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ANALYSIS OF USER TRUST IN THE SECURITY OF SENSITIVE DATA PROVIDED TO FINANCIAL TECHNOLOGY COMPANIES

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Abstract. *Financial technology has become the technology that is used by Indonesia nowadays. Therefore, the number of users increases rapidly, so user data become crucial and need to be maintained. This research collected data with an online questionnaire using a snowball sampling technique with 388 respondents. This research will analyze user trust using Structural Equation Modelling (SEM) using AMOS 26. Examination of validity, reliability, normality, and goodness of fit was also tested to ensure the model, indicators, and dataset used were appropriate. This research shows that legal, financial, and privacy risk significantly influence perceived risk. Therefore, perceived risk and perceived security both have a substantial impact on trust. Trust also significantly affects attitude towards use, while attitude towards use significantly affects actual usage.*
Keywords: FinTech service, SEM, Trust, Risk

1. **Introduction.** The financial sector keeps developing rapidly in knowledge and innovations due to customer needs, new regulatory requirements, and the development of applications and technologies [1]. This situation drives researcher and engineer conduct in financial technology development. In 2020, many FinTech startups were established in Indonesia [2]. Based on data by Kemp [3], in January 2020, it is recorded of 175.4 million Internet users in Indonesia. One hundred seventy-one million users used mobile as their devices. Pandemic situation [4] supports the improvement of activities online and remotely through application [5].

Current research studies about the effect of using FinTech [6-10] prove that various countries use FinTech, for example, South Korea, United Kingdom, Ghana, Germany, and Indonesia; therefore, FinTech is used all over the world. According to Vejaèka and Štofa, security, risk, and trust are several factors that influence the use of FinTech [11]. They used TAM to learn perceived security, trust, attitude towards using, and behavioral intention as factors that influence the actual use of electronic banking in Slovakia. From this study, trust positively affects attitude towards using and intention to use.

TAM is a method used to assess and predict user acceptance of information technology designed to understand the causal chain relationship between the external and internal variables [12]. Figure 1 shows the model of TAM [13]. TAM model has proven that it can produce good quality and reliability by statistics [12]. In this study, the researcher will learn and analyze risk and trust factors affecting attitude toward use and intention

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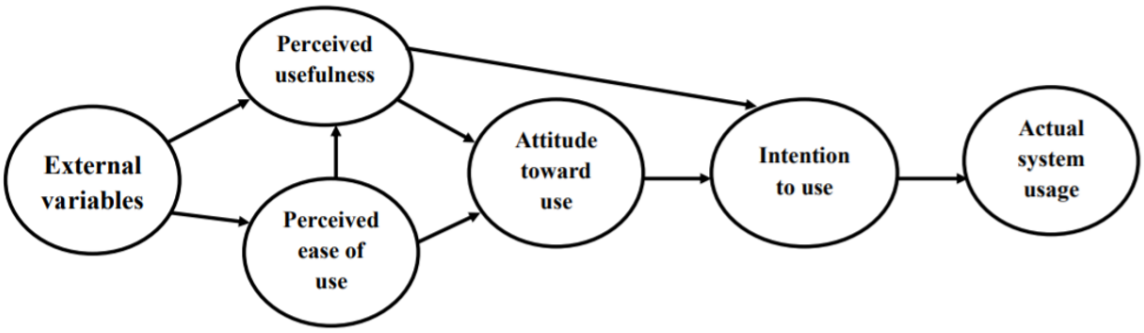

FIGURE 1. TAM model

to use. The primary purpose of this study is to examine the interrelationships of factors that can influence user trust to use FinTech by security factors of risk and trust.

In this research, there are four sections. The first section explains the introduction of this research and previous research that has been conducted. Section 2 discusses the research method in this study. The result of this study is represented in Section 3. The last section will conclude this study, suggestions, and limitations on this work. In this study, the researcher focused on the security of sensitive data from FinTech applications. The researcher can conclude that perceived risk and security influence the trust. Trust also has a significant attitude towards use, which means users will use the application because they trust it.

