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Fintech and Financial Inclusion: Cross Country Study Comparing Indonesia and Hungary

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ABBREVIATIONS

ATM	Automated Teller Machine
AVE	Average Variance Extracted
Bappebti	Badan Pengawas Perdagangan Berjangka Komoditi / Commodity Futures Trading Regulatory Agency
BCG	Boston Consulting Group
CCA	Confirmatory Composite Analysis
CMB	Common Method Bias
Covid-19	Coronavirus Disease of 2019
CR	Composite Reliability
CV	Convergent Validity
Fintech	Financial Technology
FL	Factor Loading
GNI	Gross National Income
G20	Group of Twenty of the World's Major Economies
HTMT	Heterotrait-monotrait
IBM	International Business Machines
ICT	Information and Communication Technologies
IFC	International Finance Corporation
IMF	International Monetary Fund
IRT	Innovation Resistance Theory
KSEI	Kustodian Sentral Efek Indonesia / Indonesia Central Securities Depository
LMS	Learning Management System
MNB	Magyar Nemzeti Bank
MSMEs	Micro, Small and Medium Enterprises
OECD	Organization for Economic Cooperation and Development
OJK	Otoritas Jasa Keuangan / Financial Services Authority
OTG	Omnibus Test of Group

PWC	PricewaterhouseCoopers
Regtech	Regulatory Technology
SDGs	Sustainable Development Goals
SEM-ANN	Structural Equation Modeling-Artificial Neural Network
SPSS	Statistical Package for Social Sciences
SRMR	Standardized Root Mean Square of Residual
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
UN SDGs	United Nations Sustainable Development Goals
UNSGSA	United Nations Secretary-General's Special Advocate for Inclusive Finance for Development
UTAUT	Unified Theory of Acceptance and Use of Technology
UTAUT2	Unified Theory of Acceptance and Use of Technology 2

I. INTRODUCTION

The global financial recession exposed the world in 2009, revealing the substantial vulnerability in economic architecture. The world economy shifted to negative growth by -1.3% in 2009 compared to 2% in 2008, with losses of nearly US$30 trillion in the global financial market (LIN, 2009). The crisis was caused by several factors, including the failure of policymakers to supervise excessive debt due to the complexity of financial instruments (CLAESSENS ET AL. 2010). Increased supervision of economic actors and activities is needed to prevent crises, including education for individuals on financial literacy and inclusion as a form of risk mitigation to face future uncertainties (KLAPPER ET AL. 2013). In addition, access to financial products and services is also a key factor for reducing poverty, increasing saving and prosperity (DEMIR, 2020; CICCHIELLO ET AL. 2021; WORLD BANK, 2021a), including rural revitalization (WANG, 2023).

The World Bank (2018) described financial inclusion as the ability to obtain inexpensive and valuable financial services such as transactions, payments, credit, and insurance. Financial inclusion became one of the priority agendas after the global financial crisis, especially at the Group of Twenty (G20) Leaders' Summit meeting in Pittsburgh in 2009. One of the meeting results agreed to establish the G20 Financial Inclusion Experts Group, which is committed to building a more resilient global financial system and improving access to finance (SENYO ET AL. 2022). Global cooperation has succeeded in increasing financial inclusion. According to GLOBAL FINANCIAL FINDEX (2022) access to formal financial services has reached 76 percent in 2021, an increase of 10 percent compared to 2014 of 66 percent. However, in 2021, 1.4 billion young people across the globe remain unbanked, and most of them come from the Asian region. India has the most financially excluded people with 230 million, followed by China (130 million), Pakistan, and Indonesia, which account for 115 million and 100 million, respectively (GLOBAL FINANCIAL INDEX, 2022). In fact, the younger generation is the primary source of financial inclusion to optimize economic activities (OECD, 2020).

Therefore, commitment to accelerating access to financial services is one of the priorities for each country. It involves the development of regulations and policies through the application of technology in delivering financial products and services. Financial technology, or Fintech, means the utilization of technology to provide financial services. In support of this effort, regulatory bodies establish innovation offices and regulatory sandboxes. Innovation offices are established with the purpose of providing regulatory guidance to financial service providers seeking to introduce innovative products and services. Meanwhile, Fintech business providers use regulatory sandboxes to experiment with new services and business models, including the

assessment of rules and regulations aimed at facilitating innovation in financial products to accelerate financial inclusion (UNSGSA, 2019). Furthermore, MASKARA ET AL. (2021) explained that the government needs to develop infrastructure by expanding the broadband network and accelerating internet connectivity to rural areas to promote the digital economy. This approach not only addresses the urban-rural digital divide but also plays a crucial role in contributing to economic growth (DE CLERCQ ET AL. 2023).

Furthermore, government support strengthens Fintech to transform the financial industry landscape and increase financial inclusion (PANOS & WILSON, 2020; SAHAY ET AL. 2020; BOLLAERT ET AL. 2021). For example, Fintech brings a new financial breakthrough, inclusive for the poor and unbanked. The relatively low cost, automation and speed of the process are added values for Fintech compared to traditional financial services (BARBU ET AL. 2021). According to KORYNSKI (2019), Fintech also contributes to financial management information that can be conveniently accessed in nearly real-time through mobile applications. The support from the government through the provision of adequate digital facilities is crucial to foster the adoption of financial technology.

Indonesia and Hungary are both in strategic locations on the Asian and European continents. Indonesia is considered a middle-income economy, while Hungary is classified as a high-income country with a Gross National Income (GNI) per capita of USD 4.580 and USD 19.010 in 2022, respectively. As defined by the World Bank, a high-income country has a GNI per capita greater than USD 13.846 (WORLD BANK, 2023a). Additionally, Indonesia and Hungary share a similarity in terms of mobile cellular ownership, exceeding 100 percent. However, they diverge in the cultural dimensions, with Indonesia being a collectivist and Hungary individualist societies (Hofstede, 2010). The increasing use of smartphones and the proliferation of technology have spurred the growth and access of Fintech services, resulting in greater financial inclusion (THAKOR, 2020; FINKELSTEIN-SHAPIRO ET AL. 2022). The literature review chapter will provide a detailed explanation of feature dimensions, highlighting the similarities and differences between Indonesia and Hungary.

Despite their high telephone penetration rates, Indonesia and Hungary exhibit relatively lower levels of financial inclusion in comparison to their neighboring countries. In 2021, the percentage of Indonesian adults who could access formal financial services was just 52%, which was notably lower than Malaysia and Singapore at the level 88% and 97% respectively. In Hungary, the adult financial inclusion rate in 2021 was 88%, which was lower than Slovenia and Austria, which had financial inclusion rates of 99% and 100% in the same year (GLOBAL FINANCIAL INDEX, 2022). Therefore, it is interesting to explore the factors influencing Fintech adoption and its impact on financial inclusion in both countries.

The implications of Fintech on financial inclusion have also sparked some skepticism over the risks it might present. Meanwhile, the investigation of barrier factors in adopting Fintech services still receives limited attention (ARIF ET AL. 2020). Therefore, it is necessary to know the driver and barrier factors of digital financial services adoption to support financial accessibility. Empirically, there is limited research that integrates driver and barrier factors toward Fintech adoption. For example, SIVATHANU (2019) found that all variables related to barriers and drivers of digital payment adoption play a significant role in explaining behavioral intention in India. Recent study conducted by MIGLIORE ET AL. (2022), which compared driver and barrier factors for mobile payment adoption in China and Italy, revealed that social influence emerged as the most influential factor in explaining behavioral intention, while traditional barrier is the only significant barrier to mobile payment adoption. However, previous studies focused on adoption drivers and barriers before the Covid-19 pandemic occurred.

Furthermore, it is noteworthy to assess how Fintech, especially during the Covid-19 outbreak, played a significant role in rapidly educating individuals with no prior experience in digital finance about financial services (NATHAN ET AL. 2022). As a result of restrictions on mobility and social distancing, many people gained access to financial services through mobile phones, including access to government cash transfer through digital devices during the Covid-19 pandemic. Massive news about the spread of Covid-19 also creates fear for the public and affects consumers' intention to make cashless transactions (AJI ET AL. 2020). Further, FU & MISHRA (2022) depicted an increase in the number of Fintech application downloaders after the government implemented lockdown policy to prevent the spread of the Covid-19. This study fills the gap by investigating the drivers and barriers of Fintech adoption during the pandemic.

Fintech not only facilitates the democratization of financial services but also contributes to greater financial inclusion. The goal of increasing financial inclusion is aligned with the United Nations Sustainable Development Goals (UN SDGs), including providing equal financial access for individuals and MSMEs to improve welfare (IFC, 2018). Previous studies revealed that financial inclusion could contribute directly and indirectly to achieving the 17 goals of the SDGs (KLAPPER ET AL. 2016; SETIAWAN ET AL. 2023). However, it is essential to note that most of the previous literature only provides explanations based on literature. Thus, the investigation of the impact of Fintech on financial inclusion with empirical modeling needs to be evaluated (BECK, 2020; ODEI-APPIAH ET AL. 2021), to extant body of literature and bridge the gap between Fintech services and financial inclusion.

In addition, basic financial knowledge also plays an essential role in accessing Fintech services (HASAN ET AL. 2022). Financial literacy covers a set of financial attributes, including financial knowledge, financial behavior, and financial attitude (OECD, 2016). JÜNGER &

MIETZNER (2020) revealed that financial literacy is positively correlated with Fintech adoption. Individuals with higher levels of financial literacy tend to adopt Fintech services easily compared to users with lower literacy levels. Although research on financial literacy and Fintech adoption is often investigated, studies on how financial literacy impacts the use of Fintech are still limited and leave ample space for further study. Even fewer studies incorporate behavioral intention and use behavior with financial literacy as a mediation variable. Furthermore, this research addresses a gap in previous literature, which previously concentrated solely on the mediating role of financial literacy within the conventional financial sector (JAVED & HUSAIN, 2021).

This study also takes into account the moderation effects of facilitating conditions and price value between use behavior and continuance intention in Indonesia and Hungary. Facilitation conditions, as mentioned by HUMIDA ET AL. (2022) included soft infrastructure such as knowledge, technological literacy, and technical infrastructure support, which play a crucial role in ensuring continued use of Fintech services. Meanwhile, price value is an important element for Indonesian respondents who are classified as middle income country, while Hungary is considered a price sensitive country in relation to consumption habits (GARAI-FODOR ET AL. 2022). By integrating price value as a moderating variable between use behavior and continuance intention, this study addresses previous research recommendations to introduce additional variables, apart from facilitating conditions, in the context of technology adoption (SHI ET AL. 2022).

Finally, the multigroup analysis was performed to assess potential differences in respondents' perspectives about Fintech adoption between Indonesia and Hungary. This study specifically examines whether Fintech user differ from non-users in relation to use behavior toward continuance intention and financial inclusion, responding to a call from the future research from TEKA (2020). Besides, an assessment of the two countries with different economic and cultural contexts is also evaluated to test the relationship between use behavior toward continuance intention and financial inclusion. In doing so, this study respond to a call from MIGLIORE ET AL. (2022) and ABUBKER ET AL. (2023) to conduct cross country studies involving respondent from diverse cultural and economic backgrounds.

1.1 Problem statement and justification

As a result of the global financial crisis, financial inclusion has received great attention from researchers and policymakers. An extensive literature reveals that financial inclusion benefits individuals, businesses, and nations. Access to finance allows the household to manage their consumption and invest in their futures through education and health. For the corporation,

financial accessibility enables them to raise capital to expand the business, resulting in job creation and reducing inequality. At the country level, financial inclusion acts as a bridge in reducing poverty and promoting prosperity (NSIAH ET AL. 2021; WORLD BANK, 2021a).

Even though efforts to improve financial inclusion have increased, more than one billion young people still lack access to financial services worldwide (GLOBAL FINANCIAL INDEX, 2022). Internal and external factors can cause barriers to formal financial access. According to GRANDOLINI (2015), internal barriers to financial inclusion include higher financial illiteracy, lack of valid identification documents, and limited knowledge of financial products. Meanwhile, external factors considered as constraints include relatively high fees and collateral requirements, including the high-interest rate of financial products and services, which are the leading causes of financial exclusion (DABLA-NORRIS ET AL. 2015).

Financial exclusion has many negative consequences, including limiting possibilities to improve individual welfare, substantially increasing transaction costs, and disrupting family financial life (ACHUGAMONU ET AL. 2020), limiting individual growth, slowing poverty alleviation, and decreasing economic growth (BLAKE & JONG, 2008; ANYANWU & ANYANWU, 2017). In contrast, despite the presence of Fintech has been proven to accelerate financial inclusion, its success is highly dependent on the readiness of each country to adopt technology-based financial products and services. Indonesia and Hungary are middle income and high income countries with growing populations of smartphone and internet users, but relatively low financial inclusion compared to ASEAN and European regions.

Therefore, this study attempts to analyze the drivers and barriers of Fintech adoption in Indonesia and Hungary in relation to promoting the acceleration of financial inclusion in both countries. The Covid-19 pandemic and its impact on Fintech adoption is evaluated to provide additional literature, particularly on middle income and high income countries. This research also assesses the mediation effects of financial literacy between behavioral intention and use behavior. Financial literacy in this study refers to financial knowledge, financial behavior, and financial attitude (OECD, 2016). The moderating effect of facilitating conditions and price value in Indonesia as a developing country, and Hungary with a price-sensitive population is analyzed in relation to use behavior and continuance intention. Finally, from a multigroup and cross country analysis, this study examines whether there is a difference in the influence of respondents who are Fintech user versus non-user by combining respondents in both countries, and evaluates whether the relationship between use behavior toward continuance intention and financial inclusion differs between Indonesia and Hungary.

1.2 Significance of the study

The findings of this study will expand the existing literature on the current understanding in finance, especially on drivers and barriers of Fintech adoption in a middle income (Indonesia) and high income economy (Hungary). In particular, this study reveals fresh insights into Fintech adoption in several contributions. First, previous studies mainly focus on Fintech adoption from the perspective of driver factors (ROH ET AL. 2022; SETIAWAN ET AL. 2023), while studies that combine drivers and barriers of Fintech adoption are still limited (SIVATHANU, 2018; MIGLIORE ET AL. 2022). In fact, investigating these two factors will provide comprehensive information rather than focusing on one variable, such as driver or barrier only (SENYO ET AL. 2022). Consequently, this study focuses on analyzing the driver and barrier factors in adoption Fintech services during the Covid-19 pandemic, with the aim of addressing gaps in existing literature.

Second, several recent studies use technology adoption theories such as TAM and UTAUT (SETIAWAN ET AL. 2021; NATHAN ET AL. 2022), even though they have many limitations in explaining the theory of technology adoption behavior (SENYO ET AL. 2022). VENKATESH ET AL. (2012) combined eight theories to explain the determinant of technology adoption, known as UTAUT2. The UTAUT2 was empirically able to explain technology adoption more broadly than the previous theory. In addition, IRT is often used in the literature to examine factors that can restrict technology adoption (CHEN ET AL. 2022; KUMAR ET AL. 2022). The combination of UTAUT2 and IRT theory might be able strengthen the existing theory in explaining the driver and barrier factors of Fintech adoption in Indonesia and Hungary.

Third, the evolution of the Covid-19 pandemic has proven to increase the adoption of Fintech services (FU & MISHRA, 2022). However, a relatively new health crisis phenomenon still opens up research opportunities to expand existing findings (YAN ET AL. 2021). NAJAF ET AL. (2021) pointed out that Fintech services are an alternative financing option during the Covid-19 pandemic. Referring to previous research (AJI ET AL. 2020; DARAGMEH ET AL. 2021; OJO ET AL. 2022), this study also integrates perceived Covid-19 risk (PCR) as one of the determinants of Fintech adoption in Indonesia and Hungary for enhancing literature on the research area.

Lastly, this study also expands on the previous literature, which is still limited in conducting empirical evidence of the relationship between behavioral intention and use behavior toward Fintech services. Empirically, a study by ODEI-APPIAH ET AL. (2021) integrated the digital divide as a moderator variable reveals that the digital divide evaluated by resource, force, and access has moderated the use of Fintech. This study expands the literature by integrating financial literacy as a mediation variable between behavioral intention and use behavior toward

digital finance in Indonesia and Hungary. This study also examines the relationship between use behavior on continuance intention and financial inclusion through the direct path and the moderating variables of facilitating conditions and price value, which is scarce in the literature. Multigroup analysis by comparing Fintech user versus non-user, Indonesia and Hungary in relation to use behavior toward continuance intention and financial inclusion might be another novelty in this study.

II. OBJECTIVE OF THE STUDY

2.1 Research objectives

This study first examines the driver and barrier factors of Fintech adoption in Indonesia and Hungary. The second objective is to evaluate the impact of the perceived Covid-19 risk on adopting Fintech services in both countries. Third, this research analyzes the effect of behavioral intention to use behavior mediated by financial knowledge, financial behavior, and financial attitude. Fourth, moderation role of facilitating conditions and price value between use behavior and continuance intention is evaluated. Lastly, multigroup analysis is conducted to investigate whether there are differences in Fintech user versus non-user and Indonesia versus Hungary in relation to the influence of use behavior toward continuance intention and financial inclusion.
The main objective is divided into the following sub-objectives:

- To test the impact of Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) dimensions on Fintech adoption in Indonesia and Hungary.
- To investigate barrier factors through Innovation Resistance Theory (IRT) in adopting Fintech in Indonesia and Hungary.
- To analyze the influence of perceived Covid-19 risk on Fintech adoption in Indonesia and Hungary.
- To examine the direct impact of use behavior on continuance intention and financial inclusion in Indonesia and Hungary.
- To evaluate the impact of financial literacy as a mediating variable between behavioral intention and use behavior toward Fintech services in Indonesia and Hungary.
- To investigate the moderating role of facilitating conditions and price value in relation to the influence of use behavior and continuance intention.
- To assess whether Fintech user versus non-user and Indonesia versus Hungary differ in regard to the effect of use behavior toward continuance intention and financial inclusion.

2.2 Research questions

This study investigates the driver and barrier factors to the adoption of Fintech services, including evaluating the role of Fintech in increasing financial inclusion in Indonesia and Hungary by integrating financial literacy as mediation variable and facilitating conditions and price value as moderating variable. This research focuses on answering several questions, including:

- What factors drive Fintech adoption in Indonesia and Hungary?
- What factors hinder Indonesian and Hungarian adoption of Fintech?

- How does perceived Covid-19 risk impact Fintech adoption in Indonesia and Hungary?
- How does Fintech use behavior promote continuance intention and financial inclusion in Indonesia and Hungary?
- To what extent does financial literacy facilitate the influence of behavioral intention and use behavior of Fintech in Indonesia and Hungary?
- To what extent do facilitating conditions and price value moderate the effect of use behavior and continuance intention?
- Do Fintech users and non-users in Indonesia and Hungary differ in relation to the effect of use behavior toward continuance intention and financial inclusion?

2.3 Research hypotheses

This study formulates 10 hypotheses with several sub-hypotheses to answer research questions. Hypotheses 1a to 1g are designed to answer questions related to Fintech drivers which refer to the UTAUT2 model by involving various variables such as performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. Hypotheses 2a to 2d focus on the barrier factors for Fintech adoption by integrating several variables such as value barrier, risk barrier, tradition barrier, and image barrier. The variables associated with barriers to Fintech adoption were developed from the innovation resistance theory. The combination of driver and barrier factors for Fintech adoption is expected to provide a comprehensive picture that can be utilized to make policies to promote the use of Fintech to improve financial inclusion.

Hypothesis 3 focuses on examining the impact of perceived Covid-19 risk on the adoption of Fintech services. Hypothesis 4 evaluates the impact of behavioral intention on use behavior, while hypothesis 5 examines the influence of Fintech use behavior toward continuance intention. Hypothesis 6 performs empirical tests regarding the effect of use behavior toward Fintech on financial inclusion in Indonesia and Hungary. Hypotheses 7a,b,c are developed with the objective of analyzing the role of financial literacy consisting of financial knowledge, financial behavior and financial attitude, as mediating variables between behavioral intention and use behavior toward Fintech services. Hypotheses 8a and b assess the moderating role of facilitating conditions and price value in relation to the influence of use behavior and continuance intention. Hypothesis 9 and hypothesis 10 explore whether there is a difference between Fintech user versus non-user and Indonesia versus Hungary in regard to the effect of use behavior toward continuance intention and financial inclusion. All the proposed hypotheses is presented in Table 1.

Table 1. Hypotheses summary

Hypothesis	Relations
H1a	Performance expectancy positively impacts behavioral intention
H1b	Effort expectancy has a positive impact on behavioral intention
H1c	Social influence positively impacts behavioral intention
H1d	Facilitating conditions has a positive impact on behavioral intention
H1e	Hedonic motivation positively impacts behavioral intention
H1f	Price value has a positive impact on behavioral intention
H1g	Habit has a positive impact on behavioral intention
H2a	Value barrier negatively impacts behavioral intention
H2b	Risk barrier has a negative impact on behavioral intention
H2c	Tradition barrier negatively impacts behavioral intention
H2d	Image barrier negatively impacts behavioral intention
H3	Perceived Covid-19 risk positively impacts behavioral intention
H4	Behavioral intention has a positive impact on use behavior
H5	Use behavior positively impacts continuance intention
H6	Use behavior positively impacts financial inclusion
H7a	Financial knowledge (positively mediates) the impact of behavioral intention on use behavior
H7b	Financial behavior (positively mediates) the impact of behavioral intention on use behavior
H7c	Financial attitude (positively mediates) the impact of behavioral intention on use behavior
H8a	Facilitating conditions (positively moderates) the impact of use behavior on continuance intention
H8b	Price value (positively moderates) the impact of use behavior on continuance intention
H9a	Use behavior positively influences continuance intention in Fintech user and non-user
H9b	Use behavior positively influences financial inclusion in Fintech user and non-user
H10a	Use behavior positively impacts continuance intention in Indonesia and Hungary
H10b	Use behavior positively impacts financial inclusion in Indonesia and Hungary

2.3.1 Direct effect of UTAUT2

2.3.1.a Performance expectancy on behavioral intention

Performance expectancy refers to the degree to which an individual believes that using a particular technology will enable them to perform certain tasks more effectively or efficiently.

This belief is based on the perceived potential benefits that the individual expects to receive from using new technology. These benefits could include improved productivity, increased accuracy, reduced effort or time, and better overall performance in completing certain activities (VENKATESH ET AL. 2012). In the context of Fintech services, the level of expectation which is associated with ease, speed and efficiency in accessing financial services compared to products offered from non-digital financial companies. DE' ET AL. (2020) documented digital payments provide convenience and flexibility for consumers in conducting transactions. Previous studies revealed that performance expectancy has a positive impact on the adoption and use of Fintech services (AL-SAEDI ET AL. 2020; NIKOLOPOULOU ET AL. 2021). According to a recent study by BAJUNAIED ET AL. (2023), performance expectancy was empirically proven to be one of the strongest influences on Fintech adoption. Based on the empirical study above, the following hypothesis is:

Hypothesis 1a: Performance expectancy positively impacts behavioral intention

2.3.1.b Effort expectancy on behavioral intention

VENKATESH ET AL. (2012) defined effort expectancy as a level of convenience associated with the use of technology. Based on the expectancy theory of motivation which explains the correlation between effort and performance, it reveals that a reduction in effort in carrying out an activity due to the discovery of a new method will tend to encourage a shift from the traditional approach. Fintech offers financial products and services that are proven to be able to reduce the barriers of traditional financial products. Reducing efforts to access digital financial services results in a positive attitude that has an impact on the willingness to adopt Fintech services (BAJUNAIED ET AL. 2023). In this study, effort expectancy is measured by various indicators, including the ease of interaction and understanding of Fintech services. Several previous studies have proven a positive correlation between effort expectancy and technology adoption (ALALWAN ET AL. 2017; GAN ET AL. 2021; XIE ET AL. 2021; PUROHIT ET AL. 2022). However, MERHI ET AL. (2019) found that effort expectancy is not significant in influencing technology adoption. A recent study conducted by NOURALLAH (2023) revealed that there is a strongly positive correlation between effort expectancy and behavioral intention to adopt Fintech. The following hypothesis is offered based on previous research as follows:

Hypothesis 1b: Effort expectancy has a positive impact on behavioral intention

2.3.1.c Social influence on behavioral intention

Social influence is associated with to what extent people who are considered important recommend using a certain technology (VENKATESH ET AL. 2012). ALALWAN ET AL.

(2017) argued that individuals tend to be influenced by people they trust and feel comfortable if what they are advised can be practiced. Therefore, users who have benefited from the utilization of new technology are likely to influence others (MALAQUIAS & HWANG, 2016). However, other studies depicted that social influence is also very dependent on several variables, such as social status and subjective norm (YI ET AL. 2020; JOA & MAGSAMEN-CONRAD, 2022). In this study, social influence refers to family, friends, colleagues or others. Previous research has explained that social influence is positively correlated with technology adoption (AKINWALE & KYARI, 2022; KHUONG ET AL. 2022). In contrast, SINGH ET AL. (2021) found different results that social influence has a negative impact on the use of technology. Recently, HAMZAH ET AL. (2023) confirmed the significant positive impact of social influence and the user intention in adopting Fintech. The proposed hypothesis is as follows:

Hypothesis 1c: Social influence positively impacts behavioral intention

2.3.1.d Facilitating conditions on behavioral intention

Facilitating conditions describes a consumer's perception of the resources and support available to make a decision (VENKATESH ET AL. 2003). In the Fintech perspective, the concept of facilitating conditions relates to the extent to which consumer perceptions recognize the availability of resources that support the successful implementation of tasks through systems or services provided by Fintech (MIGLIORE ET AL. 2022). The development of soft and hard infrastructure, including the proliferation of an internet network, encourages people's attention to adopt digital financial services due to convenience and speed. Therefore, digital-based financial service facilities will have a positive impact on the adoption of Fintech services. Facilitating conditions in this study are measured using various indicators such as ownership of resources and knowledge to use Fintech services, including the ease of getting help when facing difficulties in operating Fintech services. Most studies show that facilitating conditions has a positive impact on Fintech adoption (MOORTHY ET AL. 2020; NAJIB ET AL. 2021; and CHE NAWI ET AL. 2022), except for ZUIDERWIJK ET AL. (2015) found evidence that facilitating conditions has no significant impact on technology adoption. Furthermore, another recent empirical study by YANG ET AL. (2023) concluded the facilitating condition has a positive impact on the user's behavioral intention to adopt a digital finance. Based on previous literature, the following hypothesis is:

Hypothesis 1d: Facilitating conditions has a positive impact on behavioral intention

2.3.1.e Hedonic motivation on behavioral intention

Hedonic motivation is perceived as the level of enjoyment felt by individuals, and is considered an important factor in the adoption of new technology (VAN DER HEIJDEN, 2004; VENKATESH ET AL. 2012). OLIVEIRA ET AL. (2016) explained that the presence of Fintech services as an alternative to new digital payment platforms has the potential pleasure for users. Within the framework of use behavior, hedonic motivation is associated with psychological attributes and consumer experiences that can be activated by their cognitive perceptions and attitudes towards technology (TAMILMANI ET AL. 2019). The user-friendly interface that is continuously developed by Fintech companies to create convenience for users is an added value regarding the fun and enjoyment that is generated when using Fintech platforms (VENKATESH ET AL. 2012; HAMZAH ET AL. 2023). In addition, Fintech application developers usually design their mobile apps with feelings and emotions in mind to encourage consumer enjoyment while using them. In this study, hedonic motivation is measured using multiple indicators, such as Fintech service creating fun, enjoyable, and entertaining for users (VENKATESH ET AL. 2012). Previous research explained that hedonic motivation has a significant impact on technology adoption (MOROSAN & DEFRANCO, 2016; LIN ET AL. 2020; MIGLIORE ET AL. 2022). A new empirical study in Malaysia and Sweden by NOURALLAH (2023) confirmed that hedonic motivation has a significant effect on behavioral intention to adopt Fintech. The following hypothesis is offered based on previous research as follows:

Hypothesis 1e: Hedonic motivation positively impacts behavioral intention

2.3.1.f Price value on behavioral intention

VENKATESH ET AL. (2012) described price value as a trade-off between the costs and benefits of using new technology. Rationally, users will consider the costs and benefits before adopting a new technology, which will be adopted when the benefits are greater than the costs. Reasonable cost and nearly real-time transaction process offered by Fintech plays an important role for users to adopt Fintech services. Moreover, several digital financial applications are also equipped with automated financial advisors (robo-advisors) which allow users to obtain alternative financial guidance that is relatively more affordable than traditional financial advisory services (BRENNER & MYELL, 2020). In addition, WINDASARI ET AL. (2022) explained that the Fintech strategy of providing discounts, cash back, and coupons succeeded in attracting consumers to adopt Fintech services. Several previous literatures had shown that price value positively affects user adoption of Fintech services (SANTOSA ET AL. 2021; CHAUHAN ET AL. 2022), except SEBASTI´AN ET AL. (2023) shown price value does

not impact on behavioral intention to adopt digital payment in Spain. However, a recent study by HASSAN ET AL. (2023) revealed price value is found to positively influence behavioral intention to adopt Fintech services. Based on the arguments above, the hypothesis is:

Hypothesis 1f: Price value has a positive impact on behavioral intention

2.3.1.g Habit on behavioral intention

Habit refers to a type of behavior that happens spontaneously and unconsciously without requiring much effort or thought from the person (VENKATESH ET AL. 2012). Habit can be characterized as a person's propensity to behave in a particular way without having to consciously deliberate it. NIKOLOPOULOU ET AL. (2021) explained that habit has a significant impact on people's intentions. In the digital payment perspective, ZHANG ET AL. (2022) described habit as one of the main determinants in relation to the adoption of certain behaviors or practices. This research determines habits using individual perceptions regarding the habits and necessity of using Fintech services in conducting financial transactions (VENKATESH ET AL. 2012). Several previous literatures found evidence that habit has a positive impact on technology adoption (MEHTA ET AL. 2019; CHANG ET AL. 2022). Recent studies revealed that habit has a positive impact on behavioral intention to adopt new technology (ONG ET AL. 2023), even SEBASTI´AN ET AL. (2023) shown habits as the strongest factor influencing digital payment adoption. However, it was documented by PLENDER ET AL. (2020) that habit does not significantly affect behavioral intentions for respondents in the Philippines. Hence, the research hypothesis is:

Hypothesis 1g: Habit has a positive impact on behavioral intention

2.3.2 Direct effect of IRT

2.3.2.a Value barrier on behavioral intention

LAUKKANEN (2016) explained the value barrier as creating innovation by providing alternative prices to consumers to change behavior. Consumers tend to change behavior if the price innovation offered has a better value than the current price. In other words, users will adopt new technology if it provides an advantage over the existing technologies. In the context of this study, users will adopt Fintech products if they perceive the services offered by digital finance companies provide advantages over traditional financial services. If Fintech services offer lower performance than the existing financial services, it will create a value barrier (ARIF ET AL. 2020). In addition, user trust in new technology can also be reduced due to the unreasonable price being charged for accessing new services (KUMAR ET AL. 2022), and consumers who have unsatisfactory experiences as a result of an inappropriate quality obtained compared to the

price paid for a product and will not recommend it to other users so that it has a negative impact on company growth (KAUR ET AL. 2020). Previous research has found that the value barrier has a negative effect on the adoption of Fintech services (SOH ET AL. 2020; KUMAR ET AL. 2022). Based on the previous literature, the research hypothesis is:

Hypothesis 2a: Value barrier negatively impacts behavioral intention

2.3.2.b Risk barrier on behavioral intention

Risk barrier is defined as an innovation that displays a certain level of uncertainty, accompanied by the potential for unexpected risks from various aspects such as economic, social, psychological, functional, and financial (LAUKKANEN, 2016; CHEN ET AL. 2022). Normally, users will associate a new technology with potential risk due to various factors such as human habits which tend to be apprehensive of change because perceptions arising from limited knowledge of the new technology (DIMITROVA ET AL. 2021). In addition, new technology also comes with performance uncertainty that can have an impact on the failure to achieve the goals intended by the user. The potential for fraud to illegally access Fintech application accounts can result in data and money stealing, including money laundering. RIVERA (2019) analyzed the various potential risks that will arise from the use of cashless transaction system such as organized crime and tracking money difficulties. The presence of Fintech services, for instance, will create potential risks in the minds of users regarding security, privacy, and internet network stability issues. When a new technology is perceived as risky, its adoption rates tend to decrease. This happened because the perceived level of risk associated with the technology negatively impacts its adoption. Prior literature finds evidence that risk barriers have a negative effect on the adoption and use of Fintech (KAUR ET AL. 2020; KUMAR ET AL. 2022), except, MIGLIORE ET AL. (2022) documented insignificant relationship between risk barrier and behavioral intention to adopt Fintech from users in China and Italy. Therefore, the research hypothesis is:

Hypothesis 2b: Risk barrier has a negative impact on behavioral intention

2.3.2.c Tradition barrier on behavioral intention

Tradition barrier refers to an obstacle to change that arises from the established norms and patterns of behavior in a society, which is linked to the traditions, customs, and habits that individuals and societies have developed over time (KAUR ET AL. 2020). People generally tend to not adopt a new technology if the products or services offered contradict with established traditions or cultural value (CHEN ET AL. 2022). New technologies are often seen as having the potential to disrupt established norms, raising fears that they may lead to a loss of cultural

identity. In addition, new technology is also synonymous with changes in habits related to social and economic status, which can raise concerns about the degradation of the local community's way of life. If Fintech services are perceived as being inconsistent with the customary behaviors of individuals, it is likely that resistance to their adoption will arise within the community. In this study, tradition barriers were evaluated based on potential challenges caused by difficulties in obtaining information from Fintech services, either directly through customer service or indirectly, such as automatic feedback programmed in Fintech applications or Fintech chatbot (HUANG & LEE, 2022). Previous empirical findings found evidence that tradition barrier had a significant negative effect on adopting new technologies (SIVATHANU, 2019; ARIF ET AL. 2020; SOH ET AL. 2020; KUMAR ET AL. 2022). Hence, the hypothesis is:

Hypothesis 2c: Tradition barrier negatively impacts behavioral intention

2.3.2.d Image barrier on behavioral intention

Image barrier is perceived as the traceability of certain innovations to the country of origin, brand, or source of innovation (LAUKKANEN & PASANEN, 2008; CHEN ET AL. 2022), even RAM & SHETH (1989) described the image barrier as a perceptual problem. The process of adopting new technology requires action to change from old habits, in other words, it has the potential to change the user's routine habits. Therefore, Fintech companies need to create positive perceptions to encourage individuals to adopt new technologies. In addition, a strategy is needed to convince potential users about the benefits that can be provided to consumers, including building the reputation of Fintech companies in order to gain the trust of consumers. Typically, users will adopt new technology with a positive image and are reluctant to adopt if the image of the product, service or company is worse than that of the existing company offering financial products. FERREIRA ET AL. (2014) argued that image barrier is a combination of general beliefs and feelings related to technological innovation. In general users will adopt Fintech services if they are perceived to have a better image than traditional financial services. Image barrier in this study is measured by individual perceptions of the complexity of Fintech applications compared to the benefits offered, including massive notifications that are frequently received by users via messaging or e-mail which can lead to a negative perception and bad image of the company. Several studies confirmed that image barrier has a negative effect on technology adoption (KAUR ET AL. 2020; KUMAR ET AL. 2022). Based on previous research, the hypothesis of this research is:

Hypothesis 2d: Image barrier negatively impacts behavioral intention

2.3.3 Direct effect of perceived Covid-19 risk on behavioral intention

The Covid-19 pandemic has changed people's behavior in social interactions and payments. The spread of the virus creates the perception of health risks, including through the transmission of physical transactions that may be attached to paper or coin money. Technology proliferation and advancement in smartphones as well as government support in providing soft and hard infrastructure have encouraged an increase in cashless transactions through Fintech services, thus reducing the potential for transmitting coronavirus disease, and having an impact on accelerating Fintech adoption and usage behavior. FU & MISHRA (2022) found an increase in the number of Fintech application downloaders during the Covid-19 period. In addition, AJI ET AL. (2020) explained that the Covid-19 outbreak had a negative effect on consumers' intentions to do direct transactions using cash and switch to digital payment. This shift in payment behavior is driven by preventive action and the fear of Covid-19 transmission that may occur due to physical transactions. Previous research explained that perceived Covid-19 risk affects the adoption of Fintech services (DARAGMEH ET AL. 2021; OJO ET AL. 2022). A recent scientific study has documented that the perceived Covid-19 risk had a significant impact on behavioral intention in adopting Fintech services (RISKA ET AL. 2022). Based on the findings of previous studies, the research hypothesis is:

Hypothesis 3: Perceived Covid-19 risk positively impacts behavioral intention

2.3.4 Direct effect of behavioral intention on use behavior

The correlation between behavioral intention and use behavior can be derived from Theory of Reasoned Action (TRA) as a form of manifestation to understand individuals' intentions drivers and encourage an action from that intention (DAVIS ET AL. 1989). Understanding the factors that shape individual intentions to take action is an important factor for designing strategies to promote the sustainable Fintech services usage. AJZEN (2002) explained that there is a strong correlation between behavioral intention and actual behavior. While behavioral intention plays an important role in the decision-making process, the correlations do not consistently show the same results. VENKATESH ET AL. (2003) described that about 70 percent of the variance in consumer intention is correlated to about 50 percent in technology use, which shows that there is a difference between behavioral intention and use behavior. In general, the prior studies documented that there is a strong relationship between behavioral intention and actual behavior (VENKATESH ET AL. 2012; MACEDO, 2017; CHOPDAR ET AL. 2018; and ODEI-APPIAH ET AL. 2021). Based on the previous literature, the hypothesis of this research is:

Hypothesis 4: Behavioral intention has a positive impact on use behavior

2.3.5 Direct effect of use behavior on continuance intention

The continuance intention refers to willingness to keep using a certain technology or service. It is perceived that the intention for continuing to use existing technology is a result of subconscious and conscious factors (GOYAL ET AL. 2022). Even though use behavior in general has an important role in continuance intention, several factors, such as increasing costs of accessing digital financial services, decreasing service quality and insufficient digital facility, can affect the continuation of customers use toward Fintech services (KANG ET AL. 2022). Furthermore, the potential uncertainty over long-term risks associated with technology-based financial companies fosters a perception among users that traditional financial services exhibit lower risks due to strong regulatory frameworks and supervisory mechanisms, consequently it enhances user confidence and security, encouraging them to stick with traditional financial services. In this study, continuance intention is measured using user perceptions regarding the willingness to continue utilizing Fintech services compared to alternative products in the future. Previous study conducted by AMOROSO & LIM (2017) revealed that in the absence of significant changes offered by alternative services, individuals tend to continue using the same product or service. Therefore, the hypothesis is:

Hypothesis 5: Use behavior positively impacts continuance intention

2.3.6 Direct effect of use behavior on financial inclusion

Financial inclusion refers to obtaining and utilizing a range of financial products and services to meet individual needs (WORLD BANK, 2018). Optimization of technology to the frontier of access to financial services is supported by various factors such as speed, convenience, and relatively cheaper costs than traditional financial products. Financial institutions providing mobile financial services enable users to conduct financial transactions more quickly and easily through their mobile phones or other digital devices (BARBU ET AL. 2021). Creating low-cost financial products that are accessible to undeserved or unbanked populations in remote areas is possible because it can be accessed using the internet and smartphones, and digital companies do not need to build physical branches that require large investments.

