products or services as this indicates that the FinTech company lacks operational skills. Taking an example where the FinTech company are causing transaction problems and remains unsolved will ultimately lead to dissatisfaction and

distrust among customers. Gradually impede FinTech adoption. (Ryu, 2018). According to Tang et al. (2020), financial, legal and operational risks were proved to negatively affect FinTech adoption. By applying the perceived risk theory, theoretically when the greater the risk is shown in the FinTech sector will cause users more likely to repel on adopting FinTech products and services.

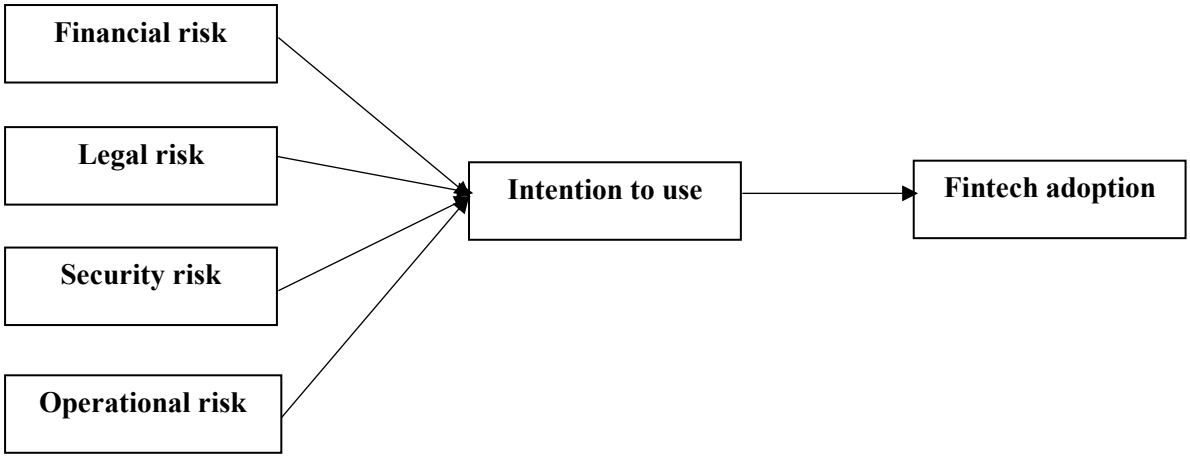

Figure 2: Perceived Risk Theory

(Source: Adapted from Bauer, 1960)

2.1.4 Theory of Acceptance Model

The Theory of Acceptance Model (TAM) plays a key role in understanding and influencing factors that influence Gen Z's adoption of fintech in Malaysia. The TAM was developed by Fred Davis in 1989 to explain individuals' technology adoption behaviour based on their perceptions of the ease and usefulness of a particular technology (Tang & Chen, 2011). Meanwhile, perceived usefulness explained in Theory of Acceptance Model is influenced by perceived risk that is linked to Perceived Risk Theory. When users perceive fintech products and services to be risky in terms of security and privacy, the usefulness of fintech will be questioned. Likewise, if users perceive fintech to be low risk, they will be more likely to use it due to intuition (Meyliana et al., 2019).

TAM asserts that individuals are more likely to adopt a technology if they perceive it as useful and easy to use. In the context of Gen Z and FinTech adoption, understanding how Gen Z perceives the usefulness of various FinTech services (e.g., mobile payments, investment apps) and how easy they find these services to navigate is crucial (Bajunaied et al., 2023). TAM encourages identifying barriers to technology adoption (Shaikh et al., 2020). For Gen Z in Malaysia, potential barriers might include concerns about security, lack of trust in online platforms, or limited knowledge about FinTech (Abdullah et al., 2018).

Security measures such as data encryption and secure authentication protocols act as concrete solutions that address these anxieties (Kim et al., 2019). Perceived ease of use within TAM encompasses not just the technical aspects of navigating a platform but also the user's comfort level (Venkatesh & Davis, 2000). Furthermore, incorporating user-friendly security features like multi-factor authentication with clear instructions enhances perceived ease of use. Gen Z can then navigate the security features without technical hurdles, further boosting their confidence and comfort level when using the platform (Luo et al., 2010). Additionally, transparent communication regarding security measures fosters trust and empowers Gen Z to understand how their data is protected. This transparency removes ambiguity and simplifies the process of using the platform securely, when Gen Z perceives a Fintech platform as secure in which their anxieties about unauthorized access and data breaches diminish (Guo et al., 2020).

Perceived usefulness within TAM reflects an individual's belief about the value and benefit a technology offers. For Gen Z, financial literacy and a clear understanding of how Fintech can enhance their financial well-being are crucial for adoption (Chen & Chan, 2018). Transparency plays a key role here. Disclosing fees and potential risks associated with using the platform demonstrates a commitment to responsible financial practices (Nasri & Charfeddine, 2012). This transparency empowers Gen Z to make informed decisions and fosters trust. When Gen Z feels they have a complete picture of the potential benefits and drawbacks, they are more likely to perceive the technology as genuinely useful (Shaikh et al., 2020).

Financial Literacy is also a major factor with fintech adoption that aligns with the theory of TAM. According to Morgan & Trinh (2020), compared to stocks, the FinTech sector bears a number of risks as well. In fact, the number of risks is greater compared to traditional financial risks, as the FinTech sector is a digital financial sector which will associate with digital risks that are much more difficult to identify. For example, phishing, spyware, pharming and swaps. As mentioned by the study of Van Rooij et al (2011) above, financial literate individuals can tolerate the risky financial activities easier, causing them to explore and utilize risky financial decisions. FinTech is the same, hence associated with better risks. Individuals with higher levels of financial literacy have better understanding of the information and potential benefits and risks associated with FinTech. Therefore, eventually leading them to have greater levels of willingness in adopting FinTech products and services. (Morgan, Huang, & Trinh, 2019).

Conversely, individuals with lower levels of financial literacy may act as a barrier in FinTech adoption, as they might be more concern regarding the risks associated with FinTech products and services, or the limitations of their financial knowledge causing them difficult to deal with the complexity of FinTech products and services. Eventually pushing them away from FinTech adoption.

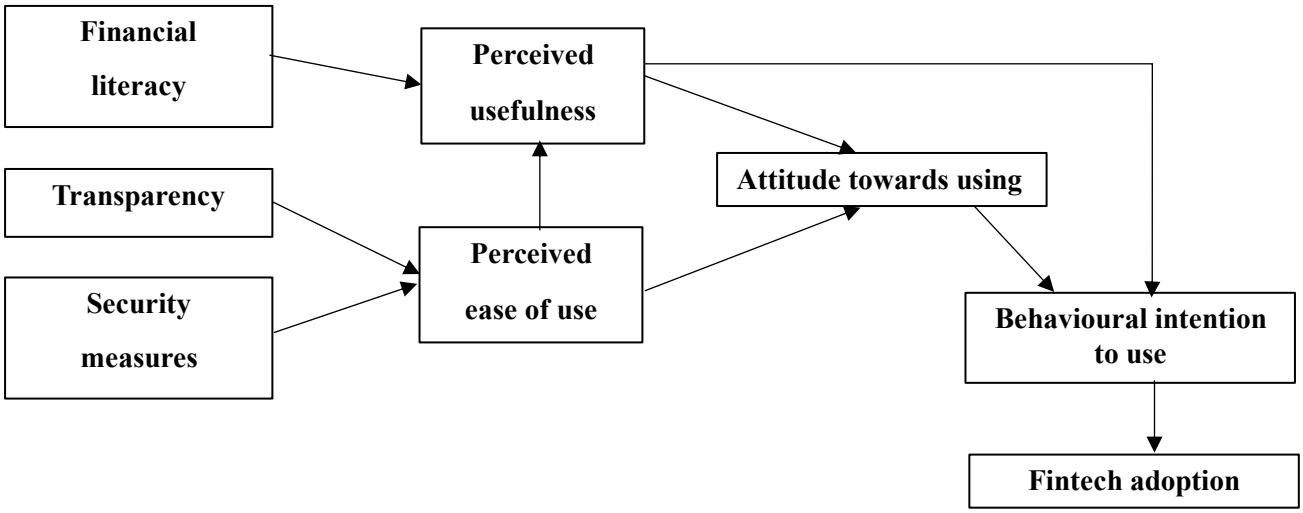

Fig. 3: Theory of acceptance model

(Source: Adapted from Davis, 1989)

