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A Model of Technology Acceptance and Usage: Case of Ribbon Embroidery SMEs in Indonesia

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Abstrak– Dengan adanya permasalahan pemanfaatan sistem informasi manajemen dan akuntansi, penelitian ini dimaksudkan untuk menguji model pemanfaatan teknologi/sistem informasi di UMKM Sulam Pita di Kota Semarang. Beberapa penelitian terdahulu pernah dilakukan dengan menggunakan model pemanfaatan teknologi/sistem informasi, akan tetapi sifatnya parsial dan belum menyentuh UMKM yang sebetulnya justru harus banyak dibantu. Penelitian ini berhasil mengumpulkan data yang diperoleh dari 49 responden yang merupakan pemilik, manajer dan karyawan bagian akuntansi atau teknologi/sistem informasi. Hasil penelitian ini belum berhasi lmembuktikan pengaruh ekspektasi kinerja, ekspektasi usaha, faktor-faktor sosial, kondisi yang memfasilitasi terhadap minat keperilakuan memanfaatkan teknologi/sistem informasi. Selain itu, penelitian ini juga belum berhasil membuktikan bahwa usia memoderasi pengaruh faktor sosial dan kondisi yang memfasilitasi terhadap minat keperilakuan dan pemanfaatan teknologi/sistem informasi. Pengalaman juga belum terbukti memoderasi pengaruh ekspektasi usaha terhadap minat keperilakuan. Namun demikian, kemanjuran diri dan kondisi yang memfasilitasi terbukti secara signifikan mempengaruhi minat keperilakuan dan pemanfaatan teknologi/sistem informasi. Sedangkan gender terbukti memoderasi pengaruh ekspektasi kinerja terhadap minat keperilakuan. Demikian juga pengalaman, terbukti memoderasi pengaruh kondisi yang memfasilitasi terhadap pemanfaatan teknologi/sistem informasi.

Kata kunci**:** minat keperilakuan, pemanfaatan, teknologi informasi, sistem informasi akuntansi

Abstract-With the problem of the management and accounting information systems, this study is intended to test the model the use of technology/information systems in Ribbon Embroidery SMEs in Semarang. Several previous studies have been done using a model of the use of technology/information systems, but only partial and not comprehensive. SMEs are in need of a lot of help. This study was able to collect data obtained from 49 respondents are owners, managers and employees of the accounting department or technology/information systems. The results of this study have not been able to prove the effect of performance expectations, business expectations, social factors, facilitating conditions on the behavioral intentions in using technology/information systems. In addition, this research has not succeeded in proving that age moderates the influence of social factors and facilitating conditions on behavioral intentions and the usage of technology/information systems. Experience also has not been proven moderating influence of the business expectations on behavioral intentions. However, self-efficacy and facilitating conditions to significantly affect the behavioral intentions and the usage of technology/information systems. The gender variable was proven to have moderating effect on the influence of performance expectations on behavioral intentions. Experience was proven to have moderating effects on the influence of facilitation conditions on the use of technology/information systems.

Keywords**:** behavioral intentions, usage, information technology, accounting information system.

1. Introduction

The information system has an important role in accounting, since accounting itself is an information system, as stated in *Statement of Financial Accounting Concept No. 2, the Financial Accounting Standard Board* (Handayani, 2007). From the variety of previous studies on the utilization of technology / information systems conducted in Indonesia, both for large and small companies, using the model of *Unified Theory of Acceptance and Use of Technology* (UTAUT) (Venkatesh et al., 2003), it obtained different results.

From various studies using the model of Venkatesh et al. (2003), only social influence variable gave inconsistent results. Most likely this was also influenced by the type of industry. This study will keep using the same model, but based on advice from previous studies as shown in Table 1, it will be added with the user intrinsic variables (Handayani, 2007; Ellyana et al., 2009; Jati & Laksito, 2012). These variables actually have been inserted by (Venkatesh et al., 2003)in his research, but not as the main determinant, such as anxiety and *self-efficacy*. Somehow these variables were not included by researchers in Indonesia used as references in this research into the research framework.

