

UNDERSTANDING THE DETERMINANTS OF FUNDERS ON CROWDFUNDING PLATFORM USING THE UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT)

WILSON SENTANOE AND TANTY OKTAVIA

Information Systems Department
Bina Nusantara University

Jl. K. H. Syahdan No. 9, Kemanggisan, Palmerah, Jakarta 11480, Indonesia
wilson.sentanoe@binus.ac.id; toktavia@binus.edu

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ABSTRACT. *Crowdfunding could be an alternative means of raising funds for various projects and goals, either commercial or social. Nevertheless, crowdfunding has a relatively low success rate in achieving the funding goals, with only 30%-55%. This research investigates the determinants or variables positively correlated to user intention on using a donation-based crowdfunding platform. It is expected to provide some recommendations for crowdfunding platforms and fundraisers to enhance their service and campaign based on this research outcome, thus increasing the success rate of crowdfunding campaigns. The research model used in this research is the Unified Theory of Acceptance and Use of Technology (UTAUT), with an additional independent construct, which is perceived trust. A survey is conducted on crowdfunding users in Indonesia using an online questionnaire, and the data collected were analyzed using PLS-SEM. From 125 respondents that participate in the survey, it can be concluded that all variables in the research model have a positive relationship with user intention on using a crowdfunding platform, with perceived trust as the most significant.*

Keywords: Crowdfunding, Use intention, UTAUT

1. Introduction. The digital industry in Indonesia is evolving rapidly, with more and more digital services offered to users. One of the digital services with emerging popularity in Indonesia is crowdfunding, especially donation-based crowdfunding. Crowdfunding is a notion of funding through an open call on the Internet [1]. This concept allows the fundraiser to raise funding from the masses, or the “crowd”, without complicated requirements that conventional funding methods needed, such as bank loans, which in theory is more accessible by many more people.

Several crowdfunding forms exist, such as equity-based crowdfunding, reward-based, donation-based, and lending crowdfunding [2]. Those types share the same concept of getting funds from the “crowd”, but they have different mechanisms and probably other variables that impact the user’s intention. For example, reward-based crowdfunding offers the backers some reward in return for their participation, so their motivation in using the crowdfunding service might be to get the compensation. However, donation-based crowdfunding is used primarily for social-related campaigns. The funders will not get anything in return for their investment, which means that their reason to use the service might not be about getting the benefits.

Although crowdfunding is considered an alternative funding method with fewer requirements, getting funding from crowdfunding is easier said than done. One problem with crowdfunding is the low success rate, with only 30%-55% [3-5]. The low success rate could negatively impact its stakeholders, such as fundraisers and platform owners. For fundraisers, a low success rate means that they have a lower chance of getting funded

through crowdfunding. As for the platform owner, a low success rate could disrupt their operation, as they rely on administration fees from successful campaigns. This issue has been proven when “wujudkan.com”, a crowdfunding platform in Indonesia, had to cease its operation in 2017 because of the low success rate, which reportedly was only 12% [6].

Crowdfunding stakeholders should address this problem of low success rate, and one of the ways is to learn the motives behind user’s intention on using crowdfunding services. This research aims to examine the variables or determinants of users’ intention of using crowdfunding services as a funder. The result of this research is expected to be used as a reference, both for platform owners and fundraisers, to develop better crowdfunding services and campaigns.

Several prior studies had researched this similar topic regarding users’ motivation in using crowdfunding services. A study by Islam and Khan in Bangladesh shows that user’s motivation in adopting crowdfunding services is heavily influenced by the opinions and recommendations of their reference groups [7]. Another factor that has been proven to have a strong effect on user’s intentions is the trustworthiness and integrity of the crowdfunding platform. A similar result was shown in other research, such as a study on charitable crowdfunding in China by Li et al. and also a study by Moon and Hwang in South Korea [8,9]. Social influence and trustworthiness of the crowdfunding platform and the project are the main motivation in using crowdfunding services.

