Analysis the use of P2P lending mobile applications in Indonesia

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Abstract. Nowadays, the development of technology is developing so fast and has touched every aspect of human life, from education, health to financial services to the community. One of the technological developments in the field of financial services is the P2P Lending application where people can borrow online. The development of the use of P2P Lending applications is so fast that it reaches one million users as of May 2018, but in the journey, there are many cases that affect users both socially, ease and performance when using the P2P Lending application. Therefore, the authors conducted a study to look at the influence of Performance Expectancy, Effort Expectancy and Social Influence on Behavioural Intention on the Use of P2P Lending Mobile Applications using Regression statistical tests. The research result explains the positive influence of these three factors on Behavioural Intention using P2P Lending applications which are moderated by Age and Gender.

1. Introduction
Technological developments have touched every aspect within human life ranging from business, education, health, to financial services for the community. One form of technological development in the field of financial services is the emergence of Peer to Peer Lending (P2P Lending) applications due to the existence of several supporting technologies such as the development of the internet and smartphones. Based on data from wearesocial.com gathered in early 2019, specifically in Indonesia itself as of January 2018 internet usage has touched the figure of 50% or half of the total population of 265.4 million. This shows that most people in Indonesia have used internet technology, where several activities carried out by people in Indonesia are to access social media, online shopping, and browsing.

Likewise, with data obtained from statista.com in 2019, regarding the development of smartphone use in Indonesia which has reached 26.26% of the total population in Indonesia in 2018 [1]. According to Klafft [2], P2P Lending itself is a two-sided market that is not much different from the traditional banking system with its distinctive challenges. Usually borrowers are individuals, Small and Medium Enterprises (SMEs), and also beginner investors who do not have enough money and limited investment channels. Some financial technology companies that focus on developing P2P Lending applications are increasingly growing in Indonesia, an example of that company is PT. Our Digital Cash (Cash), PT. Radhika Jaya Investree (Investree), and PT Digital Synergy Technology (RupiahPlus).

Based on data from the Financial Services Authority (OJK) in the Fintech Financial Data Summary (Peer to Peer Lending) report for May 2018, it shows that the total borrowers and lenders both domestic and foreign experienced significant growth each month, the total number of borrowers grew from 330,154 borrowers in January 2018 to increase to 1,850,632 borrowers or experience growth of around 461% in just five months (February - May). Likewise, the total lenders experienced growth from
115,939 in January 2018 to 199,539 in May 2018. From these data, we can prove that the P2P Lending application was welcomed by the people of Indonesia.

But in its development, there have been several cases of the use of the P2P Lending application as reported in tirto.id in 2018, regarding the OJK’s response to cases of unethical billing methods to customers carried out by one of the fintech companies, RupiahPlus. OJK also stated that the public does not need to worry about borrowing online. Another case in cnnindonesia.com is the misuse of access to borrowers’ personal data in the name of RupiahPlus, causing the loan application rate to decline by 40% [3]. Another interesting thing is the emergence of a petition on change.org which has been signed by 2,709 people regarding customer complaints who feel burdened by the collection team from a fintech P2P lending company that threatens and intimidates if they do not make a payment, the account will be frozen and billed to people. In addition, according to InfoKomputer magazine in August 2018, there were cases where users downloaded three P2P Lending mobile applications, where the first application was able to process loans quickly and in just one hour the loan funds had entered his account. Then the second application, according to him, is not practical because the verification process requires too much data that needs to be filled. While the third application is long in the verification process, even more than a week the loan status is still in the filing stage. But there is one application that can do the scoring process quickly so that it can facilitate users. The application is a Smart Credit that uses Artificial Intelligence to evaluate prospective borrowers based on the data of the prospective borrower [4].

Based on the above problems, the author can conclude that there are some customers who feel uncomfortable using a P2P Lending application and influence the usage behaviour of the application [5]. Therefore, the need for a model that can be used to measure the level of user’s technology acceptance. UTAUT (Unified Theory of Acceptance and Use of Technology) is one of the models developed by Venkatesh, Morris and several other researchers that can be used to measure user’s technology acceptance. According to Venkatesh et. Al. [6] the UTAUT model can show that the user’s intention to behave (behavioural intention) and also the behaviour to use a technology (use behaviour) can be influenced by several factors, namely the expectation of performance (performance expectancy), hope for effort (effort expectancy), social influence (social influence), supporting conditions (facilitating condition), the four factors are moderated by several factors, namely gender, age, and experience.

2. Theoretical Framework

2.1. Performance Expectancy

Based on the opinions of Venkatesh, et.al. [7], Performance Expectancy is used to measure levels user’s trust that by using a system can assist in achieving job performance. Venkatesh, et.al found that this construction affected Behavioural Intention. Meanwhile according to Shin and Kevin [8], there are three factors affect Performance Expectancy, which is job fit, perceived usefulness, extrinsic motivation. Based on the opinion of Zhou et al. [9], said that Performance Expectancy, task technology fit, Social Influence and Facilitating Condition have significant effect on user adoption.

