USER ACCEPTANCE ANALYSIS ON INTACS ERP DISTRIBUTION APPLICATION USING TECHNOLOGY ACCEPTANCE MODEL

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ABSTRACT. *The purpose of this study was to know user acceptance of the Intacs distribution system for toys import and distribution company. The respondents in this study are users who use the Intacs system using quantitative research methods and adopt the Technology Acceptance Model (TAM). The TAM model has 4 internal variables, namely perceived ease of use, perceived usefulness, usage behavior, and intention to use. In this study, we used four external variables, namely user training, user fit, non-technology complexity, and trainer support. Researchers used the SEM-PLS (Structural Equation Modeling – Partial Least Square) analysis method with the help of smartPLS tools version 3.2.8. The study aims to determine the relation between internal and external variable. The relationships between non-technology complexity with perceived ease of use, perceived ease of use with usage behavior, and user fit with perceived usefulness have significant effect. This study helps the company to find out the need of Intacs system.*
Keywords: User acceptance, TAM, SEM_PLS, Intacs

1. **Introduction.** Technology develops very fast from time to time. Technology develops along with the pace of culture. The more advanced the culture, the more developed the technology because technology is the development of a culture that is progressing rapidly [1]. Technological advances are now integrated with life in society. Technology must be useful and can help alleviate human activities in various aspects such as work, study, and entertainment [2]. This fast and rapid development of technology makes mobile activities more effective and efficient. Technology can improve performance and efficiency in an organization. Technology also increases fluency in communication which increases the speed in the decision-making process in an organization [3].

Currently, there is an integrated application system commonly known as Enterprise Resource Planning (ERP). Enterprise system is an important technology investment choice for operations managers. Generally, companies that choose technology investment want the creation of competitive advantage so that they can improve company performance [4]. There are several reasons why ERP is needed in a company, namely ERP can provide accurate and real-time information to those who need it [5,6]. In addition, the ERP system can increase market value and company performance as seen from the efficiency and effectiveness of a process by considering costs [7]. ERP is software that can integrate a company's information needs in different fields and functions to combine the complexity of a company [3]. The ability of ERP to completely integrate a company's business processes or the reduction of recurring data entry is one of the reasons for implementing this software in an organization.

TAM (Technology Acceptance Model) is a method for assessing and predicting user acceptance of information technology which is designed to understand the causal chain relationship of external variables for user acceptance and actual use in an organization. External variables such as objective system design characteristics, training, computer self-efficacy, user involvement in the design, and the nature of the implementation process, which are interpreted to influence behavioral intention to use, and ultimately usage, indirectly affect perceived usefulness and perceived ease of use [8-11].

The research was conducted at importing and distributor company that sell products such as stickers, accessories, toys, and stationery for children. The company implemented an ERP system, Intacs, in 2016 with the aim of integrating existing functional areas within the company. Intacs is a zero-coding, independent ERP software that allows users to make changes without programming knowledge. After 3 years of using this system, the utility of the system usage is still low, and employees are still reluctant to use Intacs. For this reason, the researcher wants to know which factors influence the acceptance of the Intacs system in the company by adopting the TAM (Technology Acceptance Model) model. In this study, the researchers will use user training, non-technology complexity, user fit, and trainer support as exogenous variables, while the endogenous variables in TAM consist of perceived ease of use, perceived usefulness, usage behaviour, and intention to use.

2. **Research Methods.** Figure 1 describes the research method used in this study.
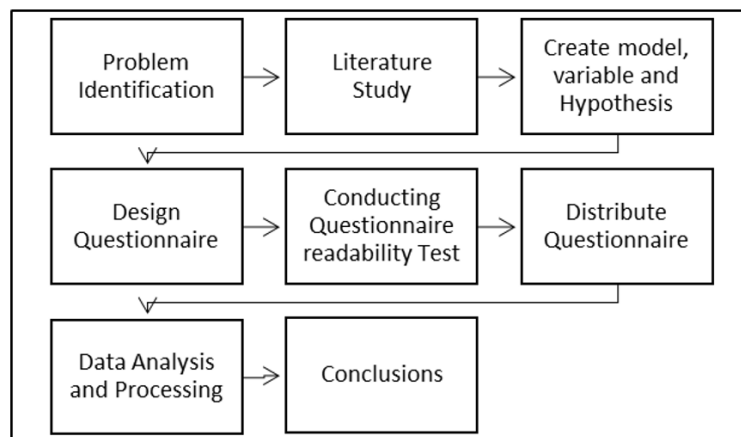

FIGURE 1. Research stages

2.1. **Problem identification.** The first stage is to determine the topics we will discuss, adjusted to the interests, talents, and abilities of researchers. Then we identified the existing problem, and analyzed it further by conducting direct interviews with related parties. From the interview results, after 3 years of using this system, the utility of the system usage is still low, and employees are still reluctant to use Intacs. Then the researchers decided to research about user acceptance of the Intacs system.