Although several studies have researched the topic, only a few of them were conducted in Indonesia. One of them is by Pangaribuan and Wulandar, which examined the user acceptance of the crowdfunding platform in Indonesia [10]. In contrast to previous research, social influence does not significantly correlate to user’s intention, but effort expectancy is. However, as the research focuses on fundraisers, more studies are needed to validate the results on funders as well. Thus, this research is expected to provide more insights about crowdfunding users in Indonesia, particularly concerning the funders and their intention on using the service.

This research will use the Unified Theory of Acceptance and Use of Technology (UTAUT) as the research model, with an additional independent variable: perceived trust. UTAUT was chosen as the research model because it has been proven to study user acceptance and intention to use a technology product [11]. The data will be collected using a survey, and then analyzed using Partial Least Squares Structural Equation Modelling, or PLS-SEM.

2. Literature Review. This section will outline the theories and concepts from relevant studies which are applied to this research.

2.1. Financial Technology (FinTech). Financial technology, or commonly abbreviated as FinTech, is a term to describe technology usage, especially information technology, in financial services [12]. The financial industry and services have been dependent on technology since the beginning, but the term FinTech just recently gained popularity. Technology development has been evolving rapidly in recent years, and the financial industry is continuously innovating and adapting the technologies to their services. This innovation generates various new financial services, usually by financial technology startups, threatening the conventional financial institution.

Services provided by financial technology startups are often well received by the public. It provides an alternative from conventional financial institutions, such as banks, which are not very trusted since the economic crisis in 2008 [12,13]. Public distrust of banks and rapid technology development become the momentum for innovative financial services to be accepted by the masses [14].

Currently, there are a variety of FinTech services available [15]. Digital or online payments are one of the most basic services provided by FinTech companies. Then, there

are also loans, wealth management, capital market, and insurance services. One of the exciting business models in the FinTech industry is crowdfunding, which will be discussed in the next section.

2.2. Crowdfunding. As a subset of FinTech, crowdfunding is an innovative financial service that could accommodate anyone to raise funds via the Internet. Crowdfunding is a concept to gather funds, typically via the Internet and social media, where people can fund a project or campaign [1,16]. The main idea is to collect a small amount of money from many individuals (the “crowd”) to finance a project.

There are at least three parties involved in crowdfunding. Those parties are the fundraiser, funder, and the crowdfunding platform itself [9]. The fundraiser is the one who makes the campaign in the crowdfunding platform, which will explain the objective of its project and set the funding target. Then, the people who donate their money and participate in funding the campaign are called the funders or backers. The crowdfunding platform is responsible for maintaining its site and services and facilitates transactions between the funder and fundraisers.

Crowdfunding could be differentiated into several categories according to the mechanism and objectives. There are at least four crowdfunding types: equity crowdfunding, donation-based crowdfunding, reward-based crowdfunding, and lending crowdfunding [2]. This research will focus on donation-based crowdfunding, in which the campaign is usually social-oriented, and the funders do not get any direct benefit from participating in a campaign.

2.3. Unified Theory of Acceptance and Use of Technology (UTAUT). The Unified Theory of Acceptance and Use of Technology (UTAUT) is a popular research model to study user’s acceptance of a technology product. Venkatesh developed UTAUT in 2003 by combining eight different research models used to study technology acceptance. The result is an integrated research model that outperforms the prior models to analyze user intention in using technology [11].

This model comprises four primary independent constructs and two dependent constructs. The four independent constructs are performance expectancy, effort expectancy, social influence, and facilitating conditions. As for the dependent constructs, there are behavioral intention and use behavior.

2.4. PLS-SEM. This research’s statistical technique is Partial Least Squares Structural Equation Modelling, or also known as PLS-SEM. It is a well-known statistical modeling method that could be used to analyze the causal model [17]. PLS-SEM’s primary focus is to evaluate each latent variable and every relationship in the research model.

One characteristic of PLS-SEM is that it uses a path diagram to visualize the hypothesis or the concept [18]. The path diagram comprises independent and dependent latent variables and also indicators that measure each construct.

