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Financial Literacy, Risk Tolerance and Fintech Adoption among Students in Four State Universities in Padang City, Indonesia

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Abstract. This study aims to examine the relationship between the students' level of financial literacy and risk tolerance, and how this relationship then influence their behavior toward Fintech adoption. To attain those objectives, this study conducted online survey using google form to more than 495 students in four state university located in Padang City, West Sumatera. In addition to a simple descriptive analysis, the survey results are processed and analyzed using PLS Smart3.0 with two-step methods, namely the measurement and structural model to test the study's hypothesis. This research found that in general, the level of financial literacy among the students in the four state universities in Padang City is quite sufficiently literate. The majority of students tend to avoid risks or risk averse and this might relate to their low level of financial literacy and they tend to use more the types of fintech that is more familiar and less risky, i.e. digital payment. Based on the PLS analysis, meanwhile, this study shows that among the proposed demographic factors, only gender that significantly affects respondents' risks tolerance. However, the level of financial literacy is directly and significantly influencing the fintech adoption.

Keywords: Financial Technology, Fintech Adoption, Risk Tolerance, Student's Financial Literacy.

1. INTRODUCTION

The development of information communication technology (ICT) and massive invention in digitalization have stimulated the growth of various kinds of Fintech services. Currently, there is a growth and expansion of Fintech companies that provide financial products and services through internet and mobile platforms in many countries, such as Ant Financial (PRC), Grab (Singapore), Paytm (India), Compass (US), Opendoor (UK), and Gojek-Tokopedia, GoTo (Indonesia). These various Fintech Start-ups offer a variety of financial products and services that add to the complexity of the financial market environment and make the financial decisions faced by consumers more complex and challenging, thereby increasing financial risks for them.

The increasingly diverse choices of financial products and services require good knowledge to make a financial decision named financial literacy. Bruhn et al. (2013) argue that in line with the growth in access to financial products and services, there is a growing concern that many consumers may not have sufficient financial skills and information to use these financial products and services adequately. In relation to this concern, Agarwalla et al. (2015) argue that due to the increasing scope and complexity of financial products and services, each individual needs to build a solid understanding of the financial world in order to be able to become good decision-makers and use the right path to achieve his goals and financial needs. Therefore, the current rapid development of Fintech also encourages the need for improved financial literacy so that users can use increasingly innovative financial products and services properly that fit in with their needs. With good financial literacy, consumers are expected to understand the financial products and services offered, including the features, benefits, risks and rights, and obligations of the parties involved.

Meanwhile, making financial decisions is also determined by how much individuals are willing to accept the risk of their financial choices, which is also called risk tolerance. Grable & Roszkowski (2008) explain that "*risk tolerance* is *the willingness of individuals to act to achieve specific goals, where the outcome of their actions is uncertain and usually accompanied by the possibility of loss*". Kimball et al. (2008), moreover, describe risk tolerance as a concept borrowed from economic psychology and roughly inversely related to the economic concept of risk aversion. Hence, financial risk tolerances, along with financial literacy, will influence individuals' financial behaviour and decisions, including decisions related to the adoption of financial technology (Fintech). For that reason, therefore, both aspect are important to get a significant attention in the research field related to financial technology. The study on financial literacy, risk tolerance, and adoption of Fintech is essential to be conducted amid the increasing complexity of financial environment that make the financial decision-making process becoming harder and challenging, creating financial risks.

Previously, numerous studies have attempted to address issues related to financial literacy, risk tolerance, and fintech adoption. Some tried to measure the level of financial literacy competence in various countries (e.g.,(Atkinson et al., 2016; Felipe et al., 2017; OJK, 2013). Moreover, several other studies tried to link the effect of financial literacy on risk tolerance (e.g., (Bayar et al., 2020; Huzdik et al., 2014; Shusha, 2017; Yong & Tan, 2017). Among these papers, Bayar et al. (2020), for example, found that financial literacy and demographic characteristics (age, gender, education level, and income level) are factors that significantly affect financial risk tolerance.

Furthermore, other studies have tried to link financial literacy and risk perception or risk tolerance with perceptions or intentions of investment choices or decisions (Aren & Zengin, 2016; Awais et al., 2016; Nguyen et al., 2016; Samsuri et al., 2019). Aren & Zengin (2016), among others, found that although personal characteristics were not related to investment choices, risk perception and financial literacy level had a significant effect on individual investment preferences. Investors who tend to avoid risk (risk-averse) tend to have deposits, while those who have a high tendency to take risks

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prefer to invest in foreign exchange, equities/stocks, and portfolios. In addition, the results of the logistic regression on household survey data in India from the Securities and Exchange Board of India (SEBI) also indicate that higher risk tolerance, financial literacy, and investment awareness significantly affect investment decisions in the capital market (R. Mishra, 2018).

Meanwhile, some studies tried to link the adoption of Fintech with risk-taking behavior and financial literacy. Several studies tried to examine the relationship between financial literacy and Fintech adoption in several Asian countries, such as Lao PDR (P. J. Morgan & Trinh, 2019a), Japan (Yoshino et al., 2020), and Vietnam (Morgan & Trinh, 2020). Morgan & Trinh (2020), for example, found that a high level of financial literacy positively and significantly affacts individual knowledge (individual awareness) and the use of Fintech service products. Meanwhile, Hong et al. (2020) found that Fintech adoption increases risk-taking in all types of decisions. Therefore, individuals who are more tolerant of risk have greater benefits from the progress and development of Fintech. Furthermore, by overcoming traditional barriers, Fintech increases risk-taking for those who need it most. Likewise, Han et al., (2019) found that financial knowledge and attitude towards risk are the two main factors associated with P2P lending.

From the various studies above, unfortunately, no research has examined the relationship between the three variables: financial literacy, risk tolerance, and adoption of Fintech in Indonesia simultaneously. Therefore, this study tries to fill this gap. This study wants to see the effect of financial literacy and risk tolerance on Fintech adoption in Indonesia. In general, this study aims to examine the relationships among financial literacy, risk tolerances and fintech adoption among higher education students in four state universities in Padang City, West Sumatera. In particular, it wants to know the level of students' financial literacy and whether there is significant differences in the level of financial literacy between students with economic and business background and those who coming from other majors. furthermore, this research will analyze the relationship between the students' level of financial literacy and risk tolerance, and how this relationship then influence their behavior toward Fintech adoption.

This research is conducted in Padang city, the provincial capital of West Sumatera Province, Indonesia. The city have great potential for the digital economy or Fintech development. It is supported by the opinion of Deputy Commissioner of the Financial Services Authority (OJK) Institute Sukarela Batunanggar in "OJK Mengajar" event. He stated that rural communities who do not have access to banking facilities and many Micro, Small, and Medium Enterprises (MSMEs) in West Sumatra provide great potential for the growth of fintech services. It is recorded that around 80 percent of MSME actors are still considered unfit for financing from banks (Republika.co.Id, 2017).