2.2. Effort Expectancy

Based on the opinion of Venkatesh, et.al., Effort Expectancy is the level of individual effort in using the system to assist his work. Meanwhile, based on the opinion of Venkatesh and Dasgupda [6], the results of previous research stated that the level of ease of use of a system in supporting a job significantly influences the interest in using the system. Based on the opinion of Yen-Ting Helena Ciu et al. [10] said that Effort Expectancy, Facilitating Condition and Social Influence have an influence on the overall intention to use a system.

2.3. Social Influence

Based on the opinion of Venkatesh et.al., Social Influence is the level where someone considers others important convinced him to use the new system. Research result by Venkatesh and Dasgupda [6], Sedana [11] mentioned that Social Influence affects the level of interest in use system. Meanwhile, in the opinion of Maldonado [12] find that learning motivation and Social Influence have positive effect on behavioral intention, whereas Facilitating conditions do not have an impact on the usage of e-
learning portal. Kijsanayotin et al. [13] state that Social Influence also affect the user’s information technology acceptance.

2.4. Behavioural Intention
Based on the opinion of Venkatesh et al., a situation where a user finds the benefits of a technology, then there will be other plans to use it, is called Behavioural Intention. Behavioural intention is user’s intention to use the system frequently with the assumption that they can access the system. The results of research from Venkatesh et al. and Sedana et al. [11] said that behavioural intention influences the usage behaviour.

2.5. Performance Expectancy and Behavioural Intention Relationship, Moderated by Age and Gender
The article addresses the factor Performance Expectancy (X1) plays important factors in P2P lending application. The hypothesis is made through assessing the Performance Expectancy (X1) affects Behavioural Intention (Y) in using P2P Lending applications. The author also wants to see how the Age (Z1) and Gender (Z2) factors can influence the relationship of the Performance Expectancy (X1) factor to Behavioural Intention (Y) users of P2P Lending applications. The following is a diagrammatic diagram of Performance Expectancy and Behavioural Intention relationship, moderated by Age and Gender.

![Figure 1. Performance Expectancy and Behavioral Intention Relationship.](image1)

2.6. Effort Expectancy and Behavioural Intention Relationship, Moderated by Age and Gender
Besides addressing the behavior intention (Y), The author also wants to see how the Age (Z1) and Gender (Z2) factors can influence the relationship of Effort Expectancy (X2) factors to Behavioural Intention (Y) users of P2P Lending applications.

![Figure 2. Effort Expectancy and Behavioral Intention Relationship.](image2)

2.7. Social Influence and Behavioral Intention Relationship, Moderated by Gender and Age
Social influence along factor of age and gender is considered has direct relation to creating behavioral intention to carry P2P lending application. The diagram is illustrated as follow:

![Figure 3. Social Influence and Behavioral Intention Relationship.](image3)
3. Research Method

3.1. Hypothesis
There are several hypotheses that have been made quantitatively by the author, then the hypothesis will be tested whether each hypothesis is accepted or rejected. Following are the hypotheses that have been made: (1) hypothesis 1: Performance Expectancy in the UTAUT model which is moderated by age and gender positively affect the Behavioural Intention of P2P Lending application users; (2) hypothesis 2: Effort Expectancy in UTAUT model which is moderated by age and gender positively affect the Behavioural Intention users of P2P Lending applications; (3) hypothesis 3: Social Influence in the UTAUT model which is moderated by age and gender positively affect the Behavioural Intention users of P2P Lending applications.

3.2. Population and Sample
The author applies the population based on the data in the Financial Services Authority (OJK) report, which is an Overview of Fintech (Peer to Peer Lending) Financial Data for May 2018, where the population to be used is the total number of borrowers per May 2018 on the island of Java. Then the sampling technique that will be used by the author is simple random sampling where the author will take samples randomly without considering the level that is found in the population. The article applies survey method with a Likert scale and delivered to 1000 respondents in Jakarta greater area. There are 385 respondents have been replied and validated for further analysis.

3.3. Sampling Methods
The following are the steps taken by the author in taking the necessary: (1) the article takes the population in this study is the total number of borrowers in accordance with data from the Financial Services Authority (OJK) report on the Summary of Fintech (Peer to Peer Lending) Financial Data for the May 2018 period, which is 1,665,219; (2) The author uses the sampling method using simple random sampling, where samples will be randomly selected. According to Zikmund [14] probability sampling means that each item in the population has the same chance to be included in the sample. According to Hair et.al. [15], the reason why simple random sampling is considered as a simple sampling technique because the process of taking of sample members within the population is done randomly without considering the level that is found in that population. The distribution of questionnaires is a technique used by the author to collect data from respondents for each P2P Lending application user in the DKI Jakarta area. The author uses a Likert scale with five categories to measure each data that has been collected.

3.4. Analysis Method.
The article uses linear regression to process and analyse the input data and validated with F-test and R-Square for validity and reliability test.

