Does the Balinese *Tri Hita Karana* Culture Affect the Adoption and Usage of Information Technology Systems?

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ABSTRACT
Hotel Information System (HIS) is defined as technological implementation in developing information for hotel industry. HIS is intended to increase operational efficiency, time efficiency, and improvement in service to guest. It is especially important as a strategic weapon to compete in the hotel industry. This study is intended to examine factors influencing the willingness to adopt and implement HIS, and conditions that facilitate the adoption and willingness to adopt and implement UTAUT model of technology-based AIS. The study is conducted in *Tri Hita Karana* cultural context as a substitute for social construct in original UTAUT model.
Data are collected using questionnaire-aided survey to gather opinions of knowledge workers. This research uses *purposive sampling* and each hotel are represented by three knowledge workers. Total respondents in this study are 143 individuals on hotels in Bali. Data are further analyzed using partial least square.
Results of the study empirically support UTAUT model in *Tri Hita Karana* culture context as organizational socio-cultural factor. Results of the analysis shows performance expectancy, effort expectancy, and socio-cultural factor affect intention to adopt and use. Facilitating conditions and intention to adopt and use affect adoption and implementation of AIS based IT. Gender moderates performance expectancy and socio-cultural factor to intention to adopt and use. Also, age moderates performance expectancy to intention to adopt and use AIS based IT in Bali.
Key words: AIS based IT adoption and usage, UTAUT Model, *Tri Hita Karana*, and socio-cultural factor.

1.1 Background

The implementation of IT systems utilized to develop information system (IS) in hotel industry is referred to as Hotel Information System (HIS). HIS can be divided into four categories, i.e.: front office system, back office system, restaurant and banquet management system, and guest related interface system (Ham *et al*., 2005). Several examples of the adoption of IT for processing information in hotels are the use of internet, voice-mail, e-mail, online room reservations, computerized food and beverages ordering, teleconferencing, interactive guide for the guests, the use of cell phones, electronic credit card authorization, e-banking transaction, graphical reporting, computerized accounting, and financial reporting system, and are commonly referred as Accounting Information System based Information Technology (AIS based IT).

The research of users' behavior on the acceptance of AIS based IT has become a crucial topic in the research of information technology systems (ITS) in past few decades. Researchers have studied different aspects of the phenomenon of adoption and usage of ITS and from variety of different theoretical perspectives, such as: Theory of Reasoned Action (TRA) as in Ajzen and Fishbein (1977), Theory of Planned Behavioral (TPB), as Mathieson (1991), Taylor and Todd (1995), Technology Acceptance Model (TAM) as in Davis et.al. (1989), and Venkatesh and Davis (1996), Social Cognitive Theory (SCT) and as in Compeau and Higgins (1995), and the Diffusion of Innovation (DOI) as in Moore and Benbasat (1991), Copying Model of User Adaptation (CMUA) by Beaudry and Pinsonneault (2005), and models of the Unified Theory of Acceptance and Use of Technology (UTAUT Model) by Venkatesh et al. (2003).

UTAUT model has been widely used in ITS research. Several studies using UTAUT model   included Bandyopadhyay and Fraccastoro (2007), Al-Gahtani et al. (2007), Hennington and Janz (2007), Gupta et al. (2008), Loo et al. (2009), McLeod et al. (2009), Al-Shafi and Weerakkody (2009), Martin and Herrero (2011) Abu Shanab et al. (2010), Urreta and Marakas (2010), Brown et al. (2010), Cheng et al. (2011), Venkatesh et al. (2012), and Baridwan (2012). The results of these research strengthen the UTAUT model; however, the model's ability in explaining the acceptance of information systems is still varied, as reflected in the value of R^2 or adjusted R^2 to adopt intentions and use of different technologies. The researchers predict that the difference is resulted from the presence of differences in cultural background, information system used, sample characteristics, organizations, and technology.

Al-Gahtani et al. (2007) conducted a research to test UTAUT model in Saudi Arabia. The research was conducted by replacing the social effect construct with subjective norm. It was done due to presence of cultural differences (culture in national level) between USA and Saudi Arabia.