Furthermore, a number of governments, including Indonesia, have also involved Fintech companies to disburse cash transfers to government assistance programs, particularly during the Covid-19 pandemic that requires the distribution of social assistance to be conducted efficiently (OJK, 2020). The use of digital payments allows cash transfers to be directly disbursed to beneficiaries and eliminates a number of potential barriers that may occur. BECK (2020) revealed that cost and risk as the two main barrier factors for financial intermediaries. Cost factor

as a result of the fixed costs of each transaction make financial transactions expensive, while the risks associated with increasing the cost of capital have an impact on loan interest expenses, which under conditions of uncertainty can make it difficult for debtors to make repayments. Furthermore, financial service technologies are transforming the financial industry in a way that can prove to be a bridge to facilitate the growth of financial inclusion for individuals, especially for those who have no access to formal or semi-formal financial services (OZILI, 2018).

CHINODA & MASHAMBA (2021) examined the impact of Fintech, financial inclusion and poverty alleviation in Africa revealed that Fintech has an important role in minimizing the poverty gap and increasing financial inclusion. Several previous studies analyzing the relationship between digital payment and financial inclusion confirmed that Fintech use has an effect on financial inclusion (PHILIPPON, 2019; SENYO & OSABUTEY, 2020; BANNA ET AL. 2021; BANNA ET AL. 2022; MORGAN, 2022). Furthermore, a recent study conducted by ASIF ET AL. (2023) depicted that the presence of digital financial companies has a significant impact on financial inclusion, especially for the middle class in India. The result of this study is in line with the findings of SETIAWAN ET AL. (2023) documented that a growing number of Fintech service providers are increasing women's empowerment through the use of digital financial services. Based on the findings of previous research, the research hypothesis is:

Hypothesis 6: Use behavior positively impacts financial inclusion

2.3.7 Mediating effect of financial literacy on behavioral intention and use behavior

The concept of financial literacy is related to an individual's understanding of basic financial knowledge and principles. The literacy of financial products and services contributes to a high awareness of adopting digital financial services (MORGAN & THINH, 2020). This awareness is perceived that individuals with a high level of financial literacy have the readiness to understand the potential benefits and risks inherent in digital financial products and services, thereby assisting in the decision-making process of using Fintech. In the context of this study, the financial literacy classification refers to the Organization for Economic Co-operation and Development (OECD) in 2016, covering financial knowledge, financial behavior, and financial attitude, as mediating variables between behavioral intention and use behavior toward Fintech services.

2.3.7a Mediating effect of financial knowledge on behavioral intention and use behavior

Financial knowledge includes basic financial concepts such as numeracy skills in a financial context, and it shapes financial decision-making, which is positively correlated with welfare (OECD, 2016). LUSARDI ET AL. (2017) argued that financial knowledge allows individuals to more effectively allocate financial resources, and better propensity to managing

finance (FONG ET AL. 2021). Financial knowledge acquired from childhood can also be an important element in making financial decisions and has the potential to increase well-being as an adult (PANOS & WILSON, 2020). In this study, financial knowledge is applied to measure the level of understanding of the three basic concepts of financial management including compound interest, inflation, and risk diversification (LUSARDI, 2019). Prior literature explained that financial knowledge influenced the adoption of Fintech services (YOSHINO ET AL. 2020). Furthermore, NUGRAHA ET AL. (2022) documented that financial knowledge has a significant impact on technology adoption mediated by user innovativeness. A recent study by ANH & NGUYEN (2022) confirmed that actual financial knowledge has an insignificant impact on Fintech adoption, while perceived financial knowledge has a significant effect on behavioral intention. This study complements the existing literature by analyzing financial knowledge as a mediator between behavior intention and use behavior in adopting Fintech services. Based on the prior study, the following hypothesis is:

Hypothesis 7a: Financial knowledge (positively mediates) the impact of behavioral intention on use behavior

2.3.7b Mediating effect of financial behavior on behavioral intention and use behavior

Financial behavior refers to how an individual allocates and manages his or her finances (OECD, 2016). People with better financial behavior tend to make short and long-term financial decisions that correlate with future well-being. Fintech products and services offer easy, inexpensive and nearly real-time access with the support of advanced technology, while still prioritizing the user's customized needs and providing added value for consumers. The proactive and comprehensive strategy conducted by Fintech companies through compatible applications on multiple devices, offers an opportunity for users to obtain information and optimize financial resources which lead to the benefit of financial health management in the future (ISAIA & OGGERO, 2022). Financial behavior in this study related to spending, bill payments, and long-term financial goals which refer to OECD (2018). Therefore, the ease, speed, and relatively low cost facilitate individuals to use Fintech services. Previous research has depicted that financial behavior influences the use of Fintech services (KADOYA & KHAN, 2020). The following hypothesis is:

Hypothesis 7b: Financial behavior (positively mediates) the impact of behavioral intention on use behavior

2.3.7c Mediating effect of financial attitude on behavioral intention and use behavior

Financial attitude is a set of beliefs, perceptions, and feelings that influence how an individual thinks about money and how they manage it (OECD, 2016). Financial attitude plays a pivotal role in shaping individual understanding of financial products as well as their decision-making process. People with a high financial attitude tend to be open minded towards innovation, and then digital financial products and services offered by Fintech are relatively easier to adopt (YOSHINO ET AL. 2020). In addition, financial attitude also encourages people to continue searching for new solutions to support financial activities to be more effective and efficient while still focusing on calculating risk. Real-time access and personalized financial information through the application helps users to control and evaluates financial activities in the past to support better financial allocation in the future. OECD (2016) explained that individuals who possess positive financial attitude are perceived to have a more informed decision-making capability in comparison to those with lower financial attitude, even though they already have sufficient knowledge about financial products and services. Previous literature found that financial attitude influences the decision to use Fintech services (BOOLAKY ET AL. 2021; FOSTER ET AL. 2022). Therefore, the following hypothesis is:

Hypothesis 7c: Financial attitude (positively mediates) the impact of behavioral intention on use behavior

2.3.8 Moderating effect of facilitating conditions and price value on continuance intention

Inclusive digital infrastructure and affordable access encourage the continuance intentions towards Fintech services. With reliable internet connectivity and wide coverage, everyone can access digital financial services. Facilitating conditions, in terms of educating people on digital financial literacy, and providing a wide and fast internet network, contribute to the continuance intention to use Fintech services. HUMIDA ET AL. (2022) revealed that facilitating conditions have a significant moderating effect on behavioral intention. Furthermore, affordable cost to access Fintech products plays a pivotal role in bolstering the continuance intention toward Fintech services. Indonesian middle-income and price-sensitive Hungarians are increasingly embracing digital financial services as these services become more economically accessible to the majority of the population (GARAI-FODOR ET AL. 2022). Therefore, the following hypotheses are:

Hypothesis 8a: Facilitating conditions (positively moderates) the impact of use behavior on continuance intention

Hypothesis 8b: Price value (positively moderates) the impact of use behavior on continuance intention

2.3.9 Multigroup analysis: Fintech user versus non-user

Users and non-users of Fintech may perceive the impact of using digital financial services differently on the continuance intention and financial inclusion. When people have used Fintech and experienced its benefits, they tend to consider this experience when making a decision whether to keep using it. Those who feel satisfied and have a positive perception of Fintech tend to continue using digital financial services (CHEN & LI, 2017). On the other hand, respondents who do not have experience using digital financial services are more likely to rely on social influences to continue using Fintech. Since they may not have direct experience with Fintech, they rely more on recommendations and experiences from others.

In general, differences in individual perceptions as users and non-users of Fintech can affect the relationship between the use behavior toward continuance intention and financial inclusion. Fintech user tend to make decisions based on their experiences, while non-users may be more influenced by social factors in shaping their intention to use Fintech services in the future. This study fills the theoretical gap documented by TEKA (2020) to gain a deeper understanding of the differences between Fintech user and non-users. By exploring whether there are differences in perceptions between users and non-users of Fintech regarding use behavior towards continuance intention and financial inclusion, this research contributes to existing knowledge in the Fintech field of study. The hypotheses are as follows:

Hypothesis 9a: Use behavior positively influences continuance intention in Fintech users and non-user

Hypothesis 9b: Use behavior positively influences financial inclusion in Fintech users and non-user

2.3.10 Multigroup analysis: Indonesia versus Hungary

Despite the benefits Fintech services offer, respondents from different social and economic backgrounds tend to differ in their perceptions regarding digital financial services (MIGLIORE ET AL. 2022). Compared to Hungary, Indonesia has a younger population and a different culture. In the context of financial literacy, although Indonesia being classified as a middle income country and Hungary as a high income economy, Indonesia was shown to have a higher level of financial literacy with a score of 63.5 in terms of financial knowledge, financial behavior, and financial attitude than Hungary at a score of 58.8 (OECD, 2020). Due to differing social economic circumstances, Indonesian and Hungarian respondents probably perceive the relationship between use behavior toward continuance intention and financial inclusion differently. In addition, a study on differences in influence between developing and developed countries regarding digital financial services completes the scientific gap observed by MERHI

ET AL. (2019) and MIGLIORE ET AL. (2022). Therefore, the author postulates the last hypotheses:

Hypothesis 10a: Use behavior positively impacts continuance intention in Indonesia and Hungary

Hypothesis 10b: Use behavior positively impacts financial inclusion in Indonesia and Hungary

2.4 Organization of the thesis

The first chapter of the thesis provides an introduction to the pivotal role of Fintech services in increasing financial inclusion in Indonesia and Hungary. It also outlines the concern of global leaders to accelerate strategy to strengthen the financial ecosystem in providing financial products and services, followed by the research problems and the significance of the study. In the second chapter, the research objectives are presented, along with research questions and hypotheses. The third chapter includes a literature review on the development in finance, driver and barrier factors in adopting digital finance and the role of Fintech in advancing financial inclusion in Indonesia and Hungary.

Chapter four of the thesis outlines the research methodology, including the research design, approach, and strategy. It also describes the data collection and research instrument used, including the research questionnaire design, scale and content validity. Additionally, the conceptual model of the thesis is presented in this chapter, along with details on the population, sample, and data analysis. In chapter five, the results and discussion of the study are presented, and followed by conclusions, implications, and recommendations in chapter six. New scientific results and summary of the research are discussed in chapter seven and eight. Finally, chapter nine and ten provide a reference and appendices.

III. LITERATURE REVIEW

3.1 Digitization in finance

The integration of technology and financial services (Fintech) has a long history. ARNER ET AL. (2016) explained the evolution of Fintech services in four periods. First, the transatlantic telegraph cable was constructed from 1854 to 1858 to support the telecommunications system. However, the deterioration in signal quality and unstable transmission speed are obstacles that cause failure. Second, the development of technology and digital communication in 1967 was marked by the beginning of the automated teller machine (ATM) operation by Barclay bank in London (NICOLETTI, 2017). The years 1967 to 2008 were known as the Fintech 2.0 period. Fintech 3.0 was driven by the emergence of start-up companies in the financial sector that provide financial services to the public. Currently, Fintech has entered the fourth phase (Fintech 4.0). This period begins with the emergence of a giant financial platform (Bigtech) created by large Fintech companies and incumbent digital financial corporations. Fintech 4.0 started in 2019 and is predicted to provide access to a wider range of financial services and grow sustainably (ARNER ET AL. 2022).

Nowadays, Fintech is growing and evolving. The growth of the Fintech industry was driven by massive investment in the digital financial services sector. The Fintech industry has managed to attract the highest investment in history in 2021, reaching approximately US$226 billion across 7,321 deals, before decreasing by 30 percent in the following year to US$164 billion with 6,006 deals (KPMG, 2023). The Covid-19 pandemic and increasing global geopolitical tensions have caused uncertainty in the economic circumstance which has had an impact on investment decisions in almost all industries, including Fintech. Economic turbulence and international geopolitical uncertainty are predicted to continue in 2023, causing the World Bank to slash its economic growth projection from 3 percent to 1.7 percent. In the midst of the global economic crisis, KPMG (2023) reported that regulatory technology (Regtech) is the Fintech sub-sector that gains investor attention and reaches a record high investment in 2022 of US$18.6 billion. According to the World Economic Forum (2022), Regtech involves the application of new technologies to assist highly regulated companies in creating, implementing and fulfilling governance, reporting, compliance and risk management procedures. As regulatory compliance requirements of digital financial companies become more stringent, it is encouraging companies to invest in Regtech as part of an ongoing effort to improve regulatory compliance.

Surging investment in Fintech enables digital financial companies to evolve in developing products to meet consumers' needs, improve financial inclusion and access to financial products. The evolution of Fintech products and services is manifested in vertical and

horizontal developments. The vertical expansion of the Fintech sector is evident through the emergence of various innovative digital financial products and services. Fintech, which was initially dominated by digital payment services, has now developed by penetrating the market to almost all financial products, including digital financial advisory services (robo-advisors) and cryptocurrencies (ALLEN ET AL. 2022). Meanwhile, the horizontal evolution of Fintech is marked by the integration of digital financial services with various companies in multiple industries (S&P GLOBAL, 2023). The development of digital financial services, through integration with both the financial and non-financial sectors, has transformed the financial industry ecosystem, enabling the delivery of tailored financial products that provide added value based on customer preferences.

The change in the financial landscape has been closely correlated with the growth of global Fintech investment activities over the past decade. Fintech has experienced remarkable growth over the past few years, attracting significant investments from both established financial institutions and venture capitalists. Figure 1 presents the global investment activity in the Fintech industry over the last 10 year from 2012 to 2022.

Figure 1. Global investment in Fintech ($ billion)

Source: own elaboration based on KPMG (2023)

Overall, Fintech investment has experienced significant growth, averaging around 56 percent annually for a decade. The highest investment growth occurred in 2018 of 215 percent, from $38 billion in 2017 to $120 billion in 2018, driven by substantial investment of $17 billion by the private equity firm Blackstone in Refinitiv, and the acquisition of WorldPay by Vantiv around $14 billion (KPMG, 2019). Significant investment growth represents a huge opportunity for the future digital financial industry, before the unprecedented event, the Covid-19 pandemic

caused investment in Fintech services to slump from $215 billion in 2019 to only $127 billion in 2020, or decrease 41 percent.

In addition to changes in the economic landscape and technological developments, shifting customer expectations of those who want financial products according to personal needs have become an important factor in the development of the digital financial industry (ARJUNWADKAR, 2018). The presence of Fintech services by bringing financial transformation is an important attribute for the needs and styles of modern society. The features and functions of innovative financial products and services that can be accessed through multiple devices from anywhere and at almost any time provide convenience while also having the potential to increase the expansion of access to financial products. The expansion of financial inclusion to all people is in line with several United Nations Sustainable Development Goals (UN SDGs) programs.

Fintech also contributes to democratizing finance in various industries, including providing products and services to all levels of society in rural and urban areas (OZILI, 2018; NATHAN ET AL. 2022; LUO ET AL. 2022). The growth of the technology-based financial sector is driven by various advantages over conventional financial services, including relatively low costs, near real-time business process, and 24-hour operations (MOUFAKKIR & MOHAMMED, 2020). Furthermore, the convenience of using Fintech services is also strengthened by government intervention in making regulations and establishing infrastructure, both expanding the internet network and accelerating the speed of internet access (MEJIA-ESCOBAR ET AL. 2020; CHINNASAMY ET AL. 2021).

3.2 Unified Theory of Acceptance and Use of Technology 2 (UTAUT2)

Theoretically, technology adoption can be traced back to the TAM introduced by DAVIS (1989). The TAM analyzes the relationship between perceived usefulness and perceived ease of use and an individual's intention to adopt new technology. With its origins in the early 1990s, TAM has successfully become a leading theory and used by most literature for explaining technology adoption, for example digital financial services (SETIAWAN ET AL. 2023), peer-to-peer lending (PUTRI ET AL. 2023), and cryptocurrencies (CHEN ET AL. 2022). However, this theory primarily addresses individual aspects and may not sufficiently encompass broader dimensions of technology adoption. Besides that, the increasing number of technology users has attracted the attention of academics to develop novel theoretical frameworks aimed at comprehensively understanding the technology adoption drivers. The intention to find new approaches is driven by evolving consumer behavior. SAHI (2021) argued that one theory often falls short in explaining technology adoption due to its inherent complexity.

As consumer behavior changes, several of technology acceptance models have been developed. VENKATESH & DAVIS (2000) extended the TAM model by adding new variables such as social influence and cognitive instrumental process, known as TAM2. The empirical finding proves that social variables (subjective norm, voluntariness, and image), and cognitive (job relevance, output quality, result demonstrability, and perceived ease of use), have a significant impact on technology adoption (KAJOL ET AL. 2022). As a result, several theories related to technology adoption began to emerge and it was encouraged to combine these theories and develop a unified theory of acceptance and use of technology (UTAUT) (VENKATESH ET AL. 2003).

The UTAUT is a technology adoption theory developed from eight theories, including reason action theory (FISHBEIN & AJZEN, 1975), TAM (DAVIS ET AL. 1989), theory of motivation model (DAVIS ET AL. 1992), planned behavior theory (AJZEN, 1993), a combination of TAM and planned behavior theories (TAYLOR & TODD, 1995), models of personal computer utilization (THOMPSON ET AL. 1991), theory of innovation diffusion (ROGERS, 1995), and social cognitive theory (BANDURA, 1999). The UTAUT model is often applied to organizational and non-organizational settings. Empirical testing of the UTAUT model using performance expectancy, effort expectancy, social influence, and facilitating conditions indicates an increase in variance in the adoption of new technology. More specifically, UTAUT can explain 70 percent of the variance in behavioral intentions toward technology adoption and 50 percent of the variance in technology use (VENKATESH ET AL. 2003).

As a result, UTAUT attracts researchers to apply and modify the model for various research objectives in order to explain variations in technology adoption. However, VENKATESH ET AL. (2003) argued that it is necessary to develop a systematic model, especially focusing on technology adoption for individual users. VENKATESH ET AL. (2007) modified the UTAUT model by adding two new theories related to psychology (planned behavior theory) and organizational behavior (job satisfaction theory). Furthermore, VENKATESH & BALA (2008) expanded TAM2 by emphasizing individual differences and considering contextual factors such as system characteristics. Then, VENKATESH ET AL. (2012) developed a technology adoption model by adding three new variables: hedonic motivation, price value, and habit, known as UTAUT2. Table 2 presents a summary of the underpinning theories related to technology adoption.

Table 2. Underpinning theories on technology adoption

No	Theory / Model	Symbol	Author(s)	Measures	Evolution
1	Technology Acceptance Model	TAM	Davis et al. (1989)	PU, PEU, BI, UB	TAM served as the foundation to explain technology adoption with two primary factors: perceived ease of use and perceived usefulness
2	Technology Acceptance Model2	TAM2	Venkatesh & Davis (2000)	PU, PEU, SN, IM, JB, OQ, RD, BI, UB	TAM2 aimed to address some limitations of the original TAM by integrating additional factors such as social influence and cognitive instrumental processes
3	Unified Theory of Acceptance and Use of Technology	UTAUT	Venkatesh et al. (2003)	PE, EE, SI, FC, BI, UB	UTAUT was developed to provide a more comprehensive understanding of technology adoption, incorporating the importance of social dimensions, for example social influence
4	Technology Acceptance Model3	TAM3	Venkatesh & Bala (2008)	PU, PEU, ID, SC, SI, FC, BI, UB	TAM3 builds upon the foundation of TAM and TAM2 by emphasizing individual differences and considering contextual factors such as system characteristics
5	Unified Theory of Acceptance and Use of Technology2	UTAUT2	Venkatesh et al. (2012)	PE, EE, SI, FC, HM, PV, HB, BI, UB	UTAUT2 expanded the original UTAUT model by recognizing the role of emotions, price perception, and habitual use in technology adoption
6	Combine UTAUT2 and Leverage Prospect Theory	UTAUT2-LPT	Goyal et al. (2022)	HB, TR, VSQ, CSQ, CI	UTAUT2-LPT integrated UTAUT2 with conscious motivations (value of status quo and commitment to status quo) to comprehend the understanding of users' intentions to continue using a technology

Measures: Behavioral intention = BI, Commitment of status quo = CSQ, Continuance intention = CI, Effort expectancy = EE, Image = IM, Facilitating conditions = FC, Habit = HB, Hedonic motivation = HM, Individual differences = ID, Job relevance = JR, Output quality = OQ, Perceived ease of use = PEU, Perceived usefulness = PU, Performance expectancy = PE, Price value = PV, Result demonstrability = RD, Social influence = SI, Subjective norm = SN, System characteristics = SC, Use behavior = UB, Value of status quo = VSQ

The empirical test results of UTAUT2 indicate that this model explained 74 percent of the variance in behavioral intentions, compared to 56% for UTAUT. The high variance of the UTAUT2 model in explaining behavioral intention and technology use encourages many researchers to adopt the theory to several specific topics. For example digital payment (DARAGMEH ET AL. 2021; YANG & ZHANG, 2022; SEBASTI´AN ET AL. 2023;

SETIAWAN ET AL. 2023), home-sharing platform (NATHAN ET AL. 2020; NAJIB ET AL. 2021), mobile shopping (CHOPDAR ET AL. 2018; HANIF ET AL. 2022), E-Grocery Shopping (DROOGENBROECK & HOVE, 2021), fitness center apps (BARBOSA ET AL. 2021), travel mobile applications (MEDEIROS ET AL. 2022), telemedicine (JEWER, 2018; QUAOSAR ET AL. 2018; SCHMITZ ET AL. 2022), Islamic digital payment (AZMAN & ZABRI, 2022), internet banking (NIKOLOPOULOU ET AL. 2021; THAKER ET AL. 2022; SAXENA ET AL. 2023), and robo-advisors in Fintech (BRENNER & MEYLL, 2020; NOURALLAH, 2023; ROH ET AL. 2023). Recent studies conducted by BAJUNAIED ET AL. (2023) evaluating Fintech adoption drivers using UTAUT2 in Saudi Arabia revealed that behavioral intention is influenced by performance expectancy, effort expectancy, facilitation condition and privacy. In addition, behavioral intentions towards digital Islamic banking are significantly influenced by social influence, facilitating conditions, the price, and perceived credibility (HASSAN ET AL. 2023).

Although the seven constructs developed in the UTAUT2 model can explain significant variance in behavioral intention for Hong Kong respondents, some existing literature indicated inconsistent results when respondents were from different social and economic backgrounds. According to BOONTARIG ET AL. (2012) and HASSAN ET AL. 2023, performance expectancy has no significant effect on behavioral intention for Indonesian and Bangladeshi respondents. The findings of JEWER (2018) and NAJIB ET AL. (2021) demonstrated no significant correlation between effort expectancy and Fintech adoption. In England and Saudi Arabia, social influence has been shown to be insignificant in explaining technology adoption (DE VEER ET AL. 2015; MERHI ET AL. 2019; and BAJUNAIED ET AL. 2023). Using Bangladesh and Jordan respondents, QUAOSAR ET AL. (2018) and AL-OKAILY ET AL. (2020) have found that the relationship between facilitating conditions and behavioral intention is not significant. Hedonic motivation and behavioral intention found no significant relationship in Sweden's sample (NOURALLAH, 2022). Finally, PLENDER ET AL. (2020) also reported that habit and behavioral intention are not significantly related for Filipino respondents.

Considering a conflicting results and different dataset, therefore, this study will employ the UTAUT2 model to explain the behavioral intention toward Fintech adoption in Indonesia and Hungary with several considerations; first, UTAUT2 is a combination of various theories and is able to explain a higher variance of technology adoption than UTAUT (VENKATESH ET AL. 2012); second, the UTAUT2 model provides consistent analysis results for various constructions of technology adoption variables (AL-SAEDI ET AL. 2020); and finally BIN-NASHWAN (2020) documented that the UTAUT2 model, which is recognized and widely used, has emerged as a major theoretical framework for comprehensively evaluating behavioral intention and use behavior across a wide range of technology adoption aspects.

3.3 Innovation Resistance Theory (IRT)

Even though Fintech offers many advantages over traditional financial services, people are not switching directly to digital finance. ERNST & YOUNG (2019) published a global Fintech adoption index and revealed that China and India are the two countries with the highest Fintech adoption rates, at 87 percent. Meanwhile among 100 populations in Japan, only 34 of them have adopted digital financial services, making it the country with the lowest Fintech adoption rate compared to the other 26 countries included in the analysis. The adoption of Fintech services faces several inhibiting factors arising from diverse aspects, including financial risk, legal uncertainty, security and privacy, and the operating system of Fintech companies which are considered unreliable (RYU, 2018). In addition, norms and habits in society may also inhibit the adoption of technology adoption (CHEN ET AL. 2022). In Indonesia, cost and security issues become the main inhibiting factors for Fintech adoption (BCG, 2023) while (MNB, 2021) reported that the financial companies experience relatively insignificant operational development, which can be attributed to the slow adoption of digital financial services in Hungary.

The innovation resistance theory is often considered as one of the most important references for examining the factors that impede the adoption of new technologies. As a pioneer of the theory, RAM (1987) defined innovation resistance as individual resistance to adopt a new innovation. Two years since the first theory was published, RAM & SHETH (1989) developed the theory by evaluating the factors of user resistance to innovation with two main categories, namely functional barriers and psychological barriers. Functional barriers occur due to limitations associated with the adoption of new technologies caused by perceived potential losses or difficulties in using digital financial services, such as cost, risk, complexity, and lack of infrastructure support to access Fintech services. Meanwhile, psychological barriers come from internal individuals which are often associated with attitudes, traditions, perceptions, and emotions that shape their willingness to adopt a new technology. In this study, tradition and image barriers are considered as psychological barriers to technology adoption. Currently, innovation resistance theory has been widely applied to examine the barrier factor to technology with four main variables, including value barrier, risk barrier, tradition barrier, and image barrier (USAI ET AL. 2021; OGUNTEGBE ET AL. 2022; THOMPSON & RUST, 2023).

The individual resistance to adopt technology can be categorized into two types, namely active resistance and passive resistance. KLEIJNEN ET AL. (2009) described active resistance as the formation of negative attitudes triggered by functional and psychological constraints toward new innovations. Meanwhile, passive resistance is considered as the tendency of individuals to reject new technologies, even before trying (TALKE & HEIDENREICH,

2014). Lack of individual enthusiasm to integrate innovation into daily life is also considered as passive resistance. Passive resistance occurs because it is triggered by various factors such as self-satisfaction with the current use of digital financial services, fear of adaptation and changes that might be attached to digital financial services. HEIDENREICH & HANDRICH (2015) explained that rejection of new technology usually occurs because users are not interested or feel uncomfortable with the changes caused by the presence of the new technology.

The innovation resistance theory sheds light on the notion of the inhibiting factors for adoption of new technologies by examining different perspectives (MA & LEE, 2019). In this study, innovation resistance theory serves as important variables to expand the perspectives of established technology adoption theories such as TAM and UTAUT2. Previous empirical studies have shown that innovation resistance theory has a negative impact on technology adoption (LAUKKANEN, 2016; CHEN ET AL. 2018; CHUNG & LIANG, 2020; KAUR ET AL. 2020). Recent study by MIGLIORE ET AL. (2022) compared Fintech adoption in China and Italy revealed that traditional barriers hinder financial technology adoption in both countries. The research findings also explained that social influence plays an important role in the resistance to the adoption of digital financial services in Italy, whereas consumers in China considered tradition to be the most significant barrier to the adoption of Fintech services.

However, the importance of understanding individual perceptions of barriers to technology adoption has only attracted a small number of researchers, particularly in the field of digital finance (PANKOMERA & GREUNEN, 2019; MOGHAVVEMI ET AL. 2021; IMAM ET AL. 2022). To the best of the author's knowledge, this study will be the first scientific work comparing drivers and barriers of Fintech adoption in Indonesia and Hungary. To fill this gap, this study combines UTAUT2 as drivers and IRT as barriers to Fintech adoption in Indonesia and Hungary. Furthermore, most previous studies have focused exclusively on Fintech adoption (JÜNGER & MIETZNER, 2020; SETIAWAN ET AL. 2021; XIE ET AL. 2021; YAN ET AL. 2021; NATHAN ET AL. 2022; SETIAWAN ET AL. 2023). Few studies draw attention to the barrier factors in adopting Fintech services (ARIF ET AL. 2020). Even fewer studies focus on analyzing drivers and barriers in order to complement financial technology adoption information (MIGLIORE ET AL. 2022). Therefore, identifying the driving and inhibiting factors of technology adoption can provide in-depth information and understanding that can lead to the increased adoption of digital finance.

3.4 Socio-Demography in Indonesia and Hungary

Indonesia and Hungary display various similarities and differences across multiple dimensions, including their economies, cultural attributes, and internet accessibility. These

distinctions and commonalities contribute to the unique characteristics and dynamics of each country, therefore making them interesting subjects for study and analysis. Table 3 presents similarities and differences between Indonesia and Hungary.

Table 3. Feature comparison between Indonesia and Hungary

	Dimensions	**Indonesia**	**Hungary**	**Source**
Similarities	Mobile cellular per 100 people in 2022	+100%		WORLD BANK (2023b)
	Long term orientation	Pragmatic orientation		HOFSTEDE ET AL. (2010)
	Indulgence	Restrained societies		HOFSTEDE ET AL. (2010)
Differences	Region	Southeast Asia	Eastern Europe	GLOBAL FINANCIAL INDEX (2022)
	Population in 2022	275.501.340	9.683.500	WORLD BANK (2023c)
	Individualism	Collectivist society	Individualist society	HOFSTEDE ET AL. (2010)
	Country group in 2022	Upper middle income	High income	WORLD BANK (2023a)
	Gross National Income (GNI) per capita (2022)	USD 4.580	USD 19.010	WORLD BANK (2023a)
	Financial inclusion in 2021	52%	88%	GLOBAL FINANCIAL INDEX (2022)
	Digital quality of life rank	67	34	SURFSHARK (2023)
	Internet quality rank	90	15	SURFSHARK (2023)
	Internet affordability rank	90	59	SURFSHARK (2023)
	Electronic security rank	61	24	SURFSHARK (2023)
	Internet users penetration in 2022	66%	90%	WORLD BANK (2023d)

In detail, both countries have mobile phone penetration rates that exceed 100 percent, indicating that individuals may own more than one mobile phone. From a long-term orientation perspective, both countries are classified as having a pragmatic culture, where people aim to secure a better future for young generations by promoting saving and increasing investments in education. Indonesia and Hungary are also categorized as restrained societies in terms of the indulgence dimension, with individuals of this characteristic feeling that social norms limit their behaviors, leading to feelings of guilt when they indulge themselves (HOFSTEDE ET AL. 2010).

Despite some similarities, Indonesia and Hungary have several differences. A significant difference can be seen in Indonesia's population of more than 275 million compared to around 10 million in Hungary. In Indonesia, people tend to identify themselves primarily as members of a group before considering their individuality, known as a collectivist society, in contrast to Hungary with individualist characteristics. Furthermore, Hungary's economy is more advanced than Indonesia, as illustrated from income per capita and access to financial services. Hungary is classified as a high-income country with a financial inclusion level of 88%, compared to Indonesia, which is at 52% and is classified as a middle-income country. Hungary also has better quality internet access than Indonesia, ranking 15th and 90th out of 130 countries based on digital quality of life (Surfshark, 2023).

In addition, the population growth trends of a country are important when planning and implementing development policies. Forecasts regarding changes in population distribution and future prospective trends play pivotal role as a reference for policy formulation and strategic decision making at various micro and macro levels, such as savings, consumption, asset values, and economic growth, including expanding and increasing access to digital financial services (BLOOM & LUCA, 2016; SHARMA & CHANGKAKATI, 2022). The government relies on population data to determine community needs in the future, which makes it possible to formulate a comprehensive and strategic plan to develop digital infrastructure. For example, the development of hard and soft infrastructure, such as internet networks, and financial literacy education programs that can then be optimized by Fintech companies to increase financial inclusion through digital financial services by expanding access and services to a broader community.

Indonesia and Hungary are developing economies in Asia and developed countries in Europe which have different population growth trends. While Indonesia is experiencing positive growth, Hungary has a declining birth rate, similar to other typical developed nations. According to the World Bank, Indonesia's population has reached over 275 million people by 2022, an increase of 207 percent in six decades, since 1960. The population growth rate in Indonesia is

inversely proportional to Hungary in the same period. Hungary's population reached 9.6 million in 2022, compared to nearly 10 million in 1960, or a decrease of around 2.3 percent over 60 years. The largest population decline in Hungary occurred between 1988 and 1989 reaching -1.1 percent, compared to Indonesia which continued to experience positive growth, an average of 1.9 percent per year for 60 years.

The increasing population trend in developing countries is influenced by various factors such as high birth rates, declining mortality rates, and limited access to family planning program, while population aging, increasing female labor force participation and changes in migration patterns are the dominant variables as obstacles to population growth in developed countries (BLOOM & LUCA, 2016; WORLD BANK, 2019). A recent study by ABELIANSKY & PRETTNER (2023) analyzed the relationship between population growth and technology adoption in 60 countries revealed that there was a negative relationship between the percentage of population growth and the degree of technology adoption.

The population based on age group and generation cohort in Indonesia and Hungary shown in Figure 2, displays that a large portion of the Indonesian population is dominated by the generation Alpha, aged between 0 to 17 years, while generation X (39-54 years) is the largest age group in Hungary of 23 percent in 2022. In general, the proportion of the working age population, especially those aged 18 to 65 years, displays relatively similar figures between Indonesia and Hungary, which are 68 percent and 66 percent, respectively. The productive age which includes four different generations, such as the boomer, X, millennial and Z generations, have different habits and behaviors in adopting new technology (ALKIRE ET AL. 2020).