2.2. **Literature study.** In the second stage, the researchers collected and studied various literature that discussed the analysis of the acceptance of an ERP application using Davis' modified TAM (Technology Acceptance Model) model in 1986. This model consists of three basic variables including perceived ease of use and perceived usefulness, which measures usage behaviour, and usage behaviour measures intention to use. Given that the ERP application has a very broad scope, it is felt that these three variables can be developed again. Several external variables are felt to affect the three basic variables mentioned above, namely user training and user fit which will be used to measure perceived usefulness, then non-technology complexity to measure perceived ease of use, and trainer support which will be used to measure usage behaviour.

2.3. **Creating model, variables, and hypothesis.** In the next stage, the researchers determine and create a research model obtained from reading the literature. The model made consists of several basic variables and external variables. The purpose of making this model is to determine what factors influence the acceptance of the Intacs system. After that, the researchers made a hypothesis related to the model. The research model can be seen in Figure 2. There are 9 hypotheses.
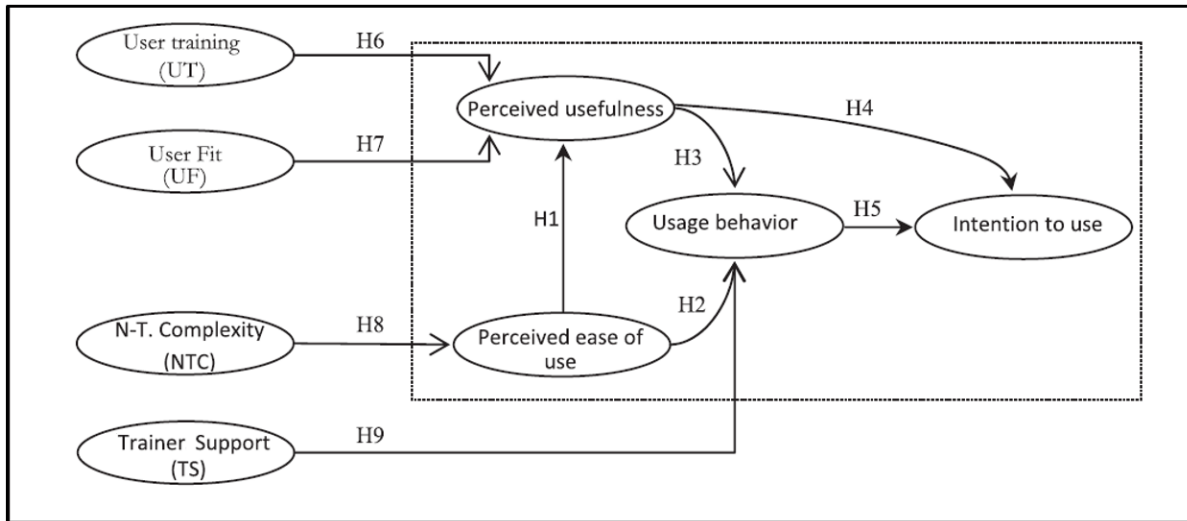

FIGURE 2. Research model

2.4. **Design questionnaire.** After the variables have been determined, the researchers then create a questionnaire based on the existing variables. In total, 24 questions were asked to the respondents.

2.5. **Conducting questionnaire readability test.** The questionnaire that the researcher had made was then carried out by the readability test. The purpose of this readability test is to ensure that each questionnaire's questions designed can be implemented and implemented by the respondent. So when filling out the questionnaire, the results are as expected.

2.6. **Distribute questionnaire.** The purpose of distributing this questionnaire is to obtain data from respondents (users or users who are directly dealing with the Intacs system). The users of Intacs are 20 employees and all users are respondents in this research.

2.7. **Data analysis and processing.** Data were analyzed using SEM-PLS (Structural Equation Modelling – Partial Least Square) method. Henceforth, the data is processed to produce the information needed for this research.

2.8. **Conclusions.** After the information is successfully generated from the data analysis and processing stage, the researchers can then draw conclusions and suggestions on the research results.

3. **Results.** The first stage of data processing is validity and reliability test. Validity and reliability tests on the questionnaire are needed to determine quality and measure how valid the instruments or variables used are. Table 1 shows the results of validity and reliability tests where all variables have been declared valid and reliable.