Table 1 - Previous Studies Using UTAUT Model

Variable	Results			
Dependent	Behavioral Intentions in Using Technology / Information System			
Researcher	Jati & Laksito, (2012)	Ellyana et al. (2009)	Handayani (2007)	Rosyati et al. (2014)
Performance Expectations	Positive, Significant	Positive, significant	Positive, Significant	Negative, not significant
Business Expectations	Positive, Significant	Positive, significant	Positive, Significant	Positive, significant
Social Factors	Negative, NotSignificant	Negative, Notsignificant	Positive, NotSignificant	Negative, notsignificant
Facilitating Conditions	Positive, Significant	Positive, significant	Positive, significant	Negative, notsignificant
Industry	Tour Agent	District Government	Manufacturing Public Companies	Handycraft SMEs

Source: developed for this study, 2016

Inconsistency of the studies results encourages this research to be conducted again. In contrast to the travel agency industry, local governments or go public manufacturing companies, SMEs has regulations related to technology / information systems which are relatively few. From the results of preliminary interviews with several SMEs in Semarang, Central Java, especially ribbon embroidery SMEs, the result got was that at the time of applying for loans from banks, usually they were required to submit financial reports and evidence that they had already had adequate accounting information system. But in fact, even though they had already had accounting information system, but there were still many who manipulated information generated by the information system. There was still reluctance to improve information systems in order to deliver results in the form of reliable information.

By use the information in the form of financial statements of manipulation result, many SMEs applying for loans to banks. Often the result is disappointing, the banks are not willing to lend. Or it could be the banks agree to provide loans, but the companies often have difficulty to return it, because the ability of refund does not correspond to that presented in the financial statements. This time, from the interview result above, it can be concluded that the use of technology / information systems on ribbon embroidery SMEs is still low.

In this study, there are several problems. First, the problem of research discrepancy, where from UTAUT model, researchers in Indonesia do not fully implement the model. It is known by the absence of several variables of UTAUT models that are not used. May be this thing that makes UTAUT model used by researchers in Indonesia give inconsistence results. Second, phenomena discrepancy, in which Semarang ribbon embroidery SMEshas the use of technology / information systems which remains low.

2. Theoretical Framework

Theory Based in this study is *UnifiedTheory of Acceptance and Use of Technology*or UTAUT (Venkatesh et al., 2003)which developed from many theories and models, such as:

1. Theory of Reasoned Action (Ajzen, 2011; Fishbein, 2009);
2. Technology Acceptance Model (Davis, 1989; Venkatesh & Davis, 2000);
3. Motivational Model (Vallerand, 1997; Davis et al., 1992);
4. Theory of Planned Behavior (Ajzen, 2011; Fishbein, 2009);
5. Combined TAM & TPB (Taylor & Todd, 1995);
6. Model of PC Utilization (Thompson et al., 1991);
7. Innovation Diffusion Theory (Moore & Benbasat, 1991);
8. Social Cognitive Theory (Compeau & Higgins, 1995)

Here are some results of previous sudy which using the partial UTAUT Model in Indonesia (Table 2):

Table 2 – Previous Studies

No.	Researcher, Year	Sample & Research Period	Variableand Method Analysis	Study Results
1.	(Jati & Laksito, 2012)	Ticketing Employees on tour agent in Semarang who registered as ASITA members (2012)	Dependent: • Behavioral intention • Technology / Information System utilization Independent: • Performance Expectation • Business Expectation • Social factor • Facilitating Condition Analysis: Regression	• Performance Expectation has positive, significant effect on behavioral intention of technology / information systems utilization. • Business Expectation has positive, significant effect on behavioral intention of technology / information system utilization. • Social factor has negative, not significant effect on behavioral intention of technology / information system utilization.
2.	(Ellyana et al., 2009)	Finanace Employees of District Government in Bangkalan, Sampang, Pamekasan&Sumenep, related with Finance Information System Area (2009)	Dependent: • Technology / Information System utilization • Individual Performance Independent: • Performance Expectation • Business Expectation • Social Factor • Facilitating Condition Analysis: Regression	• Performance expectation has positive, significant effect on behavioralintention of technology / information system utilization. • Business expectation has positive, significant effect on behavioralintention of technology / information system utilization. • Social factor has negative, not significant effect on behavioralintention of technology / information system utilization.
3.	(Handayani, 2007)	Employees of Manufacture Go Public (2007)	Dependent: • Technology / Information System	• Performance Expectation has positive,significanteffect on behavioral intention of