2.1.5 Unified Theory of Acceptance and use of Technology (UTAUT)

Within the realm of technology adoption research, the Unified Theory of Acceptance and Use of Technology (UTAUT) serves as a prominent theoretical framework. The theory was introduced by Venkatesh et al. (2003), and it centres on the premise that a user's actual technology adoption is determined by their behavioural intention to utilize it. The likelihood of adoption is directly influenced by four key constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. (Venkatesh et al., 2003). Venkatesh et al. (2003) further emphasized that moderators such as age, fender, experience level, and voluntariness of use are able to influence the impact of these constructs on adoption behaviour. This theory is built upon Theory of Acceptance Model by including more factors that influence acceptance of technology such as performance expectancy, effort expectancy, social influence and other facilitating conditions (Williams et al., 2015).

Performance expectancy

Individuals' belief in a system's ability to enhance their job performance significantly influences their adoption behaviour. This belief, termed performance expectancy, constitutes a core principle within numerous technology acceptance models. Research has established performance expectancy as the most robust predictor of a user's intention to adopt a system,

irrespective of whether adoption is mandatory or voluntary (Zhou et al., 2010; Venkatesh et al., 2016).

Studies conducted by Lema (2017) underscore the critical role of performance expectancy in fintech adoption. Users are more likely to perceive and intend to utilize the technology favourably when they recognize its benefits. To cultivate a wider user base and cater to their evolving requirements and expectations, developers must prioritize quality enhancements guided by user feedback and recommendations. Additionally, efforts should be directed towards improving current financial services to deliver a superior user experience.

Lema's (2017) research further highlights security concerns among young consumers as a potential barrier to mobile financial service adoption. This aligns with the UTAUT model's concept of performance expectancy, which posits that perceptions of inadequate security measures can diminish a user's trust in the platform's ability to safeguard their financial information, ultimately hindering adoption.

Effort expectancy

The second construct within UTAUT, effort expectancy, refers to the perceived ease of using a system (Venkatesh et al., 2003). It shares similarities with constructs like perceived ease of use from TAM and MPCU, all emphasizing the user's perception of how effortless it is to learn and operate the technology. However, research suggests that effort expectancy's influence diminishes with prolonged technology use (Gupta et al., 2008; Chauhan & Jaiswal, 2016).

In the context of Fintech adoption among Gen-Z in Malaysia, transaction transparency emerges as a significant factor influencing their decision to adopt in fintech. (Miraz et al., 2022). This aligns with the concept of effort expectancy. When fintech platforms provide clear and accessible information about features, fees, and security measures, users speed less cognitive effort deciphering complex languages or hidden charges. This translates to a more streamlined user experience, while minimising perceived effort associated with adoption.

Furthermore, transparency fosters trust and confidence in Fintech platforms, as shown in research contributed by Francisco & Swanson (2018). Users who understand how transactions work and how their data is managed are more likely to consistently engage with the platform. Aligning with Nilashi et al. (2016), where the researcher emphasized the importance of a positive user experience for successful product adoption.

Social Influence

UTAUT's social influence construct reflects the degree to which individuals perceive pressure from significant others to adopt a new system (Venkatesh et al., 2003). This aligns with similar constructs in TRA, TAM2, and other models, all emphasizing the influence of social norms and perceptions on user behaviour (Venkatesh et al., 2003). Notably, the impact of social influence is particularly significant in mandatory technology adoption scenarios (Venkatesh et al., 2003). In such cases, users might comply due to external pressures rather than personal preference (Venkatesh & Davis, 2000).

Study by Tun-Pin et al. (2019), highlights social influence as a key factor shaping user opinions towards new and unfamiliar Fintech products. Similarly, Baptisa & Campos (2016) demonstrate that social influence significantly influences behavioural intentions to adopt mobile payment technology. Their findings, along with Oliveira et al. (2016), suggest that individuals are susceptible to the influence of their social circle (Baptisa & Campos, 2016; Oliveira et al., 2016). This is particularly relevant in Fintech, where mobile payments and e-commerce play a crucial role. The high prevalence of these technologies creates a pool of potential adopters influenced by their social networks' usage patterns (Chuang et al., 2016; Kim et al., 2016; Oliveira et al., 2016). This emphasizes that Fintech adoption is driven not only by perceived benefits but also by the persuasive power of a user's social circle.

Facilitating conditions

UTAUT's facilitating conditions construct refers to the user's perception of an organization's infrastructure supporting system use (Venkatesh et al., 2003). It shares similarities with constructs like compatibility and facilitating conditions from other models (Venkatesh et al., 2003). While this construct initially influences user intention, its impact diminishes with prolonged use. However, the model suggests a direct and significant effect of facilitating conditions on actual usage behaviour (Venkatesh et al., 2003).

In the context of Fintech adoption, regulations play a dual role. Looser regulations might encourage service innovation and investment but can also reduce user trust due to potentially fraudulent activities, thus harming the industry's reputation. This aligns with the concept of facilitating conditions in UTAUT (Ryu, 2018). Users are less likely to adopt fintech services perceived as lacking legal protections (Venkatesh et al., 2003). Conversely, a supportive regulatory environment and central bank backing can foster user trust in Fintech platforms, ultimately increasing adoption among Malaysian Gen-Z users (Kuo-Chuen & Teo, 2015). Taking an example from the study of Huong, Puah, and Chong (2021), consumers' confidence in Fintech adoption were shown in Singapore due to the formation of the Payment Services Act 2019. Where consumers felt safe to adopt Fintech products and services for their daily usage as they feel protected from the associated risks. Clear and effective regulations for the Fintech sectors are important, otherwise failure in persuading people to adopt Fintech might occur. For example, Philippines resulted steep decline in crowdfunding adoption of Fintech due to rules and regulations that are imprecise and ineffectual, resulting consumers refused to adopt Fintech products and services.