Furthermore, hypothesis testing is carried out on the model that has been created using the SmartPLS software. In hypothesis testing, it is determined whether the previously proposed hypothesis can be accepted or rejected. To find out whether these hypotheses

TABLE 1. Validity and reliability test result

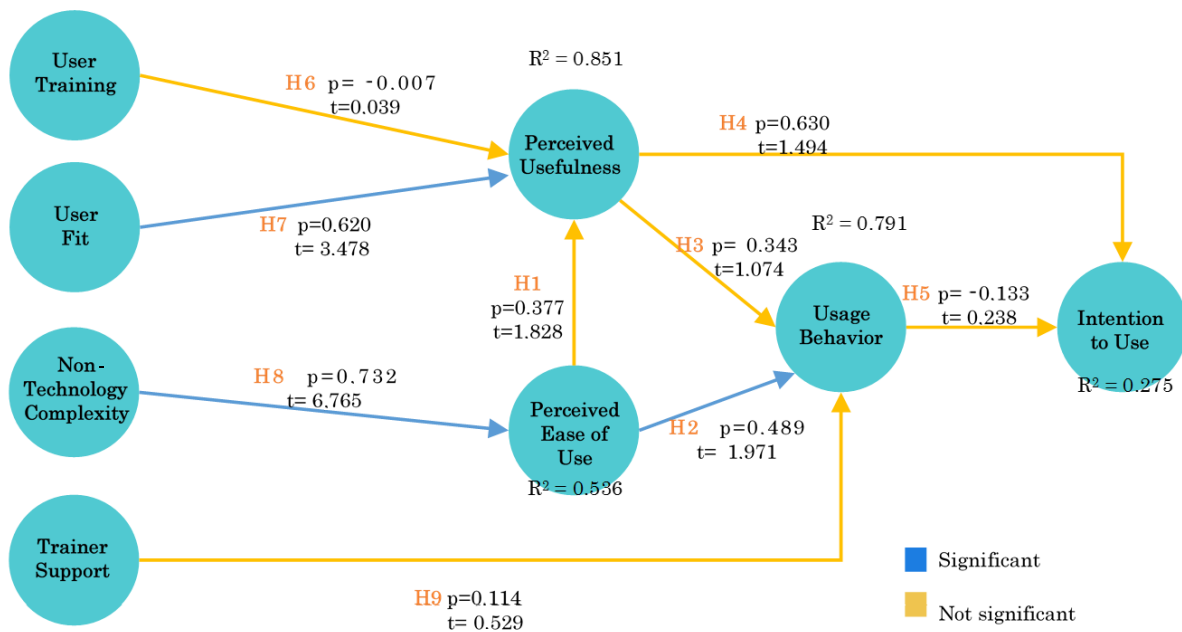|	Cronbach's Alpha	rho_A	Composite reliability	Average variance extracted
IU	0.859	0.874	0.914	0.779
NTC	0.863	0.920	0.935	0.877
PEU	0.937	0.947	0.955	0.840
PU	0.979	0.980	0.985	0.942
TS	0.868	0.884	0.919	0.792
UB	0.939	0.951	0.957	0.846
UF	0.802	0.814	0.883	0.716
UT	0.909	0.913	0.937	0.789

FIGURE 3. Result of structural model

are accepted or rejected, the standard used as a reference is the path coefficient value above 0.1 and the t-statistics value greater than 1.96 which shows the level of significance in hypothesis testing. Figure 3 shows the results of the hypothesis testing of the existing models.

3.1. **Perceived ease of use against perceived usefulness.** The results of data processing from this study indicate that the perceived ease of use variable has a less significant effect on the perceived usefulness variable. This research is in contrast to research conducted by [5] which states that the relationship of perceived ease of use has a significant effect on perceived usefulness. This research also contradicts the research conducted by [12] which also stated that this variable has a significant effect. Researchers can conclude that the employees understand to use the Intacs system but have not realized the benefits of the system. This is because the system was implemented in 2016, so it takes time for users to adapt and learn about the Intacs system.

3.2. **Perceived ease of use against usage behaviour.** The results of data processing from this study indicate that the perceived ease of use variable has a significant influence on the usage behaviour variable. These results are the same as research conducted by [5] in their journal entitled "Open Source Software: The Effects of Training on Acceptance" where the relationship between ease of use and usage behaviour has a significant effect on

one another. Research conducted by [13] also said that the PEU variable has a significant influence on the UB variable. Researchers can conclude that the employees of can easily understand the use of the Intacs system, thus affecting the frequency of use of the Intacs system.

3.3. **Perceived usefulness against usage behaviour.** The results of data processing from this study indicate that the perceived usefulness variable has less effect on the usage behaviour variable. This study contradicts the research of [5] which states that there is a significant effect of these two variables. Research conducted by [13] also shows that the two variables are significantly related. The reason the results of this study are insignificant is because some employees do not fully believe in the benefits of the Intacs system. This is because the Intacs system has not been used for a long time, so it still takes time to adapt from the old system to the new system.

