



Application of EUCS and UTAUT Method to Analyze The Implementation of Donation-Based Crowdfunding System for Fundraising Mobile Applications

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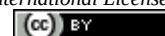
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Abstract

This research aims to determine the success of implementing the donation-based crowdfunding system in donation applications. This research will be carried out using a quantitative approach. Researchers will carry out observations and questionnaires using accidental sampling to ask respondents to answer questions that have been created in the form of a Google Form link. Researchers collected samples using the purposive sampling method. 100 people were used as respondents in this research. SmartPLS was used to carry out inferential data processing. In accordance with the results of the analysis discussion, it can be concluded that the variables in the UTAUT and EUCS models that are proven to have a positive and significant influence in measuring the level of success in implementing the donation-based crowdfunding system in applications are accuracy, content, facilitating conditions, performance expectancy, price value, social influence, user satisfaction, behavioral intention, and use behavior. Meanwhile, the effort expectancy and perceived credibility variables were proven to have no positive or significant effect in this research. Based on data analysis, the biggest variable that influences the level of success in implementing the donation-based crowdfunding system in applications is the behavioral intention variable towards use behavior. The second variable that has the most influence is performance expectancy on perceived credibility. Meanwhile, the other variable is user satisfaction with behavioral intention. From the results of the data processing that has been carried out, the variable that has the smallest influence on the level of success in implementing the donation-based crowdfunding system in the application is effort expectancy on behavioral intention. Next is the variable perceived credibility on behavioral intention.

Keywords: Implementation Success, Donation-Based Crowdfunding, UTAUT, EUCS.

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1. Introduction

The positive impact of digital technology was seen when the COVID-19 pandemic hit, where technology became a solution for society in adapting to social restrictions and physical distance. Social distancing and physical distancing policies force people to switch to digital activities to do work, study, and communicate. Internet users in the world reach almost 5 billion people, or around 60% of the total world population [1]. Based on this data, technology provides great business opportunities, especially with the increasing number of internet users. However, technology can also be used for more positive things, such as charity and social activities. Thus, technology can be used to strengthen humanity and help people in need. Many internet-based startup companies use crowdfunding platforms to raise donations from the general public [2]. The meaning of the crowdfunding system itself is a method of raising money for a program that can produce rewards from a large group of people who give a certain amount of money as donations or take part in project funding. The inspiration for the emergence of crowdfunding comes from the concepts of microfinance, which is the provision of financial services to low-income clients, and crowdsourcing, which is the practice of obtaining needed services, ideas, or content by asking for contributions from a large group of people, especially from online communities. There are four types of crowdfunding based on the system: awards, share ownership, donations, and loans. Examples of mobile-based crowdfunding applications include Kickstarter, Patreon, SeedInvest, StartEngine, Kitabisa, Dompot Dhuafa, Modalku, and Amarthia [3].

In this research, the type of crowdfunding that will be focused on is a donation-based system. The donation-based system is a form of internet-based fundraising where supporters or donors provide funds based on philanthropic motivation without expecting monetary or material rewards. In the donation-based realm, crowdfunding has

simplified the process of raising funds for pro-social causes by integrating information collection, donation transactions, and interactive communications into one standard process. Supporters or contributors to donation-based crowdfunding programs are thought to be driven more by a sense of charity, appreciation, or respect than by material incentives [4]. Donation-based crowdfunding has redefined charitable giving as it combines traditional charitable giving with crowdfunding powered by information technology. Based on related research, the use of the donation-based crowdfunding system used for fundraising has proven effective in collecting aid money, especially in the event of natural disasters and other emergencies. The attitude of users who use technology is one of the keys to determining the success of implementing information technology. The UTAUT model was developed specifically to determine the use of technology in the user context, whereas previously the UTAUT model was more specific in the organizational context [5]. The empirical results of using the UTAUT model prove that 70% of behavioral intentions and 50% of user behavior can be explained by this model. In the formulation of this model, the UTAUT model contains 7 variables that can influence behavioral intentions and user behavior, namely performance expectancy, business expectancy, social influence, supporting conditions, hedonic motivation, price value, and habits. Many researchers have also shown that a lack of credibility discourages users from carrying out online financial transactions because trust plays a very significant role when users with little to no experience consider adopting innovative services [5].