2. **Research Methods.** Figure 2 describes the research model with a total of 7 hypotheses. The variable of this test consists of Financial Risk (FR), Legal Risk (LR), Privacy Risk (PR), Perceived Risk (PCR), Perceived Security (PSE), Trust (TR), Attitude Towards Use (ATU), and Actual Use (AU). Legal Risk (LR) explains unclear legal status or lack of comprehensive guidelines for a system [14]. Privacy risk is defined as potential loss resulting from the risk of exposure of user personal information in mobile services [15]. Financial risk refers to the possibility of a purchase resulting in the loss of money or other assets [16]. Risk perceived by consumers is one of the crucial barriers when considering purchasing decisions [17]. Perceived security was a critical factor in building trust in electronic banking and significantly influencing attitudes in using it [11]. In the FinTech concept, well-explained and easy-to-understand transaction processes such as payment methods, top-ups, and transfer methods can help build user trust [18]. ATU is one of the dependent variables in the TAM model [19]. ATU explains the negative or positive evaluation generated when someone adopts a new technology or system. When developing the TAM model, actual use is the fundamental condition to use a system. This

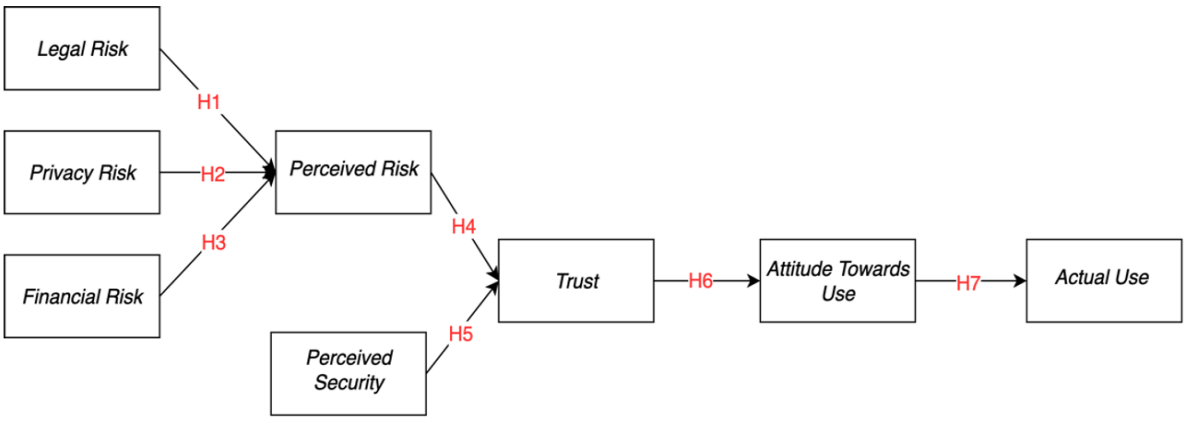

FIGURE 2. Research model

research was conducted using quantitative methods with objective theory by examining the relationships and variables [20]. This variable is measured using numerical data and analyzed by statistical procedures.

The sampling technique used in this study is non-probability sampling. This sampling technique does not provide equal opportunities for each member of the population to be selected as a sample. Data used in this research was collected by a questionnaire distributed with a five-point Likert scale [15]. In this study, the number of respondents used is 388 who used and experienced using FinTech in Java Island. The researchers analyzed the data collected using Structural Equation Modelling (SEM) [21]. In SEM analysis, the absolute minimum sample size is 50 respondents. A study shows a minimum general rule in the expected ratio of respondents to variables or indicators of 5 : 1. However, to get maximum results from the research, it is expected to reach ten times the number of variables or indicators used [22]. Therefore, the number of indicators used is 32, with a minimum of 320 respondents. We used Analysis of Moment Structure (AMOS) to analyze the variable and hypotheses data. AMOS is a software extension from SPSS to perform structural equation modeling analysis. The researcher used AMOS 26 to perform normality tests, model tests, and hypothesis tests in this study.

3. **Results.** The first stage of data processing is the validity and reliability test. Validity and reliability tests on the questionnaire are needed to determine the quality and measure how valid the instruments or variables used are. Reliability test to ensure the questionnaire used in this test is reliable and can be explored. As shown in Table 1, the Cronbach alpha is 0.861. If the Cronbach alpha value is more than 0.8, it is reliable and satisfactory [23].

Table 1. Reliability test for first 30 respondents

Cronbach alpha	No. of items	Description
0.861	32	Satisfy

In the next step, the researchers conduct the convergent validity test. The concurrent test can be measured from the Average Variance Extracted (AVE) and Composite/Construct Reliability (CR). The indicator can be defined as valid when the AVE ≥ 0.5 and CR ≥ 0.7 [24]. As shown in Table 2, the number of AVE and CR from each indicator exceeds the requirements, defining that all indicators are valid.