3. Method. This section will discuss the research model and methodology that is used in this research.

3.1. Research model. This research uses the Unified Theory of Acceptance and Use of Technology (UTAUT) as the base of the research model. One reason for using UTAUT is because it could explain most of the variance of user’s intention to use technology products [11]. It aligns with the purpose of this study.

The other advantage of using this theoretical model is the customizable nature of the model. As stated by Venkatesh et al., researchers do not need to use the model as it is but could alter it according to the research’s objective [19,20]. As for this study, there is a slight modification to ensure that it suits the research scope. The ‘use behavior’ construct

will not be used in this research because the focus is only on user intention and not user behavior.

Other than that, there will be an additional independent construct in this research, which is perceived trust, because there are some indications that trust has a vital role in driving user motivation in using crowdfunding service [8,9].

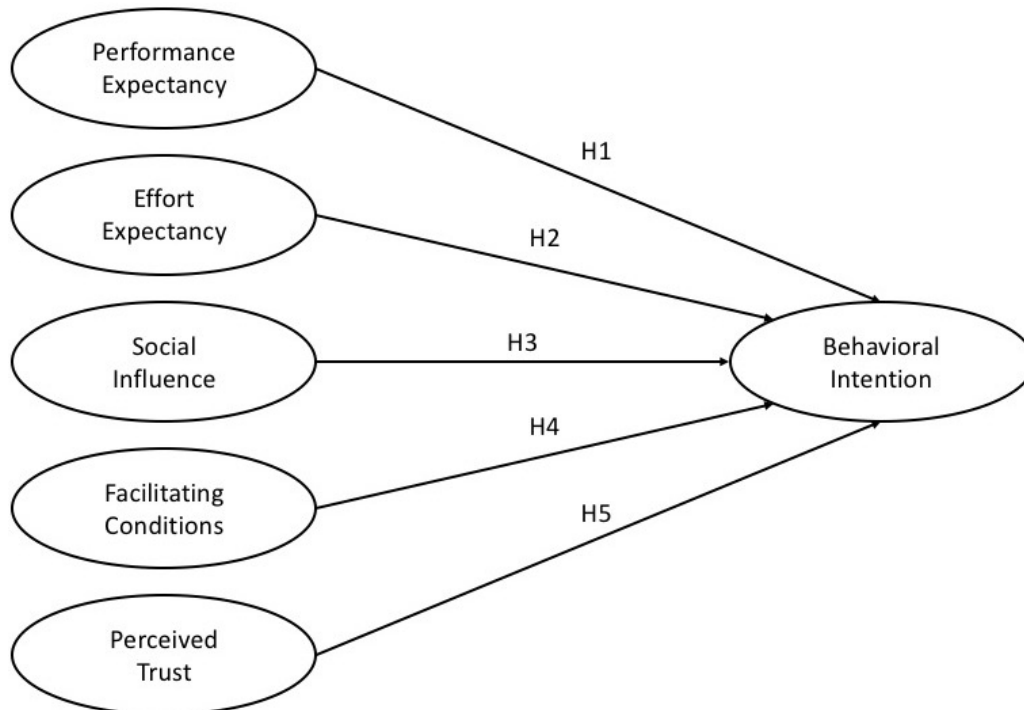


FIGURE 1. Research model

Hypothesis:

- 1) H1: Performance Expectancy (PE) positively correlates to behavioral intention.
- 2) H2: Effort Expectancy (EE) positively correlates to behavioral intention.
- 3) H3: Social Influence (SI) positively correlates to behavioral intention.
- 4) H4: Facilitating Conditions (FC) positively correlates to behavioral intention.
- 5) H5: Perceived Trust (PT) positively correlates to behavioral intention.

3.2. Time and object of research. This research was conducted from September 2020 to January 2021. This research's target population is crowdfunding users in Indonesia, especially those who have used crowdfunding as a funder. There are no restrictions on the age and gender of the respondents.