On the other hand, there is the End User Computing Satisfaction (EUCS) model. If an organization's information system is of high quality and is able to provide useful information, this organization can be relied on by its users. One indicator of the success of information system development is end-user satisfaction [5]. The EUCS model created by Doll and Torkzadeh consists of five variables: content, correctness, form, convenience, and timeliness. In this study, researchers only included content and accuracy variables because these two variables have a very important role in measuring overall user satisfaction [6]. In previous research conducted on 250 end users in information system development, they found that content plays an important role in users' decision-making to use the system, so that content has a very big influence on user satisfaction. Not only that, but in research conducted by others related to the context of the banking system, accuracy plays an important role in measuring the quality of information and services in the system [7]. The success of implementing an information system can also be measured through several aspects, such as effectiveness, efficiency, and user satisfaction. The effectiveness aspect relates to the extent to which the information system can achieve the business objectives that have been set. Meanwhile, the efficiency aspect relates to the extent to which information systems can be used to manage business resources, such as time, labor, and costs. Lastly, the user satisfaction aspect is related to how satisfied the user is with the information system that has been implemented. The importance of user satisfaction is also reinforced, explaining that when measuring the quality of an ongoing system, organizations must understand user satisfaction as feedback for improving information systems [8].

In evaluating the success of implementing an information system, it is important to pay attention to various factors that influence the success of implementing the system, such as technological, organizational, and human factors. Technological factors include the suitability of technology for business needs, ease of use, and availability of technical support. Organizational factors include management support, compatibility between information systems and business processes, and integration with existing information systems. Meanwhile, human factors include ease of user adaptation to the information system, user training, and psychological support. By paying attention to these factors, it is hoped that the implementation of information systems can run successfully and provide benefits for businesses and users [9]. The importance of successful implementation is also reinforced in that individual impact is used as an indicator that the information system has increased productivity and understanding in decision-making, changed user behavior, and changed users' understanding of the importance of the information system's utility [10]. Of course, efforts to measure system quality and end-user satisfaction must be made in order to improve application services if branding is to be strengthened and the number of users is to be increased. The UTAUT method was chosen by researchers as a measure of the level of implementation success because it has advantages compared to other approaches, namely combining variables from previous models into one comprehensive idea that presents each previous model, making it easier to understand how people react and perceive technology [11]. In addition, the EUCS model was used by researchers in this study because it is considered the most practical and appropriate model for measuring end-user satisfaction and effectiveness in the successful implementation of information systems.

2. Research Methods

This research will be carried out using a quantitative approach. The method used in this research is to look at the available literature, read it, and research it to be used as a source of research information. Researchers will carry out observations and questionnaires using accidental sampling to ask respondents to answer questions that have been created in the form of a Google Form link. All users of the mobile application who live in the Jabodetabek area are the research population. Researchers collected samples using a purposive sampling method, where this method was used to select part of the population, with the selected criteria being users who had donated at least

twice to the mobile application. 100 people were used as respondents in this research. Data analysis is carried out after all the data has been successfully collected. Demographic analysis and inferential statistical analysis are two elements of this stage. In the first step, researchers processed demographic data using Microsoft Excel 365 number processing tools to carry out analysis. Respondent characteristics and general questions from the questionnaire are the basis for grouping respondent data. After that, SmartPLS was used to carry out inferential data processing to analyze data and test hypotheses in this research using the PLS-SEM approach.

3. Results and Discussion

In individual item reliability testing, the results showed that the loading factor value was proven to be greater than 0.7. In the internal consistency reliability test, the results showed that the composite reliability value was proven to be greater than 0.7. The average variance extracted test shows that the AVE value is proven to be greater than 0.7. The discriminant validity test shows that the relationship between indicators and constructs is proven to be higher than the correlation with other construct blocks. Based on this explanation, it can be concluded that the results of the outer model analysis in this research are suitable for proceeding to the inner model analysis stage to continue the testing stage of this research model. Based on the results of the T-test, this test shows that H1, the relationship between PE and PC, is significant, where the hypothesis H0(1) is rejected and Ha(1) is accepted. The path coefficient value of 0.5 has the interpretation that the relationship between PE and PC partially mediates a positive and significant influence, and based on the f^2 value, it has a large value and q^2 has a medium value with a t-test value of 11.5. The PE hypothesis for PCs in mobile applications shows that the use of a donation-based crowdfunding system in implementing donation programs can be trusted to solve problems that occur in society more quickly, so that the user's perceived use has a sustainable positive impact. This is in line with previous research, which states that the performance expectation variable has an influence on the perceived credibility variable.