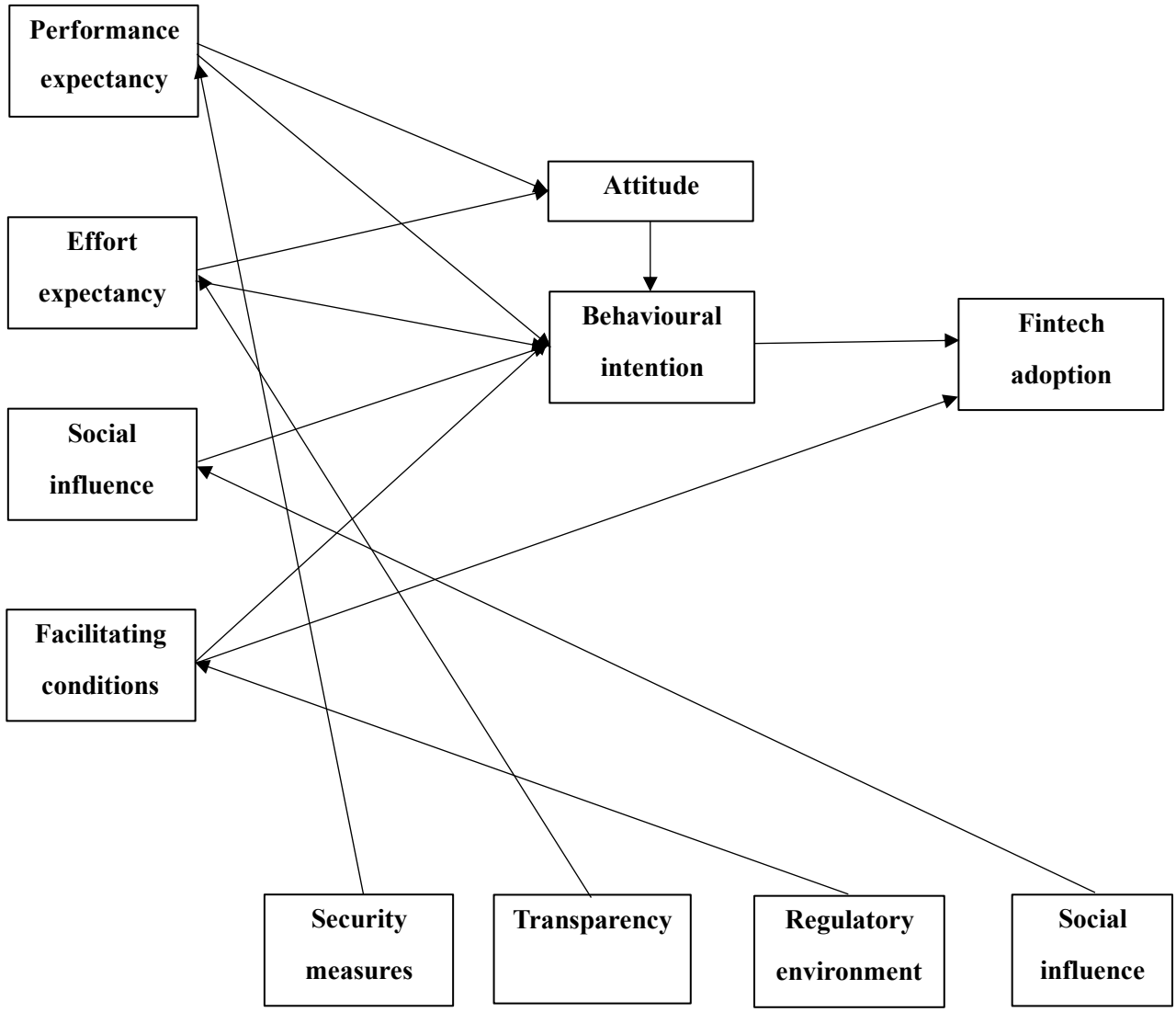

Fig. 4: Unified theory of acceptance and use of technology (UTAUT)

(Source: Adapted from Ventakesh et al., 2003)

2.2 Conceptual Framework

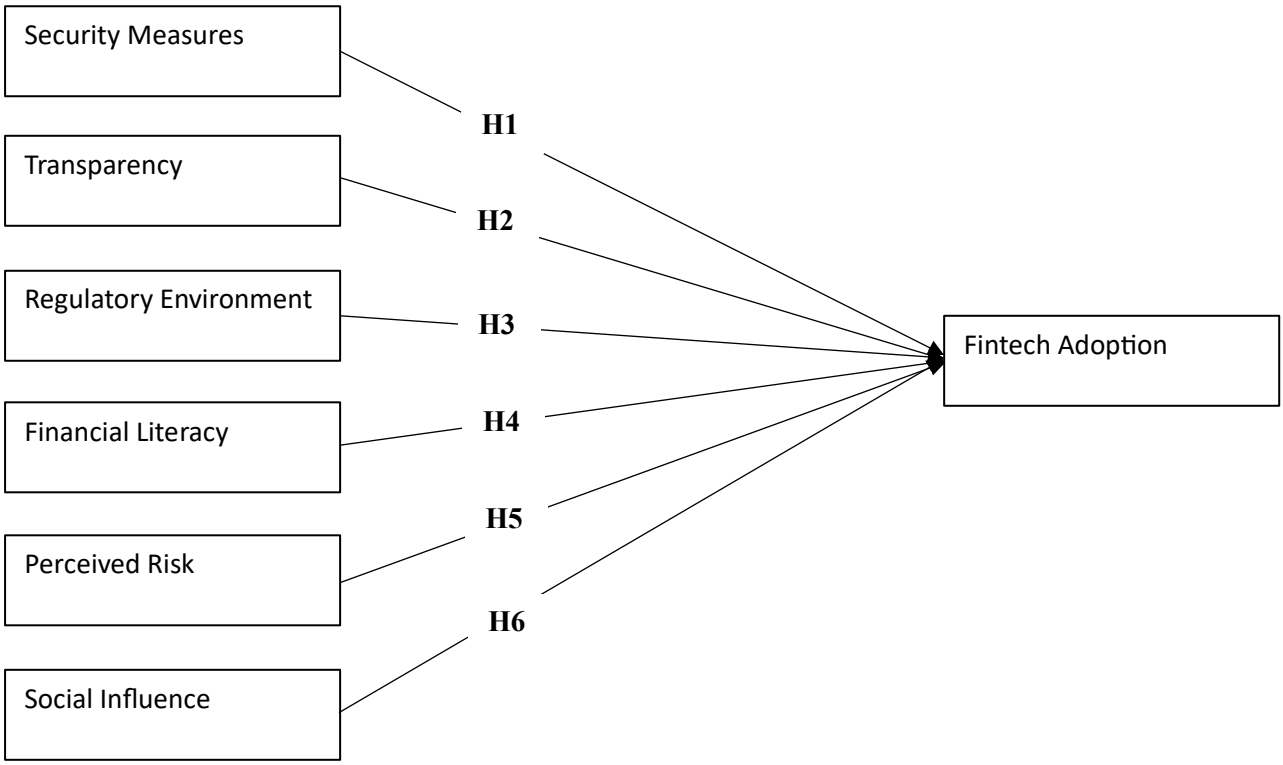

Figure 5: Conceptual Framework

According to the theoretical frameworks developed for the study, which is innovation diffusion theory, theory of perceived risk, theory of acceptance model (TAM), and unified theory of acceptance and use of technology (UTAUT), a conceptual framework is formed to study Fintech adoption among Generation-Z in Malaysia. This conceptual framework includes five independent variables such as data privacy, regulatory environment, financial literacy, perceived risk and social influence. Based on the studies found, the independent variables will significantly influence the Fintech adoption. Thus, this framework is used to examine fintech adoption among Generation-Z in Malaysia and identify the factors affecting Fintech adoption among Generation-Z in Malaysia.

2.3 Hypothesis Development

2.3.1 Security Measures and Fintech Adoption:

According to Rani (2021), security remains as a critical issue in influencing consumers to adopt in Fintech products and services. The main threats that challenge Fintech services are user authentications, data confidentiality, and message integrity. (Nyamtiga et al, 2013). According to the Theory of Acceptance Model (Davis, 1989) and UTAUT's performance expectancy (Ventakesh, 2003), users are more likely to adopt fintech when they feel comfortable, safe and secure with the platform. Security measures are important to ensure secure personal information. The major security issue that is concerning Fintech users is the confidentiality of monetary information must be guaranteed during transactions and storage to prevent breach of security to occur. (Taherdoost, 2017). Through today's media, people are aware with digital risks and data breach issues. Plus, they also understand that little to no actions have been taken to address these issues by the industry. People are keen to improve their standard of living, but they are not willing to compromise their data security. The high levels of distrust and dissatisfaction were towards fintech products and services were due to the high security risks. Resulting to hamper in fintech adoption. (Stewart & Jürjens, 2018). These security concerns are critical and must take in consideration, as it is resulted on multiple studies that security issues will influence FinTech adoption. (Rani 2021, Stewart & Jürjens, 2018). Based on the empirical study above, the proposed hypothesis is:

H1: There is positive relationship between security measures and fintech adoption among Malaysia's Generation-Z.