This research uses a quantitative approach by processing data generated from survey questionnaires addressed to undergraduate study program students (S1) from various majors in four state universities in Padang. The four universities include the following: Andalas University (Unand), Padang State University (UNP), and Imam Bonjol State Islamic University (UINIB), Padang State Polytechnic (PNP). The reason for choosing state university students is to obtain a good quality of respondents. Lusardi and Michell (2005), for example, showed that a high correlation between financial literacy and education level/length of study. Therefore, the lower the education level, the less likely the respondents are to answer correctly, and the more likely they are to say they do not know. Moreover, Mendes-Da- Silva et al. (2012) argue that being a student is a moment in life where they have growing obligations and realize their obligations to make many decisions. Moreover, these choices and decision will affect their life, determine their financial independence, and impact their future well-being and security.

The rest of this paper will be structured as follow. The second section reviews the relevant literatures of this study. The third section explains the methodology used in this research. The fourth section discusses the finding and analysis of the study. The fifth section is the conclusion of the study.

2. LITERATURE REVIEW

2.1. Financial Literacy, Financial Risk Tolerance, and Fintech: Definition and Scopes

There are various definitions in the literature related to financial literacy as each researcher or institutions uses their own criteria and limitations. U.S Commission (2007), for example, defines *financial literacy* as the ability to effectively use knowledge and skills to manage financial resources for financial well-being throughout life. Meanwhile, Servon & Kaestner (2008) stated that financial literacy is a person's ability to understand and use financial concepts. Similarly, Remund (2010) defines *financial literacy* as a measure of a person's level of understanding of critical financial concepts and ability and confidence to manage his personal finances. Furthermore, Huston (2010) defines *financial literacy* as a process of understanding and applying financial concepts and developing techniques to manage financial resources effectively. Meanwhile, Lusardi & Mitchell (2014) define financial literacy as a person's ability to process economic information and make good decisions from existing information related to financial planning, wealth accumulation, debt, and pensions.

Financial literacy is a crucial component of the financial decision-making process. The Organization for Economic Cooperation and Development and the International Network on Financial Education/OECD/INFE refers to *financial literacy* as a combination of awareness, knowledge, skills, attitudes, and behaviors required to make good financial decisions and achieve individual financial well-being (OECD/INFE, 2016). Lusardi (2009) explains that the lack of financial literacy or knowledge of economic concepts will lead to difficulties experienced by individuals when making financial decisions. Based on the various explanations above, the concept of financial literacy is multi-dimensional, which reflects not only knowledge but also skills, attitudes, and actual behavior related to decisions on the management of financial resources owned by individuals.

Financial literacy is closely related to various financial decisions and financial education/teaching. Financial literacy is associated with an extensive range of financial decisions, such as participation in the capital market, portfolio diversification, and the ability to avoid extreme debt bondage (Kimball & Shumway, 2012; Lusardi & Tufano, 2009). Meanwhile, OECD (2005) defines financial education as a process by which consumers/financial investors improve their understanding of various financial products, concepts, and risks. They develop skills and confidence to become more aware and knowledgeable about finance through information, instructions, and objective advice. Financially

literate people generally believe that most consumers cannot make the critical financial decisions that are most beneficial to them because they lack the financial education needed to make those decisions (Braunstein & Welch, 2002; Perry, 2008).

The risk is a critical component in making various financial decisions, such as choosing an investment instrument or adopting Fintech. In financial decision-making, a person's propensity to take risks is known as risk tolerance, and it is vital in making financial decisions and achieving financial goals. When making financial or investment decisions, a person will consider the possible returns and level of risks for his financial and investment decisions that he/she is willing to take. Grable & Joo (2000) defines *financial risk tolerance* as the maximum amount of uncertainty that an individual is willing to accept when making a financial decision, reaching into almost every part of economic and social life.

In this context, Hong et al. (2020) argue that the financial risk tolerance of individuals emerges as a factor influencing the choice of financial investment and the use of their savings. In line with that, for example, Yao et al. (2005) stated that the attitude towards risk is a factor that determines the investment behaviour of a person. Therefore, estimating an individual's propensity to take financial risk is an important matter. Risk tolerance is also vital for personal financial planning and optimizing investment portfolios. Moreover, determining one's risk tolerance is essential for financial service provider companies to offer products/services suitable for their customers.

Like financial literacy, financial risk tolerance also has various definitions given by experts because this concept is related and often interchanged with other concepts related to financial risk. Financial risk tolerance is the maximum level of uncertainty that a person is willing to accept when making a financial decision (Grable & Joo, 2004; Grable & Roszkowski, 2007). Sometimes, the concept of risk aversion is also used instead of financial risk tolerance, even though it means the opposite; when one avoids risk, financial uncertainty and comfort levels are reduced (Ryack et al., 2004). Furthermore, Boone & Lubitz (2003) argue that financial risk tolerance combines risk attitude and risk capacity. Risk attitude means how much risk a person chooses to take, while risk capacity means how much risk a person can bear to take. In this context, Brighetti et al. (2010) classify these two components of risk tolerance as substantially different, where risk attitude is a physiological attribute while risk capacity is a financial attribute. Furthermore, Weber et al. (2002) define risk attitude as an individual's desire to take risks, ranging from risk-averse to risk-seeking.

Sitkin & Pablo (1992) argue that risk tolerance can be characterized into three parts: risk preference, risk perception, and risk propensity. They distinguished these three features of risk tolerance by defining risk preference as a person's characteristics in terms of his or her interest in risk, while risk perception as a person's assessment of a risk from a particular situation, and risk propensity as an individual's objective probability of taking a risk or stay away from risk.

Meanwhile, Fintech, as the name indicates, is a combination of finance and technology (Pu et al., 2024). Fintech is defined differently by experts and institutions. In a Deutsch Bank research report, Dapp (2014), for example, describes Fintech as a term that is often used to describe digitalization that is taking place in the financial sector. In general, they explain that this term refers to new and highly innovative companies engaged in information technology (IT) that want to change the traditional financial sector as we know it today. Moreover, in their report on the Global Agenda Council on the future of Financing and Capital, the World Economic Forum (2015) described Fintech as a company that provides or facilitates financial services using technology. Currently, the existing form of Fintech is characterized by technology-based companies that bypass formal financial institutions and provide products and services directly to users using online and mobile channels.

Furthermore, researchers such as Sweeney (2015) and Chung et al. (2015) define Fintech as a product or service of financial service companies created with high technological innovation and disruption. Ernst and Young (2015) also define Fintech as an innovation in financial services where technology plays a crucial role in its creation. Similarly, Lee & Teo (2015) refers to Fintech as a business that uses hardware and software technology to provide financial services. Arner et al. (2015) refer to Fintech as a technology that enables financial solutions. Ryu (2018) argues that the information technology role in Fintech is not just a facilitator or supporter to provide financial services effectively. In addition, Fintech is also an innovator and real disruptor to disrupt the existing value chain by cutting lines or networks that are more there used to be. Therefore, he argues that Fintech is an innovation and disruption in financial services where information technology (IT) is a key factor for financial service providers from non-financial companies (Lisha et al., 2023).