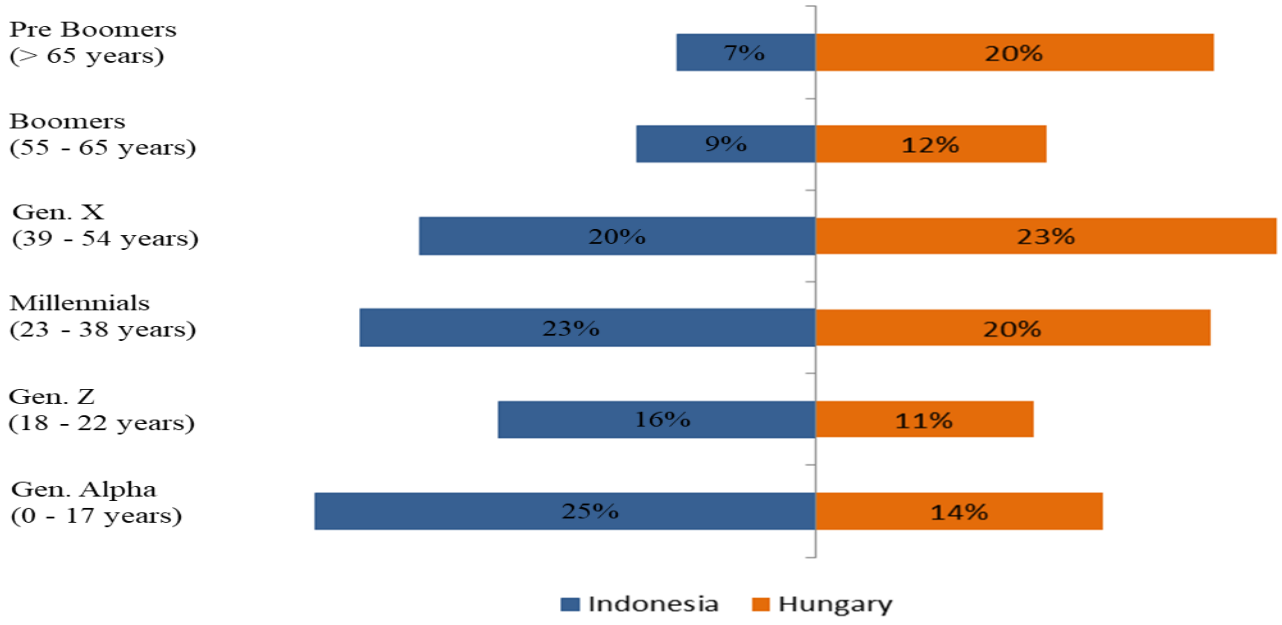

Figure 2. Demography in Indonesia and Hungary

Source: own elaboration based on United Nations (2022)

The younger generation, such as the millennial and Z generations, tends to have higher technological literacy and inclusion than the boomers and X generations (LEI ET AL. 2023). In detail, CALVO-PORRAL & PESQUEIRA-SANCHEZ (2019) explained that the younger generation is more likely to use technology for entertainment and shopping, while the older generation embraces it to gain information. Disparity in technology adoption across age groups present a challenge for the government to plan strategies that can be implemented, including providing technology literacy programs, impacting Fintech companies to create financial service products according to the needs and profiles of users from different generations.

3.5 Infrastructure to access digital financial services

The proliferation of the internet network and the growing popularity of smartphone users have accelerated the development of the digital finance industry. Indonesia and Hungary have tremendous resources in promoting digital financial services supported by technology advancement in both countries. The penetration of the internet network has reached almost all urban and rural areas, enhancing growth in internet users in Indonesia and Hungary. Indonesia's internet penetration rate is at 62 percent in 2021 and it experienced very significant growth for a decade, from 12 percent in 2011. Hungary as a high-income country has a higher internet user penetration of around 88 percent in 2021. The number of people using the internet in Hungary has increased by 3 percent per year in a decade and the internet penetration rate is predicted to continue to increase in the future. Overall, Internet users in Indonesia are almost the same as the average internet user in the world, while Hungary has a much higher number of users than Indonesia and the world (WORLD BANK, 2022), as presented in Figure 3.

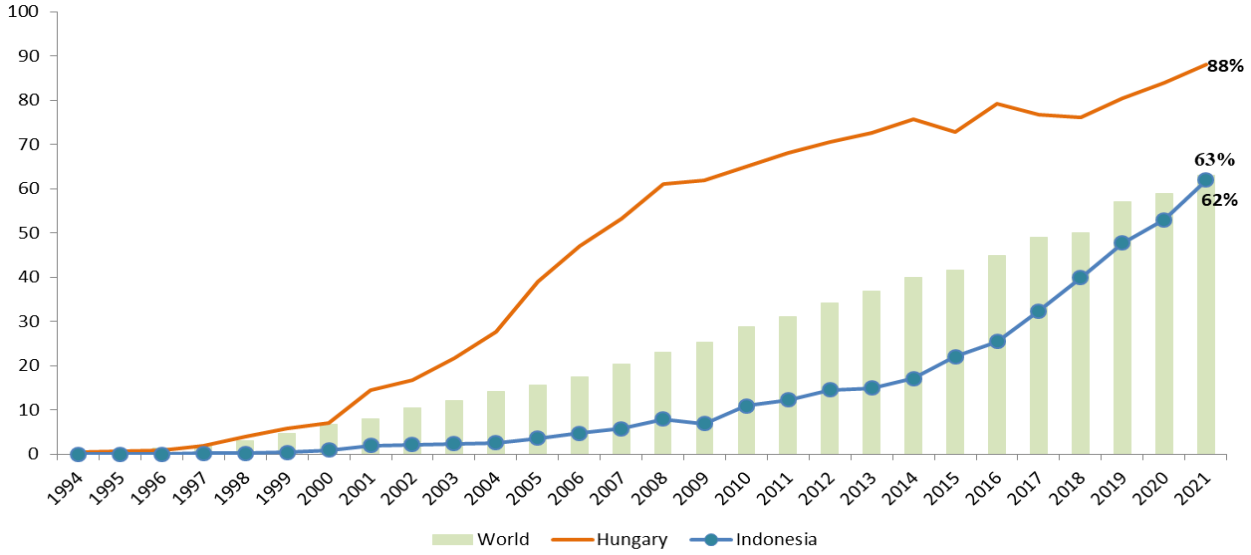

Figure 3. Internet users in Indonesia and Hungary

Source: own elaboration based on World Bank (2022)

The availability of broadband networks has a beneficial attribute to the adoption of digital finance and innovation (HUI ET AL. 2023). Therefore, ensuring the internet infrastructure availability through affordable and high quality broadband access in both rural and urban areas of Indonesia and Hungary becomes a crucial factor in narrowing the digital divide between these regions. In addition, to bridge equal access to digital financial services, the government also needs to provide internet literacy, especially for the older generation who tend to experience obstacles in technology adoption (WORLD BANK, 2022). WORLD BANK (2022) reported that most Indonesians access the internet via mobile phones, encouraging the government to conduct multi-sector transformations to be connected to digital, including unlocking opportunities to adopt digital financial services.

Furthermore, Indonesia and Hungary continue to experience significant growth in smartphone penetration. By the year 2021, smartphone user in Indonesia has increased significantly to 210 million users, equivalent to approximately 76 percent of the overall population and the smartphone penetration is estimated to reach about 87 percent of the total population in 2025 (STATISTA, 2022a). The number of smartphone users in Indonesia has grown more than tripled compared to 2015 (55 million users). In Hungary, smartphone user penetration has reached 74 percent in 2021 compared to below 50 percent in 2016. The number of smartphone user penetration rate is forecasted to continue to grow and achieve 80 percent in 2025. As a comparison, the smartphone penetration rate in Indonesia and Hungary exceeds the global average of 67 percent in 2021 (STATISTA, 2022).

The upward trend in smartphone and internet usage allows people to engage in digital financial transactions from everywhere and almost real time. This shift towards non-cash services is expected to accelerate and streamline various financial activities, ultimately leading to cost reductions for both consumers and financial service companies in the short and long term. For example, collaborative works between the government and financial institutions in facilitating the digitization of financial services by simplifying regulations related to opening securities accounts have encouraged increased involvement of young investors in the Indonesian capital market. In Hungary, the majority of Fintech companies are small businesses, and most of these micro-enterprises have achieved profitability with a total of around 8,000 employees by 2021 (MNB, 2022). In the long run, the benefit of financial services access has been proved to reduce poverty levels in rural communities in Egypt and China (KHEIR, 2018; WANG & HE, 2020) and reduce income disparities in 116 developing countries worldwide (OMAR & INABA, 2020).

3.6 The government role in accelerating digital financial access

As smartphones become more widely used and internet access becomes more affordable, the government needs to play an active role in regulating the digital financial ecosystem to ensure sustainable growth. For example, Fintech services grew in Indonesia after the government, through Bank Indonesia, issued regulations on digital financial services in 2016. Since then, there has been a tremendous growth in Fintech services, with growth occurring at an exponential rate each year. In 2021, Fintech companies received investment around USD 940 million, or 26 percent of all Fintech financing in Southeast Asia, of USD 3.5 billion (EAST VENTURES, 2022). The venture capital company, East Ventures predicted that Indonesia's Fintech sector will expand substantially in the coming years to meet the growing demand for domestic digital financial services as the population increases to approximately 300 million in the next few years, including the possibility of providing financial access to 100 million unbanked people. BCG (2023) forecasted Indonesia's digital financial services will have annual growth at the rate of 26% between 2020 and 2025.

The Indonesian government has continued to maintain the stability and growth of the digital financial sector during the Covid-19 pandemic. In response to the spread of Covid-19, the government has implemented a large-scale social restriction policy, causing a slowdown in the domestic economy, including Fintech services, which have the potential to default on debtors due to economic uncertainty. Because of the uncertainty situation and strategy to accelerate the cash transfer program as part of the social security net program, the Indonesian government has decided to partner with Fintech companies in providing digital financial solutions in order to boost economic recovery by facilitating digital transfers of social security funds directly to beneficiaries, particularly people in urban and rural areas who are unable or limited to access the traditional banking. Indonesia's latest support for the Fintech industry is the provision of authorization for cryptocurrency transactions by the Commodity Futures Trading Regulatory Agency (Badan Pengawas Perdagangan Berjangka Komoditi / Bappebti), creating an opportunity for crypto startup companies like Tokocrypto, Pintu, and others to develop the crypto market in Indonesia (BCG, 2023).

In Hungary, the development of digital financial services has already begun, while there is still much room for improvement. Digitalization of the banking sector, for example, should make it easier for people to save and borrow money by utilizing digital platforms. According to DELOITTE (2018), the Hungarian banking sector's digitization is relatively low compared to other European countries such as Poland, Spain, and the Czech Republic. Availability of financial services in digital platforms, user experience with digital interfaces, and coherence between customer expectations and technological improvements are some of the challenges that

hinder the adoption of digital banking in Hungary. However, the Covid-19 pandemic, although it negatively impacted the revenue of Fintech companies, was able to increase the number of Fintech user significantly and could be a catalyst to encourage financial sustainability and inclusion in Hungary (MNB, 2021).

The contribution of the Hungarian government to the development of the digital financial industry is through facilitation of regulation for digital payment companies, building a regulatory sandbox, and providing tax incentives (EUROPEAN BANK, 2021). As part of a government initiative to facilitate communication and coordination between government agencies and digital financial actors in Hungary, the Hungarian government created the Innovation Hub in 2018. It is essential to develop digital financial companies in Hungary, including establishing regulations on Fintech services. Furthermore, MNB has published an annual report regarding the growth of the Hungarian digital financial industry, which has been a strategic step for accelerating the process of digital transformation for financial institutions since 2020. The progressive and participatory policies of the Hungarian government have encouraged the growth of the digital financial sector, with 146 Fintech companies. One strategy to boost growth in the digital financial sector in Hungary is to promote the expansion of incumbent financial companies, which can be done by starting new financial startups or by acquiring domestic Fintech companies. In addition, Fintech business in Hungary also experienced steady growth in 2021, reaching HUF 170 billion in revenue with a profitability ratio of 9 percent (MNB, 2022).

This success story in the Indonesian and Hungarian Fintech sector is closely tied to the broader digitalization efforts within the countries. An increase in mobile internet access speed demonstrates the commitment of the governments of Indonesia and Hungary to support the accelerated growth of the digital economy. Figure 4 depicts internet access speeds in Indonesia, Hungary, and several neighboring countries as of April 2023. According to OOKLA (2023), mobile internet access speed in Indonesia increased from 17.23 megabits per second (mbps) in August 2020 to 22.08 mbps. Indonesia has increased its internet access speed by 29 percent over the last four years, but still lags behind neighboring countries in Asia, such as Thailand and Malaysia, which have internet speeds of 39.46 mbps and 48.18 mbps, respectively, encouraging the government to create a strategic plan to boost internet speed so that opportunities for optimizing the digital economy can be achieved. Meanwhile, the access speed in Hungary has continued to grow, reaching 44.08 mbps by 2023, but is still below the access speed of Slovakia and Austria (OOKLA, 2023), as illustrated in Figure 4.

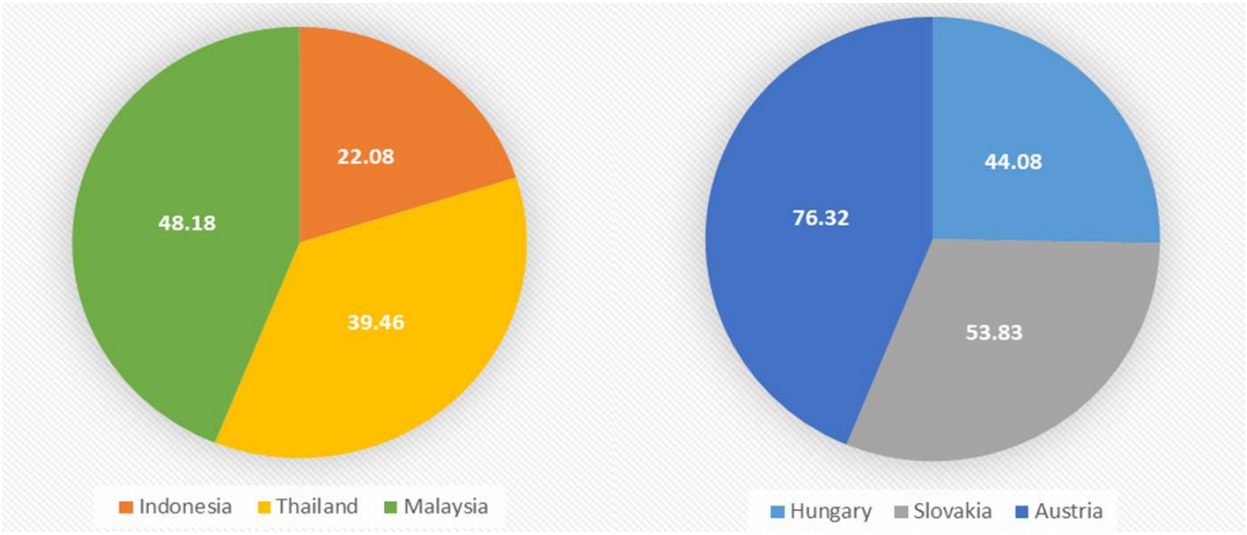

Figure 4. Mobile internet speed in Indonesia, Hungary and neighboring countries

Source: own elaboration based on Ookla (2023)

3.7 Financial literacy and access to finance

Aside from ensuring hard infrastructure is in place to support digital finance, such as internet access, the government should also provide education regarding financial literacy as an integral part of fostering a strong digital culture and ecosystem. The integration and easy access to financial services through multiple electronic devices have become a necessity for modern society, with urban people in particular experiencing a daily lifestyle that is based on these devices. In addition, the presence of digital financial services not only provides benefits, but also inherent potential risks related to compromised data security, fraud and scams, cyber security risks and others. A digital financial literacy level in the digital era will prevent potential data misuse and allow individuals to understand the risks and returns of financial products, which is an important factor in utilizing Fintech services, and impact on increasing individuals' financial independence and responsibility (KUMAR ET AL. 2023).

Several studies have defined financial literacy, such as LUSARDI & MITCHELL (2014) described financial literacy as a person's ability to process economic information and make informed decisions about financial planning, wealth accumulation, and retirement planning. According to WORLD BANK (2012), financial literacy means individual ability to make properly informed financial decisions that improves chances of having sound financial management. Furthermore, BARAJAS ET AL. (2020) associated financial literacy with an understanding of basic financial concepts and information. In this study, financial literacy refers to the OECD (2016), which defined financial literacy as a comprehensive combination of awareness, knowledge, skills, attitudes, and behaviors that are indispensable to making prudent financial decisions and ultimately achieving personal financial well-being.

Understanding concept, attitude, and behavior regarding basic financial information benefit various aspects. LUSARDI (2019) found that financial literacy impacts investment and saving behavior. Other studies revealed that financial literacy helps in increasing individual awareness to adopt and use Fintech services (MORGAN & TRINH, 2020), having a significant impact on retirement planning (SAFARI ET AL. 2021), promoting financial well-being, financial inclusion and economic growth (KHAN ET AL. 2022; PASA ET AL. 2022). However, financial illiteracy has negative consequences for individuals and global financial resilience (OECD, 2009). According to the WORLD BANK (2014), the 2008 global financial crisis provided lessons about the crucial role of low financial literacy as one of the consequences of the crisis.

Although financial literacy has become an increasingly important variable for the future financial well-being, it has not yet been recognized by everyone. The lack of financial literacy is caused by socio-demographic differences, such as income and education level (WAGNER, 2019), marital status (GARG & SINGH, 2018), and saving behavior (BANGCO ET AL. 2022). In order to develop financial habits that will lead to increase financial literacy, parent involvement is essential during childhood and adolescence (WHITEBREAD & BINGHAM, 2013). In addition, BONGOMIN ET AL. (2018) explained that establishing a financial education platform and workshops and seminars need to be carried out to help illiterate people gain basic financial knowledge that will affect the financial decision-making process in the future. HAUFF ET AL. (2020) emphasized the integration of government policies on financial education in various phases that impact individual financial health provides a crucial step in addressing the financial well-being of citizens. These policies play a pivotal role in enhancing financial literacy, as shown by Figure 5, which presents financial literacy scores in both Indonesia and Hungary.

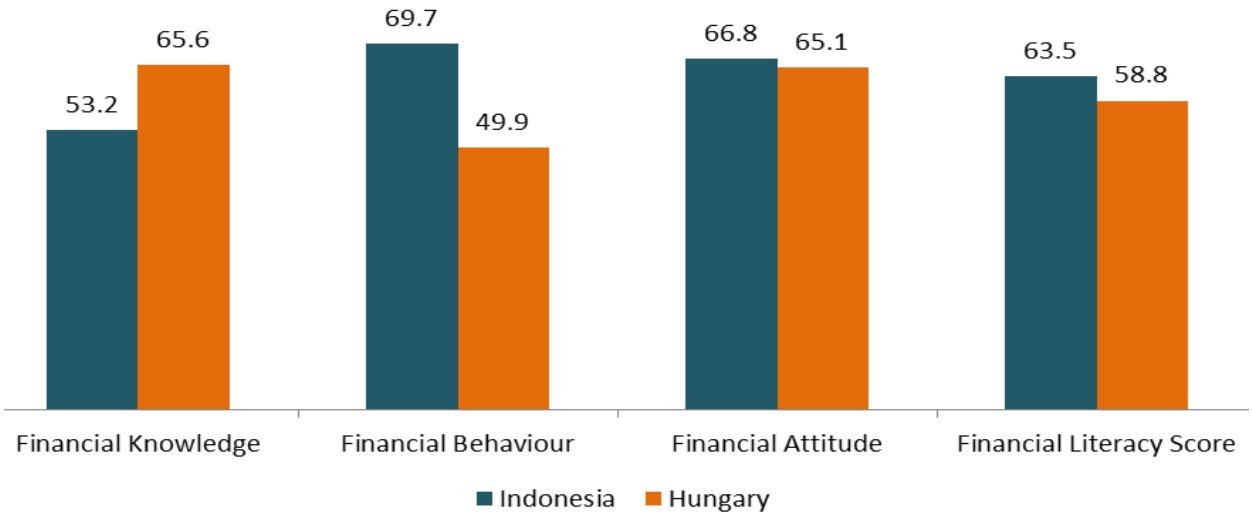

Figure 5. Financial literacy score in Indonesia and Hungary

Source: own elaboration based on OECD (2020)

According to OECD (2020) on the International Survey of Adult Financial Literacy, the financial literacy score of the adult in Indonesia is slightly higher at 63.5, compared to Hungary 58.8. In comparison with Indonesia, Hungary has a higher level of knowledge and ability to apply numeracy skills in a financial context, with a 65.6 and a 53.2 score. In contrast, adult financial behavior differs significantly between Indonesia and Hungary with a gap of 20 points, 69.7 and 49.9 respectively. Meanwhile, financial attitude is not significantly different between adults in the two countries, with a difference of less than 1 point where Indonesia scores 66.8 and Hungary scores 65.1.

As part of its commitment to increasing financial literacy, the Indonesian government has created a learning management system (LMS) by providing guides on a variety of financial products and services at beginner, intermediate, and advanced levels that can be accessed online and free of charge. LMS is an integrated learning and training system, which serves as a hub for learning, training, and knowledge management in studying financial literacy. In Hungary, the government has adopted multiple strategies to increase financial literacy through various approaches, such as creating a framework so that financial education can be expanded and become part of the education system, encouraging financial planning with a long-term orientation, including encouraging the use of cashless payments, which are proven to be associated with increasing of financial literacy (OECD, 2020).

A myriad of studies has evaluated the impact of financial literacy on financial inclusion. For example, MORGAN & TRINH (2019) analyzed the effect of financial literacy among the Lao People's Democratic Republic (PDR) and its relation to financial inclusion revealed that individuals with higher financial literacy have strong and positive influence in using financial products. JÜNGERA & MIETZNER (2020) evaluated 643 German household data and depicted that the higher level of financial literacy impacts on a higher probability of switching on Fintech services. While the cluster study with a sample of 10.091 scientific articles for 45 years on financial literacy and financial inclusion explained the increase in scholarly attention from these two areas. However, most previous studies focused on the relationship of financial literacy on financial inclusion refer to the previous literature with limited empirical evidence (KHAN ET AL. 2022). This gap provides an opportunity to comprehend the literature with empirical tests on the relationship between financial literacy and access to finance. In this study, financial literacy which consists of financial knowledge, behavior and attitude is used as a moderator variable between behavioral intention and use behavior of Fintech services in Indonesia and Hungary.

3.8 Fintech and financial inclusion

Financial inclusion is the ability of individuals or businesses to access financial products and services, both from the banking and non-banking sectors (WORLD BANK, 2023a). The banking sector includes various products and services offered by banks, such as savings, loans, investments to name few. Meanwhile, the non-banking sector includes capital market, insurance, pension funds and others. Several previous literature have revealed the positive impact of financial inclusion on various aspects, such as providing financial access for poor people, encouraging business innovation and promoting economic growth (WILSON, 2012; ZHENG, 2023). In this study, financial inclusion is adapted from BONGOMIN ET AL. (2018) which is measured by individual perceptions of ease of accessing financial services, the speed of the financing application process, the minimal loan amount, and fees charged for financial products.

The public good theory of financial inclusion emphasizes the need for everyone to have equal access to formal financial services without discrimination (OZILI, 2021). According to this theory, everybody has a right to access financial products, which can contribute significantly to the public interest, starting at the individual level, extending to the macro and country level. Additionally, under the public good theory, the government can provide subsidies to financial institutions to help them reduce the costs of providing financial services. Increasing financial inclusion is considered an important component of success, as it is a key indicator of economic growth and contributes to poverty reduction and prosperity (WORLD BANK, 2021a).

The importance of increasing financial inclusion has emerged as a global priority, including attracting great interest from policymakers, regulators, and scholars to play an active role in efforts to increase access to financial products and services. As an intergovernmental organization, the United Nations (UN) considers access to finance one of the main priorities in the United Nations Sustainable Development Goals (UN SDGs) by 2030. Specifically, financial inclusion is included in the eight SDGs targets, including SDG 1 on alleviation of poverty; SDG 2 on ending hunger, achieving food security, and promoting sustainable agriculture; SDG 3 on health and well-being gains; SDG 5 on achieving gender equality and women's economic empowerment; SDG 8 on promoting economic growth and employment; SDG 9 on supporting industries, innovation and infrastructure; SDG 10 on reducing inequality, and SDG 17 on partnerships for the goals (KLAPPER ET AL. 2016; JOIA & CORDEIRO, 2021; YAP ET AL. 2023).

Optimizing financial inclusion for all levels of society plays an important role in providing equal opportunities for accessing financial services. Statistically, there has been an increase in financial inclusion globally. This growing number can be seen in a GLOBAL FINANCIAL FIDDEX (2022) which explained that 76 percent of adults globally had a banking

account in 2021, an increase compared to 2017 and 2014, which were 72 percent and 66 percent, respectively. The number of adults in developing economies with formal financial accounts has increased rapidly from 42 percent a decade ago to 71 percent today. Despite the increase in access to finance in 2021, around 1.4 billion young people still do not have access to financial services, many of whom are women, adults and living in several countries, including Indonesia which contributes around 7 percent to the total unbanked population in the world. In the context of Hungary, ownership of financial accounts is increasing in a decade, from 73 percent in 2011 to 88 percent in 2021. Figure 6 presents financial inclusion in Indonesia, Hungary and the world in 2021.

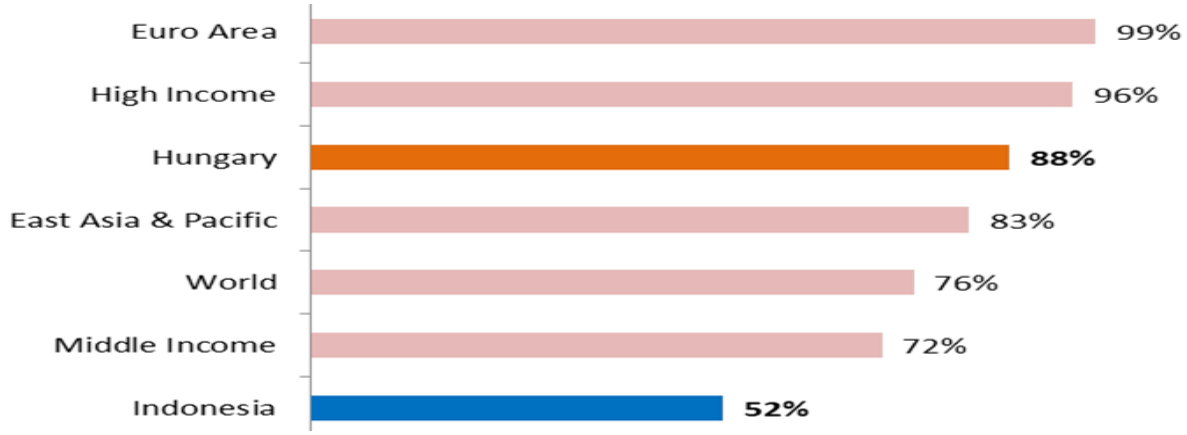

Figure 6. Financial inclusion in Indonesia and Hungary

Source: own elaboration based on Global Financial Findex (2022)

Indonesia, situated in the East Asia Pacific region and classified as a middle-income country, exhibits a financial inclusion rate of 52 percent, which is notably lower than the averages of 72 percent for middle-income countries and 83 percent for the Asia Pacific region. Hungary shows the same trend, with financial inclusion standing at 88 percent, below both high-income countries and the euro area.

These disparities emphasize the need for various factors that describe how optimizing digital finance can accelerate people's access to financial products and services. For example, Fintech offers financial services at relatively lower costs than traditional financial services so that financial products can be reached by all levels of society (DEMIRGÜÇ-KUNT & KLAPPER, 2013). The technological sophistication of Fintech services allows the elaboration of consumer data analysis and impacts credit scoring evaluations (MIALOU & AMIDZIC, 2017; GOMBER ET AL. 2018). XU & ZIA (2012) explained that Fintech offers products based on consumer preferences and directly related to consumer financial needs. Fintech companies also continue to innovate to create customized financial product (niche market), allowing them to collaborate with other enterprises and implement cross selling strategies to acquire new customers (FEYEN ET AL. 2021).

In addition, the support of technology and smartphones allow Fintech services to be easily accessible by all levels of society. Fintech services are also relatively more flexible than conventional financial companies, which tend to be more bureaucratic, allowing for a larger potential to reach clients not currently served by traditional financial institutions (WORLD BANK, 2018). Fintech companies also provide facilities for consumers to compare financial products and services, including offering a virtual negotiation platform for financial service providers and consumers, as well as assisting consumers in making financial decisions (FINANCIAL STABILITY BOARD, 2017). SIDDIK & KABIRAJ (2018) argued that Fintech risk assessment is more flexible than the traditional business approach because it is based on big data analysis, allowing for funding with less collateral.

Concerns have been raised about previous studies on Fintech and its impact on financial inclusion, emphasizing analytical review based on earlier existing literature (OZILI, 2021; KIREYEVA ET AL. 2021). As a result, empirical evidence on Fintech and financial inclusion are currently scarce (ODEI-APPIAH, 2021). Further, only few studies have compared the impact of behavioral intention and use behavior by integrating driver and barrier factors between the two countries. For example, MIGLIORE ET AL. (2022) compared consumers in China and Italy adopting Fintech. Novelty of this study applies empirical test between behavioral intention and use behavior by integrating financial literacy as mediating variable in middle income country (Indonesia) and high income economy (Hungary).

IV. MATERIALS AND METHODS

This chapter outlines the research design and methods used to test research hypotheses. This section discusses the research design and approach, research strategy, data collection methods, including questionnaire design and data analysis.

4.1 Research design

A research design describes the entire project a researcher is conducting, which covers all the phases from the definition of the research problem to the formulation of hypotheses and their implications for the research study to its conclusion. The research design explains the structure of the research problem and the plan of investigation that will be used to obtain empirical evidence regarding the research hypotheses. Research design includes decisions to determine the location of the study and the relevant variables (CRANO ET AL. 2014). The combination of research design and effective data collection techniques is important in answering research problems. In addition, as CRESWELL & CRESWELL (2018) explained research design also includes types of research within qualitative, quantitative, and mixed methodologies techniques that specify procedures in a research study. This study will apply quantitative methods by collecting primary data through a self-administrated questionnaire distributed to respondents in Indonesia and Hungary.

In general, CRANO ET AL. (2014) classified research design into two categories: experimental and non-experimental studies. While conducting experimental study, researchers are frequently actively and methodically involved, giving close attention to the research process and results. The experimental control over variables, however, can be impossible, unethical, or, at the very least, unpractical in many fields of social science (CRANO ET AL. 2014). Non-experimental studies, on the other hand, allow the researcher to act as a passive observer. This research is classified as non-experimental because the researcher does not control the respondents who will be used as samples in collecting research data. Furthermore, CRANO ET AL. (2014) explained that in non-experimental research, both variables of interest are allowed to vary freely, allowing for a better understanding of their relationship, so that in this study, it is possible to examine the driver and barrier factors not only related to intention toward Fintech, but also use behavior, continuance intention and financial inclusion.

4.2 Research strategy

Research strategy plays a pivotal role in the success of the research process. This research will be conducted with a survey research strategy using a questionnaire. Survey research is defined as the process of gathering information obtained from individual samples by collecting

responses to questions using various instrument methods (CHECK & SCHUTT, 2012). DILLMAN ET AL. (2014) stated that collecting research data through surveys is useful because it can reflect factual information, data on preferences and attitudes, opinions, and behaviors in the past and present. In this study, data will be collected through online questionnaires distributed to target respondents who will answer questions regarding drivers and barriers to Fintech adoption. DILLMAN ET AL. (2014) mentioned that the questionnaire is one of the main methods that are often used to collect data to get a relatively faster and more efficient response than conventional methods. Based on respondents' feedback, statistical analyses will be conducted to answer research hypotheses. This will include defining factual conditions regarding driver and barrier factors in adopting Fintech services.

Besides its advantages, survey research also has challenges, such as difficulty in collecting data. COHEN ET AL. (2018) described that the average respondent feedback questionnaire constituted 20-30 percent, which impacts the length of the research period. To improve responsiveness, several strategies were applied, including personalizing the invitation. The authors distribute a questionnaire link to family, friends, and colleagues personally, explaining the study objectives and describing the importance of the feedback from respondents. After that, request their help to circulate the questionnaire link to other people who fit the respondent's criteria. In addition, although the majority of the items in the questionnaire refer to previous literature, the author also uses simple words and straightforward language to avoid ambiguity in the questions. The process of simplifying the questionnaire was conducted separately by receiving feedback from academics, digital financial practitioners, innovation consultants, and Fintech users during a pilot survey.

4.3 Data collection

The main methods of collecting research data consist of observation and distributing questionnaires. Observation is conducted to collect relevant and up-to-date data related to the research topic such as internet penetration and smartphone users to test research hypotheses in Indonesia and Hungary, while a questionnaire is utilized to obtain primary data to answer research hypotheses. Data collection through questionnaires was conducted in three stages. First, a pilot survey by conducting interviews with respondents provides a link to the questionnaire, which was filled out online via mobile phones or other electronic devices. At this stage, respondents were also asked to provide responses related to questions on the questionnaire. There is no consensus regarding the number of sample sizes when conducting a pilot survey, but FINK (2003) recommended at least 10 samples, JULIOUS (2005) suggested 12 samples and

RUEL ET AL. (2016) encouraged 12 to 50 respondents for pilot testing. This study will collect data from 30 respondents for the pilot survey from Indonesia and Hungary.

The results of the pilot survey analysis will then be examined for reliability and validity tests and provide insight to make the questionnaire simpler, unambiguous and concise (SAUNDERS ET AL. 2016). In addition, the pilot survey also helps capture key information to improve the quality of questions and mitigate risks to reduce the failure rate of data collection before it is distributed to respondents on a larger scale (THABANE ET AL. 2010; BELLIZZI ET AL. 2020). Second, the questionnaire that has been corrected at the pilot survey stage will be distributed to potential respondents in Indonesia and Hungary to achieve the target sample required in the study. Lastly, the researcher will compare the research finding with the previous studies to fill theoretical and empirical gap after quantitative data analysis.

4.4 Research instrument

A questionnaire with a Likert scale of 1 to 5 will be used as a research instrument, from strongly disagree (1) to strongly agree (5). The research instrument includes characteristics of the respondents and several driver and barrier factors in adopting Fintech services, as well as their impact on financial inclusion in Indonesia and Hungary. Information on variables and dimensions in the questionnaire are as follows:

4.4.1 Questionnaire design

The process of designing the structure and questions of a survey instrument that will be applied to collect data about a certain topic is known as questionnaire design. The question items on the questionnaire must be understandable to help navigate the uncertainty of meaning or ambiguity (BEATTY ET AL. 2020). The research questionnaire design is divided into several parts, including demographic respondents, UTAUT2 and IRT dimensions, perceived Covid-19 risk, financial literacy, behavioral intention, use behavior, continuance intention and financial inclusion. In detail, the demographic section consists of seven items, namely age, gender, last education, marital status, current employment, monthly income, and residence location.

Section two covers the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) dimension and was adopted from VENKATESH ET AL. (2012) and related studies such as NORDHOFF ET AL. (2020) and MIGLIORE ET AL. (2022), including behavior intention from KIM & HAN (2010), use behavior and continuance intention toward Fintech services derived from BONGOMIN ET AL. (2018) and HUANG & LEE (2022). The UTAUT2 dimension consists of performance expectancy (4 items), effort expectancy (4 items), social influence (3 items), facilitating conditions (4 items), hedonic motivation (3 items), price value (3

items), habit (3 items), behavior intention (3 items), use behavior (3 items) and continuance intention (4 items).

The third section adopts the Innovation Resistance Theory (IRT) and it was derived from MIGLIORE ET AL. (2022), which is divided into four sub-sections: value barrier (3 items), risk barrier (3 items), tradition barrier (3 items), and image barrier (3 items). The next dimension to be examined is perceived Covid-19 risk which was adopted from AJI ET AL. (2020), consisting of 4 items. The following section is financial literacy as mediating variable, which consists of three sub-sections, namely financial knowledge (3 items) which refereed from LUSARDI, (2019), while financial behavior (3 items) and financial attitude (3 items) were adopted from OECD (2016). The last section is financial inclusion consists of 5 items and were derived from BONGOMIN ET AL. (2018).

4.4.2 Content validity

To ensure that all indicators are appropriate for measuring research variables, this study refers to previous relevant literature and interviews with academics, Fintech users, and Fintech business professionals in Indonesia and Hungary. Content validity was conducted with the aim of simplifying the questionnaire items to ensure clarity and easily understood by respondents in the nature of Fintech users in both countries (AL-SWIDI ET AL. 2023). The summary of content validity is shown in Table 4.

