Analysis and Evaluation of EB Connect Portal in PT Asuransi Jiwa Sequis Financial by Using Technology Acceptance Model (TAM)

N Ranugalih, V M Riyadie and S Heriprayoco*

Information Systems Department, School of Information Systems, Bina Nusantara University, Jakarta, Indonesia 11480

*corresponding author: hpracoyo@binus.edu

Abstract. The research aims to analyze acceptance implementation factors of EBConnect portal used in PT Asuransi Jiwa Sequis Financial. EB Connect is a web portal to support business activities, particularly sales process. The method used is the Technology Acceptance Model (TAM), which will be inserted to SmartPLS to help the calculation. Analysis based on the users' survey resulted measurements of each indicators of the TAM model. The study identified insignificant factors within TAM that alters actual use of the system, which are External Variables to Perceived Ease of Use (E), Perceived Ease of Use (E) to Perceived Usefulness (U), Perceived Ease of Use (U) to Attitude Toward Using (A), Attitude Toward Using (A) to Behavioral Intention to Use (BI) and Behavioral Intention to Use (BI) to Actual System Use. Meanwhile, there are insignificant relation which are External Variables to Perceived Usefulness (U), Perceived Usefulness (U) to Behavioral Intention to Use (BI) and Perceived Ease of Use (E) to Attitude Toward Using (A). The study found the problems causing the insignificant relation are due to product sold within the portal does not meet user requirements, lack of user socialization and training to use the portal, and server problems.

Keywords: Information system, TAM, SmartPLS

1. Introduction

In this digital era, technology evolves rapidly. Internet advancements is one of them. Internet, which is a worldwide computer network, enabled each of the computers within the network to exchange information. This is one of the reason why internet is utilized by companies to implement their business process to it. This way, companies can reach their customer faster, easier and cheaper.

One of insurance companies in Indonesia, PT. Asuransi Jiwa Sequis Financial, realize that using technology can impacted to a more effective and efficient business process. With the growing age of technology, competitors have harnessed this technology advancement. With increasing competition, PT. AJ Sequis Financial are trying to compete by creating a portal which can facilitate their employee and customer to get information and do sales processes. The focus with this portal is insurance products for group or business entity. They also have different online system for selling individual insurance which is already up and running.

Sequis is on the track to go digital; however, there is a problem in the employer and employee side. They need easy access to important information on their group insurance benefits in real time. The best solution for that problem is to have an online portal to integrate all data from distribution
partner, employer, employee and Sequis itself and can be accessed in real time. That is why, this company has developed a portal called EB Connect. With the help of EB Connect, that supposedly helps the company by supporting pre and post sales activities, the user of the portal is still below expectation. Based on information received from the company there are only 34 user and some of them are inactive. That number is not comparable to the sales and brokers agent that Sequis have. That is why this research is done to study the acceptance of EB Connect, what user have to say about EB Connect, and find out whether there are relationship among EB Connect is useful, easy to use, and could increase sales performance.

2. Research Methodology
This study uses a quantitative approach method, the aim is to test the hypothesis that has been discussed in the introduction. This study uses descriptive-associative research that aims to determine the relationship between two or more variables and define the influence or relationship between these variables. The survey method is used to obtain data from the user to find out users’ perspectives about the EB Connect system. This survey uses a questionnaire as a data collection tool. In this questionnaire, divided into several aspects. These aspects are based on five variables in TAM which include External Variable, Perceived Ease of Use, Perceived Usefulness, Attitude Toward Using, Behavioral Intention to Use and to test several hypothesis from samples taken from a particular population, data collection techniques with interviews or questionnaires [4].

2.1 Technology Acceptance Model (TAM)
Technology Acceptance Model or TAM is introduced by Davis in 1989 [1]. Technology Acceptance Model (TAM) used to predicts user acceptance of an end-user application. This model specifies causal relationships among common beliefs with attitude given from user. Factors that can influence an acceptance of technology include external variables that might affect the system, perceived ease of use which is about the easiness when using the system, perceived usefulness which is about how useful the system is for the business activities, users’ attitude toward using the system, and users’ behavioral intention to use the system. The model is as illustrated in Figure 1 below:

Figure 1. Technology Acceptance Model (TAM) (Davis et al., 1989)

2.2 Research Model
The research model from which the hypotheses will be withdrawn from applying the Technology Acceptance Model (TAM), as displayed in Figure 2:
2.3 External Variables
To analyze the acceptance of a system, there might be several external variables that affect the system or affect the users when using the system. There comes 2 hypothesis. If those external variables are good, then the user might find the system is easy to use and useful. Therefore, the hypothesis would be:

H1 : External Variable (EV) affected Perceive Usefulness (U) positively and
H2 : External Variable (EV) affected Perceived Ease of Use (E) positively.