Based on the test results, it shows that H2, the relationship between SI and PC, is significant, where the hypothesis H0(2) is rejected and Ha(2) is accepted. The path coefficient value of 0.3 has the interpretation that the relationship between SI and PC partially mediates a positive and significant influence, and based on the f^2 and q^2 values, it has a small influence value with a t-test value of 5.8. The SI hypothesis for PCs in mobile applications shows that the influence of social media influencers and people around them influences the user's perception of the credibility of using the donation-based crowdfunding system. If people in the user's social circle think positively about using the system, then the user will develop a positive image of himself, which will enable the user to adopt the use of donation-based crowdfunding system services. This is in line with previous research, which states that the social influence variable has an influence on the perceived credibility variable. Based on the test results, it shows that H3, the relationship between PC and BI, is not significant, where the hypothesis H0(3) is accepted and Ha(3) is rejected. The path coefficient value of 0.09 has the interpretation that the relationship between PC and BI does not have a positive and significant influence, and based on the f^2 and q^2 values, it also has a small influence value with a t-test value of 1.7. The PC hypothesis regarding BI in mobile applications shows that users of this application do not feel that their personal data is well protected, users feel that the details of their donation transactions are disclosed to fundraising institutions, and the security regulations that exist in the application are not enough for users to feel safe in making donation transactions, so that in this situation credibility reduces the user's decision to implement the donation-based crowdfunding system. This is also supported by user complaint data from 2020–2022, where there were 40 cases of users contacted by other institutions. This is in line with previous research, which states that the perceived credibility variable has no influence on behavioral intention.

Based on the test results, it shows that H4 the relationship between PE and BI is significant where the hypothesis H0(4) is rejected and Ha(1) is accepted. The path coefficient value of 0.18 has the interpretation that the relationship between PE and BI has a positive and significant influence, and based on the f^2 and q^2 values, it has a small influence value with a t-test value of 3.5. The PE hypothesis regarding BI in mobile applications shows that users feel this application is very useful in their daily lives to help various charity programs. This application can increase their efficiency in making online donations and help solve problems that occur in society more quickly. Based on this explanation, this greatly influences users' decisions in implementing the donation-based crowdfunding system. This is in line with previous research, which states that the performance expectation variable has an influence on the behavioral intention variable. Based on the test results, it shows that H5, the relationship between SI and BI, is significant, where the hypothesis H0(5) is rejected and Ha(5) is accepted. The path coefficient value of 0.1 has the interpretation that the relationship between SI and BI has a positive and significant influence, and based on the f^2 and q^2 values, it has a small influence value with a t-test value of 2.9. The SI hypothesis regarding BI in mobile applications shows that the influence of people around and social media influencers influences users' decisions to donate using the donation-based crowdfunding system to charity activities so that these activities appear trendier and more attractive. This hypothesis is supported by the majority of respondents using the mobile application, coming from the millennial generation aged 18–35 years. This is in line with previous research, which states that the social influence variable has an influence on behavioral intention.