Table 4. Summary of content validity

Expert	Description	Expert's comment	Action
Expert 1	Chief Technology Officer of Fintech company in Indonesia More than 10 years in the field	Item G – Where is your place of residence? The location of respondents need to be classified not only based on rural and urban, but also capital city, agglomeration area, urban area other than capital and agglomeration arena, and rural area due to differences in various factors such as digital literacy and broadband infrastructure.	Taken. The choice of location where the respondent lives will be divided into four categories: 1. Capital city (Jakarta / Budapest) 2. Agglomeration area 3. Urban (other than capital city and agglomeration area) 4. Rural
Expert 2	Hungarian Fintech practitioner and former Marketing	Suggested to add financial literacy in facilitating between intention	Taken. Financial literacy consist of financial knowledge, financial

	Director of Fintech company More than 8 years in the field	and user behavior.	behavior and financial attitude, is added as a mediating variable between behavioral intention and use behavior toward Fintech services.
Expert 3	Innovation consultant in one of the biggest bank in Central and Eastern Europe More than 5 years in the field	Item M – Specific Fintech usage purpose? The option needs to be extended, for example investments, payments, invoicing, etc.	Taken. The suggested items are added in the option of specific Fintech usage purposes.
Expert 4	Lecturer in Information Science and Technology More than 10 years in the field	Item J – need to add "Once a month" in the option of how often you use Fintech apps.	Taken. The suggested item is added in the option.
Expert 5	Professor in economics More than 10 years in the field	Item D – suggested to add "Cohabiting" in the marital status option, especially for Hungarian respondents. FK1 to FK3 – change the measurement scale of financial knowledge items from strongly disagree and strongly agree to lowest and highest to know rate of individual basic financial knowledge.	Taken. Cohabiting is added in the marital status option. The scale of financial knowledge has been revised as suggested.

Source: Author's own work based on interview

4.4.3 Questionnaire scale

Most of the questionnaire items are constructed based on a Likert scale of 1 to 5 to measure all research items, from strongly disagree (1) to strongly agree (5), except for financial knowledge which measures on a scale from one to five, where 1 is lowest and 5 is highest. The questionnaire was adapted from several literatures (Table 5), and some items have been revised based on suggestions from academics and professionals in the Fintech industry.

Table 5. Measurement items

Construct	Items	Question	Reference
Performance Expectancy (PE)	PE1	I find Fintech services useful in my daily life	VENKATESH ET AL. (2012); MIGLIORE ET AL. (2022)
	PE2	Using Fintech services enable me to pay more quickly	
	PE3	Using Fintech services helps me making payments more effectively	
	PE4	Using Fintech services allows me to save time	
Effort Expectancy (EE)	EE1	Learning how to use Fintech services is easy for me	VENKATESH ET AL. (2012)
	EE2	My interaction with Fintech services is clear and understandable	
	EE3	I find Fintech services easy to use	
	EE4	It is easy for me to become skillful at using Fintech services	
Social Influence (SI)	SI1	People who are important to me think that I should use Fintech services	VENKATESH ET AL. (2012); NORDHOFF ET AL. (2020)
	SI2	People who influence my behavior think that I should use Fintech services	
	SI3	People whose opinions that I value prefer that I use Fintech services	
Facilitating Conditions (FC)	FC1	I have the resources necessary to use Fintech services	VENKATESH ET AL. (2012)
	FC2	I have the knowledge necessary to use Fintech services	
	FC3	Fintech services is compatible with other technology	
	FC4	I can get help from others when I have difficulties using Fintech services	

Hedonic Motivation (HM)	HM1	Using Fintech services is fun	VENKATESH ET AL. (2012)
	HM2	Using Fintech services is enjoyable	
	HM3	Using Fintech services is very entertaining	
Price Value (PV)	PV1	Fintech services is reasonable priced	VENKATESH ET AL. (2012)
	PV2	Fintech services is a good value for the money	
	PV3	At the current price, Fintech services provide a good value	
Habit (HB)	HB1	The use of Fintech services has become a habit for me	VENKATESH ET AL. (2012)
	HB2	I am addicted to using Fintech services	
	HB3	I must use Fintech services	
Value Barrier (VB)	VB1	Fintech services are uneconomical	LAUKKANEN (2016)
	VB2	The quality of Fintech services are often poor	
	VB3	Fintech do not focus on a variety of services	
Risk Barrier (RB)	RB1	I fear that while I am using Fintech services, the connection will be lost	KAUR ET AL. (2020)
	RB2	I fear that while I am using Fintech services for payment, I might tap out the information of the bill wrongly	
	RB3	I fear that the list of PIN codes may be lost and end up in the wrong hands	
Tradition Barrier (TB)	TB1	I find it difficult to contact customer service at the Fintech services	LAUKKANEN (2016)
	TB2	I find it difficult to get some information about Fintech use	

	TB3	Fintech customer service is not good	
Image Barrier (IB)	IB1	In my opinion, Fintech is often too complicated to be useful	LAUKKANEN (2016)
	IB2	I have such an image that Fintech services are difficult to use	
	IB3	I receive too many notifications and messages from Fintech	
Financial Knowledge (FK)	FK1	Compounding interest	LUSARDI (2019)
	FK2	Inflation	
	FK3	Risk diversification	
Financial Behavior (FB)	FB1	Before I buy something I carefully consider whether I can afford it	OECD (2016)
	FB2	I pay my bills on time	
	FB3	I set long-term financial goals and strive to achieve them	
Financial Attitude (FA)	FA1	I find it more satisfying to spend money than to save it for the long term	OECD (2016)
	FA2	I tend to live for today and let tomorrow take care of itself	
	FA3	Money is there to be spent	
Perceived Covid-19 Risk (PCR)	PCR1	Before I buy something I carefully consider whether I can afford it	AJI ET AL. (2020)
	PCR2	I pay my bills on time	
	PCR3	I set long-term financial goals and strive to achieve them	
Behavioral Intention (BI)	BI1	Assuming that I have access to the Fintech services, I intend to use it	KIM & HAN (2010)

	BI2	I will always try to use Fintech services in my daily life	
	BI3	During the next period I intend to pay for purchases with a Fintech services	
Use Behavior (UB)	UB1	I expect to use Fintech services in the next few weeks	BONGOMIN ET AL. (2018)
	UB2	I have strong positive perception toward use of Fintech services	
	UB3	My attitude toward use of Fintech services is always positive	
Continuance Intention (CI)	CI1	I intend to continue using the Fintech services rather than discontinue its use	HUANG & LEE (2022)
	CI2	I want to continue using the Fintech sevices instead of alternative means.	
	CI3	If I could, I would like to continue using the Fintech services over the next year	
	CI4	It is unlikely for me to stop using the Fintech services	
Financial Inclusion (FI)	FI1	The numbers of documents required by the Fintech services to open an account are few	BONGOMIN ET AL. (2018)
	FI2	The minimum loan amount offered by the Fintech services is satisfactory	
	FI3	The number of days taken by the Fintech companies to process financial services is favorable	
	FI4	The fees charged by the Fintech services on use of its services are favorable	
	FI5	The products and services provided by the Fintech are user friendly	

Source: Author's own work based on literature and interview

4.5 Conceptual model

This study examines the driver and barrier factors of adoption of digital financial services in Indonesia and Hungary, including their impact on financial inclusion. The financial industry has undergone a disruptive shift due to improvements in information and communication technologies (ICT). The growing popularity of smartphones and the advancement of technology have accelerated the development of a new payment business. The evolution offered by Fintech facilitates the efficiency and convenience of financial transactions from anywhere and almost real time, which is relevant to the needs of modern society. In addition, Fintech could be a game-changer in offering financial products to the previously unreached and underserved population by traditional banking. Many people face challenges finding regulated financing to prevent them from reaching a broad range of financial services. Consequently, approximately 1.4 billion people worldwide cannot access formal financial services (GLOBAL FINANCIAL INDEX, 2022).

Despite the fact that analyzing both the drivers and barriers to digital financial services adoption can provide comprehensive insight into the topic, most existing literature focused primarily on Fintech adoption from the drivers' perspective (IMAM ET AL. 2022; MIGLIORE ET AL. 2022). This study therefore aims to contribute to the existing literature by evaluating the barriers and drivers of Fintech adoption, which is currently still receiving less attention in the prior literature. This research applies to the united theory of acceptance and use of technology 2 (UTAUT2) to investigate the drivers of Fintech adoption. According to BIN-NASHWAN (2020), UTAUT2 is the most prevalent and predictive model for technology adoption. In contrast, innovation resistance theory (IRT) is used to measure the barriers factor to adopt digital finance in Indonesia and Hungary. A recent study by CHEN ET AL. (2022) revealed that IRT has a negative impact on technology adoption. This study also examines the mediation effect of financial literacy between behavioral intention and use behavior. Mediating variable of facilitating conditions and price value in relation to use behavior and continuance intention is also evaluated. Finally, this research assesses the impact of use behavior on financial inclusion in Indonesia and Hungary, including analyzing whether there are differences between Fintech user versus non-user and Indonesian versus Hungarian respondents regarding the relationship between use behavior toward continuance intention and financial inclusion. As a result, this study constructs the conceptual framework in Figure 7 to guide the research.

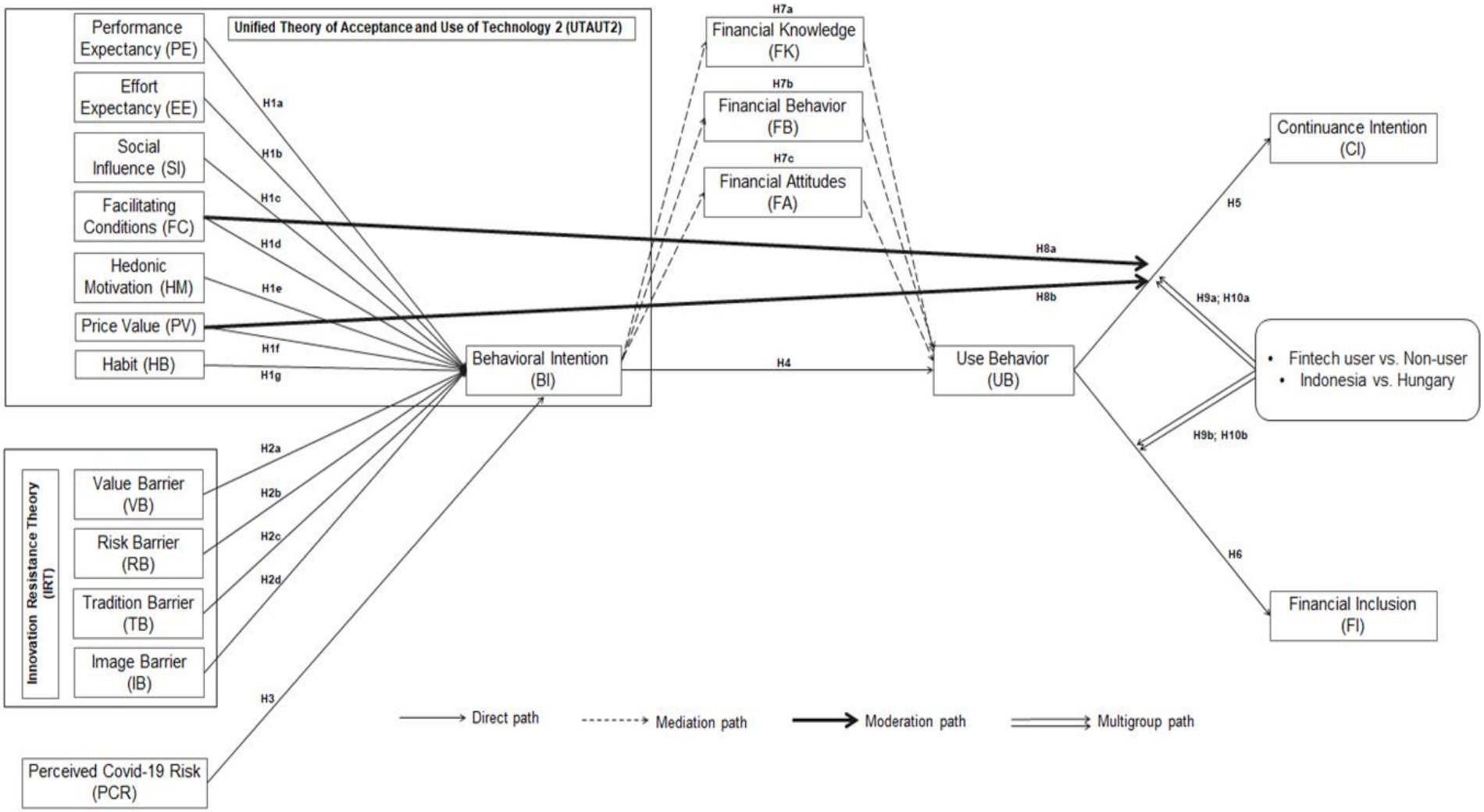

Figure 7. SEM conceptual model
Source: Author's own construction

4.6 Population and sample

The population of this study is individual citizens of Indonesia and Hungary who are familiar with Fintech products, both as user and non-user of Fintech services. The overall number of Fintech user and non-user in both countries is unknown, so the sample size can be determined using the 10-times rules technique with the assumption that the sample size should be more than 10 times the maximum number of latent variable links in the model (KOCK & HADAYA, 2018). This study has 19 latent variables, so the sample size is at least 190 respondents. SEKARAN & BOUGIE (2016) recommended sample sizes higher than 30 and lower than 500 are sufficient for most studies, and HAIR ET AL. (2019) suggested a sample size between 100 and 200 for factor analysis. In addition, G* Power software can be applied to calculate the minimum sample size. With a confidence level of 95% at 0.80 power estimates and a minimum sample size is 160 (FAUL ET AL. 2009; JAIN & RAMAN, 2022).

This study employs purposive and judgment sampling methods to collect the data. According to CRESSWELL & CLARK (2011), purposive sampling is an approach that involves identifying and selecting individuals and groups of individuals who are especially familiar with or experienced with a phenomenon. This study selected a sample of respondents by distributing questionnaires to those who are familiar with Fintech services to both user and non-user, in respect of their age group, gender, and place of residence. Judgment is used to ensure familiarity and prior experience of using Fintech. Subsequently, as data collection expanded, an explanation of Fintech services was included in the introductory section of the questionnaire, along with several examples of popular Fintech products available in the markets of Indonesia and Hungary.

This study utilizes social media for data collection, however only people with prior experience using Fintech were screened to be qualified to participate in the study. Additionally, quota sampling technique is also applied in order to get representative samples from both users and non-users, as well as Hungarian and Indonesian respondents. The data collected were 461 Indonesian respondents and 320 respondents from Hungary between 25 March 2023 and 9 June 2023. After eliminating respondents who respond to all questions with one pattern, for example all items are answered with a strongly agree (5) or neutral (3), or only strongly disagree (1), the definitive sample comprised 456 in Indonesia and 319 from Hungary for further analysis. The data collected were 461 Indonesian respondents and 320 respondents from Hungary between 25 March 2023 and 9 June 2023. After eliminating respondents who respond to all questions with one pattern, for example all items are answered with a strongly agree (5) or neutral (3), or only strongly disagree (1), the definitive sample comprised 456 in Indonesia and 319 from Hungary for further analysis.

4.7 Data analysis

This study applies quantitative research using SmartPLS version 3 software for data analysis. Partial Least Squares Structural Equation Modeling (PLS-SEM) based approach was used to test the research hypotheses. PLS-SEM is a data analysis technique that can assess a series of relatively complex relationships built simultaneously between the independent and dependent variables. Each variable can be built from several indicators (HAIR ET AL. 2019). A recent study by HAIR & ALAMER (2022) claimed that this technique is an appropriate method to evaluate complex theoretical relationships in social science research. This study, which examines driver and barrier factors toward Fintech adoption, with the extension of multiple variables such as perceived Covid-19 risk, financial literacy, use behavior, continuance intention and financial inclusion, which is more than three constructs and considered as complex research, relevant using PLS-SEM analysis (HAIR ET AL. 2017).

The data collected through an online questionnaire is then examined by eliminating respondents who answered all questions with one option. The final sample consisted of 456 from Indonesia and 319 from Hungary for further statistical analysis. Furthermore, as the study collects data from the same source and in close time, there is a possibility of common method bias (CMB), which can affect the research consistency. PODSAKOFF ET AL. (2012) argued that CMB can be minimized by ensuring measurement items are easy to understand, keeping respondent identity confidential, and only asking those who are familiar with measured variables. This study distributed questionnaires to targeted respondents who are familiar with Fintech services, even though they have never used digital financial products. To identify the CMB, Harman's Single Factor is applied, with the criteria of a total variance over 50% (TEHSEEN ET AL. 2017).

Next, all constructs and indicators have been adapted to the context of the study and then evaluated for the measurement model using the confirmatory composite analysis (CCA) method including convergent validity, reliability, and discriminant validity (HAIR ET AL. 2019). Convergent validity is measured by the factor loading and average variance extracted (AVE) with the criteria of both indicators should be higher than 0.5 (HAIR ET AL. 2019). Composite reliability and Cronbach's alpha are applied to measure the reliability test. HAIR ET AL. (2017) explained that composite reliability should be higher than 0.60 and Cronbach's alpha must be greater than 0.70 for adequate reliability score. Furthermore, the Fornell-Larcker criterion and heterotrait-monotrait ratio of correlations (HTMT) is applied to assess discriminant validity with the criteria that each AVE construct should have a square root that exceeds the highest correlation of any other construct for Fornell-Larcker analysis (HAIR ET AL. 2017), and for the HTMT, correlations between pairs of constructs should not exceed 0.90 (HENSELER ET AL.

2015). The model fit is examined using Standardized Root Mean Square of Residual (SRMR) with the criteria of SRMR value lower than 0.08 is acceptable and has a good fit model (HAIR ET AL. 2019). Then, the assessment of the structural model is conducted with a collinearity test to detect multicollinearity issues and continue to determine whether there is a correlation among measured variables, including coefficient of determination (R^2) effect size (f^2), and predictive model (Q^2).

This study also performs an indirect path through mediation and moderation variables. HAIR ET AL. (2019) explained that mediating variable can be applied to analyze the relationship between the independent variables and the dependent variable through intermediary or intervening variables. In this study, financial literacy includes financial knowledge, financial behavior and financial attitude, as mediating variable between behavioral intention and use behavior, with the assessment criteria using mediation decision tree (ZHAO ET AL. 2010; HAIR ET AL. 2021), as displayed in Figure 8.

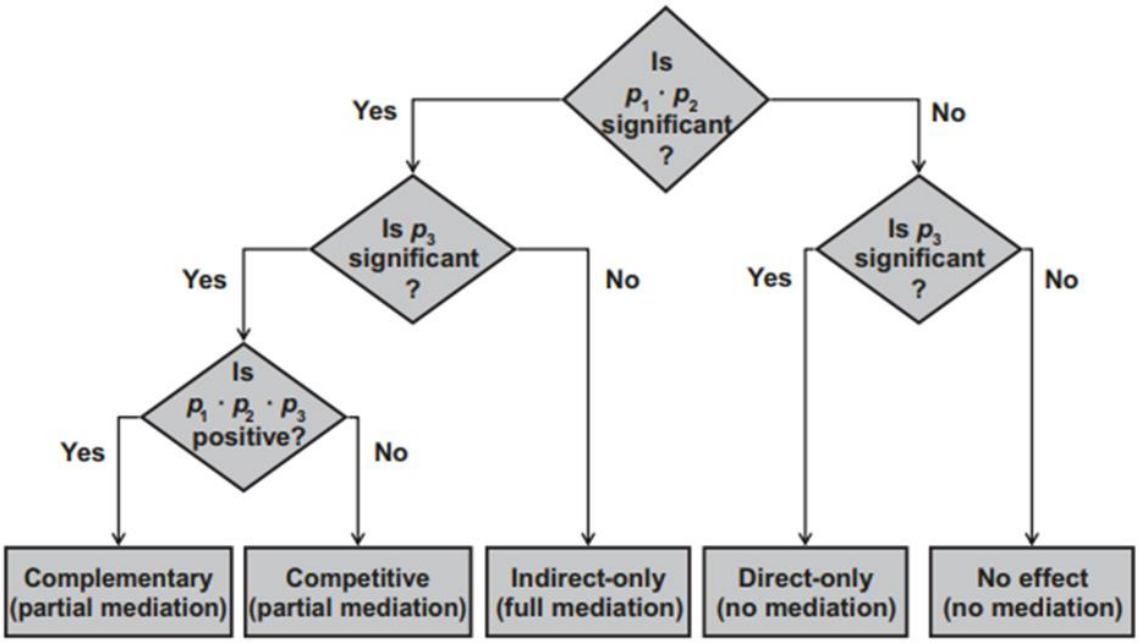

Figure 8. Mediation decision tree

Source: ZHAO ET AL. (2010); HAIR ET AL. (2021)

To measure the effect size of the mediation variable, the squared standardized υ effect, upsilon (υ), following the recommendation of Cohen is applied, where the squared standardized value higher than 0.175 is considered as a large effect, while 0.075 and 0.01 for medium and small effect (LACHOWICZ ET AL. 2018; OGBEIBU ET AL. 2021; CAO ET AL. 2023). To calculate the upsilon (υ) value in this study following LACHOWICZ ET AL. (2018) as shown in the equation below:

$$upsilon\ (v) = \beta_{MX}^2 \beta_{YM.X}^2$$

Where β_{MX}^2 and $\beta_{YM.X}^2$ denotes the squared of are standardized regression coefficients. In the context of this study, M, X and Y represents behavioral intention, financial literacy and use behavior.

Furthermore, the moderation effects of facilitating conditions and price value are examined to determine the strength and weakness of the relationship between use behavior and continuance intention. The study refers to HAYES (2013) to test the significant moderating effect, in which a p-value < 0.05 indicates a significant effect, while a p-value > 0.05 implies insignificant. Finally, regarding to the multigroup analysis on Fintech user versus non user and Indonesia and Hungary in relation to use behavior toward continuance intention and financial inclusion, this study applies Partial Least Squares Multigroup Analysis (PLS-MGA) using 5.000 bootstrapping sub-samples with significant level criteria of differences in group-specific path coefficients should have a p-value of less than 0.05 or greater than 0.95 (HENSELER ET AL. 2009). The study combines data from both countries to examine Fintech user and non-user, and it counts 232 Fintech non-user (code 0) and 543 Fintech user (code 1). For the cross country analysis, the PLS-MGA assessed whether there was a difference in use behavior toward continuance intention and financial inclusion for both countries from 456 Indonesian respondents (code 0) and 319 Hungarian respondents (code 1). According to CHEAH ET AL. (2020), minimum number of samples per group is 64 therefore the number of samples in this study is sufficient for PLS-MGA analysis. Finally, the research flow chart starting from finding gaps in the literature, developing questionnaire items, collecting and analyzing data to answer hypotheses can be seen in Figure 9.

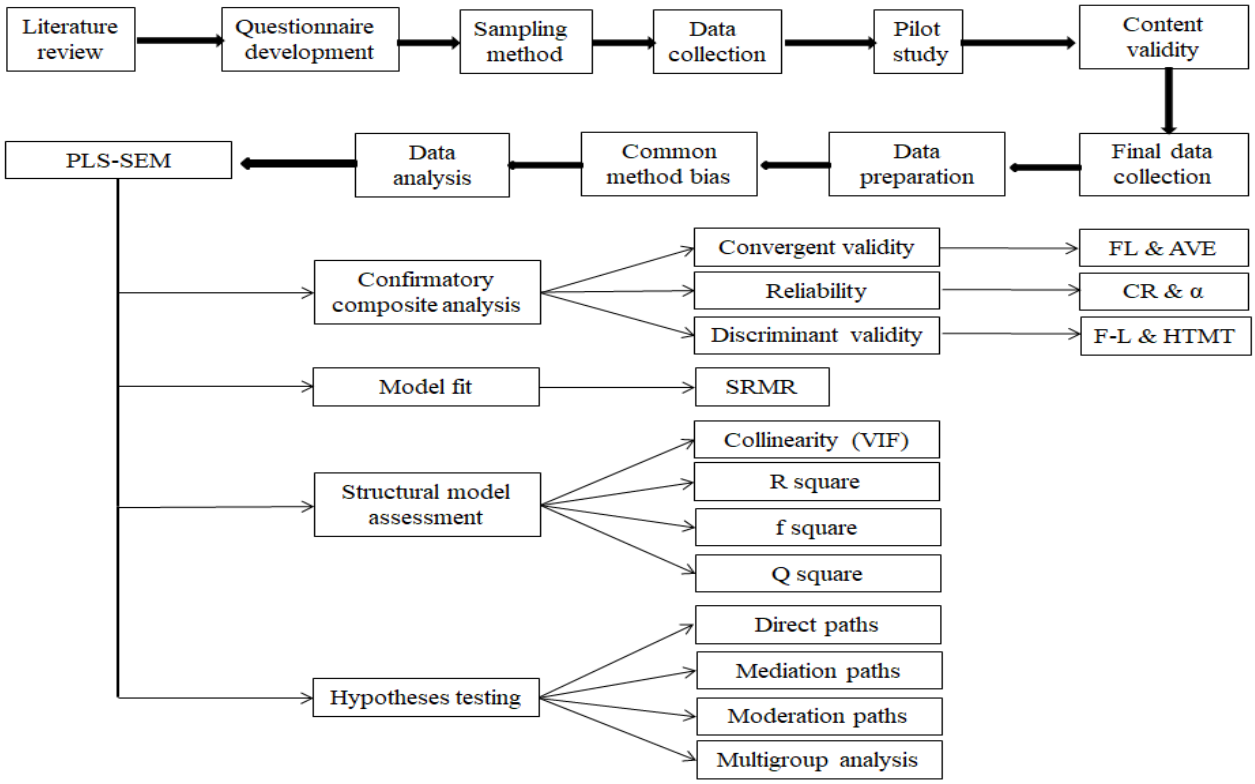

Figure 9. Research flow chart

Source: Author's own construction

V. RESULTS AND DISCUSSION

5.1 Descriptive analysis of respondents in Indonesia and Hungary

The characteristics of the respondents in this study (Table 6) exhibited variation across age, gender, education, income, marital status, and employment. This reflects the diversification of respondents' participation in Indonesia and Hungary.

Table 6. Demographic profile of respondents

Category	Criteria	Indonesia (n=456)		Hungary (n=319)	
		F	%	F	%
Age	18 - 22 years	213	46.71	125	39.18
	23 - 38 years	186	40.79	153	47.96
	39 - 54 years	57	12.50	34	10.66
	55 - 65 years	0	0	2	0.63
	Above 65 years	0	0	5	1.57
Gender	Male	185	40.57	121	37.93
	Female	266	58.33	195	61.13
	Prefer not to say	5	1.10	3	0.94
Education	Secondary/ Higher secondary school or below	85	18.64	163	51.10
	Undergraduate/ Bachelor / Diploma	264	57.89	76	23.82
	Postgraduate/ Master	73	16.01	58	18.18
	PhD/ Doctoral	34	7.46	22	6.90
Marital status	Single	271	59.43	168	52.66
	Married	176	38.60	52	16.30
	Widowed / Divorced	9	1.97	8	2.51
	Cohabiting	0	0	91	28.53
Employment status	Student	235	51.54	193	60.50
	Entrepreneur	25	5.48	12	3.76
	Employed	175	38.38	109	34.17
	Unemployed	21	4.61	5	1.57
Monthly income	< HUF 35.000	200	43.86	64	20.06

	> HUF 35.000 - HUF 130.000	104	22.81	62	19.44
	> HUF 130.000 - HUF 400.000	113	24.78	126	39.50
	> HUF 400.000 - HUF 500.000	11	2.41	30	9.40
	> HUF 500.000 - HUF 700.000	9	1.97	17	5.33
	> HUF 700.000	19	4.17	20	6.27

Note: Monthly income for Hungarian respondents converted from Indonesian rupiah (IDR) to Hungarian forint (HUF); F = Frequency.
Source: Author's own work based on respondents' survey

Table 6 presents the socio economic information of Indonesian and Hungarian respondents. The largest group of respondents for Indonesia is the 18-22 year old with just over 46 percent while Hungary has 47 percent of respondents range from 23 to 38 years old. A demographic profile of digital financial service users in Indonesia and Hungary indicates that more than 80 percent are between 18 and 38 years old, constituting a tech-savvy generation made up of Generation Z (18-22 years) and Millennials from 23 to 38 years old (PEWRESEARCH, 2019). With more than 50% participation rate, women and students represented the majority of respondents in this study. Most of respondents hold an undergraduate degree (57.8% for Indonesian respondents, and a secondary or higher secondary school education or less (51.1%) for Hungarian respondents. The second largest groups of Indonesian respondents belong to the category of secondary high school with 18.1%, and in Hungary, undergraduate students account for 23.8%. Respondents with a master's degree contributed 16% to Indonesia and 18.1% to Hungary. While respondents with a doctoral classification were the least in number, the percentages of Indonesia and Hungary being 7.4% and 6.9%, respectively.

Regarding marital status, the majority of respondents in both countries are single, with 59.4% in Indonesia and 52.6% in Hungary. In Indonesia, married respondents constitute 38.6%, more than double of Hungarian respondents which comprise 16.3%. Respondents with widowed or divorced status are relatively low at 1.9% in Indonesia and 2.5% in Hungary. Respondents with cohabitation classification are the second highest in Hungary with 28.5% compared to zero participation in Indonesia. The classification of respondents according to their type of employment is including student, entrepreneur, employed and unemployed. Indonesia and Hungary had the highest proportion of respondents with student status, accounting for 51.5% and 60.5%, respectively. It was followed by employment in the range between 34% and 38% in both countries. Both countries have relatively low rates of respondents with entrepreneur and unemployed status, below 5%. In regards to monthly income, most Indonesian respondents earn

less than HUF 35.000 a month, classified as low-income population, while a majority of Hungarian respondents have a monthly income between HUF 130.000 and HUF 400.000.

Furthermore, respondent participation based on residence location in Indonesia and Hungary is presented in Figure 10. In general, most Indonesian respondents lived in urban areas other than the capital and agglomeration area, while respondents from Hungary were dominated by participants living in the capital city (Budapest). As can be seen from the graph, more than 70 percent of Indonesian respondents are located in urban areas in comparison to about 21 percent of Hungarian respondents. In contrast, 35 percent of Hungarian respondents are located in the capital city compared to around 6 percent of respondents from the Indonesian capital (Jakarta). Furthermore, the respondents in the two countries from the agglomeration area were below 10 percent with Indonesia at 5.9 percent and Hungary at 8.5 percent.

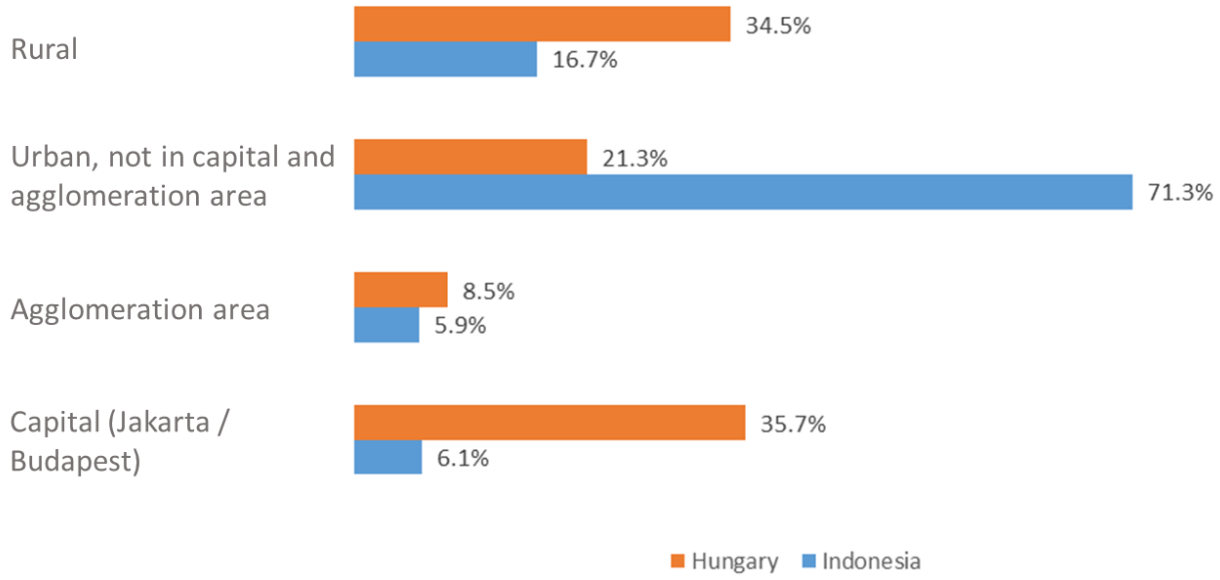

Figure 10. Place of residence of Indonesian and Hungarian respondents

Source: own elaboration based on questionnaire survey

Figure 11 shows the Fintech user and non-user in Indonesia and Hungary. Overall, the majority of Indonesian respondents have used Fintech services, compared to about slightly more than half of respondents in Hungary. It is clear that more than 75 percent of respondents in Indonesia answered that they had utilized digital financial services. In contrast, Hungarian respondents who have used digital financial services are only around 57 percent. The noteworthy point is that there are twice as many respondents who have never used Fintech services in Hungary than in Indonesia, namely 43 percent and 20.8 percent, respectively.

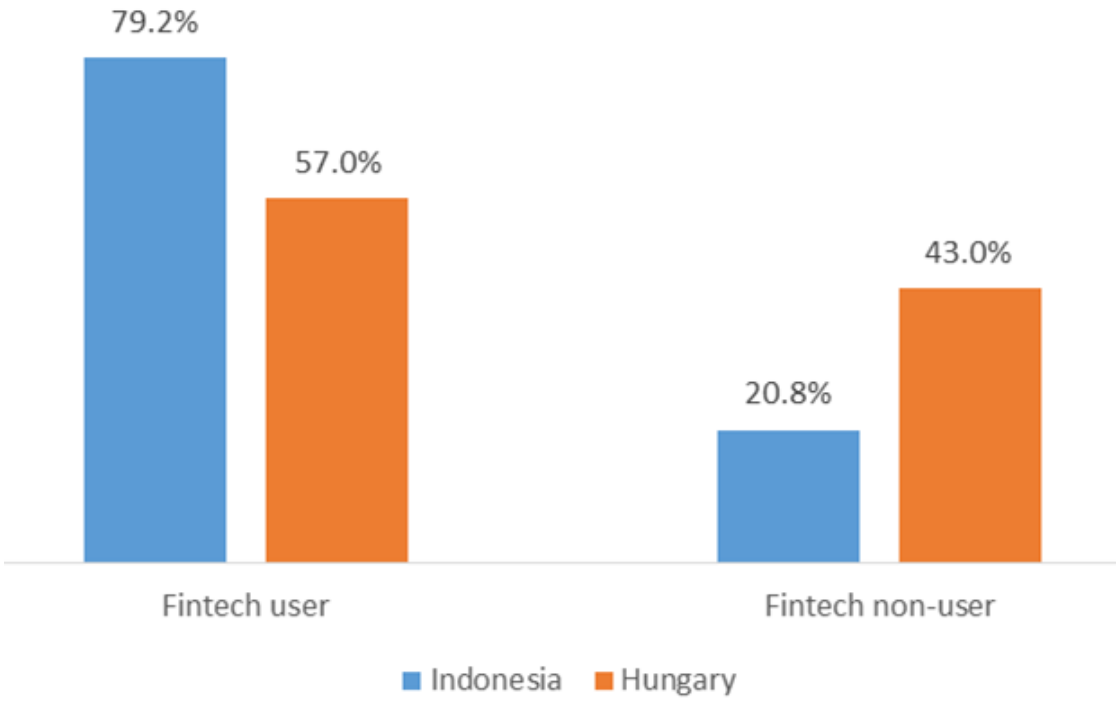

Figure 11. Fintech user and non-user in Indonesia and Hungary

Source: own elaboration based on questionnaire survey

Figure 12 displays Fintech-related applications owned by respondents in both countries. Among Hungarian respondents, 49.8% have one to two Fintech applications, compared to 43.2% in Indonesia. Downloaders of three to four Fintech applications in Indonesia are 24.1%, which is double Hungary's 11%. Indonesian respondents who downloaded more than 4 Fintech applications recorded as much as 14% compared to only 4.4% in Hungary. Among Hungarian respondents, Fintech applications are not utilized as much as 34.8% for Indonesia only 18.6%.