Table 2. Convergent validity test result

Indicator	Average variance extracted	Construct reliability
FR	0.570	0.809
LR	0.541	0.821
PR	0.614	0.778
PCR	0.600	0.852
PSE	0.566	0.879
TR	0.718	0.931
ATU	0.718	0.931
AU	0.600	0.837

Furthermore, the researchers measured Goodness-of-Fit (GOF) using AMOS 26 software. GOF testing is used to measure the suitability of the actual observation data results with the predictions of the proposed model [25,26]. In this study, the data were tested using nine criteria representing each group of GOF. The model can be seen in Figure 3.

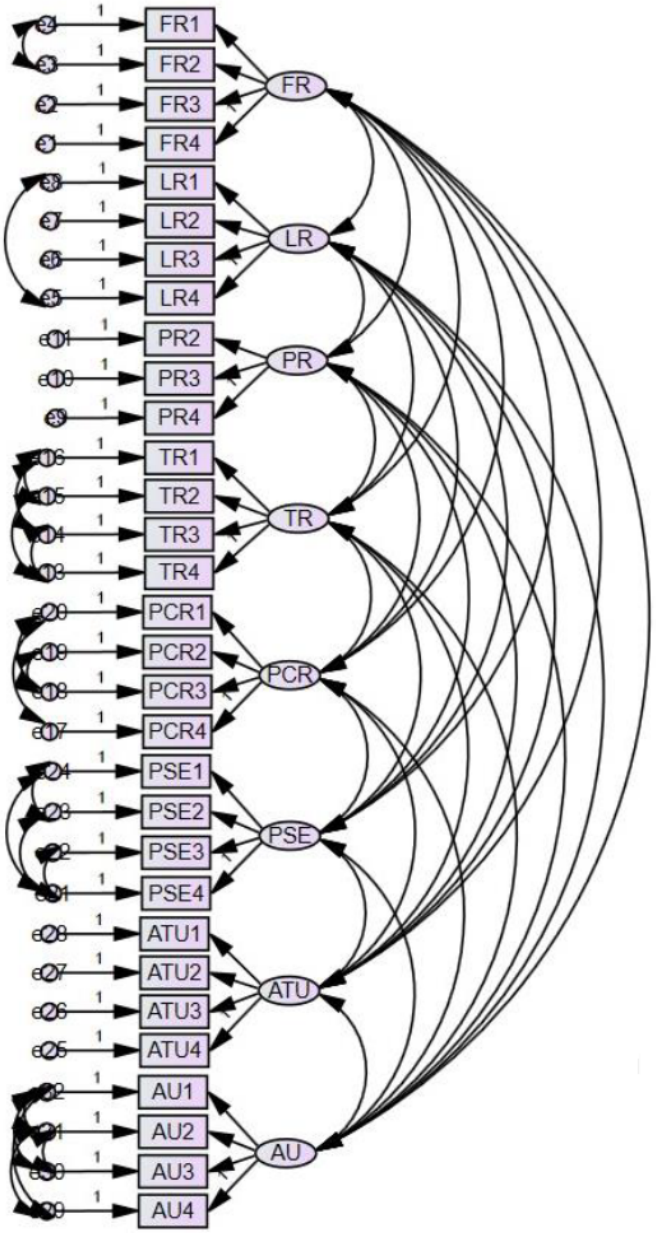

FIGURE 3. Goodness-of-fit model

From Figure 3, PR1 was removed because the minimum factor loading is less than 0.5, which does not meet the requirement.

The result of the GOF calculation from the model is shown in Table 3. From the model, RMSEA shows the result of close fit, χ^2/df, NFI, RMR, TLI, PNFI show good fit, GFI, AGFI and PGFI show marginal fit. With this result, we can conclude that the indicator used in the model, as shown in Figure 2 is valid. Then the researcher conducts a hypotheses test to know whether the relation between variables is significant or not [27]. Hypotheses can be accepted if C.R. $\geq \pm 1.96$ and p-value ≤ 0.05. Table 4 shows the hypotheses result and the requirements met so all the hypotheses can be accepted.

Figure 4 shows the value of standardized regression weights of each hypothesis in this study. Financial risk has a direct influence on the perceived risk factor. Perceived security has a direct impact to trust, and attitude towards use has a direct influence on the actual use factor. Meanwhile, of all the variables used in the study, the variable that has the most significant indirect effect on the actual use factor is trust mediated by attitude towards use.