			utilization • Individual Expectation Independent: • Performance Expectation • Business expectation • Social Factor • Facilitating Condition Analysis: Regression	technology / information system utilization. • Business Expectation has positivesignificant effect on behavioralintention of technology / information system utilization. • Social factor has positive,notsignificanteffect on behavioral intention of technology / information system utilization.
4.	(Rosyati et al., 2014)	Employees Handycraft SMEs listed in Bank Jateng in Semarang	Dependent: • Technology / Information System utilization • Use Independent: • Performance Expectation • Business Expectation • Social Factor • Facilitating Condition • Anxiety • Self - Efficacy • Attitude toward Technology Moderation • Age • Experience	• EK → M: Negative, notsignificant • EU → M:Positive, significant • FS → M:Negative, notsignificant • KM → M: Negative, notsignificant • KC → M: Negative, significant • KD → M: Positive, significant • ST → M:Positive, notsignificant • U*EK → M: Negative, notsignificant • U*EU → M: Positive, notsignificant • U*FS → M: Negative, notsignificant • EX*EU → M:Positive, not significant • EX*FS → M: Positive, notsignificant • KM → P: Positive, significant • M→ P: Positive, significant • U*KM → P: Positive, notsignificant • EX*KM → P: Positive, significant

Source: developed to this study, 2016

Based on theoritical framework and hyphotesis above, the framework of this study can be arrange as follows (Figure 1):

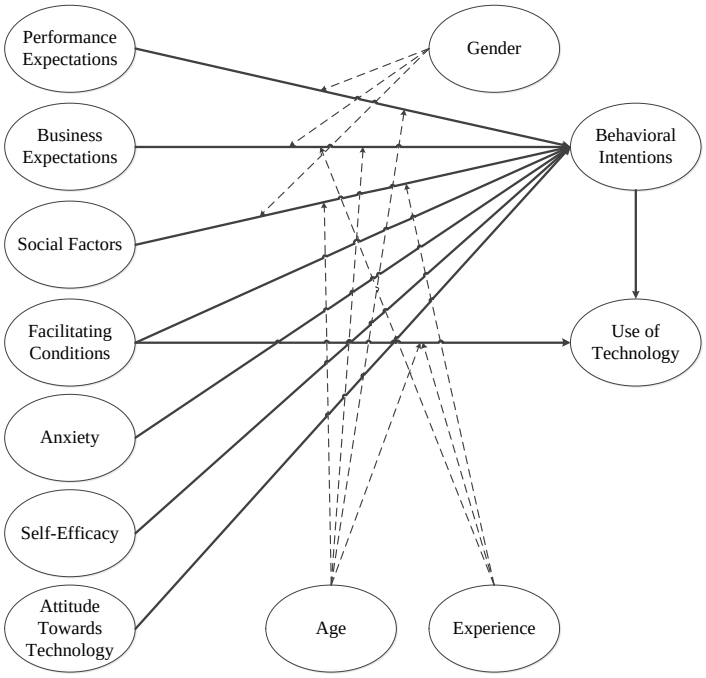

Figure 1. Research Framework

Source: UTAUT Model (Venkatesh et al., 2003)

3. Research Method

The research was conducted in Semarang ribbon embroidery SMEs, with 49 respondents who are owners, managers and employees of the accounting or technology/information systems department (if any) of the SMEs. The method of data collection/dissemination of the questionnaire used *convenience sampling*. While, the analysis of the data in this study used *structural equation modelling*, it suited to each hypothesis, having previously passed the test of data quality (validity and reliability) as well as the classical assumption test. Statistic software used in this study was WarpPLS v.5.

4. Result and Discussion

4. 1. Research Result

Respondents who participated in this study consisted of 24 women and 25 men, with an average age of 36-37 years and most of them have experience in using technology / information systems for 7-8 years. Overall, statistical description of this research variable is high, as shown inTable 3.

Table 3 – Variables Descriptions

Variable	Mean	Conclusion
Performance Expectation	5,7551	High
Business Expectation	5,6225	High
Social Factors	5,6786	High
Facilitating Condition	5,2857	High
Anxiety	5,0867	High
Self-Efficacy	5,1786	High
Attitudes Toward High Technology Utilization	4,6582	High
Behavioral Intentions of Technology Utilization	5,2448	High
Technology / Information Systems Utilization	5,7857	High

Source: Processed Data, 2016

Testing of the hypothesis in this study experienced modifications. This was because the initial model proposed did not pass the feasibility test of model/*model fit* and produced negative *Adjusted* R^2. Therefore, the variables of anxiety and attitudes toward technology were not included in data processing model. In addition, some moderating relationships must be eliminated in data processing model. After passing through some processes of variables elimination and moderating relationships, *Adjusted* R^2 values for behavioral intention of technology/information systems utilization was 56.8%. Meanwhile *Adjusted* R^2 value for technology/information systems utilization was 34.0% (Figure 2).