Bandyopadhyay and Fraccastoro (2007) developed UTAUT model in the context of the acceptance of prepayment metering systems in India. The research samples are the accounting professionals, faculties, doctors, lawyers, and other professions. This research modified the definition of the social effect construct due to cultural differences in USA and India.

Other researches employing national cultural differences as an important issue are Straub (1994), Straub et al. (1997), Zakour (2004), Thatcher et al. (2006), Srite et al. (2008), Agirre-Urreta and Marakas (2010), Venkatesh and Zhang (2010). These researches emphasizes national cultural differences in Japan, Switzerland, China, India, Saudi Arabia, and USA that affect individual intentions and behaviors to adopt and use information technology systems.

One of the reviews of organizational culture dimension that can be included in the research of adoption and the usage behavior of information systems, according to Straub et al. (2002) and Zakour (2004) is the cultural concept according to Kluckhon and Strodtbeck (1961). The cultural dimension according to Kluckhon and Strodtbeck includes the relationship to nature of people, person's relationship with nature, person's relationship with other people, the primary mode of activity, conception of space, and the person's temporal orientation.

This research emphasizes the role of organizational culture in adoption and usage behavior of AIS based IT with the cultural dimension of *Tri Hita Karana (THK)*. *THK* has been made into life philosophy which is holistic and unique in nature, as it only exists in Bali which is taking root from Hinduism. THK is the concept of a local culture that has been adopted into organizational culture and has been existed since centuries ago. *THK* according to Windia and Dewi (2007: 2) and Wiana (2007: 8) is a cultural system that contains the elements of; (1) *parahyangan*, harmonious relationship between human and God Almighty. (2) *palemahan*, harmonious relationship between human and their environment. (3) *pawongan*, harmonious relationship among fellow human beings. The objective of *THK* is to achieve happiness in life by promoting the principles of harmony, conformity, and balance among economic motives, environmental preservation, culture, aesthetics, and spiritual.The cultural concept of THK which is growing and developing in Bali has a broader scope than the cultural concept of Kluckhon and Strodtbeck (1961), for other than considering the relationship among human beings, human and nature, THK also considers human relationship with God.

According to Hofstede (2010: 46), local culture will influence organizational culture. As prior to joining the organization, the individuals (workers) are first affected by various social agencies or institutions that routinely inculcated values and norms as well as shaping behavior, such as families, communities, nations, educational systems, tribes, and religions.

1.2 Research Motivation

Based on the analysis of the existing research gap, this research was focused on the reconstruction of the definition and measurement of the social effect construct from organizational culture perspective and spiritual level (particularly on *THK* culture in hotel industry) by replacing the social effect construct with socio-cultural factor construct. It was conducted because Al-Gahtani's research (2007) replaced social factor construct on UTAUT model with subjective norms, Bandyopadhyay and Fraccastoro (2007) modified the definition of social factor construct. Venkatesh and Zhang (2010) conducted research in USA and China by creating the different hypotheses for social factor construct, by adopting UTAUT model.

The objective of the research was to examine the effect of THK culture on the adoption and usage of AIS based IT by adopting UTAUT model. The findings of the research can be used as inputs for the hotel industry to facilitate the adoption and the usage of AIS based IT and therefore increasing the operational efficiency, time efficiency, and services to hotel guests.

2. Literature Review and Hypothesis Development

The constructs in UTAUT model are produced after reviewing and comparing previous eight models. The four main constructs tested in the UTAUT model are performance expectancy, effort expectancy, social influence, and facilitating conditions. The moderating variables used are gender, age, voluntaries, and experience.