3.3. Research sample. This research uses a non-probability technique, convenient sampling, to gather the sample from the research population. Convenient sampling is a method to collect respondents from a target population that meets specific criteria such as reachable and agrees to participate in [21]. It was used because it does not need much resource, and the process tends to be faster.

In about one month of collecting data, it successfully gathered a total of 169 respondents. However, not all respondents were crowdfunding users. Only 125 respondents out of the total indicated that they had ever used crowdfunding services as a funder, implying that only 125 data points could be analyzed in this study. This amount still exceeds the minimum sample amount that has been calculated using statistical power analysis, which is 122 respondents [18].

TABLE 1. Demography of respondents

Demographic variable	Category	Frequency
Gender	Male	65
	Female	60
Age	< 16	1
	16-25	101
	26-35	17
	36-45	6

Of the 125 respondents, 65 are males, and 60 are females, which is relatively equal in gender. However, most of the respondent's age falls between 16 and 25 years old, with 101 people.

3.4. Data collection method. Research data that will be analyzed in this research was gathered with a survey, using a questionnaire as the instrument. The questionnaire was made digitally using Google Forms. Then, it was distributed online via social media and instant messaging services to the target population.

The questionnaire itself was divided into three main sections. The first section includes a brief explanation that introduces the crowdfunding concept and questions about the participant's background. It also includes a question of whether the respondent was ever using crowdfunding services as a funder before. If the respondent never uses crowdfunding services as a funder, they will not continue the survey, and their data will not be analyzed.

The second section contains a series of statements, where the respondents need to set their level of agreement for each statement using the Likert Scale. The statements were derived from the variables that were included in the research model. Finally, the last section of the questionnaire contains open-ended questions, where the respondents were asked about their opinion about crowdfunding services.

Other than data gathered through the survey, this study also uses secondary research data from various academic articles and former research. It was used to support the theories and concepts used in this research.

4. Discussion. This section will discuss the result of the data analysis done by using the PLS-SEM method. There are two main components in PLS-SEM analysis, the measurement model and the structural model [18]. The measurement model, also known as the outer model, deals with the research model's reliability and validity by analyzing the latent variable and its indicators. The structural model, also known as the inner model, corresponds with the relationship and correlation between latent variables.

4.1. Structural model. The structural model corresponds to the relationship between constructs, and one of the evaluations is by using path coefficients. Table 2 shows the path coefficient and t-statistics value of each relationship. A positive path coefficient means that the independent construct correlates positively to the dependent construct. To measure its significance, it is using the t-statistics value. If the t-statistics value exceeds 1.96, then the relationship could be considered significant.

From the result, all relationships have a positive path coefficient, which means that every independent latent variable positively impacts the user's intention in using crowdfunding services. Only three are proven significant from those relationships: PE \rightarrow BI, SI \rightarrow BI, and PT \rightarrow BI.

4.2. Performance expectancy to behavioral intention. Based on this research result, this relationship's path coefficient has a positive value, which means that H1 is accepted. The t-statistics value of this relationship is 1.964, which is slightly larger than

TABLE 2. Path coefficient

Path	Path coefficient	T-statistics	Description
PE → BI	0.132	1.964	Positive; Significant
EE → BI	0.044	0.532	Positive; Not Significant
SI → BI	0.255	3.562	Positive; Significant
FC → BI	0.166	1.770	Positive; Not Significant
PT → BI	0.380	4.390	Positive; Significant

1.96. From the t-statistics, it could be concluded that performance expectancy positively and significantly impacts users' intention to use crowdfunding services.

Performance expectancy in this study refers to how a person is confident that crowdfunding could help fundraisers solve their financial problems. So, users may use crowdfunding services because they believe that they could help others use this platform.

4.3. Effort expectancy to behavioral intention. The result shows that the effort expectancy positively correlates with behavioral intention, but it is not significant. The path coefficient shows a positive value. However, the t-statistics are below 1.96. H2 is still accepted because it has a positive relationship.