2.4 Perceived Usefulness
According to [1], perceived usefulness is the degree to which a person believes that using a system would enhance his or her job performance. If the system is useful, then the users might enjoy using it and tend to use it for a long period of time. Therefore, the hypothesis would be:

H4 : Perceived Usefulness (U) affected Attitude Toward Using (A) positively and
H5 : Perceived Usefulness (U) affected Behavioral Intention to Use (BI) positively.

2.5 Perceived Ease of Use
Davis defined this as the degree to which a person believes that using particular system would be free from effort. Davis in [2] defines Perceived Ease of Use is a level where one believes that the use of a particular system can do something. Perceived ease of use in this research is about whether this system is ease to use, effective, efficient to do the business activities. If the users find it easy, it will affect users’ perspective about the usefulness of the system and the users’ attitude on using the system. Therefore, the hypothesis would be:

H3 : Perceived Ease of Use (E) affected Perceived Usefulness (U) positively, and
H6 : Perceived Ease of Use (E) affected Attitude Toward Using (A) positively.

2.6 Attitude Toward Using
Davis in [3] states that attitudes are feelings, or individual thoughts about desired behavior. Attitude can be positive or negative depending on one's perception of the behavior and outcome of the relationship. Users’ attitudes might affect the behavior on using the system in a certain period of time. Therefore, the hypothesis would be:

H7 : Attitude Toward Using (A) affected Behavioral Intention to Use (BI) positively.
2.7 Behavioral Intention to Use
Behavior Intention is a behavioral tendency to keep using a Davis technology in [2]. It can be said behavior is an indicator for users who will use the system, therefore behavioral intention will show the actual use of technology (actual technology use). So, the hypothesis would be:

H8 : Behavioral Intention to Use (BI) affected Actual System Use positively.

In this study, samples were taken randomly and used a Slovin formula to determine the number of samples. The sample used is users of EB Connect who is sales and broker. Researchers distributed questionnaires as many as the number of active users which are 34 people because sample size over 30 and less than 500 is appropriate for most studies [5]. From the questionnaires distributed, 31 questionnaires were successfully returned. The questionnaire was distributed over 12 days, starting from May 7, 2018 and returning on May 21, 2018. Therefore because the research was carried out only in a short period of time, the researcher determined the confidence level is 95% and has an error rate of 5% (α = 0.05).

The data analysis used in this study is using the Partial Least Square (PLS) program to test the relationships between variables. In this study, the PLS application used was SmartPLS 3.0

3. Result and Discussion
3.1 Respondent’s Profile
Respondents that uses EB Connect are divided into group of ages, educations, genders and divisions. The profile is shown in Table 1, as follows:

| Table 1. Respondent’s Profile |
|-----------------------------|
| **Variables** | **Category** | **Percentage** |
| Age       | 20-25 years old | 19% |
|           | 26-30 years old | 19% |
|           | 31-35 years old | 42% |
|           | 36-40 years old | 10% |
|           | 41-45 years old | 7%  |
|           | 46-40 years old | 3%  |
|           | >50 years old   | 0%  |
| Education | High school     | 0%  |
|           | D1/D2/D3        | 7%  |
|           | D4/S1           | 77% |
|           | S2              | 16% |
|           | S3              | 0%  |
| Gender    | Female          | 35% |
|           | Male            | 65% |
| Division  | Broker          | 32% |
|           | EBB             | 26% |
|           | Other           | 42% |

3.2 Data Analysis
In this research data analysis are divided into evaluation of Measurement Model (Outer Model) and Structural Model (Inner Model). Measurement model is used to measure validity and reliability of
tested indicator meanwhile Structural model is used to measure significance that is formulated within the hypothesis.

Validity test is include finding out loading factor that should be > 0.5 and Average Variance Extracted (AVE) which is also should be >0.5. Meanwhile Reliability test is seen from Cronbach’s alpha and Composite Reliability which both should be >0.70 to be acceptable. After calculating each test with SmartPLS of the Measurement model in Table 2 and Table 3 below are the result:

### Table 2. Cronbach's Alpha, Composite Reliability, and AVE

| Indicators                          | Cronbach’s Alpha | Composite Reliability | AVE  |
|------------------------------------|------------------|-----------------------|------|
| External Variables                 | 0.762            | 0.858                 | 0.670|
| Perceived Usefulness (U)           | 0.841            | 0.895                 | 0.739|
| Perceived Ease of Use (E)          | 0.805            | 0.872                 | 0.631|
| Attitude toward Using (A)          | 0.786            | 0.875                 | 0.702|
| Behavioral Intention to Use (BI)   | 0.787            | 0.876                 | 0.702|
| Actual System Use                  | 0.830            | 0.887                 | 0.663|

### Table 3. Composite Reliability and Cronbach's Alpha for Reliability Test

| Variables                          | Composite Reliability | Cronbach's Alpha |
|------------------------------------|-----------------------|------------------|
| External Variables                 | 0.858                 | 0.762            |
| Perceived Usefulness (U)           | 0.895                 | 0.841            |
| Perceived Ease of Use (E)          | 0.872                 | 0.805            |
| Attitude toward Using (A)          | 0.875                 | 0.786            |
| Behavioral Intention to Use (BI)   | 0.876                 | 0.787            |
| Actual System Use                  | 0.887                 | 0.830            |