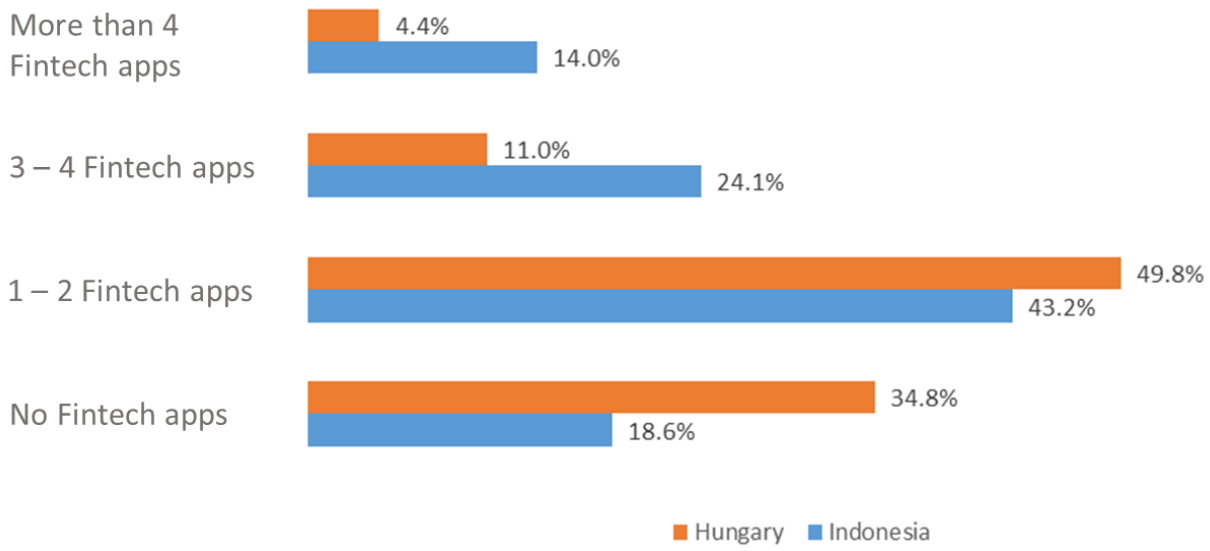

Figure 12. Fintech-related application on smartphones

Source: own elaboration based on questionnaire survey

Figure 13 illustrates Fintech usage frequency in Indonesia and Hungary. In general, Fintech user in Indonesia with a frequency of once a month and more than 4 times a week are higher than in Hungary. In contrast, Hungarian respondents use digital financial applications once a week and 2 to 4 times a week more frequently than Indonesian respondents. In Indonesia, 23.9% of Fintech user utilizes the application once a month, slightly higher than 23.7% in Hungary. However, the utilization of Fintech services once a week is higher in Hungary, which is 24.2%, than in Indonesia, which is below 20%.

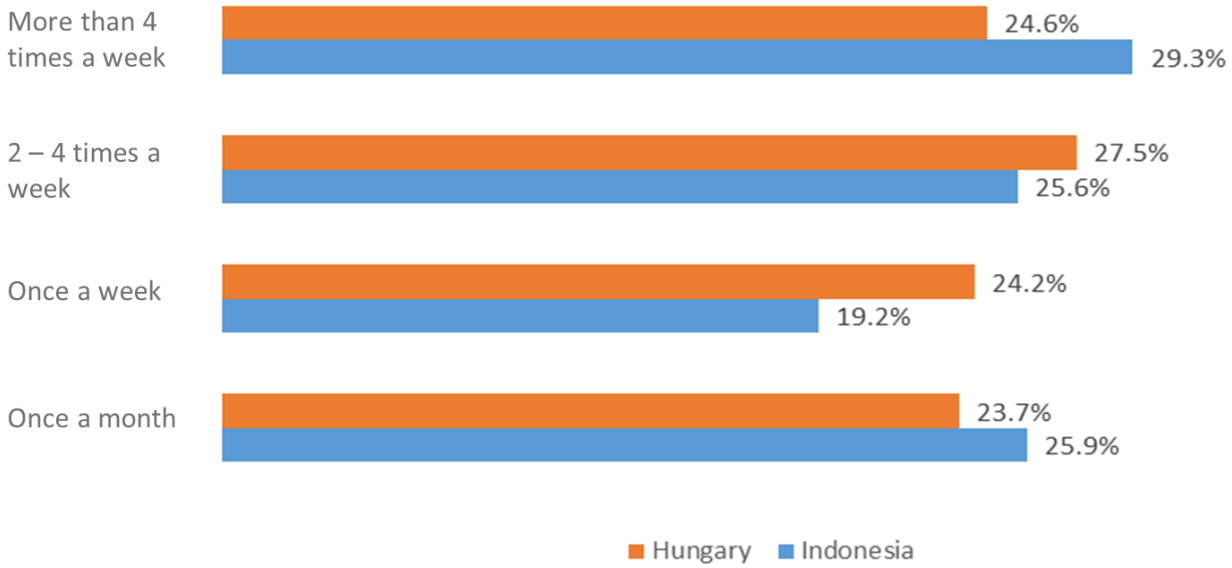

Figure 13. Fintech usage frequency

Source: own elaboration based on questionnaire survey

Furthermore, digital payments continue to dominate Fintech services among Indonesian and Hungarian users with 76 percent and 60 percent respectively, as illustrated in Figure 14. A fascinating finding was that more than 15 percent of Hungarian respondents utilized Crypto & Blockchain services, compared to only 3 percent of Indonesian participants. In Hungary, Crypto & Blockchain is the second leading Fintech services, surpassing microfinancing, insurtech, and crowdfunding. Users of P2P lending are relatively similar in the two countries, with around 6 percent using the services. In contrast to Hungary with 2.3 percent, Indonesia's second-most popular Fintech is microfinancing, which stands at more than 5 percent. Fintech services still have the potential to grow in Indonesia and Hungary, and there is still a huge gap between digital payment and other Fintech services such as Crypto & Blockchain, P2P lending, microfinance, and crowdfunding with a user rate below 20 percent.

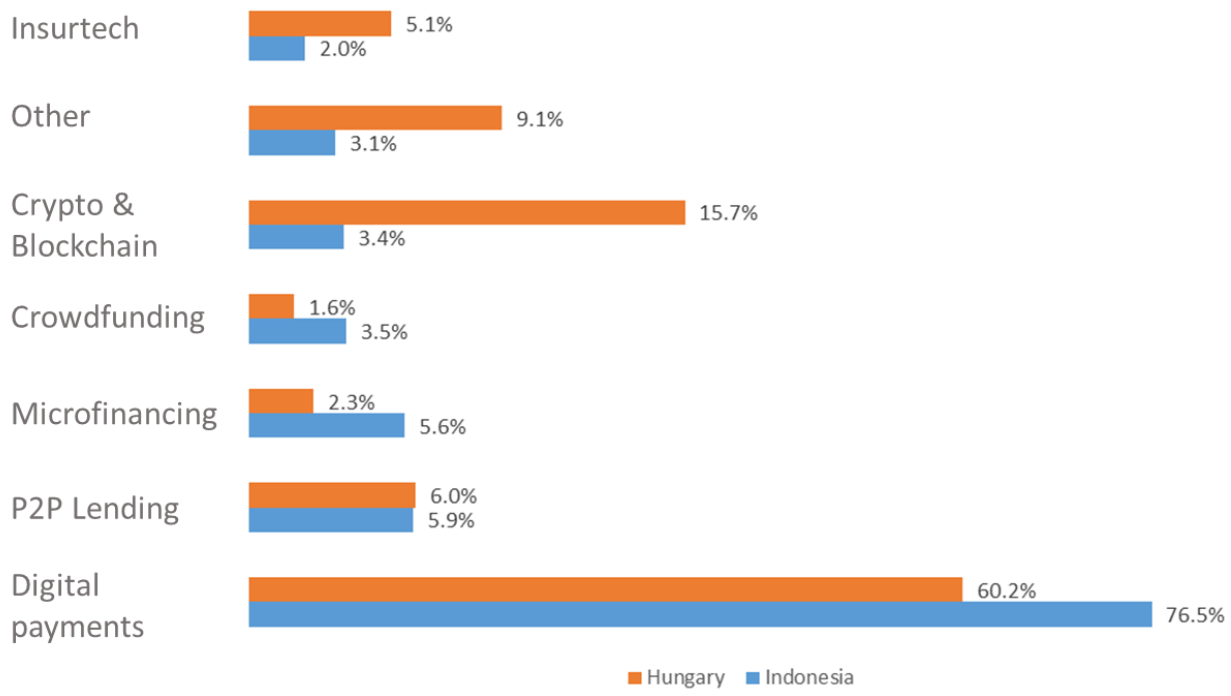

Figure14. Type of Fintech used in Indonesia and Hungary

Source: own elaboration based on questionnaire survey

Figure 15 presents the purpose of Indonesian and Hungarian respondents using Fintech services. The majority of respondents from both countries utilize Fintech services to fulfill their personal financial requirements. In Hungary, more than 80 percent of Fintech users use these services for personal purposes, whereas in Indonesia, the figure is approximately 70 percent. However, Indonesian respondents have a higher level of Fintech users for personal and business purposes, 25 percent compared to 15 percent in Hungary. Moreover, respondents from both countries primarily employ Fintech services solely for business-related objectives which is still below 5 percent.

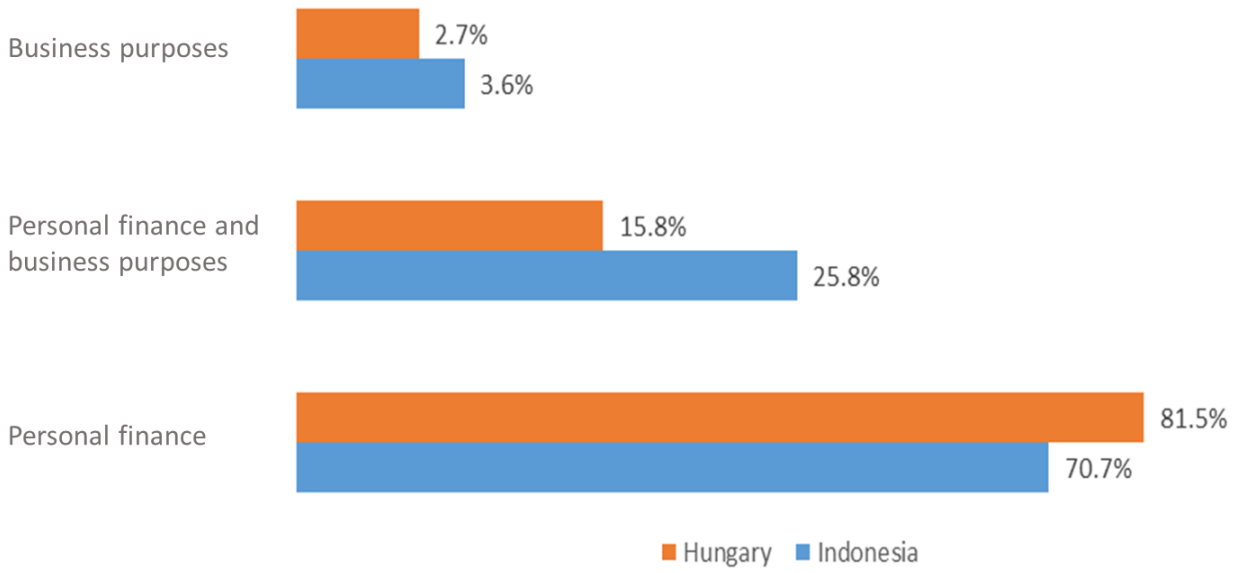

Figure 15. Purpose using Fintech applications

Source: own elaboration based on questionnaire survey

The specific purpose of using Fintech services in Indonesia and Hungary, as displayed in Figure 16, is still primarily associated with digital payment, both receiving and sending money. Indonesia's Fintech user has almost double the digital payments of Hungary, at 88 percent compared to 46 percent. In Hungary, trust in Fintech services is higher than in Indonesia. This is evidenced by Hungarian respondents who invest more than 25 percent of their funds on Fintech platforms compared to about 3 percent in Indonesia. Other Fintech services such as emergency funds and invoicing still have the potential to grow, as the percentage is below 5 percent in both countries. Comparatively, Indonesian Fintech user seem to be still optimizing Fintech only for basic financial purposes, such as receiving and sending money, compared to Hungarian Fintech user who are becoming more confident about investing and saving through digital financial apps.

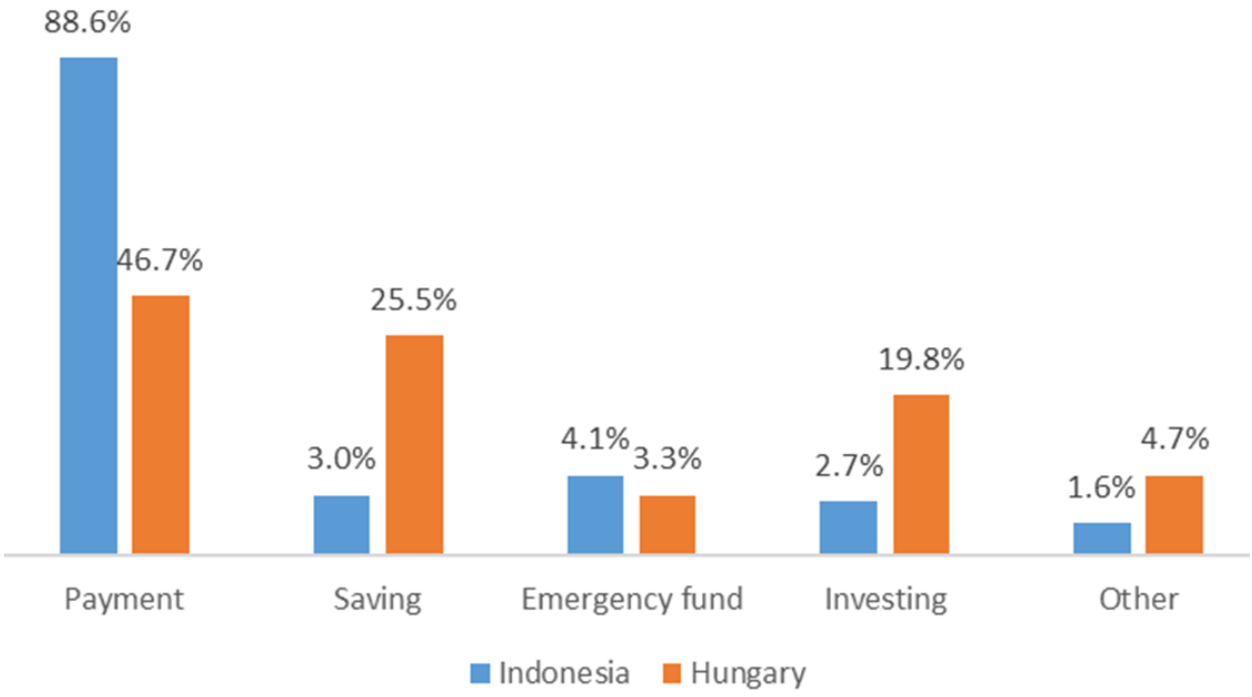

Figure 16. Specific Fintech usage purpose in Indonesia and Hungary

Source: own elaboration based on questionnaire survey

Figure 17 compares the devices used to access Fintech services in Indonesia and Hungary. It is clear that smartphone is the primary platform for accessing digital finance in both countries. Over 96 percent of Indonesian respondents access Fintech services via smartphones, compared to 65 percent in Hungary. In Hungary, 21 percent of the population uses a personal computer compared with 2 percent in Indonesia to access digital payment. In contrast, smartwatches and tablets are used by more than 10 percent of Fintech user in Hungary, compared to approximately only 1 percent in Indonesia.

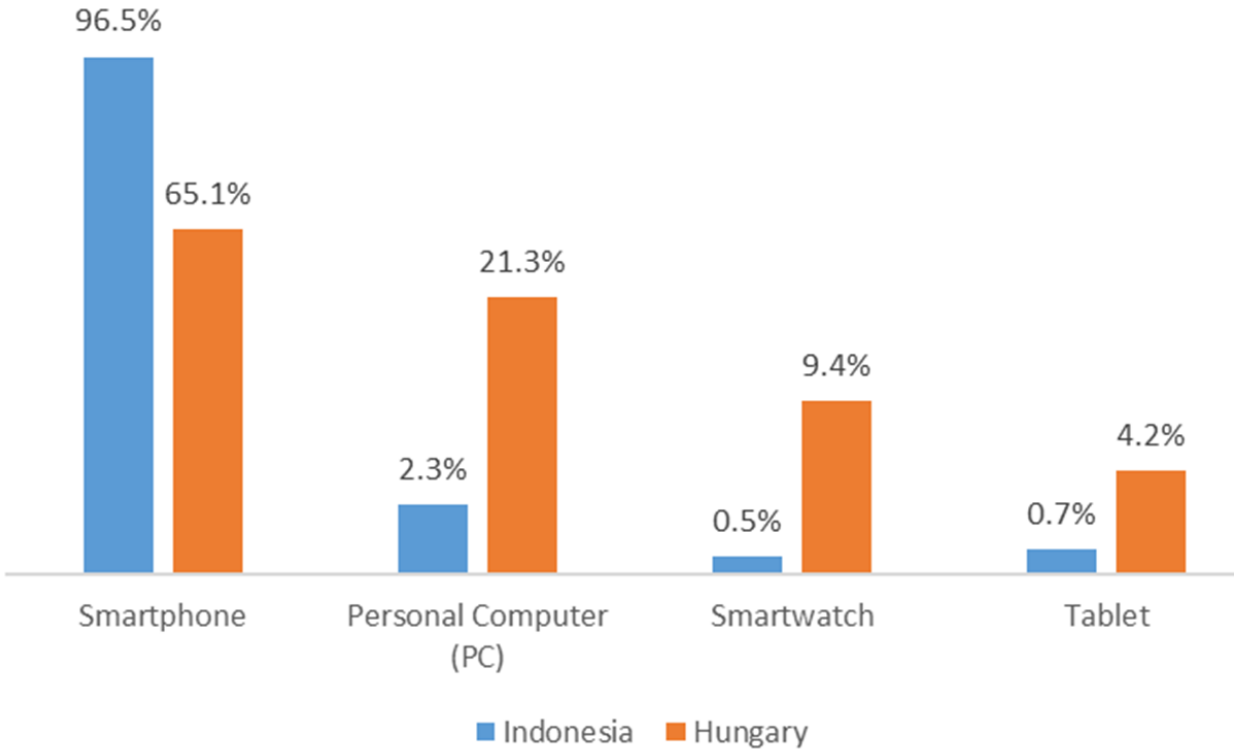

Figure 17. Electronic devices used to utilize Fintech in Indonesia and Hungary

Source: own elaboration based on questionnaire survey

5.2 Common method bias (CMB)

Before conducting statistical analysis, CMB was performed on 456 Indonesian and 319 Hungarian samples after data cleaning. The term common method bias refers to a potential bias resulting from multiple variables being measured using the same measurement method (PODSAKOFF ET AL. 2012). This approach has been used for detecting the potential of CMB in a number of studies related to technology adoption, such as DARAGMEH ET AL. (2021); RAHMAN ET AL. (2022); and AL-SWIDI ET AL. (2023). In this study, CMB was assessed using Harman Single Factor with the support of IBM SPSS software version 23. The finding revealed that all factors account for below 50%, which 34.56% for Indonesia and 27.26% for Hungary to the total variance, indicating that there was no CMB issue in this study.

5.3 Descriptive statistics

In Indonesia and Hungary, mean value of Fintech driver factors (see Table 7) tend to be higher than 3 (neutral), as opposed to the barrier factors, at which respondents give an average score of 2 (disagree). In addition, behavioral intention and financial inclusion both have average mean values above 3, which indicate that most respondents answered with agree or strongly agree.

Table 7. Descriptive statistics of respondent in Indonesia and Hungary

Construct	Items	Indonesia		Hungary	
		Mean	Std. Deviation	Mean	Std. Deviation
Performance Expectancy (PE)	PE1	4.026	0.917	3.884	1.033
	PE2	4.066	0.960	3.962	1.070
	PE3	4.035	0.941	3.777	1.019
	PE4	4.072	0.956	3.853	1.068
Effort Expectancy (EE)	EE1	3.750	0.840	3.777	0.981
	EE2	3.781	0.819	3.643	0.956
	EE3	3.844	0.853	3.781	0.958
	EE4	3.763	0.867	3.755	0.935
Social Influence (SI)	SI1	3.500	0.848	2.959	1.054
	SI2	3.458	0.883	2.843	1.068
	SI3	3.467	0.865	2.871	1.097
Facilitating Conditions (FC)	FC1	3.682	0.852	3.771	1.074
	FC2	3.695	0.846	3.448	1.096
	FC3	3.770	0.859	3.671	0.967
	FC4	3.651	0.886	3.536	1.043
Hedonic Motivation (HM)	HM1	3.537	0.870	2.937	0.865
	HM2	3.607	0.857	2.994	0.878
	HM3	3.417	0.844	2.787	0.891
Price Value (PV)	PV1	3.577	0.860	3.520	0.867
	PV2	3.643	0.877	3.279	0.796
	PV3	3.761	0.854	3.357	0.848
Habit (HB)	HB1	3.678	0.934	3.276	1.226
	HB2	3.217	0.952	2.160	1.052
	HB3	3.346	0.914	2.583	1.139
Value Barrier (VB)	VB1	2.607	0.817	2.602	0.868
	VB2	2.809	0.822	2.649	0.813
	VB3	2.789	0.819	2.683	0.876
Risk Barrier (RB)	RB1	3.458	0.919	2.828	0.953
	RB2	3.476	0.955	2.969	0.992
	RB3	3.581	0.979	3.116	1.030
Tradition Barrier (TB)	TB1	3.132	0.848	2.953	0.886
	TB2	2.890	0.851	2.809	0.898
	TB3	2.840	0.797	2.871	0.845

Image Barrier (IB)	IB1	2.765	0.845	2.649	0.904
	IB2	2.546	0.810	2.567	0.882
	IB3	3.149	0.871	2.624	0.942
Financial Knowledge (FK)	FK1	2.930	0.888	3.533	1.076
	FK2	3.064	0.834	3.793	0.934
	FK3	3.007	0.909	2.906	1.138
Financial Behavior (FB)	FB1	3.842	0.960	3.975	0.960
	FB2	3.833	0.970	4.132	0.983
	FB3	3.721	0.966	3.790	1.006
Financial Attitude (FA)	FA1	2.329	1.022	2.555	1.034
	FA2	2.186	1.031	2.545	1.130
	FA3	2.629	1.020	2.370	1.051
Perceived Covid-19 Risk (PCR)	PCR1	3.112	0.919	1.784	0.967
	PCR2	3.232	0.929	2.389	1.257
	PCR3	3.239	0.942	1.871	1.062
Behavioral Intention (BI)	BI1	3.667	0.791	3.329	0.921
	BI2	3.601	0.834	3.050	1.003
	BI3	3.664	0.850	3.172	1.041
Use Behavior (UB)	UB1	3.577	0.802	3.238	1.122
	UB2	3.651	0.777	3.226	0.982
	UB3	3.557	0.815	3.163	0.988
Continuance Intention (CI)	CI1	3.575	0.837	3.489	1.125
	CI2	3.471	0.819	3.313	1.027
	CI3	3.612	0.830	3.480	1.032
	CI4	3.458	0.847	3.433	1.083
Financial Inclusion (FI)	FI1	3.325	0.749	3.285	0.945
	FI2	3.184	0.646	3.107	0.744
	FI3	3.401	0.749	3.201	0.851
	FI4	3.274	0.779	3.210	0.855
	FI5	3.456	0.782	3.467	0.912

Explanation items of PE1, PE2, etc. in Table 7 refer to Table 5

Source: Author's own work based on SmartPLS version 3

5.4 Measurement model evaluation

The measurement model in this study was evaluated using the confirmatory composite analysis method (HAIR ET AL. 2019). HAIR ET AL. (2019) recommended factor loading and AVE should be higher than 0.5 for each item to meet the criteria of convergent validity. For Indonesian respondents, almost all factors loading was above 0.50, except for TB2 (0.031) and IB3 (-0.177). Using the same criteria, all indicator items in the sample in Hungary had factor loading above 0.5, except for TB2 (-0.081) and IB3 (0.472), which was excluded from the analysis because the factor loading was below the threshold limit. In addition, the AVE of all constructs in Indonesia and Hungary exceed 0.50 indicating convergent validity is fulfilled.

HAIR ET AL. (2017) explained that reliability obtained when composite reliability is higher than 0.60 and Cronbach's alpha exceeds 0.70. In this study, all composite reliability values exceeded 0.60 and Cronbach's alpha is greater than 0.70, indicating that the constructs are reliable for further analysis. Furthermore, variance inflation factor (VIF) was performed to check collinearity. HAIR ET AL. (2011) suggested the value in the VIF should not exceed 5 indicates no collinearity issue in the construct. Even though most VIF values in this study are below 5, several indicators must be excluded from the analysis due to their VIF values above 5. There are several indicators in Indonesia with a VIF value greater than 5 including BI3 (5.544), EE2 (5.490), HM2 (5.159), PE3 (6.986), PE4 (5.888), PV2 (5.367) and UB2 (5.359). However, in Hungary, all VIF values below 5, except for CI1 (5.157), must be removed from the analysis. Table 8 presents the convergent validity, composite reliability, and collinearity. Several indicators were excluded because they did not meet the criteria of the confirmatory composite analysis method which are denoted by n/a (not applicable).

Table 8. Convergent validity, composite reliability, and collinearity

Items	Indonesia						Hungary					
	FL	**CR**	**α**	**AVE**	**CV**	**VIF**	**FL**	**CR**	**α**	**AVE**	**CV**	**VIF**
PE1	0.965	0.960	0.917	0.923	Yes	3.533	0.897	0.952	0.933	0.833	Yes	3.142
PE2	0.956					3.533	0.927					4.050
PE3	n/a					n/a	0.919					3.875
PE4	n/a					n/a	0.908					3.541
EE1	0.937	0.961	0.939	0.891	Yes	3.742	0.913	0.957	0.939	0.846	Yes	3.523
EE2	n/a					n/a	0.923					3.867
EE3	0.945					4.371	0.920					3.728
EE4	0.949					4.703	0.924					4.023
SI1	0.929	0.950	0.921	0.863	Yes	3.256	0.921	0.946	0.914	0.853	Yes	3.147
SI2	0.943					4.210	0.918					2.946
SI3	0.915					3.173	0.933					3.540
FC1	0.905	0.940	0.914	0.796	Yes	3.476	0.866	0.900	0.851	0.695	Yes	2.403
FC2	0.907					3.448	0.880					2.477
FC3	0.930					4.029	0.888					2.544
FC4	0.822					1.982	0.686					1.432
HM1	0.952	0.948	0.890	0.901	Yes	2.807	0.940	0.942	0.908	0.844	Yes	3.646
HM2	n/a					n/a	0.917					2.916
HM3	0.946					2.807	0.898					2.768
PV1	0.943	0.946	0.886	0.898	Yes	2.730	0.870	0.906	0.844	0.762	Yes	2.040
PV2	n/a					n/a	0.863					1.857
PV3	0.952					2.730	0.886					2.313
HB1	0.870	0.916	0.864	0.784	Yes	1.749	0.879	0.855	0.764	0.664	Yes	1.444
HB2	0.894					2.961	0.716					1.597
HB3	0.892					2.927	0.840					1.909
VB1	0.987	0.850	0.862	0.661	Yes	1.868	0.859	0.904	0.846	0.759	Yes	1.785
VB2	0.660					2.491	0.836					2.227
VB3	0.757					2.622	0.916					2.333

RB1	0.903	0.939	0.903	0.837	Yes	2.630	0.925	0.873	0.818	0.700	Yes	1.752
RB2	0.931					3.636	0.877					2.153
RB3	0.910					2.825	0.689					1.754
TB1	0.986	0.744	0.783	0.615	Yes	1.704	0.813	0.883	0.766	0.792	Yes	1.625
TB2	n/a					2.187	n/a					1.647
TB3	0.508					1.704	0.961					1.625
IB1	0.850	0.909	0.825	0.834	Yes	1.973	0.930	0.940	0.874	0.887	Yes	2.518
IB2	0.972					1.973	0.954					2.518
IB3	n/a					1.225	n/a					1.378
FK1	0.893	0.937	0.902	0.832	Yes	2.928	0.913	0.904	0.842	0.759	Yes	2.519
FK2	0.934					2.746	0.906					2.282
FK3	0.910					2.862	0.788					1.694
FB1	0.936	0.956	0.931	0.879	Yes	3.945	0.676	0.858	0.785	0.672	Yes	1.557
FB2	0.951					4.466	0.850					1.808
FB3	0.926					3.369	0.916					1.622
FA1	0.913	0.932	0.896	0.821	Yes	3.968	0.840	0.878	0.794	0.707	Yes	1.873
FA2	0.962					3.909	0.860					1.733
FA3	0.840					2.037	0.821					1.546
PCR1	0.887	0.943	0.909	0.846	Yes	2.532	0.804	0.879	0.810	0.708	Yes	2.367
PCR2	0.927					3.356	0.869					1.414
PCR3	0.944					3.918	0.850					2.478
BI1	0.956	0.954	0.905	0.913	Yes	3.142	0.926	0.949	0.920	0.862	Yes	3.244
BI2	0.955					n/a	0.929					3.403
BI3	n/a					3.142	0.930					3.380
UB1	0.935	0.934	0.859	0.877	Yes	2.312	0.891	0.928	0.883	0.811	Yes	2.242
UB2	n/a					n/a	0.924					3.124
UB3	0.938					2.312	0.886					2.534
CI1	0.941	0.959	0.943	0.853	Yes	4.960	n/a	0.949	0.920	0.862	Yes	n/a
CI2	0.912					3.537	0.925					3.093
CI3	0.937					4.792	0.939					3.826
CI4	0.905					3.256	0.922					3.347
FI1	0.779	0.922	0.894	0.703	Yes	1.839	0.817	0.927	0.902	0.718	Yes	2.107
FI2	0.780					1.991	0.835					2.572
FI3	0.871					2.715	0.851					2.730
FI4	0.869					2.841	0.861					2.750
FI5	0.887					3.024	0.872					2.859

Abbreviations: FL, factor loading; CR, composite reliability; α, cronbach's alpha; AVE, average variance extracted; CV, convergent validity; VIF, variance inflation factor, n/a, not applicable.
Explanation items of PE1, PE2, etc. in Table 8 refer to Table 7 and Table 5
Source: Author's own work based on SmartPLS version 3

In this study, the discriminant validity was assessed to evaluate the multiple dimensions measured by each construct using Fornell-Larcker criterion and heterotrait-monotrait (HTMT) ratio. FORNELL & LARCKER (1981) evaluated whether the correlation between the various dimensions is lower than the square root value of AVE. In Fornell-Larcker criteria, the square root of each AVE construct should exceed any other construct's highest correlation (HAIR ET AL. 2017). Table 9 and Table 10 present the Fornell-Larcker criterion in Indonesia and Hungary

revealed that the square root of each construct's AVE exceeds its highest correlation with any other construct. Following these findings, the discriminant validity based on the Fornell-Larcker criterion was considered satisfactory.

Furthermore, HENSELER ET AL. (2015) argued that it is necessary to develop the Fornell-Larcker approach criteria to detect discriminant validity problems. Therefore, this study applies the HTMT analysis as an alternative method to support the argument about discriminant validity. The HTMT is defined as the mean of all correlations among indicators measuring different constructs (the heterotrait-heteromethod correlations), expressed as a percentage of the mean of the average correlations between indicators measuring the same construct (the monotrait-heteromethod correlations). The correlation between pairs of constructs must be less than 0.9 to obtain discriminant validity (HENSELER ET AL. 2015). In this study, the results did not exceed the threshold (0.90) indicating the discriminant validity criterion is fulfilled, which displayed in Table 11 for Indonesia and Table 12 for Hungary. Before conducting the hypothesis test, model fit using Standardized Root Mean Square of Residual (SRMR) is assessed. The results shown that SRMR for Indonesia and Hungary are 0.058 and 0.062, below the threshold limit of 0.08, indicating model fit is acceptable.

Table 9. Discriminant validity (Fornell-Larcker criterion, Indonesia)

	BI	CI	EE	FC	FA	FB	FI	FK	HB	HM	IB	PCR	PE	PV	RB	SI	TB	UB	VB
BI	0.955																		
CI	0.753	0.924																	
EE	0.567	0.533	0.944																
FC	0.592	0.612	0.754	0.892															
FA	-0.144	-0.018	-0.103	-0.082	0.906														
FB	0.581	0.484	0.485	0.522	-0.303	0.938													
FI	0.558	0.608	0.428	0.502	0.134	0.387	0.839												
FK	0.148	0.195	0.165	0.191	0.108	0.164	0.284	0.912											
HB	0.584	0.631	0.618	0.605	0.019	0.361	0.491	0.165	0.885										
HM	0.526	0.553	0.580	0.565	0.045	0.317	0.441	0.137	0.659	0.949									
IB	-0.176	-0.097	-0.144	-0.136	0.507	-0.172	-0.009	0.119	-0.065	0.039	0.913								
PCR	0.368	0.361	0.259	0.297	0.209	0.235	0.272	0.113	0.319	0.280	0.197	0.920							
PE	0.544	0.469	0.736	0.678	-0.177	0.501	0.390	0.115	0.557	0.485	-0.231	0.164	0.961						
PV	0.599	0.615	0.672	0.702	-0.029	0.494	0.539	0.203	0.710	0.666	-0.086	0.273	0.630	0.948					
RB	0.283	0.314	0.305	0.327	0.117	0.297	0.202	0.068	0.239	0.278	0.275	0.306	0.313	0.282	0.915				
SI	0.429	0.453	0.520	0.563	0.099	0.240	0.387	0.169	0.551	0.615	0.042	0.271	0.493	0.539	0.230	0.929			
TB	0.147	0.120	0.160	0.146	0.182	0.165	0.102	0.027	0.142	0.147	0.390	0.165	0.137	0.115	0.414	0.120	0.785		
UB	0.742	0.770	0.518	0.589	-0.068	0.482	0.578	0.198	0.602	0.479	-0.136	0.304	0.459	0.582	0.209	0.428	0.150	0.936	
VB	-0.128	-0.102	-0.131	-0.121	0.410	-0.162	0.103	0.129	-0.079	-0.004	0.615	0.114	-0.180	-0.149	0.199	0.023	0.233	-0.070	0.813

Source: Author's own work based on SmartPLS version 3

Table 10. Discriminant validity (Fornell-Larcker criterion, Hungary)

	BI	CI	EE	FC	FA	FB	FI	FK	HB	HM	IB	PCR	PE	PV	RB	SI	TB	UB	VB
BI	0.928																		
CI	0.774	0.928																	
EE	0.522	0.565	0.920																
FC	0.521	0.568	0.680	0.834															
FA	0.091	0.034	0.086	0.047	0.841														
FB	0.142	0.146	0.116	0.122	-0.211	0.820													
FI	0.539	0.617	0.488	0.420	0.186	0.186	0.847												
FK	0.225	0.213	0.317	0.242	0.025	0.353	0.249	0.871											
HB	0.624	0.511	0.410	0.399	0.126	-0.044	0.353	0.152	0.815										
HM	0.359	0.338	0.376	0.264	0.184	0.134	0.362	0.241	0.466	0.919									
IB	-0.170	-0.204	-0.325	-0.285	0.087	-0.149	-0.044	-0.152	-0.049	-0.089	0.942								
PCR	0.210	0.130	-0.038	-0.041	0.183	-0.121	0.182	0.056	0.281	0.152	0.273	0.842							
PE	0.609	0.655	0.657	0.652	0.039	0.069	0.502	0.205	0.430	0.349	-0.156	0.037	0.913						
PV	0.479	0.487	0.576	0.581	0.096	0.151	0.442	0.287	0.379	0.334	-0.180	0.083	0.572	0.873					
RB	-0.036	-0.069	-0.138	-0.101	0.059	-0.067	-0.001	-0.142	0.101	0.020	0.537	0.174	0.052	-0.121	0.836				
SI	0.393	0.323	0.279	0.283	0.094	-0.012	0.223	0.076	0.550	0.346	0.051	0.171	0.312	0.250	0.151	0.924			
TB	0.094	0.121	-0.003	0.114	0.112	-0.003	0.161	0.069	0.125	0.082	0.449	0.168	0.126	0.086	0.329	0.106	0.890		
UB	0.800	0.828	0.588	0.513	0.091	0.186	0.610	0.272	0.560	0.432	-0.217	0.210	0.607	0.513	-0.088	0.296	0.108	0.900	
VB	-0.125	-0.238	-0.219	-0.171	0.241	-0.237	-0.078	-0.250	0.097	-0.022	0.547	0.244	-0.180	-0.191	0.473	0.100	0.402	-0.194	0.871

Source: Author's own work based on SmartPLS version 3

Table 11. Discriminant validity (HTMT, Indonesia)

	BI	CI	EE	FC	FA	FB	FI	FK	HB	HM	IB	PCR	PE	PV	RB	SI	TB	UB
BI																		
CI	0.815																	
EE	0.615	0.566																
FC	0.650	0.658	0.812															
FA	0.141	0.037	0.097	0.101														
FB	0.632	0.515	0.518	0.562	0.311													
FI	0.614	0.657	0.462	0.550	0.167	0.418												
FK	0.154	0.202	0.172	0.202	0.127	0.169	0.314											
HB	0.649	0.691	0.667	0.662	0.077	0.386	0.553	0.180										
HM	0.586	0.604	0.633	0.626	0.069	0.346	0.495	0.149	0.751									
IB	0.180	0.096	0.139	0.134	0.549	0.150	0.095	0.144	0.098	0.084								
PCR	0.404	0.390	0.279	0.324	0.244	0.252	0.308	0.123	0.358	0.313	0.257							
PE	0.596	0.501	0.793	0.740	0.174	0.541	0.425	0.115	0.601	0.533	0.238	0.174						
PV	0.668	0.672	0.735	0.777	0.060	0.540	0.603	0.221	0.800	0.749	0.086	0.305	0.693					
RB	0.312	0.338	0.329	0.360	0.151	0.323	0.224	0.070	0.264	0.309	0.366	0.336	0.343	0.311				
SI	0.468	0.486	0.557	0.615	0.122	0.256	0.429	0.183	0.614	0.677	0.054	0.296	0.534	0.597	0.251			
TB	0.099	0.077	0.106	0.105	0.438	0.110	0.106	0.093	0.095	0.119	0.776	0.220	0.103	0.075	0.502	0.091		
UB	0.842	0.856	0.577	0.663	0.064	0.538	0.653	0.217	0.690	0.547	0.147	0.343	0.515	0.666	0.236	0.481	0.105	
VB	0.081	0.076	0.092	0.080	0.431	0.125	0.107	0.113	0.075	0.071	0.747	0.175	0.185	0.088	0.312	0.029	0.651	0.044

Source: Author's own work based on SmartPLS version 3

Table 12. Discriminant validity (HTMT, Hungary)

	BI	CI	EE	FC	FA	FB	FI	FK	HB	HM	IB	PCR	PE	PV	RB	SI	TB	UB
BI																		
CI	0.840																	
EE	0.561	0.608																
FC	0.585	0.642	0.750															
FA	0.105	0.050	0.114	0.070														
FB	0.140	0.152	0.132	0.149	0.270													
FI	0.588	0.674	0.525	0.477	0.221	0.196												
FK	0.249	0.232	0.346	0.268	0.067	0.408	0.274											
HB	0.682	0.522	0.404	0.420	0.191	0.167	0.381	0.188										
HM	0.391	0.362	0.401	0.299	0.221	0.139	0.398	0.268	0.565									
IB	0.188	0.223	0.356	0.322	0.103	0.175	0.105	0.164	0.121	0.093								
PCR	0.222	0.129	0.095	0.119	0.249	0.259	0.205	0.118	0.417	0.186	0.356							
PE	0.657	0.708	0.702	0.730	0.073	0.079	0.545	0.220	0.415	0.375	0.170	0.074						
PV	0.542	0.554	0.647	0.681	0.123	0.171	0.503	0.336	0.395	0.380	0.206	0.083	0.645					
RB	0.043	0.079	0.130	0.103	0.083	0.080	0.089	0.165	0.141	0.073	0.620	0.246	0.098	0.123				
SI	0.429	0.352	0.302	0.335	0.105	0.105	0.249	0.099	0.659	0.382	0.059	0.215	0.339	0.285	0.179			
TB	0.101	0.146	0.028	0.145	0.122	0.079	0.192	0.092	0.142	0.094	0.557	0.215	0.159	0.107	0.425	0.133		
UB	0.883	0.913	0.645	0.584	0.108	0.204	0.681	0.309	0.618	0.481	0.244	0.235	0.666	0.593	0.082	0.329	0.125	
VB	0.133	0.264	0.245	0.192	0.286	0.282	0.126	0.272	0.233	0.062	0.645	0.338	0.190	0.216	0.543	0.113	0.506	0.214

Source: Author's own work based on SmartPLS version 3

5.5 Structural model assessment

5.5.1 Coefficient of determination (R^2), effect size (f^2) and predictive model (Q^2) measurement

HAIR ET AL. (2019) suggested that coefficient determination (R^2) should be interpreted in the research. In this study, the coefficient determination (R^2) is assessed to measure the explanatory power of Fintech adoption in Indonesia and Hungary. HAIR ET AL. (2019) explained that the range of predictive power is from 0 means no relationship, to 1 indicates perfect relationship. In detail, HAIR ET AL. (2019) mentioned that the value of R^2 of 0.75 reveals substantial explanatory power, while 0.50 and 0.25 are considered as moderate and weak explanatory power. Table 13 displays the coefficient of determination and size effect, reveals that moderate explanatory power of Fintech adoption in Indonesia (R^2=0.518) and Hungary (R^2=0.568), indicating that the variable of performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, habit, value barrier, risk barrier, tradition barrier, image barrier and perceived Covid-19 risk explain 51.8% and 56.8% of the variation in the adoption of Fintech in Indonesia and Hungary, respectively.