4. Results and Discussion

4.1. Analysis Regression Model
The Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and moderator variable for Age and Gender (PE.AGE, EE.AGE, SI.AGE, PE.GEN, EE.GEN, SI.GEN) are zero, while Behavioural Intention (BI) is 8.214. The further analysis can be summarised as follows:
- Regression coefficient of Performance Expectancy (PE) variable obtained is 0.436; that means if other independent variable has fixed value and Performance Expectancy (PE) variable increase 1-point, Behavioural Intention (BI) will increase 0.436 point. If coefficient is positive, the correlation will be positive on Performance Expectancy (PE) and Behavioural Intention (BI). If Performance Expectancy (PE) variable increase, Behavioural Intention (BI) variable increase as well.
- Regression coefficient of Effort Expectancy (EE) variable obtained is 0.137; that means if other independent variable has fixed value and Effort Expectancy (EE) variable increase 1-point, Behavioural Intention (BI) variable will increase 0.137 point. If coefficient is positive, the correlation will be positive on Effort Expectancy (EE) and Behavioural Intention (BI). If Effort Expectancy (PE) variable increase, Behavioural Intention (BI) variable increase as well.
Regression coefficient of Social Influence (SI) variable obtained is 0.268; that means if other independent variable has fixed value and Social Influence (SI) variable increase 1 point, Behavioural Intention (BI) will increase 0.268 point. If coefficient is positive, the correlation will be positive on Social Influence (SI) and Behavioural Intention (BI). If Social Influence (PE) variable increase, Behavioural Intention (BI) variable increase as well.

Value of Sig. on PE.AGE, EE.AGE, and SI.AGE is lower than 0.05. Therefore, we can conclude that Age is moderator variable that can influence correlation between Performance Expectancy, Effort Expectancy, and Social Influence and Behavioural Intention. Value of PE.GEN, EE.GEN and SI.GEN is higher than 0.05. Therefore, we can conclude that Gender is not moderator variable and cannot influence correlation between Performance Expectancy, Effort Expectancy, and Social Influence and Behavioural Intention.

The results of figure 4 shows the regression equation as follow:

\[
BI = 8.214 + 0.436PE + 0.137EE + 0.268SI + 0.026PE.AGE + 0.060EE.AGE + 0.036SI.AGE + 0.027PE.GEN + 0.043EE.GEN + 0.034SI.GEN
\]  

(1)

4.2. **Partial Analysis of Regression Coefficient (T test)**

Based on calculated t value from regression result above, calculated t value for Performance Expectancy is 1.562; calculated t value for Effort Expectancy is 1.411; calculated t value for Social Influence is 5.425. Only Social Influence (SI) have calculated t value higher than t table (2.045) so we can summarize that Social Influence variable partially have significant influence to Behavioural Intention, whereas Performance Expectancy and Effort Expectancy don’t have significant effect on Behavioural Intention.

4.3. **Simultaneous Analysis of Regression Coefficient (F test)**

Based on figure 5, calculated F (10.949) is higher than F table (4.10) and value of Sig. of 0.000 is lower than 0.05 so we can conclude that there is simultaneous effect of Performance Expectancy, Effort Expectancy and Social Influence on Behavioral Intention.
Based on figure 6, value of Adjusted $R^2$ (Coefficient of Determination) is 0.921 (higher than 0.6). Therefore, we can conclude that there is strong correlation between those three variables, Performance Expectancy, Effort Expectancy and Social Influence to Behavioural Intention.

From that value, we can conclude that percentage of independent variable of Performance Expectancy, Effort Expectancy, and Social Influence to fixed variable of Behavioural Intention is 92.1%, whereas 17.9% influenced by other variable not used in this research model.

5. **Conclusions**

The research purpose is to identify whether Performance Expectancy, Effort Expectancy and Social Influence have influence to Behavioural Intention on utilization of P2P Lending Mobile Application that is moderated by Age and Gender. Data on this research is obtained by survey to respondents who are match with this research purpose. Therefore, we can conclude that:

- There is significant and positive correlation between Behavioural Intention and three independent variables used. That correlation is evidenced by double regression result with value of Adjusted $R^2$ (coefficient of determination) of 0.921. That means variation of Performance Expectancy, Effort Expectancy, and Social Influence independent variable explain fixed variable of Behavioural Intention of 92.1%. The rest of 7.9% (100% - 92.1% = 7.9%) is variation of other independent variable that influence Behavioural Intention that is not used in this research.
- Value of Adjusted $R^2$ (coefficient of determination) double regression model for Behavioural Intention is constituted of 3 independent variable and 1 fixed variable.
- Based on this regression equation:
  \[ BI = 8.214 + 0.436PE + 0.137EE + 0.268SI + 0.026PE.AGE + 0.060EE.AGE + 0.036SI.AGE + 0.027PE.GEN + 0.043EE.GEN + 0.034SI.GEN \]
  We can conclude that Performance Expectancy (0.436), Social Influence (0.268), and Effort Expectancy (0.137) is independent variable that have most influence to Behavioural Intention as fixed variable.

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