Based on the test results, it shows that H6, the relationship between EE and BI, is not significant, where the hypothesis H0(6) is accepted and Ha(6) is rejected. The path coefficient value of -0.07 has the interpretation that the relationship between EE and BI has no positive or significant influence, and based on the f^2 and q^2 values, it also has a small influence value with a t-test value of 1.2. EE's hypothesis regarding BI in mobile applications shows that users of this application still find it difficult to make online donations, and users feel the need to have special skills to use the donation-based crowdfunding system. This hypothesis is supported by the number of complaints: 80 cases of users having difficulty logging in, 130 cases of filling the balance in their donation bag, which often had problems causing users to feel like their balance had disappeared, and 90 cases of failure to pay donations. This is in line with previous research, which states that the effort expectancy variable has no influence on the behavioral intention variable. Based on the test results, it shows that H7, the relationship between PV and BI, is significant, where the hypothesis H0(7) is rejected and Ha(7) is accepted. The path coefficient value of 0.2 has the interpretation that the relationship between PV and BI has a positive and significant influence, and based on the f^2 and q^2 values, it has a small influence value with a t-test value of 2.9. The PV hypothesis for BI in mobile applications shows that users feel that the fundraising services provided in this application are in accordance with today's donation needs, have good transparency, and are willing to make large nominal donation transactions on the mobile application. This is in line with previous research, which states that the price value variable has an influence on the behavioral intention variable.

Based on the test results, it shows that H8, the relationship between FC and UB, is significant, where the hypothesis H0(8) is rejected and Ha(8) is accepted. The path coefficient value of 0.3 has the interpretation that the relationship between FC and UB has a positive and significant influence, and based on the f^2 value, it has a medium influence value, and q^2 has a small influence value with a t-test value of 6.9. FC's hypothesis regarding UB in mobile applications shows that the use of payment gateways, donation pockets, and prayer features in the application makes it easier for users to make online donations, and there are clear instructions for using this application. This is in line with previous research stating that the facilitating condition variable has an influence on the use behavior variable. Based on the test results, it shows that H9, the relationship between CT and US, is significant, where the hypothesis H0(9) is rejected and Ha(9) is accepted. The path coefficient value of 0.5 has the interpretation that the relationship between CT and US has a positive and significant influence, and based on the f^2 and q^2 values, it has a medium influence value with a t-test value of 6.9. The CT hypothesis for US mobile applications shows that the available crowdfunding program information and its implementation have been adapted to user needs; users feel that this application has good, complete information, and the benefits of implementing the donation-based crowdfunding system in this application can be felt by users. This is in line with previous research, which states that the content variable has an influence on user satisfaction.

Based on the test results, it shows that H10, the relationship between AC and US, is significant, where the hypothesis H0(10) is rejected and Ha(10) is accepted. The path coefficient value of 0.4 has the interpretation that the relationship between AC and US has a positive and significant influence, and based on the f^2 value, it has a medium influence value, and q^2 has a small influence value with a t-test value of 5.9. The AC hypothesis for US mobile applications shows that users feel that there is minimal misunderstanding of information, the suitability of features for the information they are looking for, and the crowdfunding program information provided in this application is in accordance with the current problem so that it can have an impact on their satisfaction in carrying out online donation transactions. This is in line with research that has been conducted, which states that the accuracy variable has an influence on user satisfaction. Based on the test results, it shows that H11, the relationship between US and BI, is significant, where the hypothesis H0(11) is rejected and Ha(11) is accepted. The path coefficient value of 0.4 has the interpretation that the relationship between AC and US has a positive and significant influence, and based on the f^2 value, it has a medium influence value, and q^2 has a small influence value with a t-test value of 7.1. The US hypothesis regarding BI in mobile applications shows that users feel that the profit value and quality of this application are in accordance with their needs; they feel satisfied making donations to this application because it is reliable and in accordance with their needs. This is in line with research that has been conducted, which states that the user satisfaction variable has an influence on the behavioral intention variable.

Based on the test results, it shows that H12, the relationship between BI and UB, is significant, where the hypothesis H0(12) is rejected and Ha(12) is accepted. The path coefficient value of 0.4 has the interpretation that the relationship between AC and US has a positive and significant influence, and based on the f^2 value, it has a large influence value, and q^2 has a medium influence value with a t-test value of 12.4. BI's hypothesis regarding UB in mobile applications shows that users aim to recommend this application to people around them; the application will become a daily need for users in carrying out online donation activities; and users believe in always using this application for every donation. This is in line with previous research, which states that the behavioral intention variable has an influence on the use behavior variable. This research was conducted to determine the success of implementing the donation-based crowdfunding system, and 10 of the 12 hypotheses had a significant influence on this application. There are 2 hypotheses that do not have a significant effect because the t-statistic value is below the specified threshold, namely perceived credibility (PC) on behavioral intention (BI) and effort