This study reveals that behavioral intention explained 55.2% and 64% of use behavior variance in Indonesia and Hungary. It means that behavioral intention has moderate explanatory power for use behavior in both countries. Similarly, continuance intention, with a variance of 59.3% for Indonesia and 68.5% for Hungary, showed moderate explanatory power. However, CHIN (1998) argued that R^2 value of 0.67 can be considered as a large explanatory power. Meanwhile, the model accounts for 33.5% and 37.2% of the variance in financial inclusion, revealing that user behavior has weak explanatory power for financial inclusion in Indonesia and Hungary. The effect size (f^2) of each predictor evaluated to determine the substantive effect on the endogenous construct when specific exogenous omitted. COHEN (2013) classified the f^2 value above 0.35 as having a large effect size, while 0.15 and 0.02 are medium and small. The value of f^2 below 0.02 indicates no effect size. Furthermore, all Q^2 values both for Indonesia and Hungary are above 0, indicating all endogenous constructs are adequate predictive relevance (HAIR ET AL. 2022).

Table 13. Coefficient determination (R^2), effect size (f^2) and predictive model (Q^2)

Path	Indonesia			Hungary		
	f^2	**R^2**	**Q^2**	**f^2**	**R^2**	**Q^2**
Performance Expectancy -> Behavioral Intention	0.007			0.100		
Effort Expectancy -> Behavioral Intention	0.001			0.003		
Social Influence -> Behavioral Intention	0.000			0.002		
Facilitating Conditions -> Behavioral Intention	0.012			0.004		
Hedonic Motivation -> Behavioral Intention	0.013			0.004		
Price Value -> Behavioral Intention	0.015			0.001		
Habit -> Behavioral Intention	0.020			0.198		
Value Barrier -> Behavioral Intention	0.001			0.005		
Risk Barrier -> Behavioral Intention	0.004			0.006		
Tradition Barrier -> Behavioral Intention	0.009			0.002		
Image Barrier -> Behavioral Intention	0.044			0.001		
Perceived Covid-19 Risk -> Behavioral Intention	0.062			0.100		
Behavioral Intention -> Use Behavior	0.717			1.780		
Use Behavior -> Continuance Intention	1.459			2.173		
Use Behavior -> Financial Inclusion	0.503			0.592		
Behavioral Intention		0.518	0.447		0.568	0.480
Use Behavior		0.552	0.488		0.640	0.509
Continuance Intention		0.593	0.503		0.685	0.585
Financial Inclusion		0.335	0.230		0.372	0.259

Source: Author's own work based on SmartPLS version 3

5.5.2 Hypotheses testing

5.5.2.1 Direct effect of UTAUT2, IRT and perceived Covid-19 risk

The present study analyses the driver and barrier factors of Fintech adoption in Indonesia and Hungary. Based on a bootstrapping technique in SmartPLS version 3, the t-statistic of the proposed theoretical model shown in Figure 7 was evaluated for significance. The summary of direct hypotheses testing is displayed in Table 14.

Table 14. Direct hypotheses testing summary

Direct Paths		Indonesia			Hungary		
		Path Coefficient	**p-value**	**Decision**	**Path Coefficient**	**p-value**	**Decision**
H1a	Performance Expectancy -> Behavioral Intention	0.097	0.125	not supported	0.319	0.000	**supported**
H1b	Effort Expectancy -> Behavioral Intention	0.031	0.582	not supported	0.053	0.455	not supported
H1c	Social Influence -> Behavioral Intention	-0.018	0.725	not supported	0.039	0.430	not supported
H1d	Facilitating Conditions -> Behavioral Intention	0.132	0.022	**supported**	0.064	0.372	not supported
H1e	Hedonic Motivation -> Behavioral Intention	0.123	0.035	**supported**	-0.047	0.383	not supported
H1f	Price Value -> Behavioral Intention	0.150	0.041	**supported**	0.023	0.672	not supported
H1g	Habit -> Behavioral Intention	0.157	0.005	**supported**	0.406	0.000	**supported**
H2a	Value Barrier -> Behavioral Intention	0.024	0.644	not supported	-0.065	0.216	not supported
H2b	Risk Barrier -> Behavioral Intention	0.052	0.240	not supported	-0.061	0.266	not supported
H2c	Tradition Barrier -> Behavioral Intention	0.077	0.209	not supported	0.031	0.570	not supported
H2d	Image Barrier -> Behavioral Intention	-0.209	0.000	**supported**	-0.034	0.595	not supported
H3	Perceived Covid-19 Risk -> Behavioral Intention	0.194	0.000	**supported**	0.127	0.012	**supported**
H4	Behavioral Intention -> Use Behavior	0.689	0.000	**supported**	0.800	0.000	**supported**
H5	Use Behavior -> Continuance Intention	0.770	0.000	**supported**	0.828	0.000	**supported**
H6	Use Behavior -> Financial Inclusion	0.578	0.000	**supported**	0.610	0.000	**supported**

Source: Author's own work based on SmartPLS version 3

As shown in Table 14, hypothesis H1a proposed the positive relationship between performance expectancy and behavioral intention is significant only for Hungarian respondents. This indicates that consumer's perception of performance expectancy has been influenced by the perceived benefits associated with Fintech services, such as simplified payment processes, real-time transaction, cost efficiency and advanced function in digital finance apps. The performance expectancy of users towards adopting Fintech services has consistently been demonstrated to have a significant impact on behavioral intentions in previous studies, for example AZMAN & ZABRI (2022); JENA (2022); BAJUNAIED ET AL. (2023); and ROH ET AL. (2023). However, performance expectancy has no significant impact on behavioral intention for

Indonesian respondents, consistent with the finding of BOONTARIG ET AL. (2012). In addition, recent study examining the antecedent of mobile Fintech service in Bangladesh revealed insignificant effect of performance expectancy and behavioral intention (HASSAN ET AL. 2023).

Effort expectancy had no significant impact on behavioral intention in both countries. It implies that Fintech services are probably perceived as more complicated or time-consuming by respondents in Indonesia and Hungary. Further, when it comes to financial matters, users tend to stick to their usual routines and established patterns. It is understood that traditional financial services have been integrated into our lives for a long time, and some people may be reluctant to switch to a new Fintech platform because of the unknown benefits and risks. Due to this variation in individual perceptions, effort expectancy has a reduced impact on Fintech behavioral intentions. While the theory explains the significant effect between effort expectancy and behavioral intention (VENKATESH ET AL. 2012), some recent literature has found contradictory results, including JEWER (2018); and NAJIB ET AL. (2021) which revealed an insignificant effect between effort expectancy and Fintech adoption.

The impact of social influence on Fintech adoption is insignificant in Indonesia and Hungary. Digital finance adoption may be affected by changes in modern society's behavior that are more individualistic. Fintech user may prioritize their own beliefs, values, and preferences over external influences. The presence of social influences from various sources allows the information received to be different or even contradictory, making it difficult for individuals to align their intentions with one particular influence. Even though the research findings on social influence toward technology adoption contradict with VENKATESH ET AL. (2012), this study is consistent with MERHI ET AL. (2019); and BAJUNAIED ET AL. (2023).

Moreover, the study found that facilitating conditions is a significant predictor of behavior intentions to adopt digital financial services only in Indonesia, emphasizing the role of resource availability, including Fintech applications that are compatible with multiple electronic devices. Indonesia, which is demographically dominated by the younger generation, in contrast to typical developed countries such as Hungary which are dominated by older individuals, tends to have a faster rate of technology adoption because young people are considered to be more tech-savvy generations (LAW ET AL. 2018). The previous studies had found both a significant influence, such as RAHMAN ET AL. (2020); BAJUNAIED ET AL. (2023) and insignificant effect between facilitating conditions and Fintech adoption, for example QUAOSAR ET AL. (2018); AL-OKAILY ET AL. (2020).

The effect of hedonic motivation on behavioral intention was significant only in Indonesia, compared to insignificant in Hungary. Hedonic motivation refers to the level of

pleasure, enjoyment, and positive experiences related to digital financial services that are identical to the characteristics of young respondents. Younger generation adopts technology that is fun and allows them to explore more advanced financial functions on digital financial platforms, such as financial robo-advisors. This finding is consistent with the previous study which revealed that the influence of hedonic motivation on digital financial adoption is significant in developing countries (Malaysia) and not significant in Sweden (NOURALLAH, 2023). Furthermore, MERHI ET AL. (2019) also documented insignificant effect between hedonic motivation and behavioral intention in developed countries (United Kingdom).

Price value influences on intended to adopt Fintech reflect a significant relationship only for Indonesian respondents. Indonesia as a developing country has lower income per capita compared to Hungary. Therefore, Fintech users in Indonesia are typically more prudent in making decisions, especially related to financial-based applications. In contrast to Hungary with higher income making price less influential on behavioral intention. Developed countries probably have more advanced Fintech products that lead to greater financial differentiation to meet the needs of customers beyond the price. Furthermore, high quality financial products expected by users in Hungary may associate with higher price compared to Indonesia with limited exposure to higher cost of financial services. This finding in line with previous studies revealed a significant effect of price value on Fintech adoption (VENKATESH ET AL. 2012; BRENNER & MEYLL, 2020). When it compares between developing and developed countries, MIGLIORE ET AL. (2022) found consistent results that price value has significant impact on behavioral intention in China and insignificant in Italy.

Habit was found to have a positive and significant impact on behavioral intention to adopt Fintech in both Indonesia and Hungary, which support the findings of NIKOLOPOULOU ET AL. (2021); MIGLIORE ET AL. (2022); SEBASTI´AN ET AL. (2023) but in contrast to the result of NAJIB ET AL. (2021). Furthermore, habit in particular, was the most influential variable in predicting Fintech adoption in both countries. The rapid development of digital financial services supported by technological advances and smartphone ownership directly and indirectly changes the behavior that is performed with little consciousness to embrace digital financial platforms. In addition, the convenience offered by digital financial services coupled with a user-friendly interface gives a positive perception to develop new habits toward Fintech services. In the context of Fintech adoption in cross country analysis, the finding is in line with MERHI ET AL. (2019) revealed that habit has a significant effect on behavioral intention for Lebanese and British respondents. In contrast to PLENDER ET AL. (2020) documented that habit has an insignificant effect on behavioral intention for respondents in the Philippines.

Furthermore, except for the image barrier in Indonesia, all barrier factors derived from innovation resistance theory have no significant impact on behavioral intention. Although the theory provides insight into the barrier factors for technology adoption in general (KAUR ET AL. 2020), this study reveals the weak explanatory power of behavioral intentions in the context of digital finance in Indonesia and Hungary. This result is consistent with the findings of MIGLIORE ET AL. (2022) evaluated the innovation resistance theory on mobile payment adoption in China and Italy, as well as answering the future research of SETIAWAN ET AL (2023) to evaluate the driving and inhibiting factors of Fintech adoption in Indonesia, and MIGLIORE ET AL. (2022) to conduct a cross-country analysis in respect to different cultures and economic situations in both developing and developed countries.

The research also revealed that the perceived Covid-19 risk for behavioral intention has a positive and significant effect on Indonesian and Hungarian respondents. This suggests that individual concerns regarding the risk of transmitting the Coronavirus lead to an increase in awareness to minimize direct transactions, especially in relation to the potential transmission of the virus through paper or coin money (AUER ET AL. 2020). This perception has driven individual behavior to adopt digital financial services. FU & MISHRA (2022) documented that digital financial applications were downloaded more frequent during the Covid-19 pandemic. GLOBAL FINANCIAL INDEX (2022) also revealed that Covid-19 has accelerated access to finance. This result is in line with DARAGMEH ET AL. (2021) found a significant effect of perceived Covid-19 risk on behavioral intention of adults in Hungary to adopt online payments.

The relationship between behavioral intention and use behavior was significant in Indonesia and Hungary, indicating intention will encourage using digital financial services. A possible explanation for this might be that the proliferation of digital infrastructure, such as increasing internet coverage and developing information, computers and technology allows for easier access to Fintech products. This finding is consistent with the planned behavior theory developed by AJZEN (2002) and several previous studies such as VENKATESH ET AL. (2003); CHOPDAR ET AL. (2018). Recently, SAXENA ET AL. (2023) revealed that behavioral intention has significant influence to use behavior toward Fintech services in developing countries.

Use behavior was found to have significant impact on continuance intention in both countries. It seems that Fintech services offer a positive experience to their users, including ease of use, efficient performance, responsiveness, and effective solutions to their needs that might influence their intentions to continue using digital finance products in the future. Tangible benefits in terms of speed, convenience, or time and cost savings tend to encourage the continued use of digital finance services (VENKATESH ET AL. 2012). OGHUMA ET AL. (2016) also

documented the importance of service quality perceptions in continuing to use behavior of new technologies.

Furthermore, the result showed that use behavior has a significant effect on financial inclusion in Indonesia and Hungary. Fintech platforms that can be accessed easily via smartphones or other electronic devices allow the underserved population to reach financial products more easily. Business model innovations that rely on big data also increase access to finance, especially for individuals who have limited collateral, which is sometimes a barrier to traditional financial services (AHELEGBEY ET AL. 2023). The speed at which Fintech services perform transactions such as payments and remittances can increase the convenience and trust of customers, which, in turn, contributes to financial inclusion. This finding is consistent with AL-SMADI (2022); YANG & ZHANG (2022); and COFFIE & HONGJIANG (2023).

5.5.2.2 Mediating effect of financial literacy

This study examines whether financial literacy (financial knowledge, financial behavior, and financial attitude) facilitates the relationship between behavioral intention and use behavior toward Fintech in Indonesia and Hungary. Table 15 provides effect size estimations using upsilon υ, while Table 16 summarizes the mediating effects evaluated in this study.

Table 15. Upsilon (υ) calculation

Indonesia	**Original Sample (OS)**	**OS Square**	**Upsilon (υ) calculation**	**Upsilon (υ) value**
Behavioral Intention -> Financial Knowledge	0.149	0.022	0.022 x 0.013	0.000
Financial Knowledge -> Use Behavior	0.112	0.013		
Behavioral Intention -> Financial Behavior	0.583	0.340	0.340 x 0.235	0.080
Financial Behavior -> Use Behavior	0.485	0.235		
Behavioral Intention -> Financial Attitude	-0.144	0.021	0.021 x 0.005	0.000
Financial Attitude -> Use Behavior	0.068	0.005		
Hungary	**Original Sample (OS)**	**OS Square**	**Upsilon (υ) calculation**	**Upsilon (υ) value**
Behavioral Intention -> Financial Knowledge	0.226	0.051	0.051 x 0.049	0.002
Financial Knowledge -> Use Behavior	0.220	0.049		
Behavioral Intention -> Financial Behavior	0.135	0.018	0.018 x 0.019	0.000
Financial Behavior -> Use Behavior	0.138	0.019		
Behavioral Intention -> Financial Attitude	0.095	0.009	0.009 x 0.016	0.000
Financial Attitude -> Use Behavior	0.127	0.016		

Source: Author's own work based on SmartPLS version 3

Table 16. Mediating effect of financial literacy

Mediation Paths		Indonesia						
		Path Coefficient	p-value	Confidence Intervals		Decision	upsilon (υ)	Effect size
				Lower limit	Upper limit			
H7a	Behavioral Intention -> Financial Knowledge -> Use Behavior	0.017	0.135	0.001	0.045	no mediation	0.00	no
H7b	Behavioral Intention -> Financial Behavior -> Use Behavior	0.283	0.000	0.210	0.362	**partial mediation**	0.08	**medium**
H7c	Behavioral Intention -> Financial Attitude -> Use Behavior	-0.010	0.247	-0.023	0.011	no mediation	0.00	no
Mediation Paths		**Hungary**						
		Path Coefficient	p-value	Confidence Intervals		Decision	upsilon (υ)	Effect size
				Lower limit	Upper limit			
H7a	Behavioral Intention -> Financial Knowledge -> Use Behavior	0.050	0.041	0.015	0.103	**partial mediation**	0.02	**low**
H7b	Behavioral Intention -> Financial Behavior -> Use Behavior	0.019	0.201	0.003	0.056	no mediation	0.00	no
H7c	Behavioral Intention -> Financial Attitude -> Use Behavior	0.012	0.361	-0.001	0.050	no mediation	0.00	no

Source: Author's own work based on SmartPLS version 3

Despite financial literacy in general contributes to the better process of making financial decisions (KAWAMURA ET AL. 2021), this study found that financial literacy has various mediating roles in the relationship between behavioral intention and use behavior. The empirical findings revealed that financial knowledge is divergent in facilitating behavioral intention to use behavior toward Fintech services, with partial mediation and low effect size for Hungarian respondents, but no mediation and no size effect for Indonesian respondents. This finding implies that Hungary might require more financial knowledge because of the complexity of its digital financial services than Indonesia. The digital finance industry in developed countries such as Hungary, which has a level of "innovating" in the Fintech development categorization according to WORLD BANK (2020a), offers relatively more advanced and varied financial products and services than developing countries. In Hungary, more than 15% of respondents use Crypto & Blockchain services as compared to only around 3% in Indonesia. KOWALEWSKI & PISANY (2023) documented that Fintech services in asset management have grown in developed economies, but are less prevalent in developing economies.

The finding also indicated differences between Indonesian and Hungarian respondents when examining the mediating effect of financial behavior toward behavioral intention and use behavior in adopting Fintech. Financial behavior has partial moderation and medium effect size in Indonesia compared to no mediation effect for Hungarian respondents. Indonesia's financial behavior score exceeds Hungary's by 69.7 points, compared to 49.9 points in Hungary (OECD, 2020), which may affect the use of digital financial services. Additionally, Indonesian respondents are more likely to use Fintech services due to the demographics of a young

population and limited product variants compared to Hungary, whose financial products are relatively advanced.

This study also found that financial attitude is insignificant in facilitating the relationship between behavioral intention and use behavior in both countries. As a result of massive promotions by Fintech companies to attract new customers, and the policies of the Indonesian and Hungarian governments which encourage digital finance acceleration, especially during the Covid-19 pandemic, enabling individuals to use digital financial services without associating them to their financial attitude. During the Covid-19 pandemic of 2021, the number of adults making or receiving digital payments in developing economies reached 57 percent, compared to 34 percent in 2014. Hungary also experienced a similar trend, with financial access increasing during the pandemic to 88 percent, compared to 73 percent in 2011 (GLOBAL FINANCIAL INDEX, 2022).

5.5.2.3 Moderating effect of facilitating conditions and price value

The moderating effect of facilitating conditions and price value on use behavior and continuance intention in Indonesia and Hungary is presented in Table 17. The findings show that facilitating conditions can strengthen the influence of use behavior and continuance intention, however, price value has different directions towards weakening the relationship between use behavior and continuance intention for Indonesian respondents. The argument is probably due to sufficient level of digital access, as demonstrated by the significant growth of internet users in Indonesia from 63% in 2021 compared to 12% in 2011, which encourage Fintech user to continue using digital financial services (GLOBAL FINANCIAL FINDEX, 2022). This finding is consistent with HUMIDA ET AL. (2022) documented a significant effect of facilitating conditions on Fintech adoption. Meanwhile, price value has proven to weaken the relationship between use behavior and continuance intention, perhaps due to the relatively high cost of accessing digital financial services in Indonesia compared to financial products from other industries (BCG, 2023). In addition, both facilitating conditions and price value seem to have insignificant role in moderating the relationship between use behavior and continuance intention in Hungary.

Table 17. Moderating effect of facilitating conditions and price value

Moderation Paths		Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	p-value	Decision
Indonesia							
H8a	Use Behavior -> Facilitating Conditions -> Continuance Intention	0.175	0.164	0.053	3.290	0.001	**supported**
H8b	Use Behavior -> Price Value -> Continuance Intention	-0.177	-0.162	0.058	3.026	0.003	**supported**
Hungary							
H8a	Use Behavior -> Facilitating Conditions -> Continuance Intention	0.008	0.003	0.038	0.203	0.839	not supported
H8b	Use Behavior -> Price Value -> Continuance Intention	0.001	-0.003	0.049	0.028	0.977	not supported

Source: Author's own work based on SmartPLS version 3

5.5.2.4 Multigroup analysis

The multigroup analysis is performed to determine whether the original structural model tests are different between Fintech user versus non-user and across countries (Indonesia and Hungary). A non-parametric approach using PLS-MGA is applied to investigate the difference between groups (HAIR ET AL. 2017). The multigroup analysis can be conducted when samples for each group are more than 64 (CHEAH ET AL. 2020), and PLS-MGA can be applied when the data have different sizes (HAIR ET AL. 2017). As presented in Table 18, the results revealed that none of the PLS-MGA p-value is below 0.05 or above 0.95, indicating that there is no significant difference in Fintech user versus non-user and Indonesia versus Hungary in relation to use behavior toward continuance intention and financial inclusion.

This finding revealed that even though non-Fintech users do not have direct experience with digital financial platforms, they may have a perception of continuance intention derived from the experience of Fintech users. By interacting with Fintech user, individual who have not utilized Fintech services may gain information that may influence them to continue using digital financial services in the future through reviews, recommendations, or satisfaction experiences. In addition, psychological factors such as emotion also play a role in the willingness to continue using technology (CRUIJSEN & HORST, 2016), since non-Fintech user may have a positive attitude towards technology or perceive digital financial services to provide significant benefits. Although there has been a research examining differences between Fintech user and non-user on Fintech adoption (JÜNGER & MIETZNER, 2020), no one has specifically analyzed the differences between Fintech user and non-user regarding use behavior and continuance intention. The study also addresses a call from TEKA (2020) for future research between user and non-user to gain better understanding of Fintech adoption.

The other assessment of PLS-MGA between Indonesia and Hungary found that there is no difference in the two countries regarding the relationship between use behavior and financial inclusion. As a result of better digital infrastructure and more advanced financial products offered by the traditional financial industry in developed countries, it may be the reason Fintech services have not been fully adopted, which reconfirms the findings of ERNST & YOUNG (2019) which revealed higher adoption of Fintech in developing countries compared to developed countries. On the other hand, Fintech services are available as an alternative solution in developing countries to traditional financial products that are unable to meet the financial needs of an underserved population totaling around 1.4 billion in 2021 worldwide (DONOVAN, 2011; GLOBAL FINANCIAL INDEX, 2022). This study also completes a research gap from MIGLIORE ET AL (2022) to analyze differences between developed and developing countries in digital financial services adoption.

Table 18. Multigroup analysis results

Fintech user vs. non user		**Path coefficient difference**	**PLS-MGA: p-value**	**Decision**
H9a	Use Behavior -> Continuance Intention	0.043	0.302	not supported
H9b	Use Behavior -> Financial Inclusion	-0.031	0.643	not supported
Indonesia vs. Hungary		**Path coefficient difference**	**PLS-MGA: p-value**	**Decision**
H10a	Use Behavior -> Continuance Intention	0.058	0.136	not supported
H10b	Use Behavior -> Financial Inclusion	0.006	0.919	not supported

Source: Author's own work based on SmartPLS version 3

Furthermore, Table 19 presents the summary of hypotheses testing result including direct paths of UTAUT2, IRT and PCR to behavioral intention. The mediation effect of financial knowledge, financial behavior, and financial attitude plays a crucial role in facilitating the relationship between behavioral intention and use behavior. Additionally, the moderating role of facilitating conditions and price value in the context of use behavior toward continuance intention and financial inclusion is examined. A multigroup analysis is conducted to explore this relationship among Fintech users and non-users, as well as between respondents in Indonesia and Hungary.

Table 19. Hypotheses testing result summary

Hypotheses Result		Decision	
		Indonesia	**Hungary**
Direct Paths			
H1a	Performance Expectancy -> Behavioral Intention	not supported	**supported**
H1b	Effort Expectancy -> Behavioral Intention	not supported	not supported
H1c	Social Influence -> Behavioral Intention	not supported	not supported
H1d	Facilitating Conditions -> Behavioral Intention	**supported**	not supported
H1e	Hedonic Motivation -> Behavioral Intention	**supported**	not supported
H1f	Price Value -> Behavioral Intention	**supported**	not supported
H1g	Habit -> Behavioral Intention	**supported**	**supported**
H2a	Value Barrier -> Behavioral Intention	not supported	not supported
H2b	Risk Barrier -> Behavioral Intention	not supported	not supported
H2c	Tradition Barrier -> Behavioral Intention	not supported	not supported
H2d	Image Barrier -> Behavioral Intention	**supported**	not supported
H3	Perceived Covid-19 Risk -> Behavioral Intention	**supported**	**supported**
H4	Behavioral Intention -> Use Behavior	**supported**	**supported**
H5	Use Behavior -> Continuance Intention	**supported**	**supported**
H6	Use Behavior -> Financial Inclusion	**supported**	**supported**
Mediation Paths			
H7a	Behavioral Intention -> Financial Knowledge -> Use Behavior	no mediation	**partial mediation**
H7b	Behavioral Intention -> Financial Behavior -> Use Behavior	**partial mediation**	no mediation
H7c	Behavioral Intention -> Financial Attitude -> Use Behavior	no mediation	no mediation
Moderation Paths			
H8a	Use Behavior -> Facilitating Conditions -> Continuance Intention	**supported**	not supported
H8b	Use Behavior -> Price Value -> Continuance Intention	**supported**	not supported
Multigroup Paths			
Fintech user vs. non user			
H9a	Use Behavior -> Continuance Intention	not supported	
H9b	Use Behavior -> Financial Inclusion	not supported	
Indonesia vs. Hungary			
H10a	Use Behavior -> Continuance Intention	not supported	
H10b	Use Behavior -> Financial Inclusion	not supported	

Source: Author's own work based on SmartPLS version 3

Furthermore, Figures 18 and 19 display the assessment of the structural model based on 5,000 subsamples to examine path coefficients using a two-tailed test for respondents from Indonesia and Hungary (HAIR ET AL. 2019).

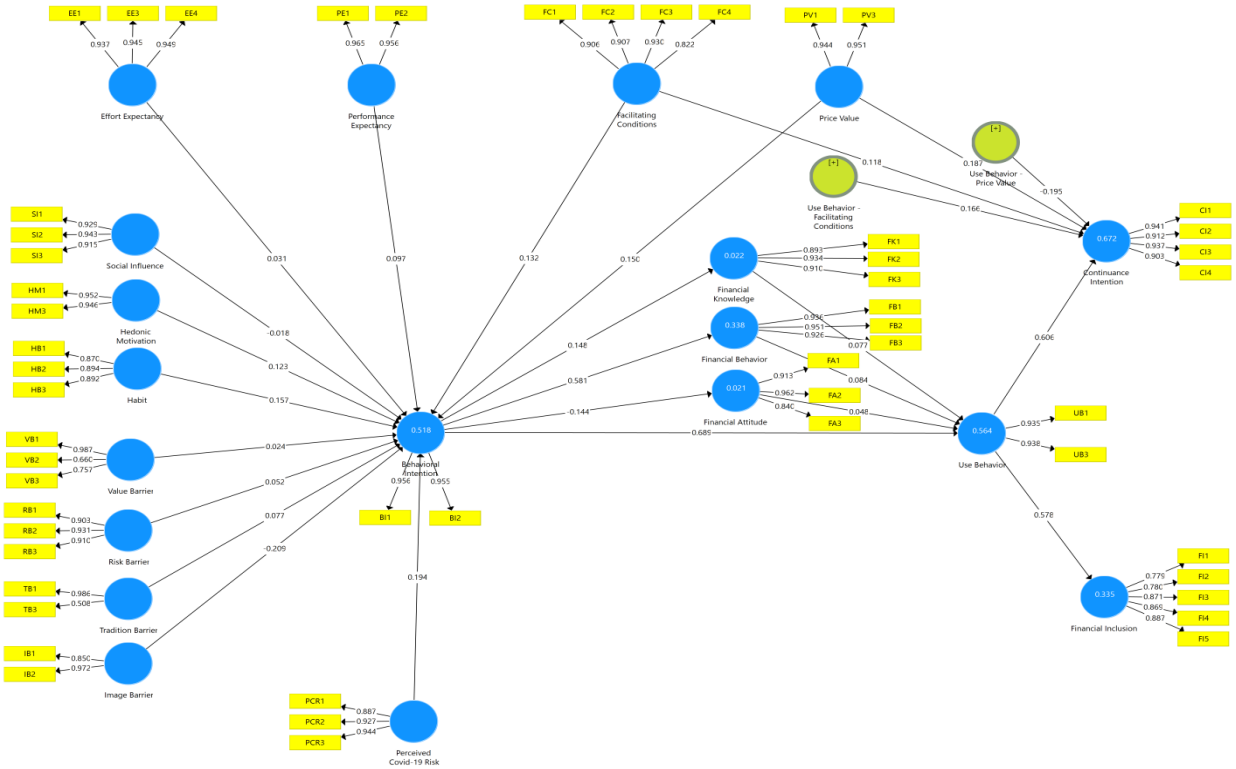

Figure 18. Structural model for Indonesian respondents

Source: Author's own construction based on SmartPLS version 3

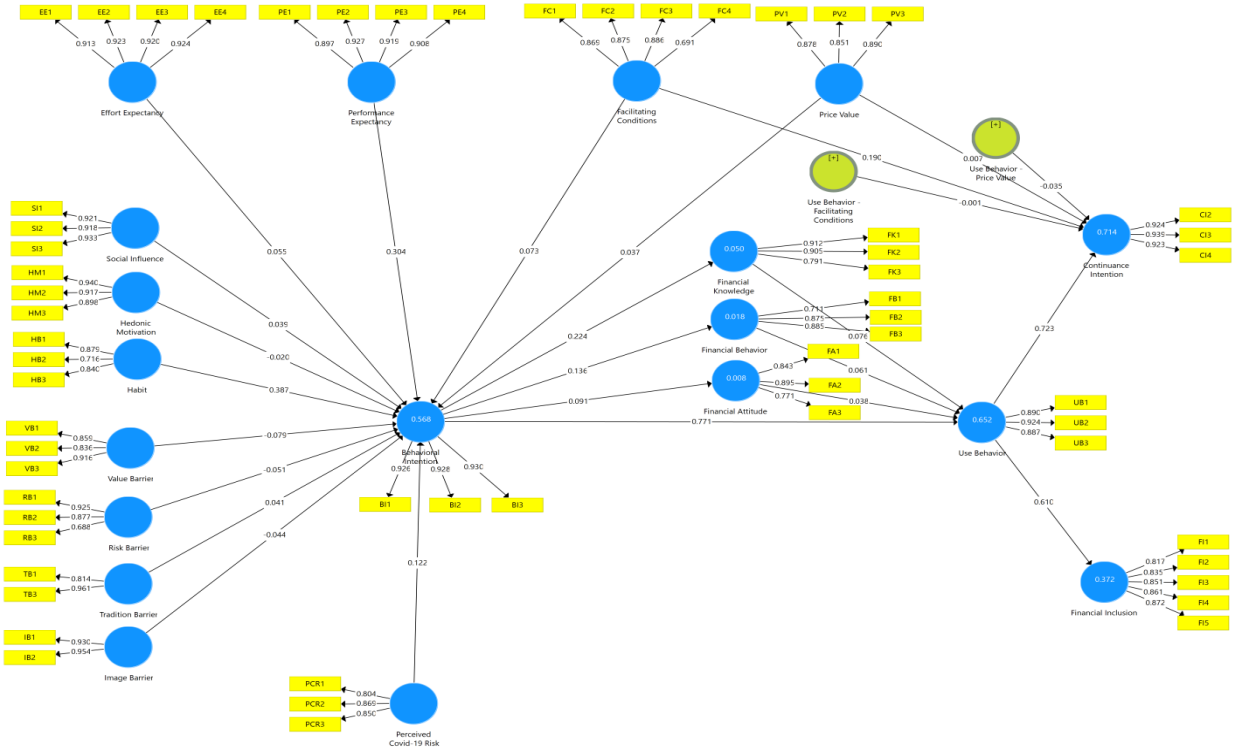

Figure 19. Structural model for Hungarian respondents

Source: Author's own construction based on SmartPLS version 3

VI. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

Despite the government and multiple parties making collective efforts to provide financial products accessible for the majority of the population, access to formal and semi-formal finance remains a challenge for the world of 1.4 billion populations, particularly the underserved. With the help of advanced technology, Fintech serves as a platform for financial technology that can bridge society from financial exclusion to inclusion. Since technology adoption varies among countries, it is necessary to collaborate across countries to accelerate financial inclusion. The main objective of this research is to examine the driver and barrier factors for the adoption of Fintech services in developing and developed countries with a sample of Indonesian and Hungarian respondents. The driving factors derived from UTAUT2, and the inhibiting factors referred to IRT were analyzed using PLS-SEM. This study found that adoption of Fintech services can be explained by the UTAUT2 model. Habit has positive, significant and most determinant impact of Fintech adoption in Indonesia and performance expectancy for Hungarian respondents. On the other hand, IRT cannot be used as an explanatory factor for technological barriers in both countries. Most of the IRT variables such as value barriers, risk barriers, tradition barriers and image barriers are proven to have no significant effect in explaining the adoption of Fintech services, except for image barriers in Indonesia.