Meanwhile, Truong (2016) explains that Fintech often refers to companies that provide financial business services through platforms or technological means (internet) that make financial products and services more innovative and efficient. Moreover, Fintech is also described as a new form of financial services that are trying to change the forms and methods of traditional financial transactions into new, modern, and more effective ways of financial transactions using high-tech devices. Such as mobile devices payment systems, money transfers, credit loans (peer-to-peer lending/borrowing), fundraising (fundraising or crowdfunding), and even asset/wealth management and Blockchain.

2.2. Relationship between Financial Literacy, Risk Tolerance, and Fintech Adoption

It has been explained above that financial risk tolerance is an important part of the financial decision-making process and achieving financial goals. Therefore, many empirical studies have been conducted from various disciplines, especially those related to financial planning and consulting, to identify factors that influence financial risk tolerance and their implications for financial behavior, such as investment choices and adoption of Fintech.

Some studies examine the impact of demographic characteristics variables (e.g., age, gender, marital status, education level, income, and wealth level), personal qualifications, behavioral and behavioral factors (e.g., anxiety/worries, level of life satisfaction), and background culture on financial risk tolerance (e.g.,Duasa & Yusof, 2013; Fisher & Yao, 2017; Irwin, 1993; D. Mishra et al., 2014; Rahmawati et al., 2015; Weber, 2014). In terms of gender, for example, men tend to take greater risks than women, and single men take greater risks than those who are married (Barber & Odean, 2001; Grable & Roszkowski, 2007; Yao et al., 2004). In contrast, several other studies have been unable to find sufficient evidence that there are gender differences in risk tolerance and risk perception(e.g., Friedberg & Webb, 2006; Hanna et al., 1998).

Other studies, meanwhile, analyze the impact of education level and financial literacy level on financial risk tolerance.

For example, Grable (2000) and Hallahan et al. (2004) show evidence that financial literacy and having a high level of education are both positively correlated with the level of financial risk tolerance. Furthermore, Grable & Joo (2000) found that financial knowledge is convincingly and statistically significant as one of the determinants of risk tolerance. They even claim that financial knowledge is one of the most important factors influencing financial risk tolerance and risk tolerance. Incorporating this factor into the risk tolerance regression model makes several factors of demographic characteristics insignificant. Meanwhile, the study conducted by Beal & Delpachitra (2003) on students in Australia found that respondents who had a low risk-averse (more risk-tolerant) usually had high financial knowledge and skills. It is agreed in the literature that the higher the level of financial literacy, a person will tend to be more risk-tolerant or have a positive relationship between the two (e.g., Frijns et al., 2008; Gibson et al., 2013; Grable & Joo, 1999; Grable & Joo, 2000; Grable & Roszkowski, 2008)

Meanwhile, risk tolerance is one factor that influences various financial decisions, including those related to investment and Fintech adoption. Hsiao & Tsai (2018) argue that the opportunity or possibility of participating in risky financial behavior is significantly influenced by the costs and benefits of obtaining information. Related to this, as Vissing-Jorgensen (2003) and Guiso & Jappelli (2005) stated, knowledge/awareness and understanding of financial products will influence a person's decision to use or not use the product. In this context, financial literacy becomes important. Individuals with high levels of financial literacy may have lower fixed costs associated with the process of obtaining and processing financial information compared to those with low financial literacy.

Related to this, Van Rooij et al. (2011), for example, shows that financial literacy has a positive correlation with stock/capital market investment. Likewise, financial literacy also affects the allocation of assets or investment portfolios of individual or institutional investors. For example, Dreu & Bikker (2012) examined pension fund managers in the Netherlands in the 1999-2006 period. They found those fund managers who lack knowledge/simple investment strategies tend to have greater opportunities to choose more profitable investments with no risk in allocating assets/investments. The rationale behind this positive relationship is that less intelligent investment managers are generally risk avoiders and therefore tend to have low-risk investments. It implies an indirect impact of financial literacy on asset/investment allocation decisions through risk tolerance.

Similar to participation in investment and activities in the capital market, the adoption of Fintech products/services also carries various risks. For example, Morgan et al. (2020) explain that in addition to the general risks associated with using financial services, there are other additional risks when someone uses digital financial services. These risks are more diverse and more difficult to identify than the risks associated with traditional financial products or services. These additional risks include phishing, pharming, spyware, and SIM card swaps and risks stemming from digital footprints. It may also mean that a high level of financial literacy and risk tolerance can also facilitate the use of Fintech products/services.

In this regard, as stated in the introduction section above, several relevant previous studies support this assumption. Studies conducted in Lao PDR, Japan and Vietnam indicate high levels of financial literacy have a positive and significant impact on awareness and adoption of Fintech products/services (eg., Morgan & Trinh, 2019; Morgan & Trinh, 2020; Yoshino et al., 2020). Meanwhile, Hong et al. (2020) used consumption data from individual accounts provided by Ant Group. They found that Fintech adoption increases risk-taking for all, and individuals who are more risk-tolerant gain greater returns of the progress and development Fintech. Furthermore, by overcoming traditional barriers, Fintech increases risk-taking for those who need it most.

3. RESEARCH METHODS

3.1. Research Framework and Hypothesis

Based on the literature study above, this research designs a general model of the relationship between demographic characteristic, financial literacy, risk tolerance, and Fintech adoption, as shown in Figure 1 below.

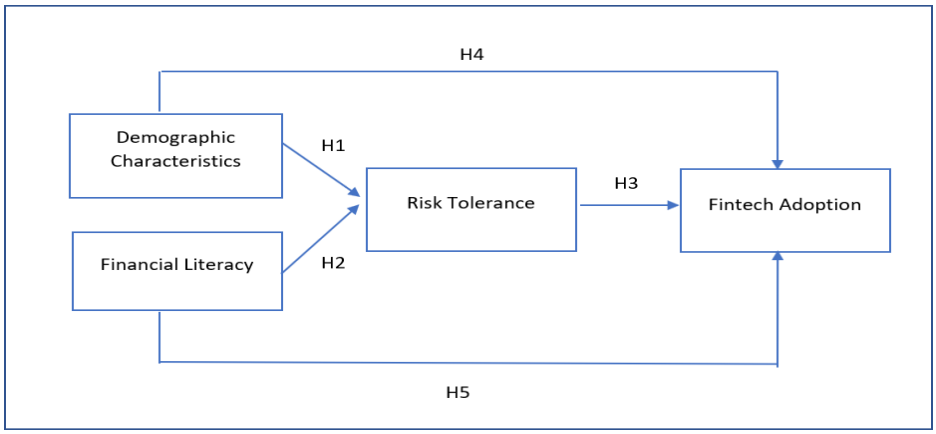

Figure 1: General Model of Demographic Characteristic and Financial Literacy Relationship with Risk Tolerance and Fintech Adoption.