2.3.2 Transparency and Fintech Adoption:

Transparency of Fintech companies has significantly influence on Fintech adoption. Taking into account the ethical considerations in utilizing Fintech, transparency on revealing the data collection method, usage of data, provision of consumer opt-out options and data-protection policies are salient and should not be enclosed to gain trusts from the public (Aldboush & Ferdous, 2023). Theory of Acceptance Model (Davis, 1989) and UTAUT's effort expectancy (Ventakesh et al, 2003), explained that the more trust in users towards fintech products and services, will result in ease of use in fintech products and services. Ultimately leading to fintech adoption. According to Vannucci and Pantana (2020), transparency in data collection, processing, and data analysis are associated with customers' trust and credibility. This means that the occurrence of incomplete data inputs, unfairness decision-making, data abuse can cause inequitable consequences that negatively affect the customers (Danielsson et

al., 2022). Moreover, transparency is the value of recreation that primarily serves as an indicator of legitimacy (Bourne, 2020). Transparency is also claimed to be important for comparative shopping between Fintech companies and for business legitimacy, indicating that consumers will more likely to engage with the Fintech usage when the Fintech companies present the openness and honesty in their business practices (Bourne, 2020). Another study explains that transparency can enhance reputation in business's activities and can be proven with results of lower negative stock-price reaction when the company acquires good reputation and high level of transparency (Martin et al., 2017). Thus, the hypothesis proposed for this study is:

H2: There is a positive relationship between transparency and Fintech adoption among Malaysia's Generation-Z.

2.3.3 Regulatory Environment and Fintech Adoption:

Financial services are one of the industries that have well developed regulatory environments in the word. The recent arising Fintech industries draws major regulatory concerns as technological integration nowadays have higher complexity and penetration rate in the public. As Fintech is still relatively new, compared to the traditional financial service sector, regulatory guidance is somewhat limited in Fintech operations. For example, one of the US startup companies was investigated by Securities and Exchange Commission (SEC) for adopting unregulated brokers and underwriters to sell insurance solutions. These legal loopholes were easily utilized by unethical firms to bypass regulations from the regulators, as the lack of understanding from regulators allow these situations to occur. (Mention, 2019). Huong, Puah and Chong (2021), found out that regulatory environment can assist or hinder fintech adoption. Applying the theory of UTAUT's facilitating conditions (Venkatesh et al., 2003), users are less likely to adopt fintech services perceived as lacking legal protections Conversely, a supportive regulatory environment and central bank backing can foster user trust in Fintech platforms. According to Huong, Puah, & Chong (2021), consumers' confidence in Fintech adoption in Singapore increases when the Payment Services Act 2019 was established. Consumers had the confidence to use Fintech products and services without compromising their privacy and security. On the other hand, Philippines fintech adoption rate was declined due to the lack of regulatory environment on the Fintech sector, resulting failure in adopting Fintech products and services among consumers. According to Frost (2020) studies, strict regulatory environmental countries have shown higher amount of volumes of alternative finance adoption, which includes fintech credit. In addition, less stringent regulatory

environmental in the bank sector have shown higher investments in fintech. Therefore, based on the study above, following hypothesis is proposed:

H3: There is positive relationship between regulatory environment and fintech adoption among Malaysia's Generation-Z.

2.3.4 Financial Literacy and Fintech Adoption:

According to study conducted by Morgan and Trinh (2020), financial literacy will influence fintech adoption. Financial illiterate individuals have low levels of awareness and adoption towards fintech products and services. Adapting the Theory of Acceptance Model (Davis, 1989), individuals are more likely to adopt a technology if they perceive it as useful and easy to use. To further illustrate this, individuals with higher levels of financial literacy are able to deal with risky financial activities with ease compared to the lower financial literate individuals. (Van Rooij et al., (2011). Based on Morgan & Trinh (2020), Fintech is a financial sector that have greater risks compared to traditional financial risks, Van Rooij et al. (2011) stated that financial literate people are more willing to explore in the Fintech sector, due to able to tolerate risks with ease, while understanding the associated risks and benefits of Fintech, leading financially literate individuals are more likely to adopt fintech products and services. (Morgan, Huang, & Trinh, 2019).

Moreover, Generation-Z are the generation that grows up alongside with technology. According to Carlin, Olafsson, and Pagel (2017), Millenials and Gen-Z are the generations that have the highest Fintech adoption levels compared to the previous generations as their awareness level towards fintech is high. To further illustrate this, Gen-Z are the generations that have professionally experiences with technology usage that assist them in interacting with fintech services. The gained experiences are contributed by their daily intensive technology usage and accessing through social medias, e-commerce to finance. Moreover, it is reported that two-thirds of Gen-Z are the early adopters for fintech services when compared to other generations. Study shows that approximately 35% of the Gen-Z have more financial awareness levels compared to Millennials which only amounted to 12%. This result shows that Gen-Z are more financially responsible in controlling their financial issues than Millennials. Studies also mentioned that this generation had advanced knowledge in Fintech, resulting them to have highest fintech adoption intention among all other generations globally. (Daqar et al., 2020). Hence, the proposed hypothesis according to the empirical studies above is:

H4: There is positive relationship between financial literacy and fintech adoption among Malaysia's Generation-Z.

2.3.5 Perceived Risk and Fintech Adoption:

Perceived risk has significant influence on Fintech adoption. This is because risk always associated with uncertainty and when people encounter any vague or uncertainty, they tend to avoid their participation in those events (Hofstede, 1980). Adapting from the Theory of Perceived Risk (Bauer, 1960) and Innovation Diffusion Theory (Roger, 1983), when the users are perceived of the risk in the FinTech sector, users are less likely to adopt FinTech products and services. Consumers are assumed to be rational and take into account the risks of using Fintech which include data invasion, financial losses or even financial fraud (Zavolokina et al., 2016). As Fintech also comes with its risks, people's satisfaction on Fintech will drop when the services provided lead to unfavorable outcomes such as losses, thus causing low adoption rates of Fintech (Kaur et al., 2021). Based on the study, perceived risk plays a crucial role to influence the users' intention of using Fintech significantly (Dzandu et al., 2022). Study by Ooi et al. (2020), also shows that perceived risk has negative influence in Bitcoin. Therefore, the proposed hypothesis is:

H5: There is a negative relationship between perceived risk and Fintech adoption among Malaysia's Generation-Z.

2.3.6 Social Influence and Fintech Adoption:

Besides, findings show that social influence to have significant influence on fintech adoption. The UTAUT's social influence theory (Ventakesh et al., 2013) and Innovation Diffusion Theory (Roger, 1983) suggested that users are more likely to adopt fintech products and services when they are persuaded by their social circle. Social influence is often linked to people who are closed to a person or people who are important to that person (Venkatesh et al., 2012). Influences from those people are strong enough to shape an individual's behaviour and to induce him / her to act in such a way that is regarded as normal by the group where it is backed by a study stating that social influences play a significant role in determining that acceptance and adoption of new information and technology (Malhotra & Galletta, 1999). Effect or action in response to social influence also claimed to be more of a voluntary action in which a person chooses to believe (Brown et al., 2002). Therefore, the hypothesis proposed is:

H6: There is a positive relationship between social influence and Fintech adoption among Malaysia's Generation-Z.

CHAPTER 3: DATA AND METHODOLOGY

The primary goal of this research is to investigate Fintech adoption among Malaysia's Generation-Z, and to investigate the factors that influence it. In order to achieve this goal, the research's methodology will consist of data design, constructs measurement, data coding and data collection.

3.1 Data Design

3.1.1 Target Respondents

The term target population refers to all members of a defined group. In this case, it consists of all respondents that meet the requirement set for the research. (Macfarlane, 1996). Researchers have the responsibility for ensuring all respondents are from the relevant target population in order to collect accurate data. In other words, making sure of the eligibility of the respondents is crucial for the survey.

The purpose of this study is to investigate and explore the factors that may influence fintech adoption among Generation-Z in Malaysia. To make this straight, the target respondents of this study is aimed towards all Gen-Z population in Malaysia, as Gen-Z is the largest age group in the overall population in Malaysia. Upon observation, we also found out that Selangor have the highest amount of Gen-Z existed in Malaysia, compared to other states. Plus, they are the most potentially largest e-payments users in the future due to their high dependency on internet. (Mustafa et al., 2022).

3.1.2 Sampling Location

The sampling location is set around the whole Malaysia, as the target population was Gen-Z in Malaysia.