Additionally, this study evaluates how individual behavior has been affected by the Covid-19 pandemic in Indonesia and Hungary, which has resulted in an increase in perception that direct money transactions could transmit the Coronavirus, resulting in a shift from traditional to digital financial services. This research also adds a construct to examine the role of financial literacy consisting of financial knowledge, behavior and attitude, as mediating variables in facilitating the relationship between behavioral intention and use behavior. The divergent result shown in both countries, financial behavior proved to have a significant influence in facilitating the relationship between behavioral intention and use behavior for Indonesian respondents, while in Hungary it was facilitated by financial knowledge. Financial attitude is insignificant as an intervening variable between behavioral intention and use behavior in both countries. Meanwhile, the role of facilitating conditions and price value as a moderating variable between use behavior and continuance intention is only significant for Indonesian respondents. Meanwhile, Hungary respondents do not consider facilitating conditions and price value as significant moderating variables between use behavior and continuance intention.

The hypothesis which asserted that there is a difference between Fintech user versus non-user in explaining the influence between use behavior and continuance intention remain

inconclusive using PLS-MGA. Similarly, when comparing Indonesian and Hungarian respondents regarding the difference in effect between use behavior toward continuance intention and financial inclusion, this was also not proven empirically. Furthermore, use behavior has a direct and significant effect on continuation intention and financial inclusion in Indonesia and Hungary.

In conclusion, this research provides a novel contribution as one of the pioneering studies which will be considered as a new model for the future. The research framework in this study was developed from UTAUT2 and IRT as a driver and barrier factors in adopting Fintech in a cross country analysis. The results of this research have the potential to be a valuable reference for advancing scientific research on Fintech adoption and its relation to financial inclusion. The research findings are anticipated to provide substantial support to Fintech companies in designing effective strategic approaches aimed at accelerating the acceptance of digital financial services, which could lead to a greater level of financial inclusion in Indonesia and Hungary.

6.2 Recommendations and implications

Research findings can address the theoretical gap and facilitate the development of strategies in promoting digital financial services adoption. By building on the research model of Fintech adoption drivers and barriers to financial inclusion, this paper fills this important theoretical gap. First, previous study has utilized UTAUT2 and IRT to assess the driver and barrier factors of Fintech adoption (e.g. MIGLIORE ET AL. 2022). The result of empirical analysis found that UTAUT2 and IRT play an important role in the adoption of Fintech services. This study extended previous literature in the context of Covid-19 pandemic by adding perceived Covid-19 risk (PCR). The results found that the coefficient of determination (R^2) of the entire model in relation to behavioral intention was 0.518 in Indonesia and 0.583 for Hungarian respondents, higher than existing studies which only compared driving or inhibiting factors separately, with R^2 values ranging from 0.3 to 0.4 (CHEN T EL. 2019; BAJUNAIED ET AL. 2023). The results of this study illustrate that UTAUT2, IRT and PCR have an important role in Fintech adoption. This research also responds to calls by MIGLIORE ET AL. (2022) to analyze the factors driving and inhibiting digital financial services adoption across countries with different cultures and economies. This study has important recommendations that understanding digital financial adoption drivers and barriers can support the Fintech business to implement the appropriate strategy and government to make good policies to increase the number of digital financial service users.

Second, this study analyzes the role of financial literacy as a mediating variable between behavioral intention and use behavior. The research findings are important because mediation

results differ in facilitating between measured variables in the two countries. The relationship between behavioral intention and use behavior is facilitated by financial behavior in Indonesia, whereas financial knowledge is a significant intervening variable in Hungary. Thus, the role of financial literacy as a mediating variable, and its relationship between behavioral intention and use behavior toward digital financial platforms, can be better understood. This complements previous research by JAVED & HUSAIN (2021) which evaluated the mediating role of financial literacy in the traditional financial sector. Based on the results of this study, the government will be able to formulate strategies and policies to increase access to digital finance, where the Indonesian government focuses on conducting financial management education to improve financial behavior skills, while the Hungarian government is attempting to increase public knowledge regarding numeration, inflation, and risk diversification.

Third, the results found that facilitating conditions and price value had a significant impact as a moderating variable between use behavior and continuance intention only for Indonesian respondents. This study also responds to the research recommendations of SHI ET AL. (2022) to include new variables in addition to facilitating conditions for technology adoption. In light of these findings, it is important to note that Fintech companies continue to provide digital financial products that are compatible for access from multiple electronic devices, including providing Fintech products at affordable prices for Indonesian consumers. From the perspective of policy makers regarding the continuation of digital finance use, the results of this study recommend that the government should consider conducting educational programs regarding digital financial literacy in order to increase the use of digital financial service platforms.

Fourth, the study found that there were no significant differences between Fintech user and non-user when it came to the influence of use behavior and continuation intentions, including in cross-country analyses between Indonesia and Hungary. These studies also complete the theoretical gap and respond to research suggestions from ABUBKER ET AL. (2023) to conduct cross-country analyses to better understand technology adoption. In practice, the absence of differences between Indonesia and Hungary regarding the relationship between use behavior and continuance intention provides opportunities for cooperation between the two countries to develop a joint strategy to strengthen the financial sector which contributes to the adoption and utilization of digital financial services.

Finally, despite the fact that the relationship between use behavior and financial inclusion has already been examined in a previous study, it remains an open discussion among finance researchers and professionals. Theoretically, these findings complement the study by ODEI-APPIAH ET AL. (2021) regarding the effect of use behavior on financial inclusion with

respondents from developing countries in the African region, Ghana. Therefore, this current research provides theoretical and empirical results from Fintech firms, particularly those corporates that open the digital financial business in developing countries, such as Indonesia, and developed economies, e.g. Hungary, which is considered to continue to grow along with the development of information and communication technology. In addition, easy access to digital financial services has an impact on achieving financial inclusion goals in Indonesia and Hungary which indirectly also contributes to achieving the UN SDGs.

6.3 Limitations and future research directions

Even though our study found promising results, it has limitations related to variables, methodologies, and samples, similar to other empirical studies. Although the combination of UTAUT2, IRT and PCR variables can explain Fintech adoption in Indonesia and Hungary, however, most of the constructs from IRT do not have a significant effect on behavioral intention in both countries. Consequently, future studies can include new variables to explain the factors inhibiting digital finance adoption, such as usage barrier and security barrier. Different statistical approaches can also be applied to analyze technology adoption barrier factors, such as structural equation modeling-artificial neural network (SEM-ANN).

The future study may develop the research model using new moderating variables, for example gender and employment status. In future research, digital financial literacy can be considered as an intervening variable since individual perceptions and behaviors have been changing towards digital, especially in the post Covid-19 pandemic era. The research construct by integrating moderating variables other than facilitating conditions and price value can be analyzed, such as the value of status quo and commitment to status quo, which has recently been demonstrated empirically to have a significant effect on continuance intention. This study's sample is limited to developing and developed countries with respondents from Indonesia and Hungary. As a result, a cross-country study can be conducted integrating countries that are classified as less developed, developing and developed, which have different social, cultural, and economic conditions. Finally, it is also important to evaluate differences in technology adoption across more than two countries using another statistical method, such as the omnibus test of group differences (OTG), to provide a complete understanding of technology adoption in countries with different economic circumstances.

VII. NEW SCIENTIFIC RESULTS

In my research, the results show several novel scientific outcomes that can be used as a framework for further studies in the future. In addition, next research can be conducted based on additional analytical and new constructs in the research model, including developing a multigroup analysis of different countries.

1. This study confirmed that the UTAUT2 dimension could explain behavioral intention for Indonesian and Hungarian respondents. Habit has a positive and significant impact as well as being the most influential variable on Fintech adoption in both countries, compared to other UTAUT2 variables. These findings reveal that the efforts of the Indonesian and Hungarian governments to encourage the development of digital financial services have changed consumer behavior in adopting Fintech services.
2. Based on my research, I proved a positive and significant impact of perceived Covid-19 risk on the behavioral intention to adopt Fintech in Indonesia and Hungary. In both countries, the pandemic caused individuals to reduce physical activity and direct cash transactions which were considered more risky for transmitting the virus. As an alternative, Fintech offers digitally accessible payment and financial solutions, which are considered safer during the pandemic. Additionally, as the pandemic increases awareness of the importance of savings and investments, Fintech services have become increasingly relevant in helping individuals manage their finances more efficiently. This is especially when traditional financial institutions have become limited due to social distancing and lockdowns.
3. The research finding documented financial literacy has a different role in facilitating the relationship between behavioral intention and use behavior in both countries. Financial knowledge positively and significantly facilitates the relationship between behavioral intention and use behavior in Hungary. It reveals that Hungarian respondents' higher financial knowledge will increase the use of digital financial services. Meanwhile in Indonesia, financial behavior is proven to be significant as an intervening variable between behavioral intention and use behavior. This finding indicates the pivotal role of government participation through the financial services authority to raise awareness regarding the financial knowledge and awareness of the Indonesian people to achieve the goal of increasing access to finance through Fintech services.
4. Based on my scientific research, I found that, as a moderating variable, facilitating conditions significantly strengthened the relationship between use behavior and continuance intention in Indonesia. These findings show that various aspects such as

digital financial education, responsive customer service and accessibility of Fintech products are important factors in increasing customer satisfaction, which in turn leads to users' intentions to continue using Fintech services. In contrast, price value was shown to significantly weaken the relationship between use behavior and continuance intention for respondents in Indonesia. These findings indicate that when Fintech users perceive the value they get from Fintech services to be lower than the price they pay, their intention to continue using Fintech decreases.

5. The empirical research revealed no significant differences regarding the influence of use behavior toward continuance intention and financial inclusion in both countries. The results of this study complement the previous research by MIGLIORE ET AL. (2022) in the context of the adoption of Fintech services from developing and developed countries with different economic and cultural conditions.
6. My research proved that use behavior has a positive and significant impact on financial inclusion in Indonesia and Hungary. These findings indicate that there is a unidirectional relationship between access and participation in the financial system in both countries. Through the use of digital financial services, individuals will be able to avail of various financial products and services at any time and in almost real time, thus contributing to financial inclusion in Indonesia and Hungary. These finding answers a call from ODEI-APPIAH ET AL. (2021) suggested analyzing the impact of use behavior on financial inclusion by comparing developing and developed countries.

VIII. SUMMARY

Collaboration among international organizations to provide financial access to the global community has made substantial progress. Globally, the percentage of young people with access to formal financial services has grown rapidly to 74 percent in 2021, up from 51 percent in a decade. In spite of the diminished disparity in financial access, approximately 1.4 billion populations remain unbanked. Developing countries such as China, India and Indonesia are countries with the largest majority financial exclusion population in the world. In fact, the availability of basic financial services makes it easier, cheaper, and safer to engage in financial activities, such as saving, remitting money, and insuring property.

Digitalization in the financial industry plays an important role in facilitating the transition of society from a state of exclusion to financial inclusion. The benefits of Fintech over traditional financial services have been numerous, however, a number of barriers have prevented many individuals from directly utilizing digital finance, leading to a differential adoption rate of Fintech across countries. Fintech adoption in this study refers to the intention to which individuals decide to use digital financial services. A comprehensive study of the driver and barrier factors to digital finance adoption is necessary to increase access to finance via the Fintech platform.

Therefore, this research was conducted to analyze the driving and inhibiting factors of behavioral intention toward Fintech services. This research is also designed to integrate UTAUT2 and IRT in order to better explain digital finance adoption. Fintech adoption has previously been evaluated by separating the driving and inhibiting factors, which potentially reduced the ability of theory to adequately explain technology adoption. Furthermore, cross-country analysis involving respondents from Indonesia as a representative of developing countries, and Hungary to represent developed countries, is expected to provide better insight into Fintech adoption.

Data was collected through online questionnaires from respondents in Indonesia and Hungary using purposive and convenience sampling method, then analysis was conducted using PLS-SEM through SmartPLS version 3. According to the results of the study, UTAUT2 and IRT can explain Fintech adoption in Indonesia and Hungary. Perceived Covid-19 risk has significant effect on behavioral intention in both countries. The study also found that financial behavior has proved significant in Indonesia, while financial knowledge is significant in Hungary as a mediating variable between behavioral intention and use behavior. The results of moderating effect indicate that facilitating conditions significantly strengthened, while price value significantly weakened the relationship between use behavior and continuance intention in

Indonesia. Based on the PLS-MGA analysis, there are no significant differences between Fintech user and non-user with regard to the effect of use behavior toward continuance intention and financial inclusion. PLS-MGA also indicated that there is no significant difference in the effect of use behavior toward continuance intention and financial inclusion between Indonesian and Hungarian respondents. Furthermore, the research results also documented a significant relationship between use behavior and financial inclusion in Indonesia and Hungary.

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X. APPENDICES

Appendix 1: Questionnaire

Demographic Variables

A. **Age:**
1) 18-22 years; 2) 23-38 years; 3) 39-54 years; 4) 55-65years;
5) More than 65

B. **Gender:** 1) Male; 2) Female; 3) Prefer not to say

C. **Education:**
1) Secondary/ Higher secondary school or below; 2) Undergraduate/ Bachelor;
3) Postgraduate/ Master; 4) PhD/ Doctoral

D. **Marital status:**
1) Single; 2) Married; 3) Widowed / Divorced; 4) Cohabiting

E. **Employment status:**
1) Student; 2) Entrepreneur; 3) Employed; 4) Unemployed

F**. Monthly income range:**
1) > HUF 32.500; 2) > HUF 32.500 to HUF 128.000;
3) > HUF 128.000 to HUF 390.000; 4) > HUF 390.000 to HUF 500.000;
5) > HUF 500.000 to HUF 700.000; 6) > HUF 700.000

G. **Place of residence:**
1) Capital city (Jakarta / Budapest); 2) Agglomeration of capital city;
3) Urban (not in capital city and agglomeration area); 4) Rural

H. **Do you use Fintech services:**
1) Yes; 2) No

I. **If you have a smartphones, how many apps do you have on your phone that is Fintech-related:**
1) No apps; 2) 1 – 2 apps; 3) 3 – 4 apps; 4) more than 4 apps

J. **How often do you use Fintech apps:**
1) Never; 2) Once in a month; 3) Once a week;
4) 2 – 4 times a week; 5) More than 4 times a week

K. **Type of Fintech used** (You may select more than one):
1) Not applicable; 2) Digital payment; 3) Peer-to-Peer Lending;
4) Microfinancing; 5) Crowdfunding; 6) Insurtech;
7) Proptech; 8) Regtech; 9) E-aggregator;
10) Crypto & Blockchain; 11) other:

L. **Fintech usage purpose:**

1) Not applicable; 2) Personal finance; 3) Business purposes;
4) Personal finance & business purposes

M. **Specific Fintech usage purpose:**

1) Never use; 2) Payments (send and receive money); 3) Savings;
4) Emergency fund; 5) Investing; 6) Invoicing; 7) other:

N. **What device do you use to pay for goods and services through Fintech** (You may select more than one)

1) Mobile or smart phone; 2) Tablet; 3) Personal Computer (PC);
4) Smartwatch; 5) Internet banking; 6) Bank card; 7) other:

To what extent do you disagree or agree with the following statements. Please use the Likert scale to answer the following questions: 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A) and 5 = Strongly Agree (SA).

1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; and 5 = Strongly Agree						
Performance Expectancy (PE)		**1**	**2**	**3**	**4**	**5**
1	I find Fintech services useful in my daily life					
2	Using Fintech services enable me to pay more quickly					
3	Using Fintech services helps me making payments more effectively					
4	Using Fintech services allows me to save time					
Effort Expectancy (EE)		**1**	**2**	**3**	**4**	**5**
5	Learning how to use Fintech services is easy for me					
6	My interaction with Fintech services is clear and understandable					
7	I find Fintech services easy to use					
8	It is easy for me to become skillful at using Fintech services					
Social Influence (SI) Social influence refers to family, friend, colleagues or others.		**1**	**2**	**3**	**4**	**5**
9	People who are important to me think that I should use Fintech services					
10	People who influence my behavior think that I					

	should use Fintech services					
11	People whose opinions that I value prefer that I use Fintech services					
Facilitating Conditions (FC)		**1**	**2**	**3**	**4**	**5**
12	I have the resources necessary to use Fintech services					
13	I have the knowledge necessary to use Fintech services					
14	Fintech services is compatible with other technologies I use					
15	I can get help from others when I have difficulties using Fintech services					
Hedonic Motivation (HM)		**1**	**2**	**3**	**4**	**5**
16	Using Fintech services is fun					
17	Using Fintech services is enjoyable					
18	Using Fintech services is very entertaining					
Price Value (PV)		**1**	**2**	**3**	**4**	**5**
19	Fintech services is reasonable priced					
20	Fintech services is a good value for the money					
21	At the current price, Fintech services provide a good value					
Habit (HB)		**1**	**2**	**3**	**4**	**5**
22	The use of Fintech services has become a habit for me					
23	I am addicted to using Fintech services					
24	I must use Fintech services					
Value Barrier (VB)		**1**	**2**	**3**	**4**	**5**
25	Fintech services are uneconomical					
26	The quality of Fintech services are often poor					
27	Fintech do not focus on a variety of services					
Risk Barrier (RB)		**1**	**2**	**3**	**4**	**5**
28	I fear that while I am using Fintech services, the connection will be lost					
29	I fear that while I am using Fintech services for					

	payment, I might tap out the information of the bill wrongly					
30	I fear that the list of PIN codes may be lost and end up in the wrong hands					
Tradition Barrier (TB)		**1**	**2**	**3**	**4**	**5**
31	I find it difficult to contact customer service at the Fintech services					
32	I find it difficult to get some information about Fintech use					
33	Fintech customer service is not good					
Image Barrier (IB)		**1**	**2**	**3**	**4**	**5**
34	In my opinion, Fintech is often too complicated to be useful					
35	I have such an image that Fintech services are difficult to use					
36	I receive too many notifications and messages from Fintech					
Financial Knowledge (FK) On a scale from one to five (where 1 is lowest and 5 is highest), how would you rate your understanding of financial knowledge related to the concepts below:		**1**	**2**	**3**	**4**	**5**
37	Compounding interest					
38	Inflation					
39	Risk diversification					
Financial Behavior (FB)		**1**	**2**	**3**	**4**	**5**
40	Before I buy something I carefully consider whether I can afford it					
41	I pay my bills on time					
42	I set long-term financial goals and strive to achieve them					
Financial Attitude (FA)		**1**	**2**	**3**	**4**	**5**
43	I find it more satisfying to spend money than to save it for the long term					
44	I tend to live for today and let tomorrow take care					

	of itself					
45	Money is there to be spent					
Perceived Covid-19 Risk (PCR)		**1**	**2**	**3**	**4**	**5**
46	I am worried I will get infected by coronavirus when I use in-person financial services					
47	I am not comfortable making payments using cash and in-person financial services					
48	I am worried there is a coronavirus droplet in physical cash and contacted payment methods					
Behavioral Intention (BI)		**1**	**2**	**3**	**4**	**5**
49	Assuming that I have access to the Fintech services, I intend to use it					
50	I will always try to use Fintech services in my daily life					
51	During the next period I intend to pay for purchases with a Fintech services					
Use Behavior (UB)		**1**	**2**	**3**	**4**	**5**
52	I expect to use Fintech services in the next few weeks					
53	I have strong positive perception toward use of Fintech services					
54	My attitude toward use of Fintech services is always positive					
Continuance Intention (CI)		**1**	**2**	**3**	**4**	**5**
55	I intend to continue using the Fintech services rather than discontinue its use					
56	I want to continue using the Fintech sevices instead of alternative means					
57	If I could, I would like to continue using the Fintech services over the next year					
58	It is unlikely for me to stop using the Fintech services					
Financial Inclusion (FI)		**1**	**2**	**3**	**4**	**5**
59	The numbers of documents required by the Fintech					

	services to open an account are few					
60	The minimum loan amount offered by the Fintech services is satisfactory					
61	The number of days taken by the Fintech companies to process financial services is favorable					
62	The fees charged by the Fintech services on use of its services are favorable					
63	The products and services provided by the Fintech are user friendly					

Appendix 2: Questionnaire cover letter

Reseach Topic: Fintech and Financial Inclusion: Cross Country Study Comparing Indonesia and Hungary

Dear Participants

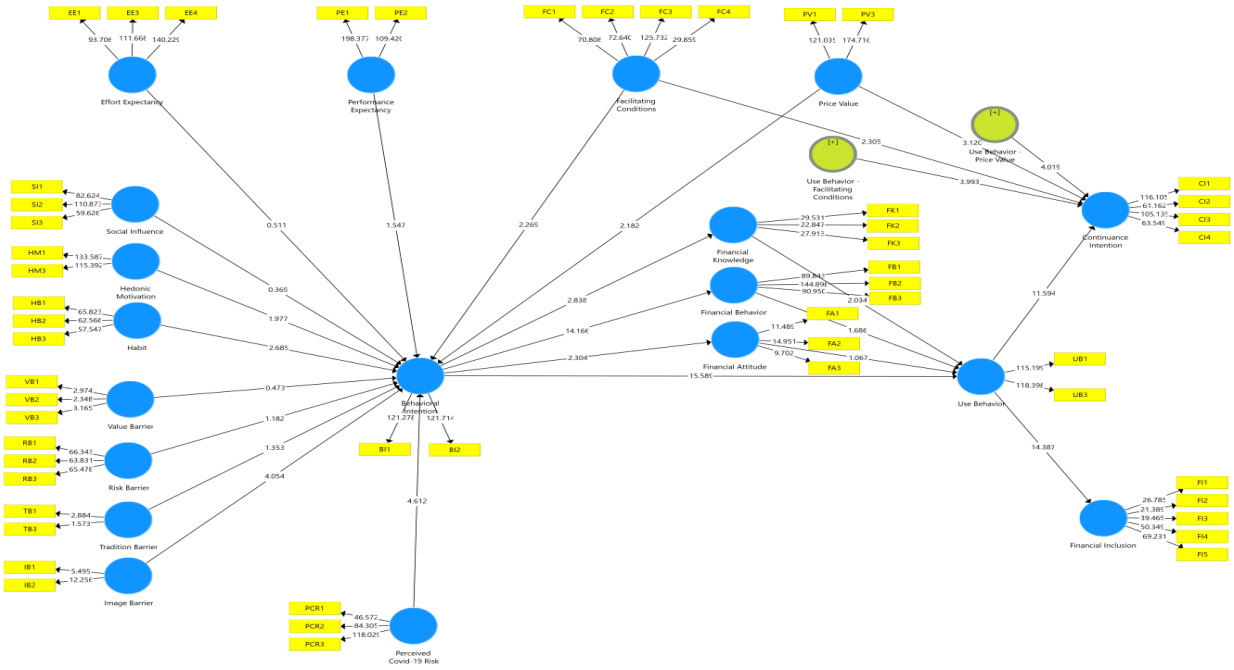
Warm Greetings

My name is Budi Setiawan and I am a PhD student in the Doctoral School of Economic and Regional Sciences at Hungarian University of Agriculture and Life Sciences (MATE). The survey below is part of my PhD research, under the supervision of Prof. Dr. Maria Fekete-Farkas, Ph.D. and Assoc. Prof. Dr. Robert Jeyakumar Nathan, Ph.D. The aim of the research is to examine the drivers and barriers of adopting Fintech. In general, Fintech means the integration of technology into offerings by financial institutions. Fintech products and services are mobile payment (e.g. Revolut / Wise), mobile lending, peer-to-peer (P2P), crowd-funding, wealthtech, marketplace lending, finance and insurance software, etc.

Your participation should take approximately 10-15 minutes. Your response will be used only for research purposes and will be completely anonymous. This research will not be used for commercial purposes. If you have any queries about the research or wish to be informed of the study's result, you can contact Budi Setiawan at the address below. Thank you very much for your support and cooperation. Have a good day.

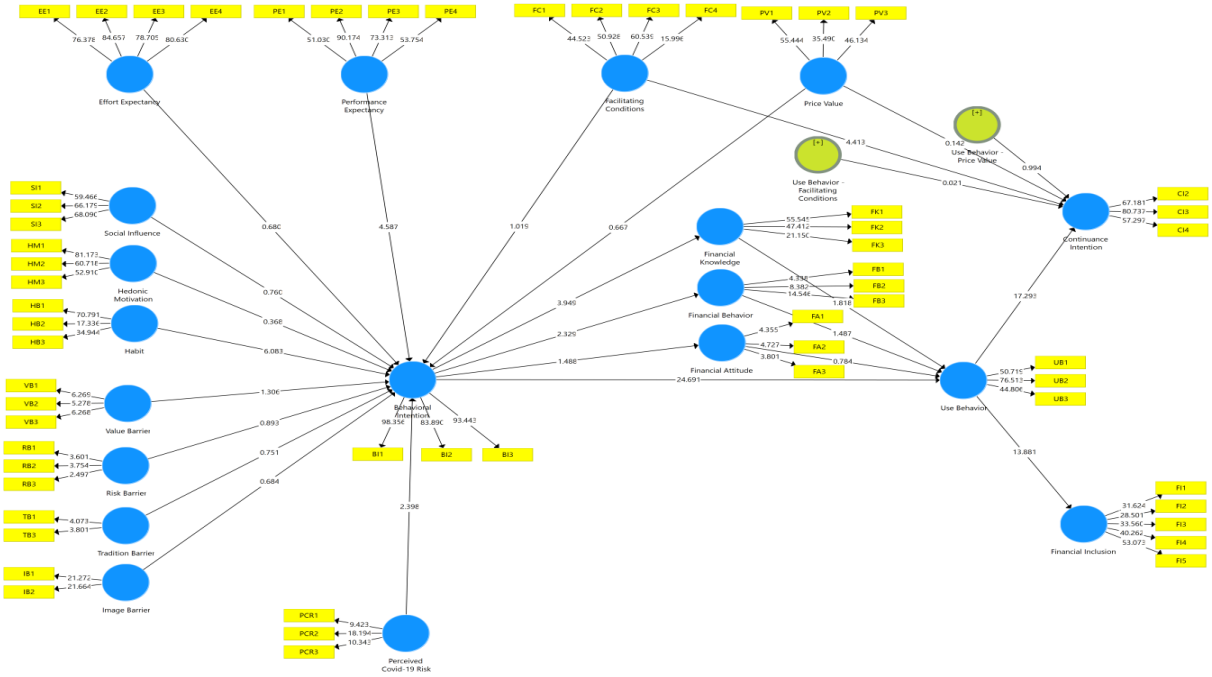
Thanks and regards,
Budi Setiawan
Email: setiawan.budi@phd.uni-mate.hu / budi.setiawan@uigm.ac.id

Appendix 3: The bootstrapping result for all hypotheses for Indonesian respondents



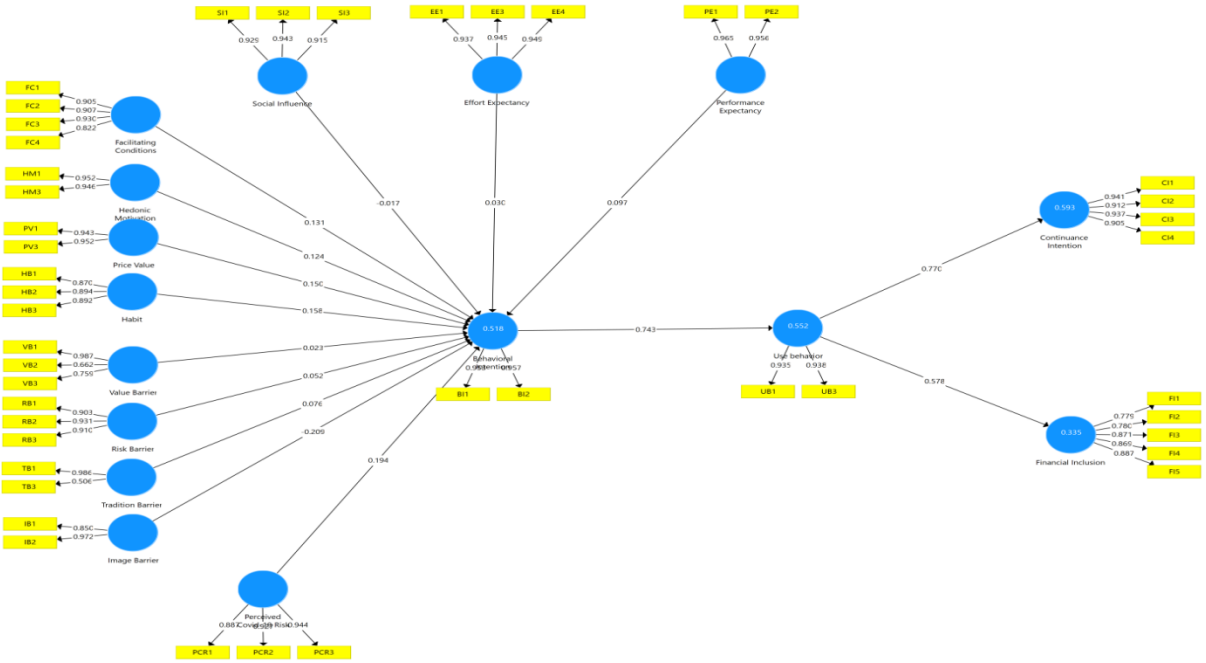
Source: Author's own construction based on SmartPLS version 3

Appendix 4: The bootstrapping result for all hypotheses for Hungarian respondents



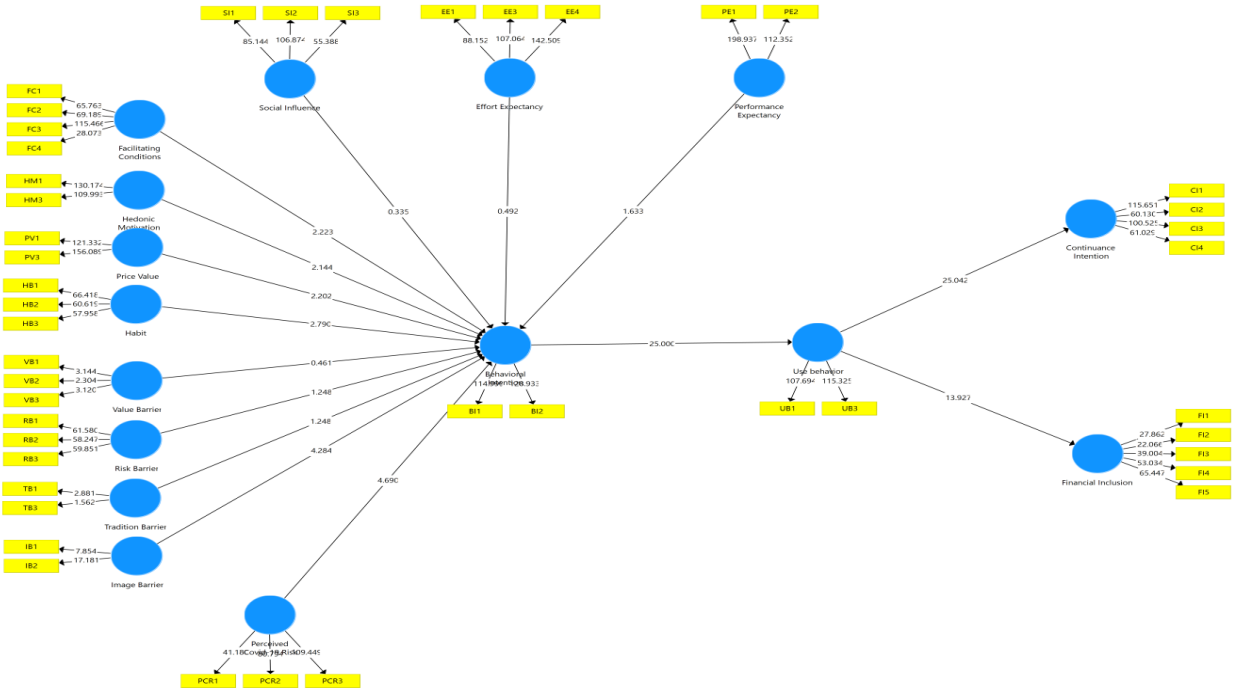
Source: Author's own construction based on SmartPLS version 3

Appendix 5: Direct hypotheses model for Indonesian respondents



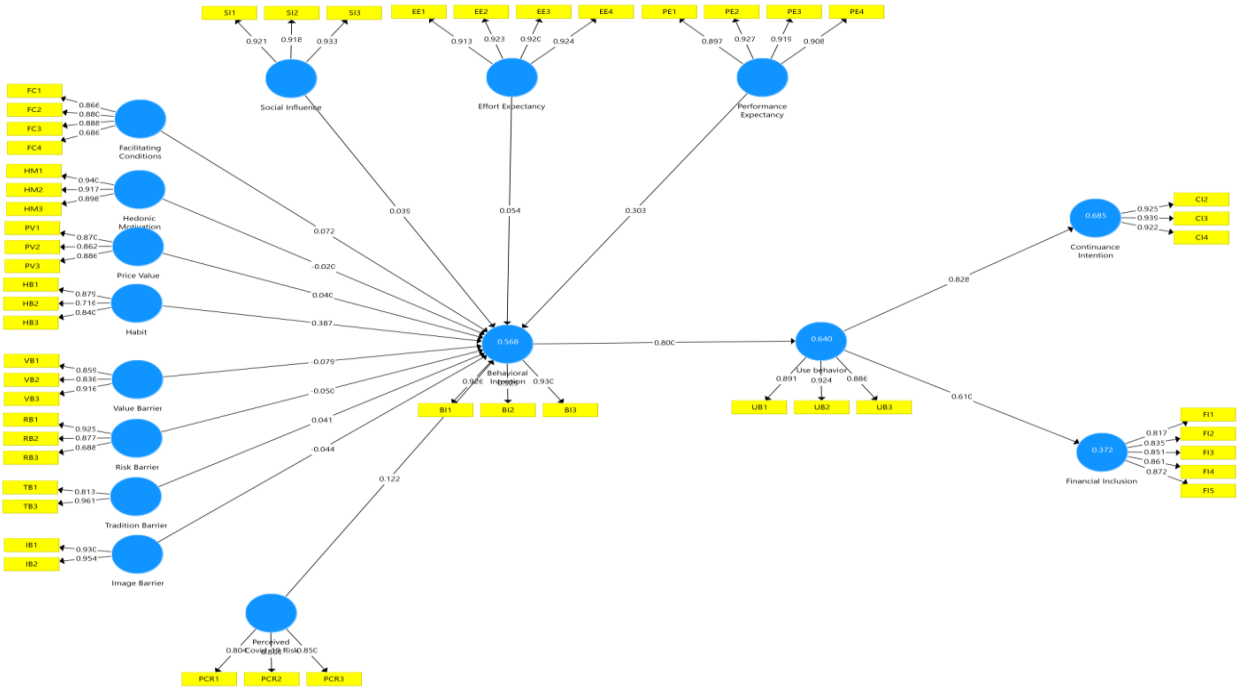
Source: Author's own construction based on SmartPLS version 3