This figure assume that individual characteristics and financial literacy levels affect the level of risk tolerance, which will impact the adoption of Fintech. Each of them also directly influence the fintech adoption. Here are some hypotheses of the relationship between the variables above that will be tested in this study:

H1: Students' demographic characteristics affect their risk tolerance. H2: Financial literacy level is positively related to risk tolerance

H_3: Financial literacy is positively related to fintech adoption mediated by risk tolerance. H4: Individual characteristics directly influence the fintech adoption

H_5: Financial literacy directly and positively influence the fintech adoption

3.2. Research Framework and Hypothesis

This study conducted online survey using google form to more than 495 students in four state universities located in Padang City, West Sumatera (Universitas Andalas, Politeknik Negeri Padang, Universitas Islam Negeri Imam Bonjol, dan Universitas Negeri Padang). Taking into account the ongoing conditions of the Covid-19 Pandemic, the selection of survey samples was carried out using the Convenience sampling method. The survey was conducted from August to October 2021.

The survey questionnaire was designed as the main instrument in this research. This instrument asks respondents for data on various things, including characteristics of demographic knowledge (eg gender, program study, length of study, number of monthly consumption, etc.), financial literacy level consisting of financial knowledge or financial knowledge (for example, regarding the calculation of interest rates, the concept of compound interest, inflation, financial valuation, etc.), attitudes towards finance or financial attitudes (eg attitudes towards long-term financial planning), and financial behavior or financial behavior (for example, and recording individual budgets).

/house), and financial behavior or household financial behavior, saving habits, consideration when shopping, credit, etc.). Meanwhile, questions regarding risk tolerance will contain actual investment choices or only hypothetical questions that seek to measure whether respondents tend to be risk averse or risk averse people. Lastly, the respondent knowledge and experience of using Fintech services will also be asked.

The survey results are processed and analyzed using PLS Smart 3.0 with two-step methods, namely the measurement model and structural model, to test the study's hypothesis in order to test the research hypothesis. To provide a deeper insight and context for the study moreover, this study conducts a descriptive statistical analysis of the survey results.

4. RESULTS AND DISCUSSION

4.1. Respondent Profiles and Some Stylized Facts

Table 1 reveals respondent profiles of this study. According to their gender status, majority of of respondents in the survey are female students, accounting about 66 percent of total 495 respondents. The survey results also reveals disproportional distribution of the origin of respondent's university. The majority of respondents (39 percent) are coming from PNP university, while the minority of respondents study at UIN IB (18 percent). The number of respondents who study at Unand and UNP are relatively equal, which accounted about 20 percent and 22 percent respectively. Based on their consumption level, meanwhile, nearly 80 percent of respondent spend less than 1 million rupiah per month. Only 3.6 percent of respondent spend more than 2 million rupiah per month.

Table 1: Profile of Respondents.

	Number	**Percentage**
1. Gender	327	66.06%
F	168	33.94%
M	495	100%
2. University		
Unand	99	20.00%
UNP	109	22.02%
PNP	196	39.60%
UIN IB	91	18.38%
	495	100%
3. Consumption Level		
Rp. 0 - Rp. 500, 0000	149	30.10%
Rp. 500.001-Rp.1.000.000	238	48.08%
Rp. 1000.001-Rp. 2.000.000	90	18.18%
> Rp. 2.000.000	18	3.64%
	495	100%

In general, as shown in figure 2, the level of financial literacy among the students in the four state universities in Padang City is quite sufficiently literate and there is no significant differences between the level of overall financial literacy among student with economics and business background and those coming from other majors. The level of overall financial literacy is about 68.5. This quite high level of overall financial literacy is driven by financial behavior and financial attitude aspects, which scored about 79.8 and 74.5, respectively. Interestingly, however, the level of their financial knowledge is relatively low, compared to other aspect of financial literacy. It overall score is about 51.4. Moreover, there is big difference between the score of financial knowledge between student with economics and business background and those coming from other majors: 58 vs 44.

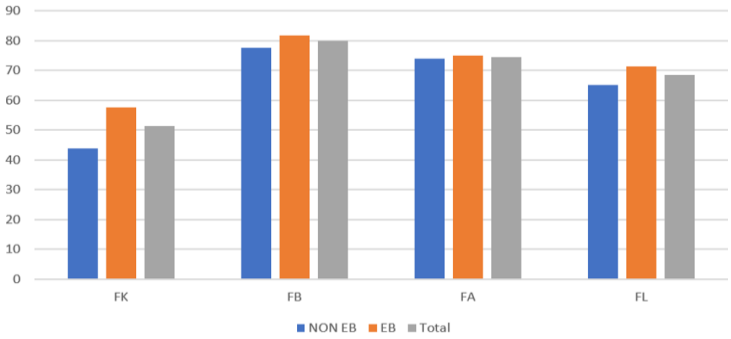

Figure 2: Financial literacy scores according to its aspects and student education background.

Like the level of financial literacy, the majority of students' risk tolerance level is also quite moderate, regardless their educational background. Out of 495 respondents, 56.4 percent tend to be characterized as moderate to avoid risks, compared to 29.5 percent who are moderate to take risks. Despite of its insignificant differences, the students with non-economic and business background tend to have higher risks tolerance than those with economic and business background. The percentage of student with economic and business background who moderate to avoid risks is about 58 percent, compared to 54 percent for those with non-economic and business major.

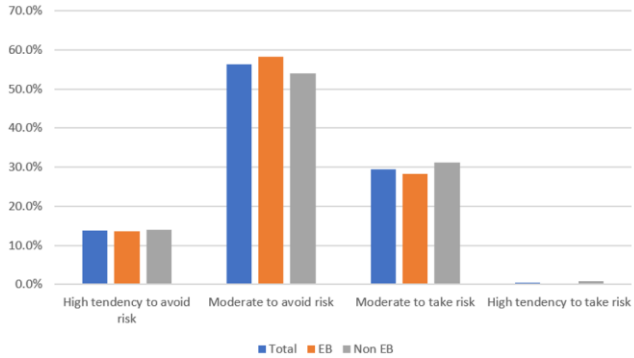

Figure 3: Level of financial risk tolerance according student education background

As for fintech adoption, meanwhile, the digital payment is the most frequently used by the student, indicating that they tend to use more for the types of fintech that is more familiar and less risky.

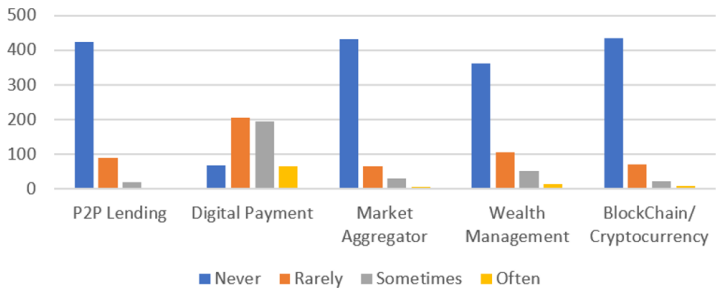

Figure 4: Student's Experience in using various types of Fintech.