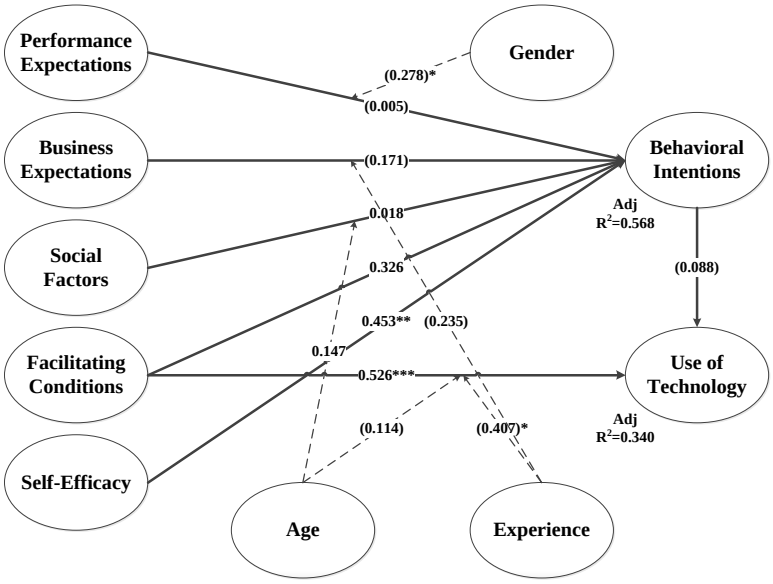

Figure 2 – Hypothesis Testing Results

Source: Processed Data, 2016

4. 2. Discussion

Performance expectation has negative effect but not significant toward behavioral intention of technology/information systems utilization.This is not consistent with the results of previous research conducted by Jati&Laksito (2012), Ellyana etal. (2009) and Handayani (2007). However this research is consistent with the research results of Rosyati etal. (2014). The negative effect is reflected in the distribution of respondents' data for both variables. When the performance expectation is low, the intention of technology/information systems utilization is high. When the performance expectation is high, behavioral intentions of technology/information systems utilization is low. However, the distribution of data in most particular areas in the center showed that when performance expectation is rising, the behavioral intention of technology/information systems utilization tends to be unchanging for some times.

Similar to the performance expectation, business expectation also has negative effect but not significant to the behavioral intention of technology/information systems utilization. The result of this study is not consistent with the results of previous studies (Handayani, 2007; Ellyana et al., 2009; Jati & Laksito, 2012; Rosyati et al., 2014). The distribution of data collected from respondents of this study indicates that when the business expectation is increasing, the intention of technology/ information systems utilization is decreasing, but at a certain point when business expectation continues to increase, the intention of technology/information systems utilization occur constant conditions/not increasing nor decreasing.

Social factors also have not been proven significantly influence behavioral intention of technology/information systems utilization. But, in general the effect is positive. This is reflected in the distribution of the respondents' data. At certain extent, the intention of information technology utilization remains unchanging as the result of social factors, even tends to decrease. But after social factors experience considerable increase, the intention of technology/information systems utilization then steadily increase. These results are not consistent with the research results of Jati& Laksito (2012), Ellyana et al. (2009) and Rosyati et al. (2014), but these are consistent with the research results of Handayani (2007).

Similar to social factors, the facilitating conditions have positive effects on behavioral intention of technology/information systems utilization although not significant. However, the data distribution pattern is different from the social factors. For that facilitating condition, the distribution of respondents' data when the facilitating conditions experienced an increase in the beginning, behavioral intention of technology/information systems utilization also experienced significant increase. But, at a certain period in which the facilitating condition is still increasing, the behavioral intention of technology/information systems utilization experienced stagnant period, although finally the behavioral intention of technology/information system utilization was slowly increasing. This research direction is equal to some previous researches, although previous studies showed significant results (Handayani, 2007; Ellyana et al., 2009; Jati & Laksito, 2012).