3.1.3 Sampling Elements

A single component or case within a target population is referred to an element. Some elements will be selected from the population to be observed in research with a chosen sampling technique. In this study, it consisted of several sampling elements where the selected

respondents were based on quota sampling and they will differ in terms of gender, ethnicity, education level.

3.1.4 Sampling Technique

The data utilized for this study was acquired from the target respondents that were born within the year period of 1997 – 2012, in other words, Generation-Z. In this particular study, quota sampling method is used, which is considers as a non-probability sampling technique, which participants are chosen based on specified qualities in order for the whole sample to have the same distribution of characteristics as the larger population. (Taherdoost, 2016). This sampling technique was selected as it fixes the poor response rate issue faced by probability sampling. (Yang & Banamah, 2014).

3.2 Constructs Measurement (Scale and Operational Definitions)

In this study, constructs measurement is essential to keep the validity of the results and findings. Interval scale such as likert scale was utilised in this study for measurement.

3.2.1.3 Interval Scale

Brown (2011) stated that interval scales displayed the sequences order and there are similar intervals exist between the points on the scale. For example, the distance between scores 1, 2, 3, 4, 5 are assumed to have the constant distance along the scale. Test scores and Likert scales are commonly treated as interval scales.

Example of interval scale:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Fintech adoption process is easy to adopt	1	2	3	4	5

3.2.2 Measurement of Independent Variables and Dependent Variable: Operational Definition

There are six factors affecting fintech adoption among Generation-Z in Malaysia, namely security measures, transparency, perceived risk, social influence, regulatory environment, financial literacy. Five-point Likert scale method is utilized to measure the variables. Based on the five-point Likert scale, the first refers to “Strongly Disagree” and the last of the scale five refers to “Strongly Agree”.

3.2.3 The design of questionnaire

The questionnaires were designed with ten sections, where the first section introduces the purpose of study, collecting the name of respondent and the consent form of Personal Data Protection Act 2012 (PDPA). The second section includes the demographic profile of the respondents and was measured in nominal scale and ordinal scale. Gender, race, job type was measured in nominal scale, while age was measured in ordinal scale. Section three to nine consists of 40 questions for the respondents to answer in a five-point Likert scale which is consider an interval scale. The respondents are required to choose among scales 1 to 5 where 1 refers to "Strongly Disagree", 2 refers to "Disagree", 3 refers to "Neutral", 4 refers to "Agree" and 5 refers to "Strongly Agree". The last part of the section is the appreciation message to the respondents.

3.3 Data Coding

This section is to apply numerical scales to the responses in the questionnaires of this study, which the number can be selected by respondent and can be imported to SPSS software to analysis. The scale of our questionnaire for respondent is 5-point Likert scale.

For example:

Scale	**Code**
Strongly Disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5

3.4 Data Collection

The data collected through the Google Forms questionnaire is exported into a Microsoft Excel format and was all imported to the SPSS software for analysis. SPSS is essential in order to analyze quantitative data collected through the questionnaire. Multiple linear regression analyse.

3.4.1 Reliability Test

Cronbach's alpha is used to measure reliability. Calculating alpha has become more common for reliability testing as it is much easier to apply for comparison with other estimates, and only one test administration is required. (Cohen et al, 2012). The reliability is increased when the alpha is value is closer to 1, but it does not indicate the higher the alpha values are, the more reliable they are. In fact, there are different ranges reported by several different reports that acceptable values of alpha range from 0.70 to 0.95. (Tavakol et al, 2011). According to Van Griethuijsen et al (2014), some reports also accept the values of 0.6 or 0.7.

3.4.2 Inferential Analysis

Inferential analysis is a tool for measuring reliability of conclusions that involves in a population from the targeted research. An alternative method which is multiple linear regression analysis has been utilized with SPSS software for this study.

3.4.3 Multiple Linear Regression Analysis

Regression analysis is a statistical method that estimates the relationship between a single dependent variable and another single independent variable, and it formulates an equation with a linear relation between those variables. Multiple linear regression models refer to the models that consist of one dependent variable but with more than one independent variables. Optimal results would be shown with multiple linear regression analysis when more than one independent variable exist. (Uyanık & Güler, 2013). In this study, fintech adoption serves as our dependent variable, where we estimates the relationship between our independent variables which is security measures, transparency, regulatory environment, financial literacy, perceived risk, and social influence.

CHAPTER 4: RESULTS AND DISCUSSION

4.1 Descriptive Analysis

Descriptive analysis to make sure data can be read easily. Hence, the analysis part is made on the demographic data of the survey questionnaire. Therefore, table will be generated for the purpose of summarizing the data

4.1.1 Respondents' Demographic Profile

4.1.1.1 Gender

Table 4.1

Descriptive Analysis for Gender

Gender	Frequency	Percentage (%)	Cumulative Frequency	Cumulative Percentage (%)
Male	209	51.7	209	51.7
Female	195	48.3	404	100

4.1.1.2 Ethnicity

Table 4.2

Descriptive Analysis for Ethnicity

Ethnicity	Frequency	Percentage (%)	Cumulative Frequency	Cumulative Percentage (%)
Malay	46	11.4	46	11.4
Chinese	330	81.7	376	93.1
Indian	28	6.9	404	100

4.1.1.3 Education Level

Table 4.3

Descriptive Analysis for Education level

	Frequency	Percentage (%)	Cumulative Frequency	Cumulative Percentage (%)
Primary	2	0.5	2	0.5
Secondary	14	3.5	16	4
Pre-U	6	1.5	22	5.5
Diploma	49	12.1	71	17.6
Bachelor's Degree	320	79.2	391	96.8
Master's	10	2.5	401	99.3
Doctorate	3	0.7	404	100

4.1.1.4 Place of origin

Table 4.4

Descriptive Analysis for place of origin

	Frequency	Percentage (%)
Kuala Lumpur	48	11.9
Selangor	65	16.1
Johor	24	5.9
Kedah	28	6.9
Malacca	22	5.4
Negeri Sembilan	16	4
Pahang	35	8.7
Penang	56	13.9
Perak	68	16.8
Perlis	13	3.2
Sabah	6	1.5
Sarawak	12	3
Terengganu	5	1.2
Labuan	1	0.2
Putrajaya	1	0.3
Kelantan	3	0.7
Other	1	0.3

4.2 Scale Measurement

4.2.1 Reliability Test

Table 12

Cronbach's Alpha Reliability Analysis

No.	Type of Variable	Name of Variable	Number of Items	Cronbach's Alpha	Reliability Test
1	Dependent Variable	Fintech Adoption	6	0.876	Excellent
2	Independent Variable	Security Measures	5	0.839	Excellent
3	Independent Variable	Transparency	5	0.843	Excellent
4	Independent Variable	Perceived Risk	5	0.843	Excellent
5	Independent Variable	Social Influence	4	0.796	Good
6	Independent Variable	Financial Literacy	6	0.790	Good
7	Independent Variable	Regulatory Environment	6	0.628	Average

Kept all the variables in the study because all of the Cronbach's alpha is between 0.6 to 1.

4.3 Preliminary Data screening

Multicollinearity and normality test applied in this section to ensure the results of this study is reliable.

4.3.1 Multicollinearity

When independent variables in a statistical model have a high connection with one another, a phenomenon known as multicollinearity occurs. Unreliable outcomes and a higher error term may result from this. Two popular techniques are used to determine whether multicollinearity exists in a study: the tolerance value and the variance inflation factor (VIF). A significant level of multicollinearity is indicated by a tolerance value less than 0.1 and a VIF larger than 10. (Alin, 2010).

4.3.2 Estimation Result

Table 4.13

Tolerance Value and Variance Inflation Factor (VIF)

Independent variables	Collinearity statistics
	VIF
Security Measures	2.259
Transparency	2.502
Perceived Risk	2.685
Social Influence	2.537
Financial Literature	2.260
Regulatory Environment	1.965

Table 4.13 indicates that the tolerance of all independent variables is greater than 0.1 and that the VIF values of all independent variables are less than 10. Thus, there isn't a problem with multicollinearity between these independent variables.