4.2. SEM PLS: Validity, Reliability, and Hypothesis Testing

In addition to simple descriptive analysis above, this study processed the survey data using the SEM PLS method to conduct some hypothesis testing.. Fornell & Bookstein (1982) explains that PLS is a recommended method for predictive research models emphasizing theory development. As further explained by Hair et.al (2010), this analysis is started by assing the measurement model or the outer model. The measurement model specifies the rules of relationship between measured and latent variable. This model enables the researcher to use any number of variables for a single independent or dependent construct.

Ramayah et al. (2011), moreover, explain that there are two key criteria used in PLS analysis to assess the measurement model or the outer model, i.e., reliability and validity. The reliability test aims to find stability and consistency of the mearing instruments, while the validity test intends to find out how accurate an instrument measures a particular concept that is designed to measure (Sekaran & Bougie, 2013) The individual item reliability, construct internal consistency and construct validity are considered in assessing the outer model in PLS. the reliability, convergent and discriminant validity of instruments used in this study are evaluated using the approaches developed for a PLS context. The test results for measurement model can be seen as follow:

Table 2: Validity and Reliability test.

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance E\tracted (AVE)
Consumption	1,00	1,00	1,00	1,00
Financial Literacy	0,84	0,85	0,89	0,61
Fintech Adoption	1,00	1,00	1,00	1,00
Gender	1,00	1,00	1,00	1,00
Knowledge Background	1,00	1,00	1,00	1,00
Risk Tolerance	1,00	1,00	1,00	1,00

Table 3: Outer loading.

	Consumption	Financial Literacy	Fintech Adoption	Gender	Knowledge Background	Risk Tolerance
Risk Tolerance						1,00
Consumption	1,00					
Fintech Adoption			1,00			
Financial Literacy		0,78				
Gender				1,00		
Knowledge Background					1,00	

Table 4: Discriminant Validity – Fornel Lacker Criterion.

Consumption		Financial Literacy	Fintech Adoption	Gender	Knowledge Background	Risk Tolerance
Consumption	1,00					
Financial Literacy	-0,11	0,78				
Fintech Adoption	-0,05	0,34	1,00			
Gender	-0,02	0,10	0,11	1,00		
Knowledge Background	0,12	-0,19	-0,21	-0,12	1,00	
Risk Tolerance	0,00	-0,12	-0,04	-0,20	0,11	1,00

The validity of data is analyzed with two measures, namely convergent validity, and discriminant validity. The Rule of thumb for convergent validity measure is measured by looking at Cronbach's alpha (>0.6), the composite reliability (>0.6), and the AVE (average variance extracted) value (>0.5). In contrast, discriminant validity can be analyzed from the matrix results in the Fornell-Lacker table (cross loading value should be more than 0.7) (Fornell & Larcker, 1981; Janadari et al., 2018; Jogiyanto & Abdillah, 2015). The output of testing the validity and reliability, as shown in Tables 2, 3, and 4, shows that all results meet the criteria of validity and reliability. Hence, the data processing may proceed to the next stage, structural model or hypotheses testing.

This study tests five hypothesis that aims to measure the direct or indirect influence of demographic factor and financial literacy on the fintech adoptions using risk tolerance variable as a moderating factor. In this hypothesis testing, following Jogiyanto & Abdillah (2015)., we use some rules to assess the measurement results. First, if the coefficients or the variable relationship (as indicated by the original sample value) is confirm the hypothesis. Second, if the t-statistic value is greater than 1.64 (two-tiled) or 1.96 (one-tiled) and has a probability value (*p*-value) of less than 0.05 or 5 percent.

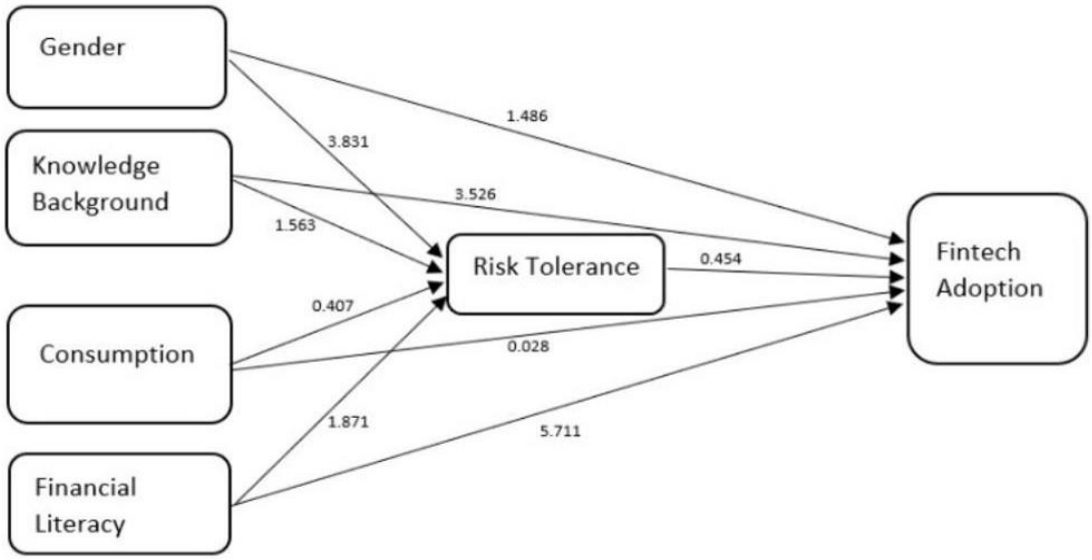

Figure 5: Structural model results.

Table 5. Estimation results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Consumption -> Fintech Adoption	0,00	0,00	0,04	0,03	0,98
Consumption -> Risk Tolerance	-0,02	-0,02	0,05	0,41	0,68
Financial Literacy -> Fintech Adoption	0,31	0,31	0,05	5,71	0,00
Financial Literacy -> Risk Tolerance	-0,09	-0,09	0,05	1,87	0,06
Gender -> Fintech Adoption	0,06	0,06	0,04	1,49	0,14
Gender -> Risk Tolerance	-0,18	-0,18	0,05	3,83	0,00
Knowledge Background -> Fintech Adoption	-0,15	-0,15	0,04	3,53	0,00
Knowledge Background -> Risk Tolerance	0,08	0,07	0,05	1,56	0,12
Risk Tolerance -> Fintech Adoption	0,02	0,02	0,05	0,45	0,65

Table 6: Hypothesis Testing.