TABLE 3. Goodness-of-fit model result

GOF measurement	Model result	Criteria	Description
χ^2/df	2.00	≤ 2	Good fit
GFI	0.88	≥ 0.90	Marginal fit
RMR	0.05	≤ 0.05	Good fit
RMSEA	0.05	≤ 0.05	Close fit
AGFI	0.85	≥ 0.90	Marginal fit
TLI	0.94	≥ 0.90	Good fit
NFI	0.90	≥ 0.90	Good fit
PNFI	0.76	≥ 0.06	Good fit
PGFI	0.69	≥ 0.90	Marginal fit

TABLE 4. Hypotheses test result

Hypotheses	Estimate	S.E.	C.R.	p-value	Description
LR >> PCR	0.428	0.074	5.79	***	H1 Accepted
FR >> PCR	0.487	0.082	5.933	***	H2 Accepted
PR >> PCR	−0.103	0.052	−1.968	0.049	H3 Accepted
PCR >> TR	−0.121	0.046	−2.601	0.009	H4 Accepted
PCS >> TR	0.598	0.076	7.886	***	H5 Accepted
TR >> ATU	0.792	0.058	13.68	***	H6 Accepted
ATU >> AU	0.835	0.067	12.535	***	H7 Accepted

S.E., Standard Estimate; C.R., Construct Reliability; ***, p-value < 0.001.

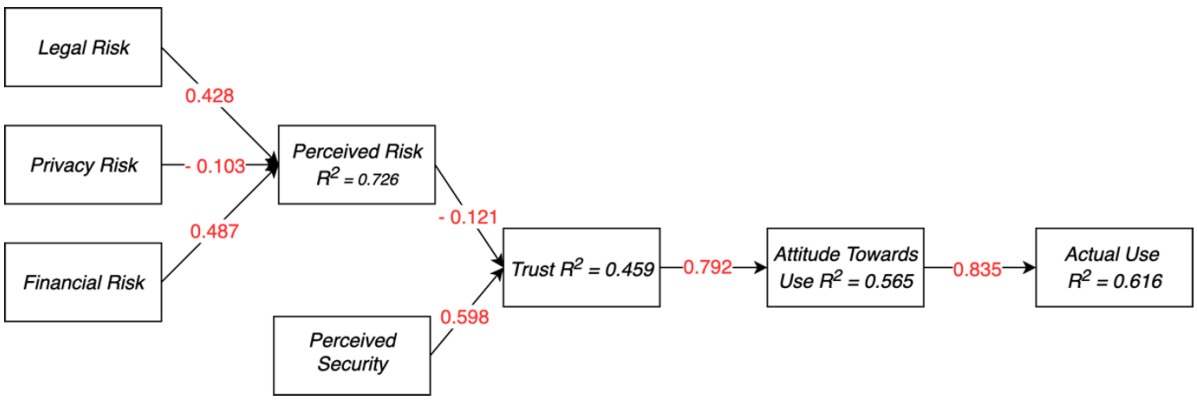

FIGURE 4. SEM test result

In this study, perceived risk has the highest coefficient determination, so we can define that legal, privacy, and financial risks significantly relate to perceived risk. This result makes law and legality very crucial for FinTech services to influence trust in the use of FinTech. It is also necessary to pay intention to privacy risk of data provided because it became the primary risk consideration for the benefit of FinTech services. As shown in Figure 4, the trust factor has the most significant impact on actual use. This means that user trust in FinTech services can change user views of these services, directly influencing FinTech services. If an individual trusts FinTech services, then the individual's tendency to use the FinTech service increases.

4. **Conclusion.** FinTech services are innovations in technology and finance. FinTech payment and clearing services can replace the role of the physical wallet into a digital form that is on the user's mobile. FinTech facilitates the financial process, which makes it

more effective. However, FinTech services may have several shortcomings. Various risks arise from the prerequisites for using FinTech services. For example, submission of identity data can increase the risk of leaking personal data and the risk of fraud and spam. As a result, legal, privacy, and financial risks affect the perceived risk. This happens because the user is still unaware of their data leak. Therefore, risk and security affect trust. The user considers risk and security, so trust becomes a crucial issue. So, this also affects the actual use. With users' confidence of attitude and view of users towards FinTech services getting better, the tendency of users to use these services is high. Therefore, the trust factor becomes a crucial factor that FinTech services providers must pursue and maintain.

This study suggests that laws and regulations need more consideration. Therefore, Bank Indonesia should observe FinTech services providers. Furthermore, the government should socialize the regulation of FinTech services, so people know the current rules. Limitations in this study are data collection due to pandemic conditions coverage of data collection only on Java Island. Finally, the researchers suggest analyzing more variables for the following research, such as security risk, operational risk, and psychological risk.

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