4.4 Inferential Analysis

4.4.1 Multiple Regression Analysis

Table 4.15

Multiple Regression Analysis

Model	Standardized Coefficients Beta	t-statistics	P-value	Collinearity Statistics Tolerance
(Constant)		4.323	0.000	
H1: SM - FA	0.045	0.956	0.340	0.443
H2: TR - FA	0.247	5.029	0.000	0.400
H3: RE - FA	-0.057	-1.298	0.195	0.509
H4: FL - FA	0.261	5.590	0.000	0.443
H5: PR - FA	-0.065	-1.270	0.205	0.372
H6: SI - FA	0.434	8.767	0.000	0.394
R-squared				0.616
Adjusted R-squared				0.611
F-test				106.346
P-value				0.000

First of all, the relationship between the six independent variables, which are security measures (SM), transparency (TR), perceived risk (PR), social influence (SI), financial literacy (FL), regulatory environment (RE), and the dependent variable: fintech adoption. According to table 4.15, the data from the table shows that only three independent variables have significant relationship with dependent variable, which is transparency, social influence, and financial literacy. It is because these three independent variables have the P-value that is lower than 0.05, and the rest of the independent variables, security measures, perceived risk, and regulatory environment is not significant with dependent variable, due to the p-value of them are higher than 0.05.

The first independent variable, security measures is not significant at 95% of confidence level. Because of the p-value for this independent variable is 0.340, and it is larger than the significance level of 0.05. Study from Firmansyah et al. (2022) shows that While trust, financial literacy, and safety are significant factors influencing fintech adoption, the study does not find security measures to be a strong determinant, due to user has higher concern on information secrecy, limited government control, and service intuitiveness obstacles. The unstandardized regression coefficient is positive at 0.024, which mean when one unit increase in security measures cause increase of 0.024 unit in fintech adoption among Gen-Z, ceteris paribus.

The next independent variable, transparency is significant at 95% of confidence level. This is because the p-value of this independent variable is 0.000, and it is less than significance level of 0.05. Study and paper from Aldboush and Ferdous (2023), and Roh et al. (2022) prove that transparency is significant in affecting fintech adoption among Gen-Z. The unstandardized regression coefficient of this independent variable is positive at 0.219, which mean when transparency increased by 1 unit on average, the fintech adoption will increase by 0.219-unit, ceteris paribus.

Third independent variable is regulatory environment, but it has no significant relationship with dependent variable (fintech adoption among Gen-Z) at significant at 95%. The P-value of regulatory environment is 0.195, and it is larger than significance level of 0.05. Study shows that legacy regulatory is more crucial for fintech entrepreneur is enhancing fintech adoption of user (Ahern, 2021). The unstandardized regression coefficient of financial literacy is negative at 0.057. Therefore, when regulatory environment increased by 1 unit on average, the fintech adoption among Gen-Z will be decreased by 0.057-unit, ceteris paribus.

Furthermore, financial literacy as one of the independent variables is significant with fintech adoption among Gen-Z at significant at 95%. The P-value of financial literacy is 0.000, and it is less than significance level of 0.05. Study and paper form Kakinuma (2022), and Khan et al. (2023) shows that financial education increases likelihood of fintech adoption and increase trust on it. The unstandardized regression coefficient of financial literacy is positive at 0.262. Therefore, when financial literacy increased by 1 unit on average, the fintech adoption among Gen-Z will be increased by 0.262-unit, ceteris paribus.

Fifth independent variable is perceived risk, and it is not significant at 95% of confidence level of 0.05. This is because the p-value for this independent variable is 0.205, and it is more than the significance level of 0.05. Study from (Xie et al., 2021) also have the same result, however in this study prove that perceived benefits have significant relationship with fintech adoption. Not only that, study from Tang et al. (2020) shows that potential risks do not have a significant negative effect on the intention to use Fintech. The unstandardized regression coefficient of perceived risk is negative at 0.059. Therefore, when perceived risk increased by 1 on average, the fintech adoption will decrease by 0.059, ceteris paribus.

The final independent variable is social influence, and it is significant at 95% of confidence level of 0.05. Since, the p-value of social influence is 0.000, and it is less than significance level of 0.05. Study from Diéguez et al. (2023) shows that social norms and attitude play a crucial role in shaping fintech adoption. On other side, paper from Singh et al. (2020) find that ease of use and social influence will affect fintech adoption. The unstandardized regression coefficient of perceived risk is positive at 0.436. Hence, when social influence increased by 1 unit on average, the fintech adoption among Gen-Z will increase by 0.436-unit, ceteris paribus.

In this paragraph, The R-squared (R^2), also known as the coefficient of determination, quantifies how much of the variation in the dependent variable can be attributed to changes in the independent variables. In simpler terms, it tells us the proportion of the dependent variable's variability that can be explained by the independent variables. A higher R^2 indicates that the independent variables have a stronger influence on the dependent variable. (Miles (2005). The table shows that 0.616 R^2, which means that 61.6% of the variation in Fintech adoption among Generation-Z is affected by all the independent variables. The remaining 38.4% of the variation in this study can be explained by other factors.

Chapter 5: Discussion and Conclusion

5.1 Summary of main findings

The goal of this study is to determine factors affecting fintech adoption among Gen-Z in Malaysia. Questionnaires were distributed to get data and use SPSS 27.0 to run the data for the result. Upon research, results showed that only Transparency (H2), Financial Literacy (H4), and Social Influence (H6) are accepted, rest of the independent variables are not accepted due to insignificant relationship with our dependent variable.

Transparency was found to have a significant relationship with fintech adoption among Gen-Z in Malaysia with clear communication of security measures and data practices, it enhanced the perceived security and privacy. (Mombeuil, 2020). Lack of transparency related to fees and interest rates can deter potential fintech users. (Ambrose and Conklin, 2014). When users clearly understood the associated costs, they were more comfortable engaging with these services.

Financial literacy also significantly impacts fintech adoption among Gen-Z in Malaysia, as Financial literacy is important for modern human for understanding financial components and skills like budgeting investing, borrowing, and personal financial management. Financial literacy helps people make savvy financial decisions. Thus, financial literacy improves financial wellbeing. (Abu et al., 2022; Dinh, 2022)

Social influence were proved to be significantly affecting fintech adoption among Gen-Z in Malaysia. Study by Diéguez et al. (2023) shows that social norms and attitude is significantly will affect adoption level in financial platforms, especially influence from family member have highest impact on adopting fintech. Another research from Kakinuma (2022) highlighted that individuals with high leisure are more likely to perceive the uncertainties and risks associated with new technology optimistically, suggesting a positive social influence on fintech adoption. Thesis from Singh et al. (2020) found that social influence is a key factor for behaviour intention to use FinTech services. The study found that actual use in fintech is significantly influenced by social influence but is not determined by behaviour intention and perceived usefulness.

However, there are limitation when adopting fintech with just influenced by social. Adopting something that you don't have enough knowledge in will cause lack of individuals need assessment. Following trends without considering personal needs might lead to adopting a product or service that isn't a good fit Broadstock and Zhang (2019). Additionally, another issue is the potential for the bandwagon effect. This is when social pressure can lead individuals to adopt something simply because everyone else is doing it, regardless of its actual value to them (Anyanwu & Chiana, 2022).

5.2 Implications of main findings

Based on the results of multiple regression, we can find that independent variables that have significant relationship with dependent variable is transparency, social influence, and financial literacy. Transparency in fintech services equals to clear communication of service features, costs, and data handling practices. It is a basic of trust and a crucial factor influencing the adoption decisions of Gen-Z consumers. In the purpose of increased awareness of importance of transparency among fintech and way to increase transparency among fintech, Universities can play a pivotal role by integrating fintech education into their curricula, emphasizing the importance of transparency in financial services. Workshops and seminars can be organized to educate students about the distinctions of fintech offerings and the significance of transparent operations. Government agencies can enhance regulations that assign fintech companies to disclose all terms and conditions in an easily understandable format. Campaigns can be launched to raise awareness about the rights of consumers and the obligations of fintech providers regarding transparency. Religious organizations that is trusted by many, can disseminate information about ethical fintech practices and encourage companies to adopt transparent policies that align with societal values.