	Hypothesis	Result
H1	Students' demographic characteristics affect their risk tolerance:	
	H1.a Students' Consumption affect their risk tolerance. H1.b Students' Gender affect their risk tolerance	Rejected
	H1.c Students' Major/ Knowledge Background affect their risk tolerance	Accepted Rejected
H2	Financial literacy level is positively related to risk tolerance	Rejected
H3	Financial literacy is positively related to fintech adoption mediated by risk tolerance	Rejected
H4	Individual characteristics have a direct effect on fintech adoption.	
	H4.a Students' Consumption affect their Fintech adoption. H4.b Students' Gender affect their Fintech adoption	Rejected
	H4.c Students' Major/ Knowledge Background affect their Fintech adoption	Rejected Accepted
H5	Financial literacy is directly positively related to fintech adoption	Accepted

Figure 5, along with Table 5 and 6, present the estimation results of PLS model and the study hypothesis testing. Based on those results, only 3 hypothesis meet the requirements to be accepted. First, among the proposed demographic factors, only gender that significantly affects respondents' risks tolerance. This finding supports the findings found by Fisher & Yao (2017) that show the differences in risk tolerance between men and women. Second, although there is no significant influence of respondents' educational background on the level of risks tolerance, it directly and significantly affect the fintech adoption. Third, the level of financial literacy is directly and significantly influence the fintech adoption. This finding is in-line with Yoshino et al. (2020) study results that stated that there is a positive and significant relationship between financial literacy and fintech adoptions. Individual with higher financial literacy tend to have higher tendency to adopt fintech services.

In contrast, the estimation results has also rejected some hypotheses of this study, i.e., H2 and H3. These results imply that respondents' financial literacy is not directly and significantly related to risk tolerance, and it also is not positively related to fintech adoption mediated by risk tolerance.

5. CONCLUSION

Liberalization of financial market and the development of information communication technology (ICT) have stimulated the growth of various kind of Fintech services, increasing the complexity of financial environment that make the financial decision-making process becoming harder and challenging. This study aims to examine the relationships among financial literacy, risk tolerances and fintech adoption among higher education students. In Particular, this study wants to know the level of students' financial literacy and whether there are significant differences in the level of financial literacy between students with economic and business background and those who coming from other majors. In addition, this research will analyze the relationship between the students' level of financial literacy and risk tolerance, and how this relationship then influence their behavior toward Fintech adoption.

To attain those objectives, this study conducted online survey using google form to more than 495 students in four state university located in Padang City, West Sumatera (Universitas Andalas, Politeknik Negeri Padang, Universitas Islam Negeri Imam Bonjol, dan Universitas Negeri Padang). The survey results are processed and analyzed using PLS Smart3.0 with two-step methods, namely the measurement model and structural model to test the study's hypothesis. This study also presents and discusses some interesting finding from statistical descriptive analysis of the survey data in order to provide deeper insight and context for the study.

This research observes the following interesting initial findings. First, in general, the level of financial literacy among the students in the four state universities in Padang City is quite sufficiently literate and there is no significant differences between the level of overall financial literacy among student with economics and business background and those coming from other majors. Second, the majority of students tend to avoid risks or risk adverse and this might related to their low level of financial literacy, especially financial knowledge. As a results, third, they tend to use more the types of fintech that is more familiar and less risky, i.e. digital payment. Third, among the proposed demographic factors, only gender that significantly affects respondents' risks tolerance. Fourth, the level of financial literacy is directly and significantly influence the fintech adoption. Fifth, the level of financial literacy is directly and significantly influence the fintech adoption.

As the study related to students' financial literacy, risk tolerance, and fintech adoption is still limited, there will be a great chance for potential future studies. Further studies could extend the sampling size and develop the topic not only to cover student's financial literacy but also digital financial literacy.

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REFERENCES

Agarwalla, S. K., Barua, S. K., Jacob, J., & Varma, J. R. (2015). Financial Literacy among Working Young in Urban India. *World Development*, *67*, 101–109. https://doi.org/10.1016/j.worlddev.2014.10.004

Aren, S., & Zengin, A. N. (2016). Influence of Financial Literacy and Risk Perception on Choice of Investment. *Procedia - Social and Behavioral Sciences*, *235*(October), 656–663. https://doi.org/10.1016/j.sbspro.2016.11.047

Arner, D., Barberis, J., & Buckley, R. (2015). The Evolution of Fintech: A New Post-Crisis Paradigm? *Geo. J. Int'l*, *47*, 1271.

Atkinson, A., Monticone, C., & Mess, F. A. (2016). OECD/INFE International Survey of Adult Financial Literacy Competencies. *Oecd*, 1– 100.

Awais, M., Fahad Laber, M., Rasheed, N., & Khursheed, A. (2016). Impact of financial literacy and investment experience on risk tolerance and investment decisions: Empirical evidence from pakistan. *International Journal of Economics and Financial Issues*, *6*(1), 73–79.

Barber, B. M., & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *Quarterly Journal of Economics*, *116*(1), 261–292. https://doi.org/10.1162/003355301556400

Bayar, Y., Sezgin, H. F., Öztürk, Ö. F., & Şaşmaz, M. Ü. (2020). Financial Literacy and Financial Risk Tolerance of Individual Investors: Multinomial Logistic Regression Approach. *SAGE Open*, *10*(3). https://doi.org/10.1177/2158244020945717

Beal, D. J., & Delpachitra, S. B. (2003). Financial Literacy Among Australian University Students. *Economic Papers*, *22*(1), 65–78. https://doi.org/10.1111/j.1759-3441.2003.tb00337.x

Boone, N. M., & Lubitz, L. S. (2003). A review of difficult investment policy issues. In *Journal of Financial Planning* (Vol. 16, Issue 5, pp. 56–63).

Braunstein, S., & Welch, C. (2002). Financial literacy: An overview of practice, research, and policy. *Federal Reserve Bulletin*, *88*, 445–457. Brighetti, G., Mazzoli, C., Marinelli, N., & Nucifora, V. (2010). *Risk tolerance in financial decision making Wolpertinger Conference 2010 European Association of University Teachers of Banking and Finance Faculty of Economics , Università Politecnica delle Marche Faculty of Psychology , Università degli Studi di Bologn. May 2014.*

Bruhn, M., Lara Ibarra, G., & McKenzie, D. (2013). Why is voluntary financial education so unpopular ? Experimental evidence from Mexico. *Policy Research Working Papers*, *May*, 46. http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450- 6439%5Cnfiles/183/2013 - Why is Voluntary Financial Education so Unpopular.html%5Cnhttps://ideas.repec.org/cgi-bin/htsearch?cmd=Search!&db=01/01/1990&de=&dt=range&fmt=long&m=all&np=14&ps=50&q=(saving

Chung, H. H., Chen, S. C., & Kuo, M. H. (2015). A study of EFL college students' acceptance of mobile learning. *Procedia-Social and Behavioral Sciences*, *176*, 333–339.