3.4. **Perceived usefulness against intention to use.** The results of data processing from this study indicate that the perceived usefulness variable has a less significant effect on the intention to use variable. The results of this study are in line with previous research conducted by (1) where the perceived usefulness variable is not significant for attitude towards adoption. This study contradicts the research of [5] which states that there is a significant effect of the PU variable on IU. This research shows insignificant results because the Intacs system is still relatively new, so it still must adapt from the old system to the Intacs system. Employees do not fully believe in the benefits of the Intacs system, so there is no interest in using the Intacs system.

3.5. **Usage behaviour against intention to use.** The results of data processing from this study indicate that the usage behaviour variable is less significant to the intention to use variable. This study contradicts the research of [5] which states that there is a significant influence between the usage behaviour variable and the intention to use variable. [5] research was conducted in the United Kingdom with respondents being high school students and students who had been trained using the OSS system. Because the respondents selected by Bueno et al. have received training, the selected respondents already understand the use of the OSS system well. This study also contradicts research conducted by [13] which states that these two variables are significantly related. Liu and Yu's research chose smartphone user respondents, where the selected respondents were already using it. The Intacs system was implemented in 2016 so it is still relatively new to use. Employees are still adapting from the old system to the new system so that the frequency of use of the Intacs system is not much. Using Intacs or not using it does not affect the business process.

3.6. **User training against perceived usefulness.** The results of data processing from this study indicate that the user training variable is less significant to the perceived usefulness variable. This study contradicts the research of [5] which states that there is a significant influence between the user training variable and the perceived usefulness variable. The company is given 12 opportunities for training or consultation by Intacs vendors. If it exceeds the opportunity that has been given, then the company has to incur additional costs.

3.7. **User fit against perceived usefulness.** The results of data processing from this study indicate that the user fit variable has a significant effect on the perceived usefulness variable. Research conducted by [5] also states that the user fit variable also has a significant effect on the perceived usefulness variable. Researchers can conclude that the Intacs system can satisfy and meet user needs.

3.8. **Non-technology complexity against perceived ease of use.** The results of data processing from this study indicate that the non-technology complexity variable has a significant influence on the perceived ease of use variable, this is by the journal [5] entitled "Open Source Software: The Effects of Training on Acceptance" where the non-technology complexity variable relationship has a significant influence on the perceived ease of use. If technology is considered difficult to learn and use, the technology will be considered boring to users and users tend to choose to use other solutions. This means that the users make it easy to use and learn about the Intacs system.

3.9. **Trainer support against usage behaviour.** The results of data processing from this study indicate that the trainer support variable is less significant to the usage behaviour variable. This study contradicts the research of [5] which states that there is a significant influence between the TS variable on the UB variable. [5] research was conducted in the United Kingdom with respondents being high school students and students who had been trained using the OSS system. In this study, the selected respondents had received training sessions. Bueno et al. emphasized to use students as substitutes for professionals in some TAM studies. In this research, the company received a limited amount of training and consultation which was not comprehensive so that the company does not do routine training.

The results of this study indicate that the relationship between PEU and PU, PU with UB, PU with IU, UB with IU, UT with PU, and TS with UB has a less significant relationship and the relationship between PEU and UB, UF with PU, and NTC with PU has a significant relationship. The company received 12 training or consultation times provided by the vendor. This makes the company have limitations in terms of training. Researchers suggest focusing more on training on user or module: sales, purchase, finance, and warehouse because from the data obtained, it is the four users of the module who need special training or handling. To improve the quality of training, companies can make documentation, so that training can be carried out regularly to help users of the Intacs system to understand system usage. Researchers also suggest educating employees about the importance of the Intacs application to the company so that employees understand why the company buys and implements the system to support the company's business processes.

4. **Conclusions.** Researchers have processed the results of the measurements taken and have met the validity and reliability tests. This is based on all values of outer loading, AVE, cross-loadings, Cronbach's alpha, composite reliability, and the theory [15] has met the requirements. Researchers used the TAM research model used by [5] which has four external variables, namely user training, user fit, non-technology complexity, and trainer support and four internal variables that are following the initial TAM model, namely perceived usefulness, perceived ease of use, usage behaviour, and intention to use. There is a relationship between variables that has a significant effect, namely the relationship between non-technology complexity with perceived ease of use, perceived ease of use with usage behaviour, and user fit with perceived usefulness. These results are consistent with research conducted by [5]. In this study, there are 6 relationships that have a less significant relationship, namely the relationship between perceived ease of use and perceived usefulness, perceived usefulness with intention to use, perceived usefulness with usage behavior, trainer support with usage behaviour, usage behaviour with intention to use, and user training with perceived usefulness.

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