Moreover, our next independent that is significant is social influences. Social influences mean that impact that the opinion or behaviours of peers and influencers have on an individual's decision to adopt fintech services. Universities can enhance this by creating peer-led initiatives where students who are proficient in fintech usage mentor their peers. This could include setting up fintech clubs or societies that for knowledge sharing and hands-on experience with fintech simulator. Government bodies can collaborate with popular figures and influencers to endorse responsible fintech usage. By showcasing the benefits of fintech through relatable personalities, the government can tap into the persuasive power of social influence. Religious

organizations can incorporate discussions about fintech into their community activities, highlighting how these services can be used in a manner consistent with religious teachings. This can help normalize fintech usage within the community.

The last independent variable that significant in this study is financial literacy. Financial literacy equals to the understanding of financial principles and concepts, which will affect decisions making on fintech. Universities should integrate financial literacy programs into their offerings, providing students with the knowledge required to navigate the fintech landscape effectively. This could include courses on personal finance management, digital security, and the economic implications of fintech. Government agencies can initiate national financial literacy campaigns, focusing on the practical aspects of using fintech services safely and effectively. This can be done through online platforms, public service announcements, and collaboration with educational institutions. Religious organizations can offer guidance on financial stewardship and the ethical use of money, tying these principles to the use of fintech. By doing so, they can provide a moral framework for financial decision-making in the digital age.

5.3 Recommendation for Future Research

After listing out the challenged in this study, then recommendations will be provided for improve the upcoming research about fintech in this section. For better the collected data, future study can try to expand the demographic scope. Addressing the generalizability issue, future studies could include a broader demographic range, encompassing Gen-Z individuals from various regions and socioeconomic backgrounds within Malaysia. This would provide a more comprehensive view of fintech adoption behaviours.

Longitudinal studies would provide valuable insights into the evolving nature of fintech adoption, capturing the impact of technological advancements and changing consumer behaviours over time. This could involve repeated surveys, cohort analysis, and event-based data collection. Additionally, adopting a mixed-methods approach would offer a richer understanding of the subject. Qualitative interviews could uncover the motivations and attitudes of Gen-Z towards fintech, while quantitative surveys could measure the prevalence and patterns of adoption. By integrating these methods, researchers can develop a

comprehensive narrative that captures the complexity of fintech adoption behaviours among the younger generation in Malaysia.

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Appendix

Appendix 1.1 ETHICAL APPROVAL FOR RESEARCH PROJECT

UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
Wholly owned by UTAR Education Foundation Co. No. 578227-M

Re: U/SERC/270/2023

17 October 2023

Ms Thavamalar a/p Ganapathy
Head, Department of Economics
Faculty of Business and Finance
Universiti Tunku Abdul Rahman
Jalan Universiti, Bandar Baru Barat
31900 Kampar, Perak.

Dear Ms Thavamalar,

Ethical Approval For Research Project/Protocol

We refer to your application for ethical approval for your students' research project from Bachelor of Economics (Honours) Financial Economics programme enrolled in course UBEZ3026. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No.	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	Determinants of Financial Stress Among Undergraduates: A Case Study in Universiti Tunku Abdul Rahman	1. Lee Chi Ern 2. Yeoh Yew Wei 3. Wang Jhor Dhern	Dr Foo Chuan Chew	17 October 2023 – 16 October 2024
2.	Factors that Influencing the Saving Behaviors Among Undergraduate Students in UNiversiti Tunku Abdul Rahman (UTAR), Kampar	1. Ivy Koh Yi Hui 2. Lau Sin Ye 3. Leo Jie Yi	Mr Kuar Lok Sin	
3.	Factors Affecting the Willingness to Adopt Central Bank Digital Currency (CBDC) Among Undergraduate Students in UTAR	1. Chee Shag Yi 2. Kong Kah Kit 3. Ng Zhe Khai	Ms Kalai Vani a/p Kalimuthu	
4.	Fintech Adoption Among Generation Z in Malaysia	1. Chan Jian You 2. Chin Chen Hun 3. Koo How Shen		
5.	Drivers of Environmental Sustainability Practices Among Undergraduate Students in UTAR	1. Lim Tian He 2. Tan Kian Yew	Dr Teoh Sok Yee	

The conduct of this research is subject to the following:

(1) The participants' informed consent be obtained prior to the commencement of the research;

(2) Confidentiality of participants' personal data must be maintained; and

(3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.

(4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 Fax: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8868
Website: www.utar.edu.my

Appendix 1.2: Survey Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN FACULTY OF BUSINESS AND FINANCE

BACHELOR OF ECONOMICS (HONS) FINANCIAL ECONOMICS

UNDERGRADUATE PROJECT

FINTECH ADOPTION AMONG GENERATION Z IN MALAYSIA

Instructions:

This questionnaire consists of three sections which are Section A, Section B and Section C. Please answer all the questions. It should take around 15 minutes to complete this survey. All the answers will be kept strictly private and confidential. Thank you for your kind co-operation. Please be informed that in accordance with Personal Data Protection Act 2010 (PDPA) which came into force on 15 November 2013, Universiti Tunku Abdul Rahman (UTAR) is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

Acknowledgment of Notice

[ ] I have been notified by you and that I hereby understood, consented and agreed per UTAR notice.

[ ] I disagree, my personal data will not be processed.

If you have any enquiries, please do not hesitate to contact:

Chan Jian You	011-56639291
Chin Chen Hun	018-2686150
Koo How Shen	012-2103098

Section A: Demographic information

We would like to obtain some information about your personal detail so that we can better understand your fintech adoption level. Please tick (√) only ONE answer for each question.

1. Your gender:

( ) Male ( ) Female

2. Your ethnicity:

( ) Malay

( ) Chinese

( ) Indian

( ) Others, please state: _____

3. Your education level:

( ) Primary

( ) Secondary

( ) Pre-U

( ) Diploma

( ) Bachelor's Degree

( ) Master's

( ) Doctorate

4. Place of origin

( ) Kuala Lumpur

( ) Selangor

( ) Johor

( ) Kedah

( ) Malacca

( ) Negeri Sembilan

( ) Pahang

( ) Penang

( ) Perak

( ) Perlis

( ) Sabah

( ) Sarawak

( ) Terengganu

( ) Labuan

( ) Putrajaya

( ) Kelantan

( ) Other: _____

Section B: Factors affecting fintech adoption

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Fintech Adoption	*Fintech adoption process is easy to adopt*	1	2	3	4	5
	Fintech helps to innovate financial products and services	1	2	3	4	5
	I intend to use Fintech in the future	1	2	3	4	5
	If I had used Fintech services in the past, I am willing to continue using them	1	2	3	4	5
	I will recommend Fintech services to my friends and family	1	2	3	4	5
	I believe using Fintech services is a good idea	1	2	3	4	5

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Security Measurement	*I am concern about the abuse of my financial information (e.g. transaction and private information) during Fintech usage.*	1	2	3	4	5
	I feel my financial information is unsecure whenever I use Fintech products and services	1	2	3	4	5
	I am worried about others may access my financial information whenever I use Fintech products and services	1	2	3	4	5
	Fintech products and services enables personal information to be transmitted in various payment systems, resulting in information disclosure risk	1	2	3	4	5
	By using Fintech products and services, I am at risk of my personal information being excessively collected	1	2	3	4	5
	Fintech provide information that allows user to reduce risk	1	2	3	4	5

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Transparency	*I feel that transparency is an important factor when using fintech products and services*	1	2	3	4	5
	I believe that the fintech products and services that I'm using are transparent enough	1	2	3	4	5
	The fintech products and services that I'm using have a great reputation	1	2	3	4	5
	Fintech always provide me reliable information", "*Fintech provide information that allows user to reduce risk*	1	2	3	4	5