Effort expectancy refers to the degree of convenience in using crowdfunding services. It shows that the users prefer the ease of use, but it is not the main reason for using it. However, from the recommendations collected of the open-ended question on the questionnaire, many suggest platform owners improve their user interface, especially on mobile apps.

4.4. Social influence on behavioral intention. This relationship has a positive path coefficient, and the value of the t-statistics is 3.562, which is greater than 1.96. This result shows that social influence has a positive and significant impact on user's intention to use crowdfunding services. Therefore, hypothesis H3 is also accepted.

Social influence in this study suggests the degree to which their social environment influences a person's decision to use crowdfunding. Hence, one of the main reasons people use crowdfunding services is that their social circle influences them. As this relationship is one of the most significant, the platform and fundraisers need to focus on this aspect. One thing that they can do is to promote and publish information about crowdfunding on social media platforms.

4.5. Facilitating conditions to behavioral intention. Based on the result, this relationship's path coefficient has a positive value, which means that facilitating condition is positively correlated with behavioral intention. Therefore, hypothesis H4 is also accepted. However, the relationship is not significant because the t-statistics is below 1.96.

In this study, facilitating conditions refer to the availability of technical and functional resources that could support crowdfunding services. This result shows that the features offered, such as payment method options, are preferred by the users, but it is not the primary motivation to use crowdfunding service.

4.6. Perceived trust to behavioral intention. The perceived trust is the most significant variable determining the user's intention to use the crowdfunding service. It has a positive path coefficient, and the t-statistics value is the highest among other constructs. This finding means that the trustworthiness of the crowdfunding platform and projects heavily influences the user's intention in using the services. Users are more likely to donate to a platform and project that appears legit and provides assurance that their donations will be used as intended. This aspect should be the main focus of both platform owners and fundraisers.

Perceived trust is referred to as the degree of trust that the user perceives from a campaign or crowdfunding platform. Based on this definition, the platform owner needs to associate their brand image with the integrity and transparency of the projects. They could provide a better verification system to ensure that campaigns listed on their platform are legit and increase user confidence in that platform. As for fundraisers, they could use narration to describe the objectives and includes several supporting visual media such as photos and videos. By using supporting media, it could appear more professional, thus increasing the campaign's perceived trustworthiness.

5. Conclusions. This research investigates independent variables from UTAUT, with an additional construct, perceived trust. From the result, all hypotheses are accepted, which means that all independent constructs on the UTAUT positively correlate with the user's intention to use crowdfunding services. Out of five independent variables, three have a significant relationship with user's intention: performance expectancy, social influence, and perceived trust.

Based on the findings, several recommendations were developed. For the platform owner, one of the recommendations is to have strict supervision and filters to make sure that the fundraisers and the campaigns registered on the platform were legit. The strict control could increase user's trust in the platform, which has a significant impact on their intention to use the service. For fundraisers, they could use a clear narration to describe their campaign and objectives and include some pictures or videos to look more professional. They also can use social media to spread information about crowdfunding and the campaign that they initiate.

Some aspects are lacking in this research and could be improved in future studies. One of them is regarding the respondent. The respondent of this research is highly concentrated in the age of 20s and 30s, which potentially could not portray the whole population. Therefore, future studies need to include the older respondents as well in the analysis. Regarding the methodology, future studies could use a different research model to enrich the findings from different perspectives other than variables discussed in UTAUT.