Dapp, T. (2014). Fintech – The digital (r)evolution. *Deutsche Bank Research*. www.dbresearch.com

de Dreu, J., & Bikker, J. A. (2012). Investor sophistication and risk taking. *Journal of Banking and Finance*, *36*(7), 2145–2156. https://doi.org/10.1016/j.jbankfin.2012.03.023

Duasa, J., & Yusof, S. A. (2013). Determinants of risk tolerance on financial asset ownership: A case of Malaysia. *International Journal of Business and Society*, *14*(1), 1–16.

Ernst and Young. (2015). Who will disrupt the disruptors ? *The Journal of Financial Perspectives*, *3*(3), 1–191.

Felipe, I. J. dos S., Ceribeli, H. B., & Lana, T. Q. (2017). Investigating the Level of Financial Literacy. *RACE, Joacaba*, *16*(3), 845–866. Fisher, P. J., & Yao, R. (2017). Gender differences in financial risk tolerance. *Journal of Economic Psychology*, *61*, 191–202.

Fornell, C., & Larcker, D. F. (1981). SEM with Unobservable Variables and Measurement Error: Algebra and Statistics. In *Journal of Marketing Research* (Vol. 18, Issue 3, pp. 1–16).

Fornell, Claes, & Bookstein, F. L. (1982). Two Structural Equation Models: LISREL and PLS Applied to Consumer Exit-Voice Theory. *Journal of Marketing Research*, *19*(4), 440. https://doi.org/10.2307/3151718

Friedberg, L., & Webb, A. (2006). Determinants and Consequences of Bargaining Power in Households. *Center for Retirement Research at Boston College, CRR WP*, *13*(02.02.2016.).

Frijns, B., Koe, llen, E., & Lehnert, T. (2008). On the determinants of portfolio choice. *Journal of Economic Behavior and Organization*, *66*(2), 373–386. https://doi.org/10.1016/j.jebo.2006.04.004

Gibson, R., Michayluk, D., & Venter, G. Van De. (2013). *Financial risk tolerance : An analysis of unexplored factors. 22*, 23–50. Grable, J. E., & Joo, S. H. (1999). Factors related to risk tolerance: a further examination. *Consumer Interests Annual*, *45*(1), 53–58. Grable, J., & Joo, S.-H. (2000). A cross-disciplinary examination of financial risk tolerance. *Consumer Interests Annual*, *46*, 51–157.

Grable, John E. (2000). Financial Risk Tolerance and Additional Factors that Affect Risk Taking in Everyday Money Matters. *Journal of Business and Psychology*, *14*(4), 625–630. https://doi.org/10.1023/A:1022994314982

Grable, John E., & Roszkowski, M. J. (2007). Self-assessments of risk tolerance by women and men. *Psychological Reports*, *100*(3 I), 795–802. https://doi.org/10.2466/PR0.100.3.795-802

Grable, John E., & Roszkowski, M. J. (2008). The influence of mood on the willingness to take financial risks. *Journal of Risk Research*, *11*(7), 905–923. https://doi.org/10.1080/13669870802090390

Guiso, L., & Jappelli, T. W. (2005). *Awareness and stock market participation.*

Hallahan, T. A., Faff, R. W., & Mckenzie, M. D. (2004). Geeft verschillende regressievergelijken weer. *Financial Services Review*, *13*, 57–78. Han, L., Xiao, J. J., & Su, Z. (2019). Financing knowledge, risk attitude and P2P borrowing in China. *International Journal of Consumer Studies*, *43*(2), 166–177. https://doi.org/10.1111/ijcs.12494

Hanna, S. D., Gutter, M. S., & Fan, J. X. (1998). A Theory Based Measure of Risk Tolerance. *Proceedings of the Academy of Financial Services*, 10-21.

Hong, C. Y., Lu, X., & Pan, J. (2020). FinTech Adoption and Household Risk-Taking. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3706709

Hsiao, Y. J., & Tsai, W. C. (2018). Financial literacy and participation in the derivatives markets. *Journal of Banking and Finance*, *88*(November), 15–29. https://doi.org/10.1016/j.jbankfin.2017.11.006

Huzdik, K., Beres, D., & Nemeth, E. (2014). An Empirical Study of Financial Literacy versus Risk Tolerance Among Higher Education Students. *Public Finance Quarterly*, *59*(4), 444–456.

Irwin, C. E. (1993). Adolescence and risk taking: How are they related? Adolescent Risk Taking. In *Adolescent risk taking* (In N. J. B, pp. 7– 28). Sage.

Janadari, M. P. N., Subramaniam, Ramalu, S., Wei, C. C., & Abdullah, O. Y. (2018). Evaluation of Measurment and Structural Model of the Reflective Model Constructs in PLS-SEM. *The Sixth (6th) International Symposium of South Eastern University of Sri Lanka*, *September*, 187–194. http://www.seu.ac.lk/researchandpublications/symposium/6th/IntSym 2016 proceeding final 2 (1) - Page 187-194.pdf

Jogiyanto, & Abdillah, W. (2015). *Partial Least Square (PLS) Alternatif Structural Equation Modeling (SEM) dalam Penelitian Bisnis*. ANDI. Kimball, M. S., Sahm, C. R., & Shapiro, M. D. (2008). Imputing risk tolerance from survey responses. *Journal of the American Statistical Association*, *103*(483), 1028–1038. https://doi.org/10.1198/016214508000000139

Kimball, M. S., & Shumway, T. (2012). Investor Sophistication and the Home Bias, Diversification, and Employer Stock Puzzles. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1572866

Lee, D. K. C., & Teo, E. G. S. (2015). Emergence of Fintech and the Lasic Principles. *SSRN Electronic Journal*, 1–17. https://doi.org/10.2139/ssrn.2668049

Lisha, L., Mousa, S., Arnone, G., Huerta-Soto, R., & Shiming, Z. (2023). Natural resources, green innovation, fintech, and sustainability: A fresh insight from BRICS. *Resources Policy*, 80, 103119. https://doi.org/10.1016/j.resourpol.2022.103119

Lusardi, A. (2009). The importance of financial literacy. *NBER Reporter*, *2*, 13–16.

Lusardi, Annamaria, & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, *52*(1), 5–44. https://doi.org/10.1257/jel.52.1.5

Lusardi, Annamaria, & Tufano, P. (2009). DEBT LITERACY, FINANCIAL EXPERIENCES, AND OVERINDEBTEDNESS. In *NBER WORKING PAPER SERIES No. 14808* (Vol. 2, Issue 5). ???