expectancy (EE) on behavioral intention (BI). Based on the PC and BI hypotheses, this suggests that users on these apps do not feel their personal data is well protected, users feel fundraising organizations are given access to their donation transaction details, and current app security regulations are not enough to make users feel safe when carrying out donation transactions. Based on the EE and BI hypotheses, this shows that users of this application still find it difficult to make online donations, and users feel the need to have special skills to use the donation-based crowdfunding system. These two things, credibility and business expectations, can reduce user decisions to implement a donation-based crowdfunding system.

The implementation of the donation-based crowdfunding system has had a high level of success and meets user expectations. This is proven by many users who can feel the benefits of this system in being able to solve problems that occur in society more quickly. Apart from that, this application makes it easy for users to donate online by utilizing payment gateways, donation pockets, and prayer features, and there are clear instructions for using this application. Of the 12 hypotheses proposed, there is one that has the highest value, namely behavioral intention (BI) to Use behavior (UB), where this relationship is accepted because users believe in always using this application for every donation activity. The proposal for a donation-based crowdfunding system in the application is to increase user trust in the company's use of their data and make it easier for users to carry out transactions. The developers of this application can pay attention to the variables of perceived credibility and effort expectancy in order to increase the success of system implementation and user loyalty in using the features in the application.

4. Conclusion

In accordance with the results of the analysis discussion, it can be concluded that the variables in the UTAUT and EUCS models that are proven to have a positive and significant influence in measuring the level of success in implementing the donation-based crowdfunding system in applications are accuracy, content, facilitating conditions, performance expectancy, price value, social influence, user satisfaction, behavioral intention, and use behavior. Meanwhile, the effort expectancy and perceived credibility variables were proven to have no positive or significant effect in this research. Based on data analysis, the biggest variable that influences the level of success in implementing the donation-based crowdfunding system in applications is the behavioral intention variable towards use behavior, which is proven by users who are happy to recommend the application to other people, make it a daily necessity in making online donations, and believe in continuing to use it. The second variable that has the most influence is performance expectancy on perceived credibility, which is proven by the donation-based crowdfunding system, which can solve community problems more quickly and has a positive impact on users. Meanwhile, another variable is user satisfaction with behavioral intention, namely when the user feels that the value and quality of the application meet their needs. The user then feels satisfied with making donations through the application and that the application is reliable and meets their needs. From the results of the data processing that has been carried out, the variable that has the smallest influence on the level of success in implementing the donation-based crowdfunding system in the application is effort expectancy towards behavioral intention, where users still experience difficulties in making online donations and feel they need special skills. Next is the perceived credibility variable on behavioral intention, where users feel that personal data is not protected properly, details of donation transactions are revealed to fundraising institutions, and application security regulations are inadequate, thus affecting credibility and users' decisions to use the donation-based crowdfunding system.

Based on the results of the research that has been carried out, analysis and evaluation of the relationship between variables from the UTAUT and EUCS models, as well as the moderator variable perceived credibility, in measuring the success of implementing the donation-based crowdfunding system in applications, have great potential to be developed to be better and more complete. For future researchers, to pay more attention to the use of words in the questionnaire so that they are more easily understood by respondents so as to avoid ambiguity in the meaning of the questions in the questionnaire; Future researchers are expected to be able to add other research objects to determine the success of implementing the donation-based system in other mobile applications such as Rumah Zakat and WeCare. Future researchers can use other crowdfunding methods, such as equity-based funding, lending-based funding, and reward-based funding. Respondents in the next research will not only cover and reach the Jabodetabek area but can also cover other areas in Indonesia. If further research is carried out, other sampling methods can be used, such as systematic sampling, quota sampling, accidental sampling, saturated sampling, and snowball sampling, to avoid bias. The variables used in this research can use other moderator variables and are related to the success of implementing the crowdfunding system. Future research can conduct studies on the success of implementing an information system application not only in quantitative research but also through a qualitative approach. If there is further research, it is hoped that other models such as DeLone and McLean and the Expectation Confirmation Model (ECM) can be used.

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