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Perceived Risk	*Fintech companies will handle my personal data securely.*	1	2	3	4	5
	Fintech platforms are more prone to violation of personal data by outside invaders than traditional banks.	1	2	3	4	5
	I believe that Fintech companies will be supervised at the same level with traditional banks by authorities.	1	2	3	4	5
	I believe that it can rather easily happen that money is stolen if using internet banking.	1	2	3	4	5
	I feel secure sending sensitive information across internet banking	1	2	3	4	5

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Social Influence	*I will make use of Fintech services if my friends, families and relatives are using them*	1	2	3	4	5
	I will make use of Fintech services if my colleagues /business partners /clients / suppliers are using them	1	2	3	4	5
	People who are important to me think that I should use mobile banking	1	2	3	4	5
	Most people surrounding me use mobile banking	1	2	3	4	5

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Financial Literacy	*The understanding of economics is needed in my daily activities (Job, hobbies, etc.)*	1	2	3	4	5
	If an interest rate falls, the bond price will increase	1	2	3	4	5
	Savings account have the lowest fluctuations over time compared to stock and bonds	1	2	3	4	5
	I understand that investment diversification is important	1	2	3	4	5
	I diversify my investment	1	2	3	4	5
	I understand how to maintain my personal credit rating	1	2	3	4	5
	The higher the risk of an investment, the higher the return	1	2	3	4	5

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Regulatory Environment	*I believe that the government supports and improve the usage of Fintech services*	1	2	3	4	5
	I feel protected legally as a Fintech user	1	2	3	4	5
	I believe that the government has introduced clear and favourable legislation and regulations for Fintech services	1	2	3	4	5
	I believe that the government is active in setting up infrastructures such as telecom network, to promote Fintech services	1	2	3	4	5
	It is easy to use Fintech services due to the government regulation	1	2	3	4	5
	I choose to use Fintech due to government regulation	1	2	3	4	5
	It is very easy to use various Fintech applications due to government regulations	1	2	3	4	5

PERSONAL DATA PROTECTION STATEMENT

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

Notice:

1. The purposes for which your personal data may be used are inclusive but not

limited to:-

□ For assessment of any application to UTAR

□ For processing any benefits and services

□ For communication purposes

□ For advertorial and news

□ For general administration and record purposes

□ For enhancing the value of education

□ For educational and related purposes consequential to UTAR

□ For the purpose of our corporate governance

□ For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/ study loan

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

1. By submitting this form you hereby authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

3. You may access and update your personal data by writing to us at

chincheehun21@gmail.com

Thank you for your time, opinion and comments.

~ The End ~

APPENDIX 1.3: RELIABILITY TEST ANALYSIS RESULTS FOR PILOT TEST

Fintech Adoption among Gen Z in Malaysia

Reliability

Scale: FA

Case Processing Summary

		N	%
Cases	Valid	404	100.0
	Excluded[a]	0	.0
	Total	404	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.876	.876	6

Security Measures

Case Processing Summary

		N	%
Cases	Valid	404	100.0
	Excluded[a]	0	.0
	Total	404	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.839	.788	5

Transparency

Scale: TR

Case Processing Summary

		N	%
Cases	Valid	404	100.0
	Excluded[a]	0	.0
	Total	404	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.843	.843	5

Perceived Risk

Reliability

Scale: PR

Case Processing Summary

		N	%
Cases	Valid	404	100.0
	Excluded[a]	0	.0
	Total	404	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.843	.865	5

Social Influence

Reliability

Scale: SL

Case Processing Summary

		N	%
Cases	Valid	404	100.0
	Excluded[a]	0	.0
	Total	404	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.796	.799	4

Financial Literacy

Reliability

Scale: FL

Case Processing Summary

		N	%
Cases	Valid	404	100.0
	Excluded[a]	0	.0
	Total	404	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.790	.820	6

Regulatory Environment

Reliability

Scale: RE

Case Processing Summary

		N	%
Cases	Valid	404	100.0
	Excluded[a]	0	.0
	Total	404	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.628	.773	6

APPENDIX 1.4: MULTIPLE LINEAR REGRESSION ANALYSIS RESULTS

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.785[a]	.616	.611	.38048	2.013

a. Predictors: (Constant), RE, SM, FL, TR, SI, PR

b. Dependent Variable: FA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	92.373	6	15.395	106.346	.000[b]
	Residual	57.473	397	.145		
	Total	149.846	403			

a. Dependent Variable: FA

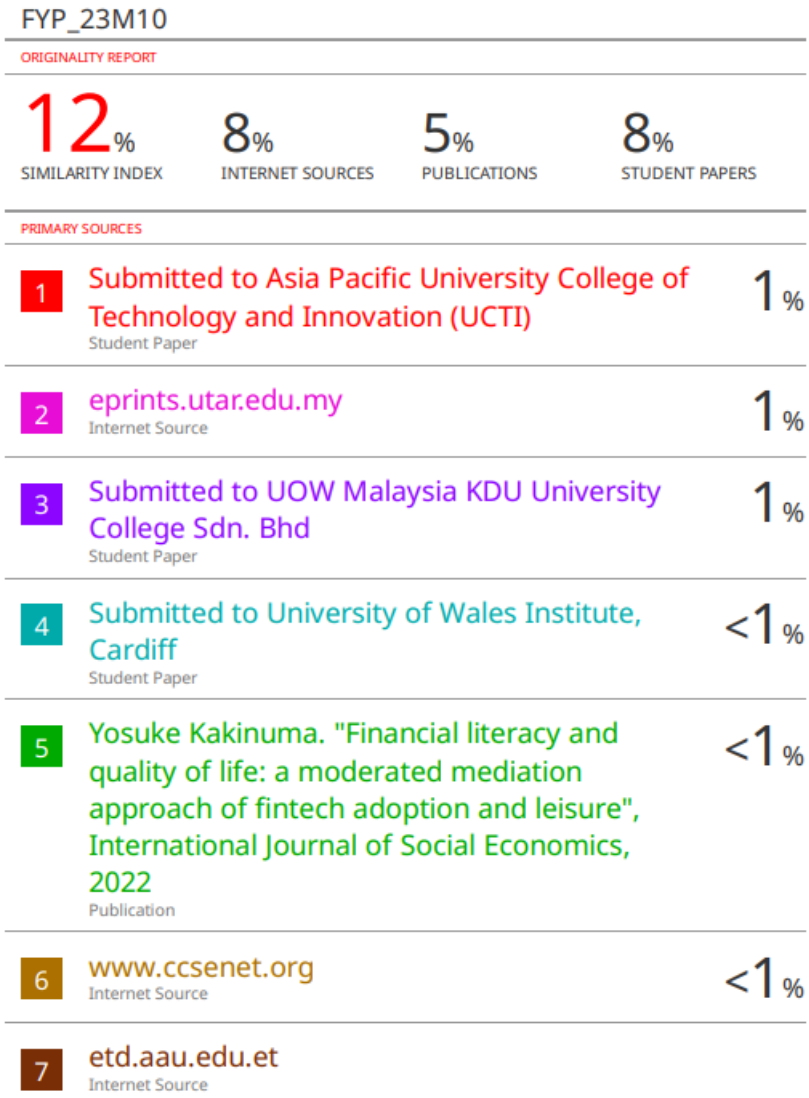
b. Predictors: (Constant), RE, SM, FL, TR, SI, PR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.754	.175		4.323	.000
	SM	.024	.025	.045	.956	.340
	TR	.219	.044	.247	5.029	.000
	PR	-.059	.047	-.065	-1.270	.205
	SI	.436	.050	.434	8.767	.000
	FL	.262	.047	.261	5.590	.000
	RE	-.057	.044	-.057	-1.298	.195

a. Dependent Variable: FA

APPENDIX 1.5: TURNITIN CHECKING RESULT



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