Despite that facilitating condition has positive effect and not significant to behavioral intention of technology/information systems utilization, the facilitating conditions actually facilitate positive effect and significant to the utilization of technology/information system. The type of distribution of respondents' data for the facilitating condition effect toward the behavioral intentions of technology/ information systems utilization is relative flat. While, the type of distribution of respondents' data for the facilitating condition effect toward the technology/information systems utilization is in very steep U shape. The facilitating condition effect toward technology/information systems utilization seems to have decreased drastically in the beginning. This is a sign of the process of learning to master the technology/information systems utilization. However, soon after the respondents mastered how to use technology/information system, the better the facilitating condition, the greater the use of technology/ information systems.

Self-efficacy has positive and significant impact on the intention of technology/information systems utilization. The distribution of the respondents' data showed very clear results. The respondents' confidence in their ability in utilizing information technology is greater as the intention in utilizing technology/information systems.

However, the behavioral intention of technology/information systems utilization on the utilization of technology/information system itself was proven to have negative effect, but not significantly. The distribution of respondents' data in this study showed that when the behavioral intention of technology/information systems utilization was increasing, the utilization of technology/ information systems was increasing much faster, up to 2-3 times fold. But at a certain point, there was a kind of boredom of respondents, so when the behavioral intention of technology/information systems utilization began to decline, then the utilization of technology/information systems also decreased much faster. Thus, it can be said that behavioral intention of technology/information system utilization experienced very volatile relationship.

The results of this study successfully demonstrated that gender moderated the effects of performance expectations towards behavioral intention of technology/information systems utilization. From the distribution of respondents' data, female gender had clear tendency, that the greater the performance expectations, the greater the behavioral intention of technology/information systems utilization. While for the male gender, to a certain point, when performance expectations increased, the behavioral intention of technology/information systems utilization decreased. But with the greater performance expectations, the behavioral intention of technology/information system utilization increased quite dramatically.

Age was not proven to moderate the effect of social factors on behavioral intention of technology/information systems utilization. The same thing was not proven either, that age moderated facilitating conditions of technology/information systems utilization. In addition, experiences were not proven moderating the effect of business expectations on behavioral intention of technology/ information systems utilization.

Though it did not moderate the effect of business expectations on the behavioral intention of technology/information systems utilization, the experience was proven to moderate the effect of the facilitating conditions on the technology/information systems utilization. The distribution of data showed different initial behavior between respondents who have and have not experienced. But at a certain point, which can be said at the time the facilitating conditions have already established and are likely to increase, then the utilization of technology/information systems also increases.

5. Conclusion

First, this study concluded that self-efficacy gave significant positive effect on behavioral intention of technology/information systems utilization. This implies that the control of managers and employees in relation to technology/information system is needed. This is because the employees feel that they are able to complete the job or task using technology/information systems: although no one around tells what to do when carrying out work related to technology/information system. The companies must also provide employees who know well about the technology / information systems to help. The companies must also provide sufficient time to allow employees to complete the job by using the available software. The companies should ensure that employees can also count on the help facility features (help / F1) standard of the program.

Second, this study concluded that the facilitating condition was also proven to have significant positive effect on the utilization of technology/information systems. This implies that the company must provide adequate resources required to utilize technology / information systems. The company must provide employees with knowledge needed to use technology/information system. The company must also ensure that technology/information systems in the company suit to the other technology / information systems used by employees. In addition, the companies need to ensure there is a team available to assist employees with difficulties in using technology/information systems.

Third, this study was able to prove that gender moderated the effect of performance expectations on the behavioral intention of technology/information systems utilization. This implies that the company should pay attention to the behavior differences between male and female employees. For male employees up to a certain point, it seems they do not have intention, but with emphasise on greater performance expectations, the company must ensure that the current available technology/ information systems are useful for the employees' work. The companies must also ensure that by using the current available technology/information systems allow the employees to complete their tasks faster, to improve employees' productivity and to increase the chance of getting salary raise.

Fourth, this study also succesfully proved that experience also moderated the effects of facilitating conditions on the utilization of technology/information systems. This implies that the use of technology/information systems at the company should be able to improve employees' performance, ease the employees' works and fun for employees.

Limitations in this study have implications for the next researches. The proposed UTAUT model can not be used fully in this study, because the number of respondents who participated in this study was very

little, which was only 49 people. In order the proposed model can be used fully, the number of respondents can be added and adapted to the number of indicators in this study.

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