REFERENCES

- [1] P. Belleflamme, T. Lambert and A. Schwienbacher, Crowdfunding: Tapping the right crowd, *J. Bus. Ventur.*, 2014.
- [2] G. K. C. Ahlers, D. Cumming, C. Günther and D. Schweizer, Signaling in equity crowdfunding, *Entrep. Theory Pract.*, 2015.
- [3] A. Cordova, J. Dolci and G. Gianfrate, The determinants of crowdfunding success: Evidence from technology projects, *Procedia – Soc. Behav. Sci.*, vol.181, pp.115-124, 2015.
- [4] Kitabisa, *5 Rules for a Successful Crowdfunding Project*, <https://blog.kitabisa.com/5-aturan-agar-proyek-crowdfunding-sukses/>, Accessed on 04-Oct-2020.
- [5] Kickstarter, *Stats*, <https://www.kickstarter.com/help/stats>, Accessed on 04-Oct-2020.
- [6] A. H. Pratama, Failed to succeed many projects, crowdfunding sites realized discontinued services, *Tech in Asia*, <https://id.techinasia.com/situs-crowdfunding-wujudkan-tutup-layanan-pada-31-maret-2017>, Accessed on 05-Oct-2020.
- [7] M. T. Islam and M. T. A. Khan, Factors influencing the adoption of crowdfunding in Bangladesh: A study of start-up entrepreneurs, *Inf. Dev.*, pp.1-18, 2019.
- [8] Y.-Z. Li, T.-L. He, Y.-R. Song, Z. Yang and R.-T. Zhou, Factors impacting donors' intention to donate to charitable crowd-funding projects in China: A UTAUT-based model, *Information, Commun. Soc.*, vol.21, no.3, pp.404-415, 2017.
- [9] Y. Moon and J. Hwang, Crowdfunding as an alternative means for funding sustainable appropriate technology: Acceptance determinants of backers, *Sustain.*, 2018.
- [10] C. H. Pangaribuan and Y. S. Wulandar, A crowdfunding platform user acceptance: An empirical examination of performance expectancy, effort expectancy, social factors, facilitating condition, attitude, and behavioral intention, *Asian Forum on Business Education International Conference (AFBE)*, Jakarta, Indonesia, DOI: 10.4108/eai.6-12-2018.2286301, 2018.

- [11] V. Venkatesh, M. G. Morris, G. B. Davis and F. D. Davis, User acceptance of information technology: Toward a unified view, *MIS Q. Manag. Inf. Syst.*, 2003.
- [12] D. W. Arner, J. Barberis and R. P. Buckley, The evolution of FinTech: A new post-crisis paradigm?, *SSRN Electronic Journal*, vol.47, no.4, pp.1271-1319, DOI: 10.2139/ssrn.2676553, 2016.
- [13] I. Goldstein, W. Jiang and G. A. Karolyi, To FinTech and beyond, *Rev. Financ. Stud.*, vol.32, no.5, pp.1647-1661, 2019.
- [14] C. Haddad and L. Hornuf, The emergence of the global FinTech market: Economic and technological determinants, *Small Bus. Econ.*, vol.53, pp.81-105, 2019.
- [15] I. Lee and Y. J. Shin, Fintech: Ecosystem, business models, investment decisions, and challenges, *Bus. Horiz.*, vol.61, pp.35-46, 2018.
- [16] E. Mollick, The dynamics of crowdfunding: An exploratory study, *J. Bus. Ventur.*, 2014.
- [17] F. J. Martinez-Lopez, J. C. Gazquez-Abad and C. M. P. Sousa, Structural equation modeling in marketing and business research, *Eur. J. Mark.*, vol.47, pp.115-152, 2013.
- [18] J. F. Hair, G. T. M. Hult, C. M. Ringle and M. Sarstedt, *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2nd Edition, Sage Publications, 2017.
- [19] V. Venkatesh, J. Y. L. Thong and X. Xu, Unified theory of acceptance and use of technology: A synthesis and the road ahead, *J. Assoc. Inf. Syst.*, vol.17, no.5, pp.328-376, 2016.
- [20] M. D. Williams, N. P. Rana and Y. K. Dwivedi, The Unified Theory of Acceptance and Use of Technology (UTAUT): A literature review, *J. Enterp. Inf. Manag.*, vol.28, pp.443-488, 2015.
- [21] I. Etikan, S. A. Musa and R. S. Alkassim, Comparison of convenience sampling and purposive sampling, *Am. J. Theor. Appl. Stat.*, vol.5, pp.1-4, 2016.