Appendix 6: Direct hypotheses bootstrapping result for Indonesian respondents



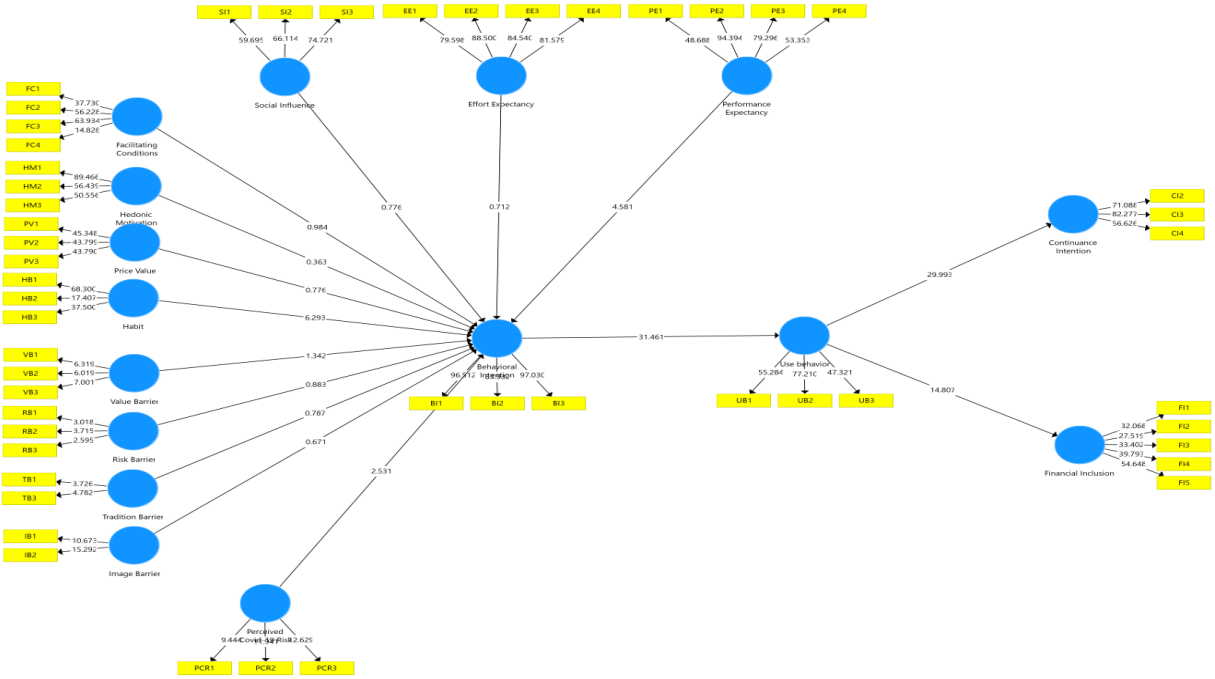
Source: Author's own construction based on SmartPLS version 3

Appendix 7: Direct hypotheses model for Hungarian respondents



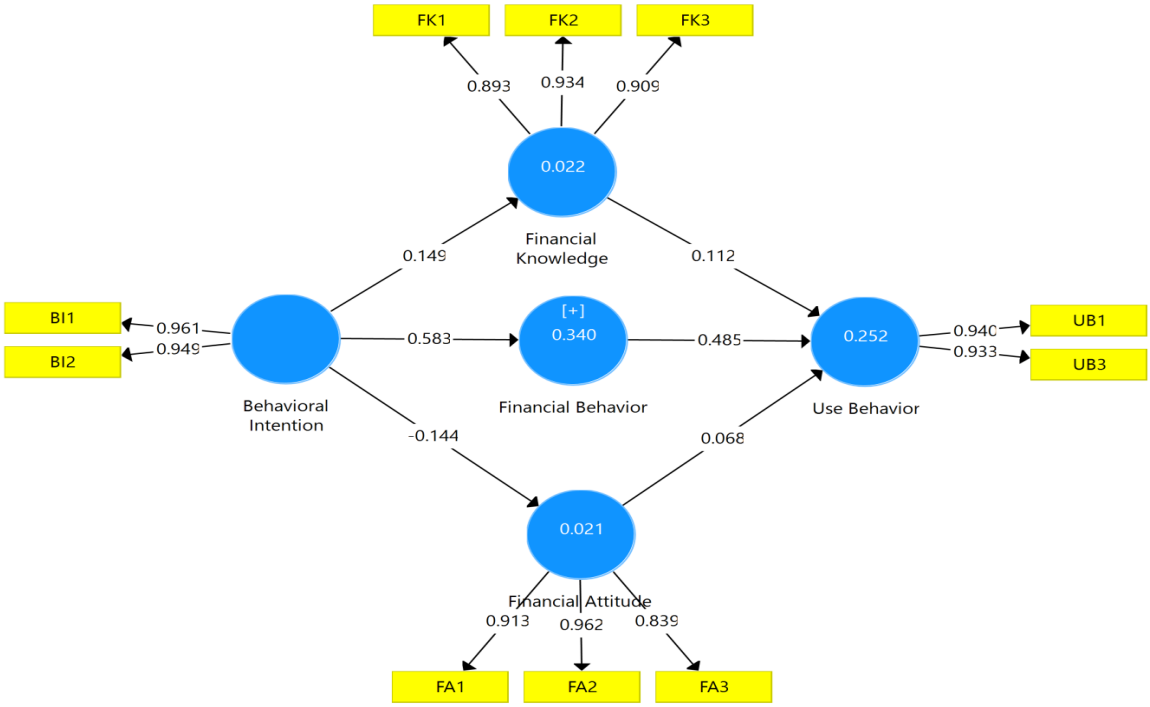
Source: Author's own construction based on SmartPLS version 3

Appendix 8: Direct hypotheses bootstrapping result for Hungarian respondents



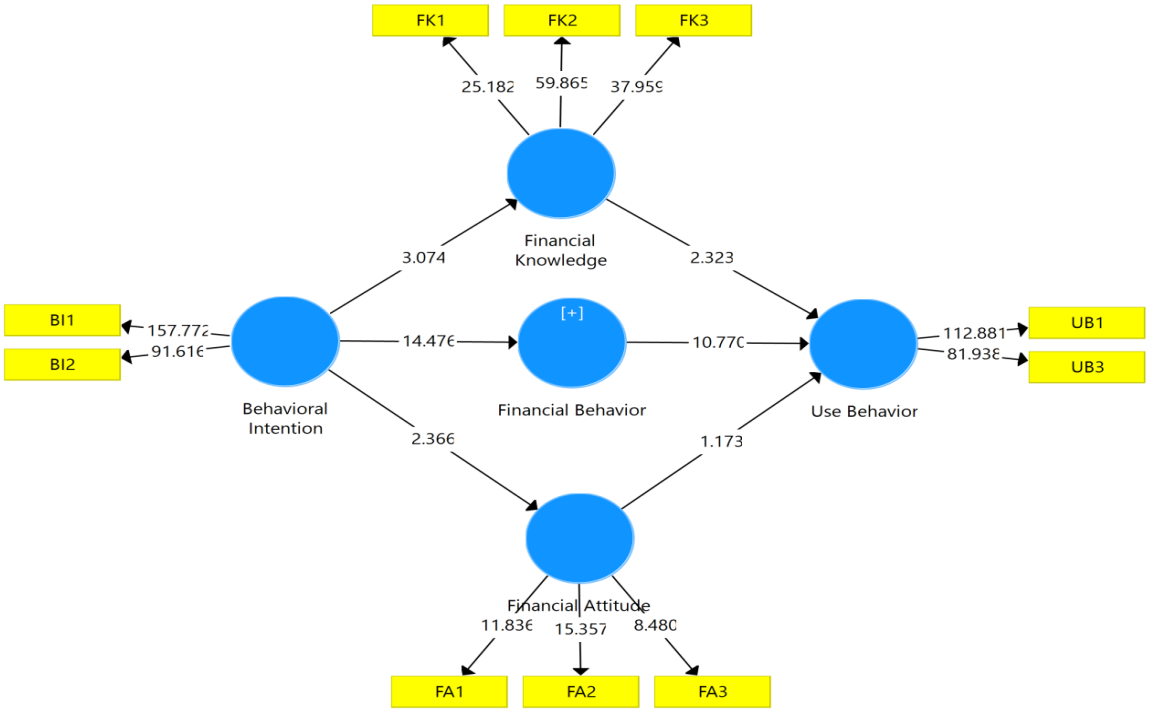
Source: Author's own construction based on SmartPLS version 3

Appendix 9: Mediation hypotheses model for Indonesian respondents



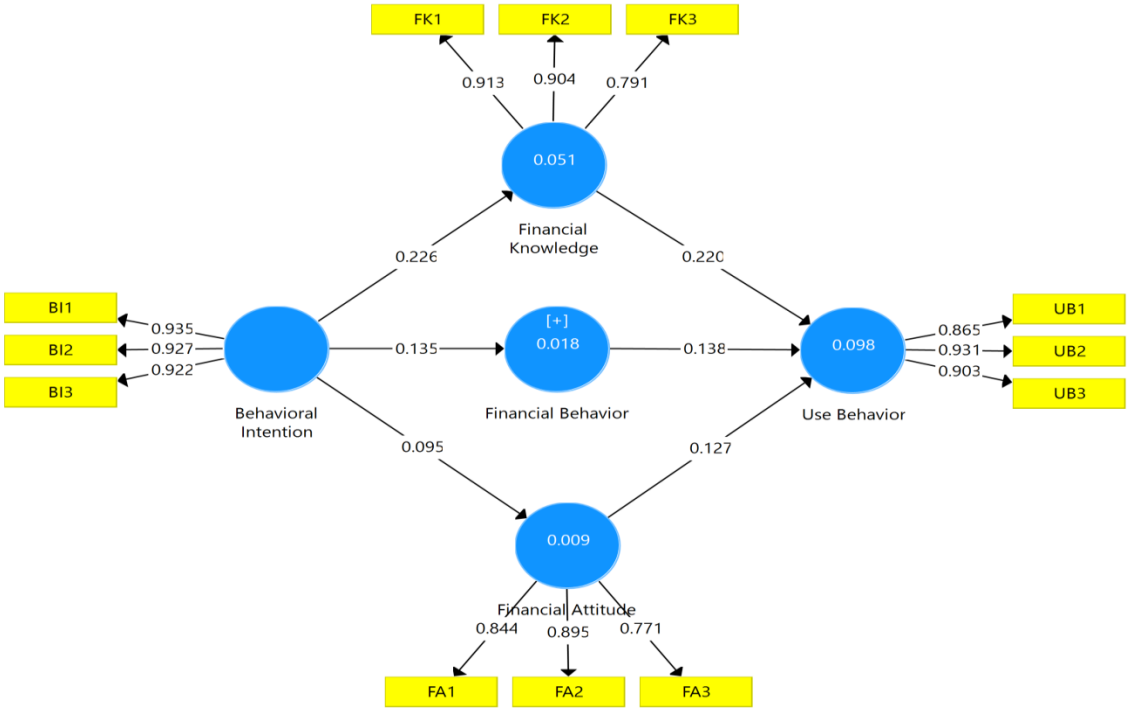
Source: Author's own construction based on SmartPLS version 3

Appendix 10: Mediation hypotheses bootstrapping result for Indonesian respondents



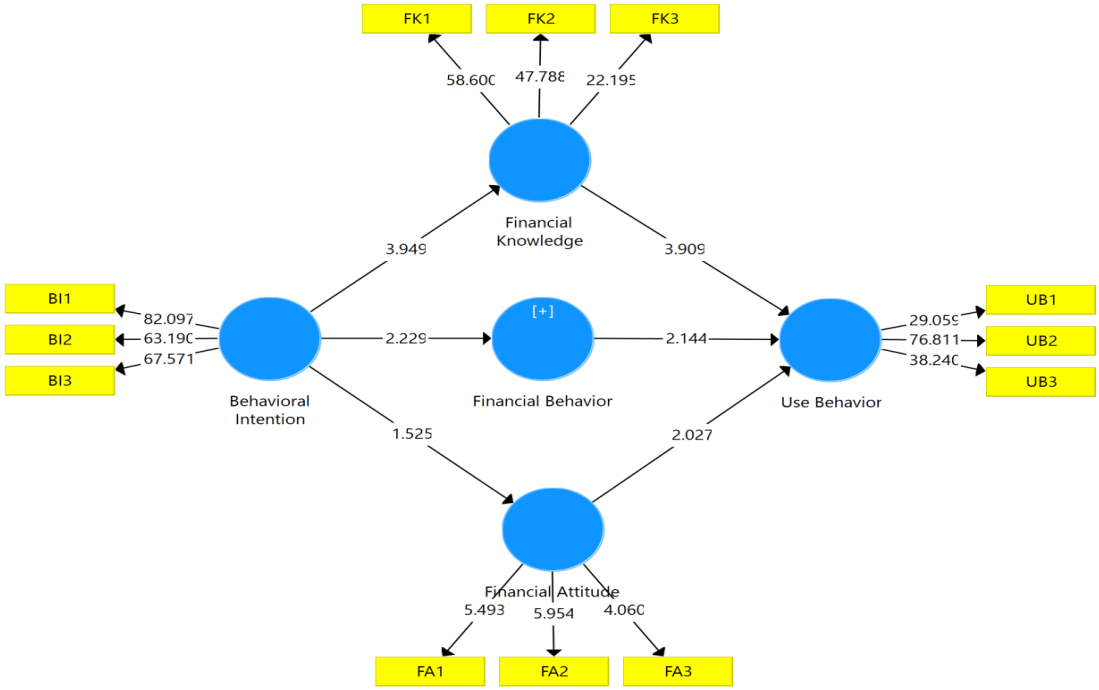
Source: Author's own construction based on SmartPLS version 3

Appendix 11: Mediation hypotheses model for Hungarian respondents



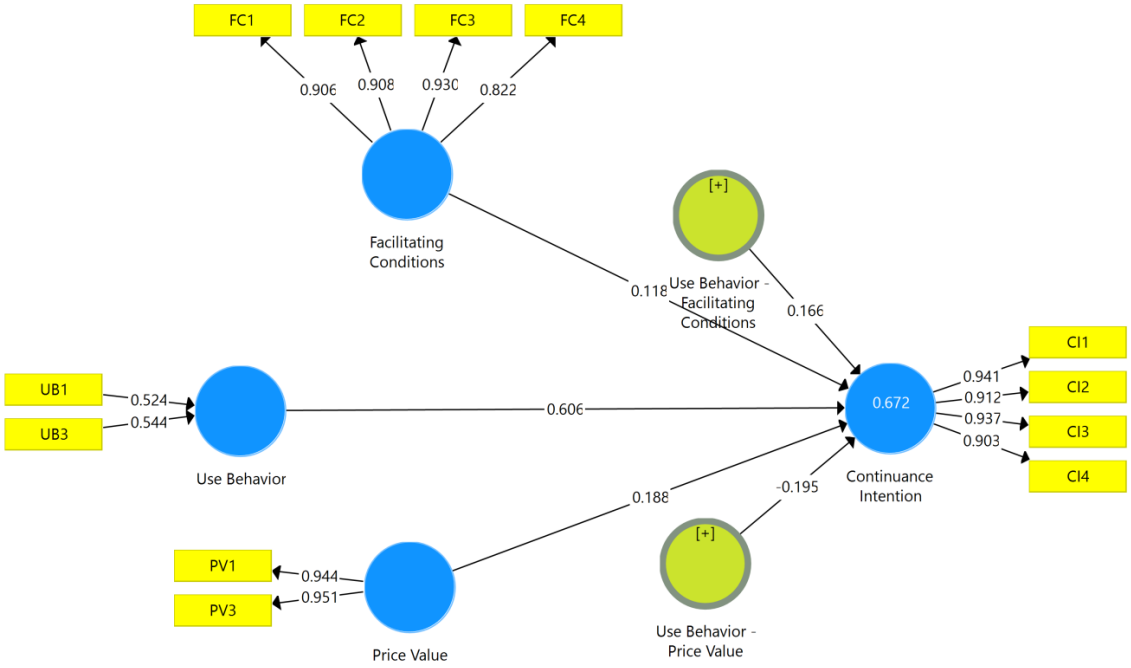
Source: Author's own construction based on SmartPLS version 3

Appendix 12: Mediation hypotheses bootstrapping result for Hungarian respondents



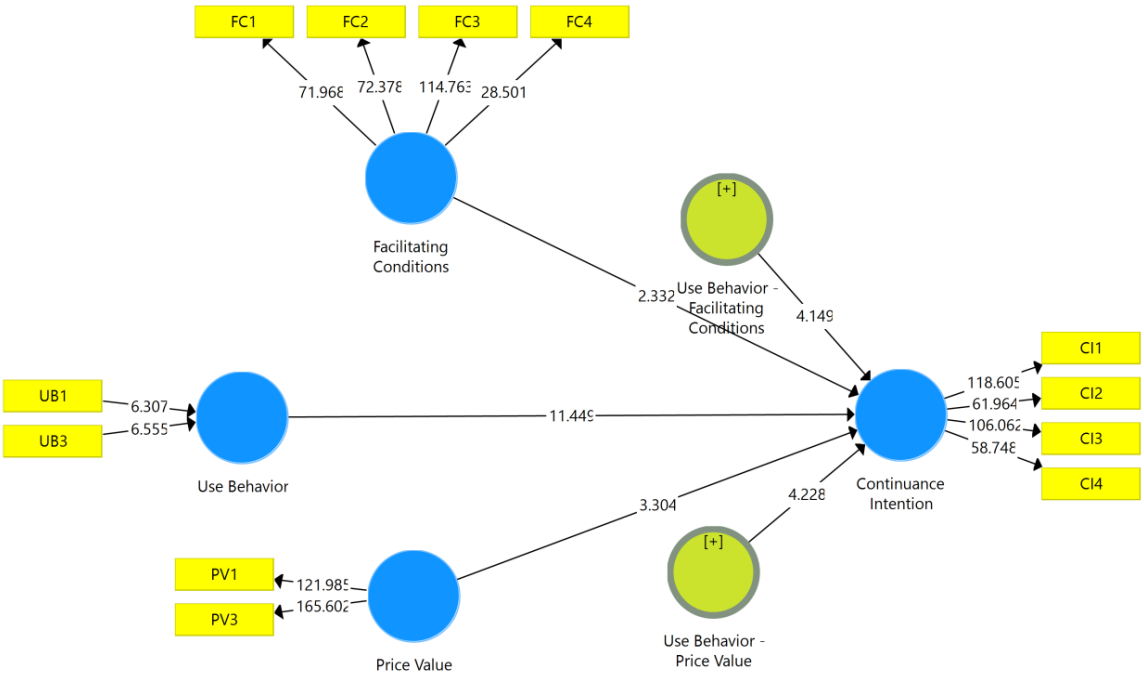
Source: Author's own construction based on SmartPLS version 3

Appendix 13: Moderation hypotheses model for Indonesian respondents



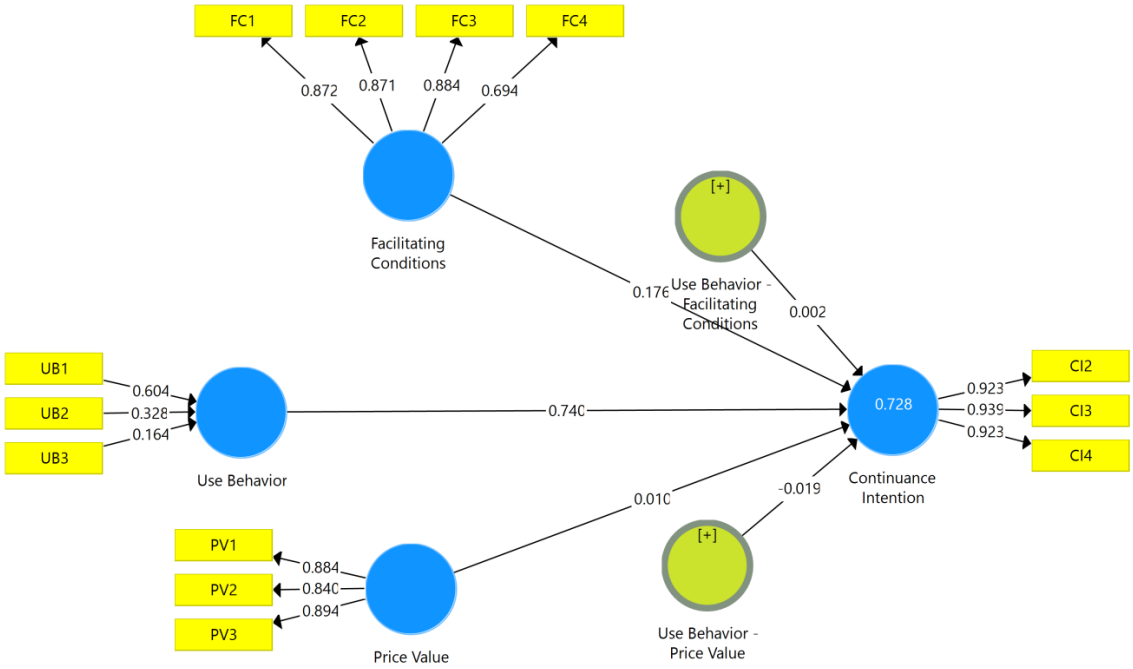
Source: Author's own construction based on SmartPLS version 3

Appendix 14: Moderation hypotheses bootstrapping result for Indonesian respondents



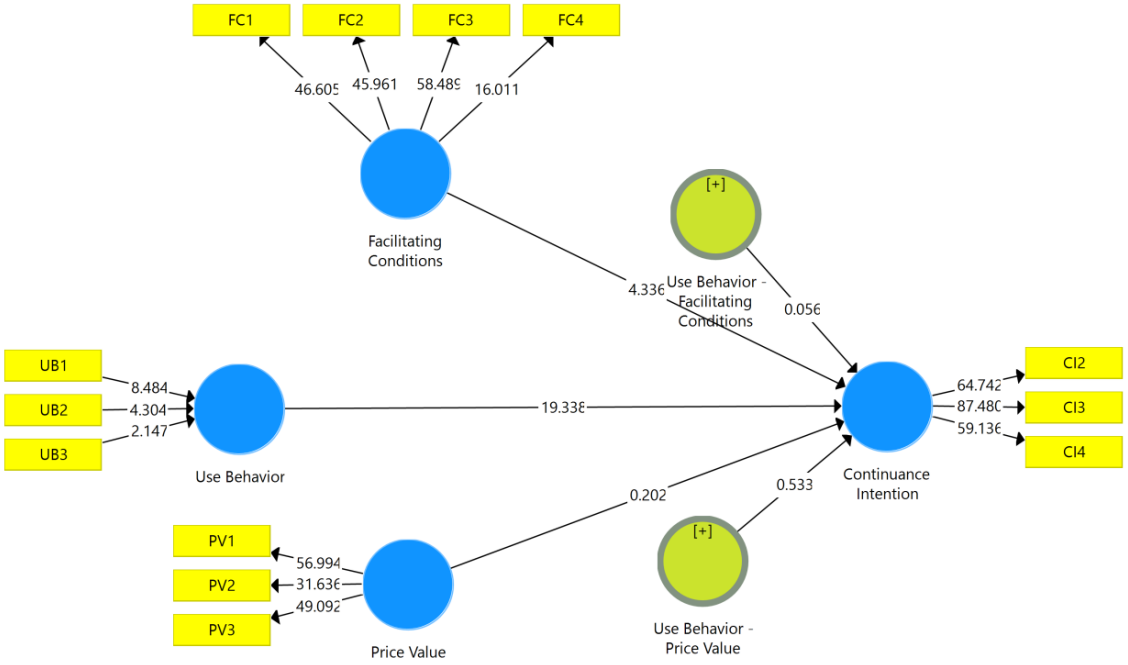
Source: Author's own construction based on SmartPLS version 3

Appendix 15: Moderation hypotheses model for Hungarian respondents



Source: Author's own construction based on SmartPLS version 3

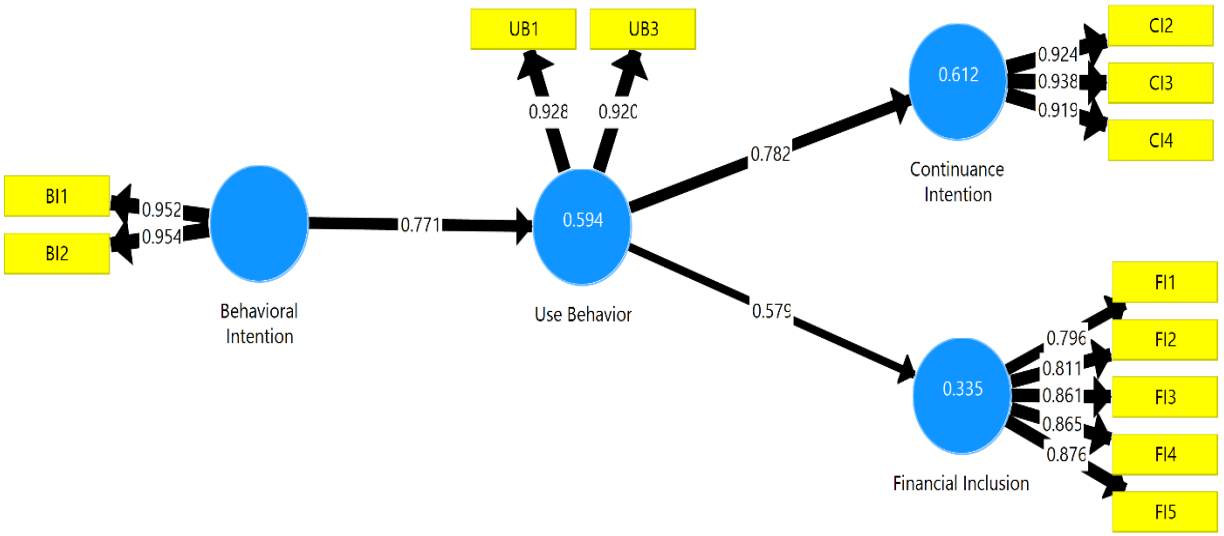
Appendix 16: Moderation hypotheses bootstrapping result for Hungarian respondents



Source: Author's own construction based on SmartPLS version 3

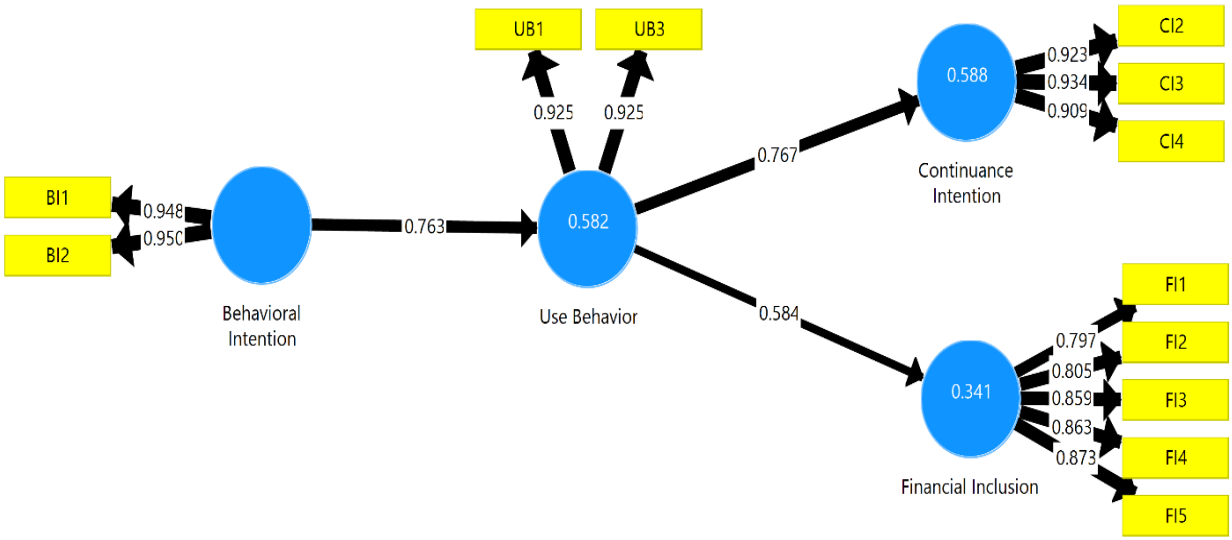
Appendix 17: Path coefficient of PLS-MGA between Fintech user and non-user

17.1 Complete (Fintech user and non-user)



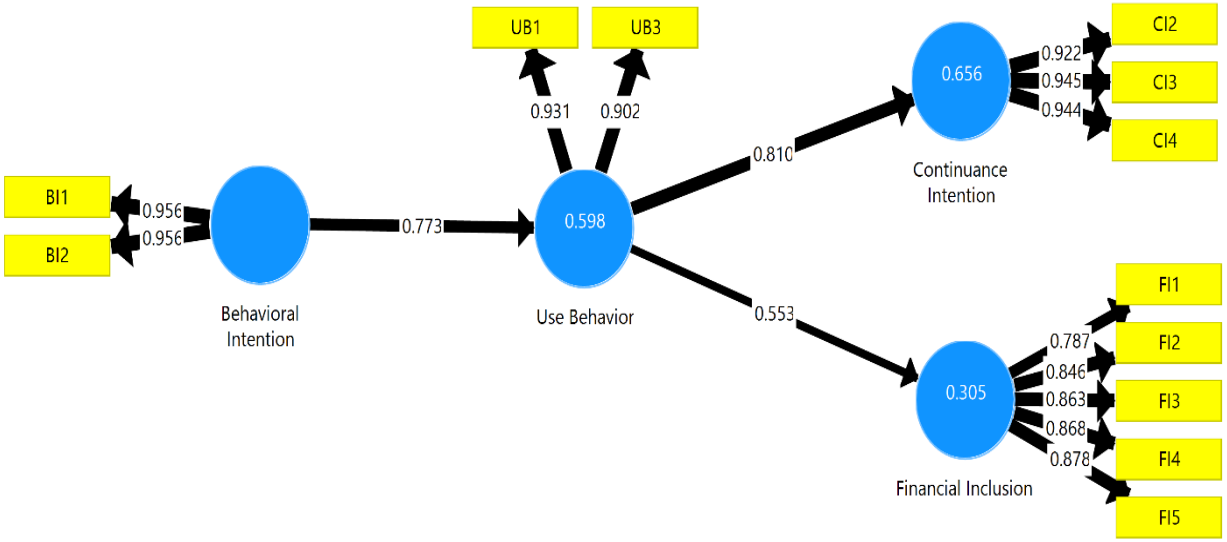
Source: Author's own construction based on SmartPLS version 3

17.2 Fintech user



Source: Author's own construction based on SmartPLS version 3

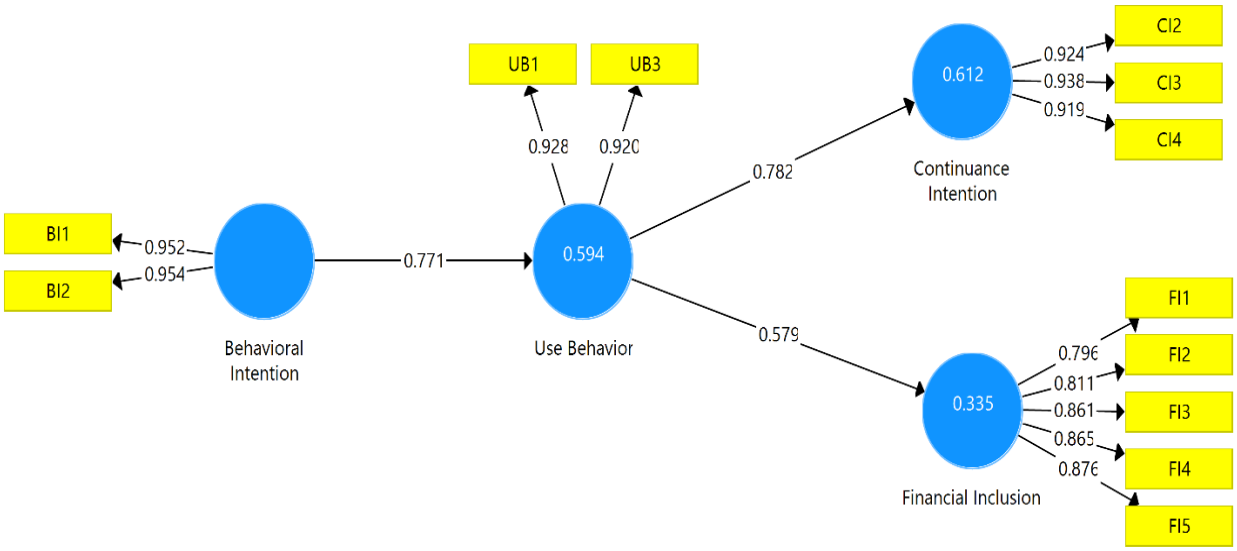
17.3 Fintech non-user



Source: Author's own construction based on SmartPLS version 3

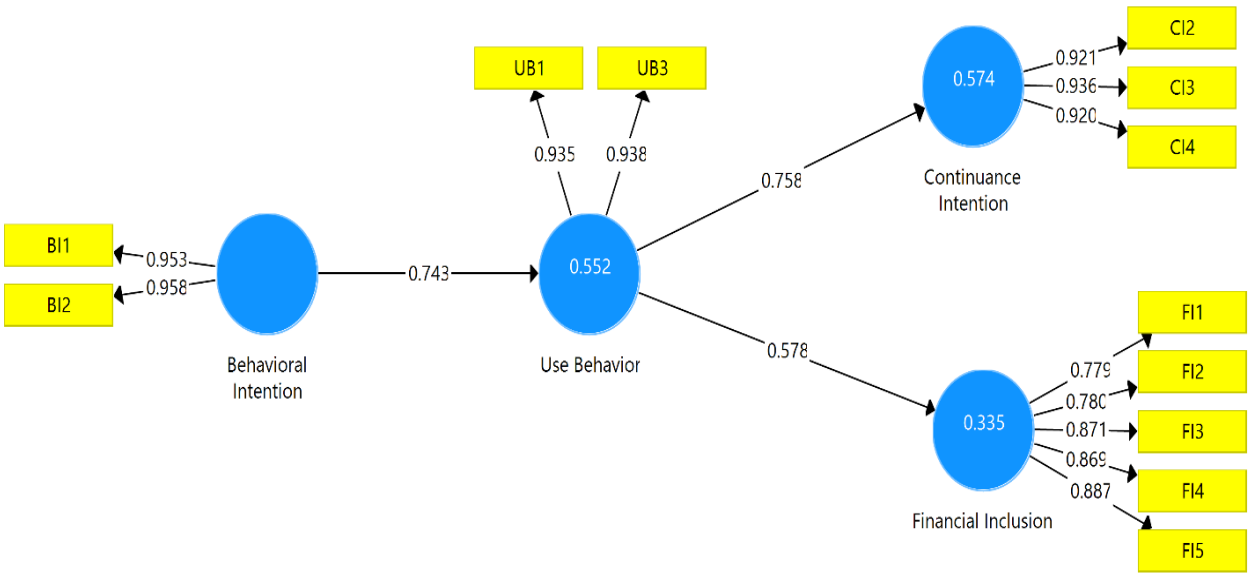
Appendix 18: Path coefficient of PLS-MGA between Indonesia and Hungary

18.1 Complete (Indonesia and Hungary)



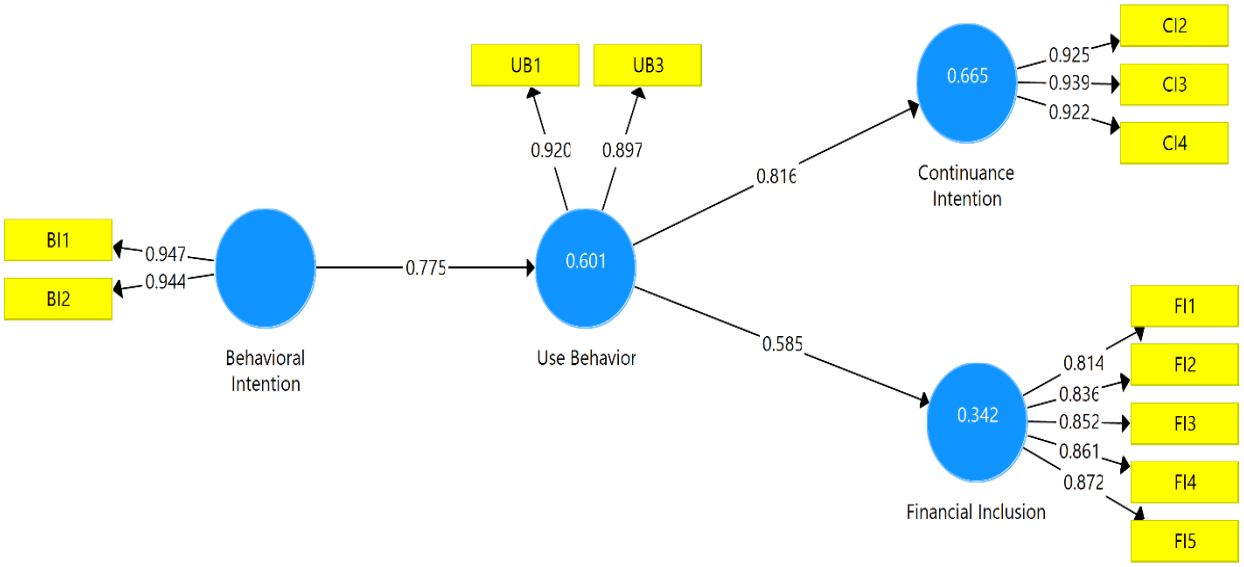
Source: Author's own construction based on SmartPLS version 3

18.2 Indonesia



Source: Author's own construction based on SmartPLS version 3

18.3 Hungary



Source: Author's own construction based on SmartPLS version 3