After every data is validated structural model test are conducted which includes T-Original Sample, Sample Mean, Standard Deviation, T Statistics and P Values. Table 4 showed the test results.
Table 4. Results of Bootstrapping

| Hypothesis | Relation | Original Sample Mean (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|------------|----------|--------------------------|----------------|---------------------------|--------------------------|----------|
| H1 | External Variables → Perceived Usefulness (U) | 0.319 | 0.319 | 0.201 | 1.587 | 0.113 |
| H2 | External Variables → Perceived Ease of Use (E) | 0.502 | 0.520 | 0.153 | 3.285 | 0.001 |
| H3 | Perceived Ease of Use (E) → Perceived Usefulness (U) | 0.397 | 0.414 | 0.160 | 2.477 | 0.014 |
| H4 | Perceived Usefulness (U) → Attitude Toward Using (A) | 0.487 | 0.481 | 0.149 | 3.271 | 0.001 |
| H5 | Perceived Usefulness (U) → Behavioral Intention to Use (BI) | 0.280 | 0.284 | 0.192 | 1.460 | 0.145 |
| H6 | Perceived Ease of Use (E) → Attitude Toward Using (A) | 0.077 | 0.100 | 0.199 | 0.387 | 0.699 |
| H7 | Attitude Toward Using (A) → Behavioral Intention to Use (BI) | 0.417 | 0.437 | 0.176 | 2.369 | 0.018 |
| H8 | Behavioral Intention to Use (BI) → Actual System Use | 0.982 | 0.983 | 0.003 | 285.086 | 0.000 |

Then the hypothesis test of the relationship between variables to determine whether there is significant relation between the variables tested by comparing the T-value 1.96 with an error rate of 5% (α = 0.05). The T-statistic is obtained from the output where the result is significant and stated to have a good relation if the value is bigger than 1.96. Table 5 shows the results of the hypothesis test:

Table 5. Hypothesis Test

| Hypothesis | Relation | T-statistic | Decision |
|------------|----------|-------------|----------|
| H1 | External Variables → Perceived Usefulness (U) | 1.587 | Not significant |
| H2 | External Variables → Perceived Ease of Use (E) | 3.285 | Significant |
| H3 | Perceived Ease of Use (E) → Perceived Usefulness (U) | 2.477 | Significant |
| H4 | Perceived Usefulness (U) → Attitude Toward Using (A) | 3.271 | Significant |
| H5 | Perceived Usefulness (U) → Behavioral Intention to Use (BI) | 1.460 | Not Significant |
| H6 | Perceived Ease of Use (E) → Attitude Toward Using (A) | 0.387 | Not Significant |
| H7 | Attitude Toward Using (A) → Behavioral Intention to Use (BI) | 2.369 | Significant |
| H8 | Behavioral Intention to Use (BI) → Actual System Use | 285.086 | Significant |
Based on the research that has been done, in the implementation of EB Connect inside PT Asuransi Jiwa Sequis Financial there are strong relationship between External variable to Perceived Ease of Use (E), Perceived Ease of Use (E) to Perceived Usefulness (U), Perceived Usefulness to Attitude Toward Using (A), Attitude Toward Using (A) to Behavioral Intention to Use (BI), and Behavioral Intention to Use to Actual System Use. Meanwhile there are also weak relationship between External Variable to Perceived Usefulness (U), External Variable to Attitude Toward Using (A) and Perceived Usefulness (U) to Behavioral Intention to Use (BI). In other word, there are a lot of trouble coming from external variable including accessibility, training, support, user interface, experience and speed. In addition, perceived usefulness of the users is low which caused fewer user.

4. Conclusion
To improve the system and solve the current problems, the company should address external variable problems such as adjusting the product to better meet user requirements, find a way so that trainings are well-socialized and more effective, add support to the system, and enhance the speed. All these external variables in the end would also improve user perceived of usefulness and in the end would affect the actual use of the system.

5. References
[1] Davis F 1989 Perceived usefulness, perceived ease of use and user acceptance of information technology MIS Quarterly
[2] Hanggono A A, Handayani S R and Susilo H 2015 Analisis atas praktek TAM (technology acceptance model) dalam mendukung bisnis online dengan memanfaatkan jejaring sosial Instagram. 26
[3] Mazhar F, Rizwan M, Fiaz U, Ishrat S, Razzaq M S and Khan T N 2014 An investigation of factors affecting usage and adoption of internet & mobile banking in pakistan
[4] Sugiyono 2011 Metode penelitian kuantitatif dan kualitatif dan R&D (Bandung: CV Alfabeta)
[5] Roscoe J T 1975 Fundamental research statistics for the behavioral science (2nd ed.) (New York: Holt Rinehart & Winston)