Mendes-Da-Silva, W., Nakamura, W. T., & de Moraes, D. C. (2012). Credit card risk behavior on college campuses: Evidence from Brazil. *BAR - Brazilian Administration Review*, *9*(3), 351–373. https://doi.org/10.1590/S1807-76922012000300007

Mishra, D., Akman, I., & Mishra, A. (2014). Theory of reasoned action application for green information technology acceptance. *Computers in Human Behavior*, *36*, 29–40. https://doi.org/doi:10.1016/j.chb.2014.03.030

Mishra, R. (2018). Financial literacy, risk tolerance and stock market participation. *Asian Economic and Financial Review*, *8*(12), 1457–1471. https://doi.org/10.18488/journal.aefr.2018.812.1457.1471

Morgan, P., Huang, B., & Trinh, L. (2020). *The Need to Promote Digital Financial Literacy for the Digital Age Bihong Huang (Asian Development Bank Institute). June 2019*, 1–9.

Morgan, P. J., & Trinh, L. Q. (2019a). Fintech and Financial Literacy in the Lao PDR. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3398235

Morgan, P. J., & Trinh, L. Q. (2019b). Fintech and Financial Literacy in the Lao PDR. *SSRN Electronic Journal*, *933*. https://doi.org/10.2139/ssrn.3398235

Morgan, P. J., & Trinh, L. Q. (2020). FinTech and Financial Literacy in Vietnam. *ADBI Working Paper Series (No.1154)*, *1154*, 1–23.

Nguyen, L. T. M., Gallery, G., & Newton, C. (2016). The influence of financial risk tolerance on investment decision-making in a financial advice context1. *Australasian Accounting, Business and Finance Journal*, *10*(3), 3–22. https://doi.org/10.14453/aabfj.v10i3.2 OJK. (2013). *Indonesian National Strategy for Financial Literacy*. OJK.

Perry, V. G. (2008). Giving Credit Where Credit is Due: The Psychology of Credit Ratings. *Journal of Behavioral Finance*, *9*(1), 15–21. https://doi.org/10.1080/15427560801896784

Pu, G., Wong, W. K., Du, Q., Al Shraah, A., Alromaihi, A., (2024). Asymmetric impact of natural resources, fintech, and digital banking on climate change and environmental sustainability in BRICS countries. *Resources Policy*, *91*, 104872. https://doi.org/10.1016/j.resourpol.2024.104872

Rahmawati, Dileep Kumar, M., Kambuaya, M., Jamil, F., & Muneer, S. (2015). Determinants of the risk tolerance of individual investors. *International Journal of Economics and Financial Issues*, *5*, 373–378.

Ramayah, T., Lee, J. W. C., & In, J. B. C. (2011). Network collaboration and performance in the tourism sector. *Service Business*, *5*(4), 411–428. https://doi.org/10.1007/s11628-011-0120-z

Remund, D. L. (2010). Financial literacy explicated: The case for a clearer definition in an increasingly complex economy. *Journal of Consumer Affairs*, *44*(2), 276–295. https://doi.org/10.1111/j.1745-6606.2010.01169.x

Republika.co.Id. (2017). *OJK: Sumbar Jadi Pasar Potensial FintecRepublika.co.Id. (2017). OJK: Sumbar Jadi Pasar Potensial Fintech. https://republika.co.id/amp/oz54b1423h*. https://republika.co.id/amp/oz54b1423

Ryack, K. N., Kraten, M., & Sheikh, A. (2004). Incorporating investor risk tolerance into the financial planning process. *Journal of Personal Finance*, *3*(3), 89–98.

Ryu, H.-S. (2018). Understanding Benefit and Risk Framework of Fintech Adoption: Comparison of Early Adopters and Late Adopters. *Proceedings of the 51st Hawaii International Conference on System Sciences*, 3864–3873. https://doi.org/10.24251/hicss.2018.486 Samsuri, A., Ismiyanti, F., & Narsa, I. M. (2019). The effects of risk tolerance and financial literacy to investment intentions. *International Journal of Innovation, Creativity and Change*, *10*(6), 280–294.

Sekaran, U., & Bougie, R. (2013). *Research Methods for Business* (6th Editio).

Servon, L. J., & Kaestner, R. (2008). Consumer financial literacy and the impact of online banking on the financial behavior of lower-income bank customers. *Journal of Consumer Affairs*, *42*(2), 271–305. https://doi.org/10.1111/j.1745-6606.2008.00108.x

Shusha, A. A. (2017). Does financial literacy moderate the relationship among demographic characteristics and financial risk tolerance? Evidence from Egypt. *Australasian Accounting, Business and Finance Journal*, *11*(3), 67–86. https://doi.org/10.14453/aabfj.v11i3.6

Sitkin, S. B., & Pablo, A. L. (1992). Reconceptualizing the Determinants of Risk Behavior. *Academy of Management Review*, *17*(1), 9–38. https://doi.org/10.5465/amr.1992.4279564

Sweeney, D. (2015). *What is FinTech and What Does it Mean for Small Business*.

Truong, O. (2016). *How fintech industry is changing the world. November*, 1–54. http://www.theseus.fi/bitstream/handle/10024/123633/TRUONG_OANH.pdf?sequence=1

U.S Commission, F. L. and E. (2007). *"Taking ownership of the future: The National Strategy for Financial Literacy."*

Van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial Literacy and Stock Market. *Journal of Financial Economics*, *101*(2), 449–472.

Vissing-Jorgensen, A. (2003). Perspectives on behavioral finance: Does "irrationality" disappear with wealth? Evidence from expectations and actions. *NBER Macroeconomics Annual*, *18*, 138–194. https://doi.org/10.1086/ma.18.3585252

Weber, C. S. (2014). Determinants of Risk Tolerance. *International Journal of Economics, Finance and Management Sciences*, *2*(2), 143. https://doi.org/10.11648/j.ijefm.20140202.15

Weber, E. U., Blais, A.-R., & Betz, N. E. (2002). A domain specific risk attitude scale : Measuring risk perceptions and risk behaviors. *Journal of Behavioral Decision Making J.*, *15*, 263–290.

World Economic Forum. (2015). The Future of Fintech: A Paradigm Shift in Small Business Finance. *Global Agenda Council on the Future of Financing & Capital*, *October*,1–36. http://www3.weforum.org/docs/IP/2015/FS/GAC15_The_Future_of_FinTech_Paradigm_Shift_Small_Business_Finance_rep ort_2015.pdf

Yao, R., Gutter, M. S., & Hanna, S. D. (2005). The financial risk tolerance of Blacks, Hispanics and Whites. *Journal of Financial Counseling and Planning*, *16*(1), 51–62.

Yao, R., Hanna, S., & Lindamood, S. (2004). Changes in financial risk tolerance, 1983-2001. *Financial Services Review*, *13*(4), 249–266. Yong, H.-N. A., & Tan, K.-L. (2017). The Influence Of Financial Literacy Towards Risk Tolerance. *International Journal of Business and Society*, *18*(3), 469–484. https://doi.org/10.33736/ijbs.3139.2017

Yoshino, N., Morgan, P. J., & Long, T. Q. (2020). Financial Literacy and Fintech Adoption in Japan. In *Asian Development Bank Institute Working Paper 1095* (Issue 1095). https://www.adb.org/publications/financial-literacy-fintech-adoption-japan