Performance expectancy construct in UTAUT model is originated from five constructs of the previous model, i.e. the usefulness of perceptions from TAM/TAM2/TAM3 and C-TAM-TPB, extrinsic motivation of MM, the task suitability of MPCU, the relative advantages of IDT, and effort expectancy of SCT. Researches that is conducted by Hennington (2007), Gupta et al. (2008), McLeod et al. (2009), Brown et al. (2010), Venkatesh and Zang (2010), Martin and Herrero (2011), Baridwan (2012), and Venkatesh et al. (2012) show that performance expectancy is a predictor of intention in adopting and using AIS based IT. Based on these researches, the hypothesis proposed is;

H_1: Performance expectancy affects the intention to adopt and use AIS based IT in hotel industry.

Effort expectancy construct in UTAUT model is originated from the three constructs of the previous models. These constructs are Venkatesh et al. (2003), perceived ease of use of TAM/TAM2/TAM3 model, complexity in

MPCU, and ease of use in IDT.

The research by Venkatesh et al. (2003) finds empirical evidence that effort expectancy affects the intention to adopt and use of information technology systems, either in voluntary or mandatory condition. Effort expectancy construct is significant in the period of earliest usage (i.e. the stage of T1 period after the training) and becomes insignificant after that. The researches by Venkatesh et al.(2003), Baridwan (2012), Venkatesh et al. (2012) show that effort expectancy construct has a strong predictor on the intention to use ITS. Based on the description of these researches, the hypothesis proposed is;

H_2: Effort expectancy affects the intention to adopt and use AIS based IT in hotel industry.

Social influence constructs a direct determinant variable on the intention to adopt and use ITS. The variable is a construct of 1) subjective norm in TRA, TAM2, TAM3, TPB/ DTPB and C-TAM-TPB, 2) social factors in MPCU, and 3) image of IDT.

Based on research testing and developing UTAUT model by Venkatesh et al. (2003), Venkatesh et al. (2012), Cheng et al. (2011), Venkatesh and Zhang (2010), Bandyopadhyay and Fraccastoro (2007), it can be concluded that social influence is a predictor of the intention to adopt and use ITS, additional Al-Gahtani et al. (2007) explains that the subjective norms are the predictor of the intention to adopt and use ITS. In addition to social influence in researches by Cheng et al. (2011), Venkatesh and Zhang (2010), Bandyopadhyay and Fraccastoro (2007), cultural factors are important elements in adopting and using ITS.

In testing the TAM model by Straub (1994), Straub et al. (1997), Srite (2006) finds that cultural factors may affect the intention to adopt and use ITS. The cultural dimension used in the researches by Cheng et al. (2011), Venkatesh and Zhang (2010), Bandyopadhyay and Fraccastoro (2007), Straub (1994), Straub et al. (1997), and Srite (2006) is the national culture of Hofstede. In contrast, in the research by Bandyopadhyay and Fraccastoro (2007), cultural dimension is included into social factor, by redefining the social factors in accordance with the culture of the country (India). According to Straub et al. (2002), and Zakour (2003), one of the cultural dimensions that can be included in the research on information technology systems is the organizational culture dimension of Kluckon and Strodtbeck (1961). This dimension consists of the nature of people, person's relationship with nature, person's relationship with other people, the primary mode of activity, conception of space, and person's temporal orientation.

From the researches mentioned above, it can be concluded that social factors direct predictors of the intention to adopt and use of ITS and is affected by the culture where ITS is being applied. Therefore, this research reconstructs the definition of social influence with local cultural factors, i.e. *THK* which has been adopted into the corporate culture. The term of socio-cultural factor is taken from Pinkett's research (2000). This theory explains that individuals in the society are active agents of change, instead of passive beneficiaries (clients). Accordingly, they act as active information and content producers, instead of passive information consumers or recipients. Therefore, if being associated with the adoption and the use of information technology, access does not mean usage, and usage does not mean meaningful usage, thus the construction and individual activeness of the users of information technology should be considered. Consistent with this, the hypothesis proposed is:

H_3: Socio-cultural factors influence intention to adopt and use of AIS based IT in hotel industry.

Gender and age strengthens the relationship between performance expectancy, effort expectancy, and social factors with the intention to adopt and use information technology systems. These can be found in Venkatesh et al. (2003), Venkatesh and Zhang (2010), and Venkatesh et al. (2012). For that reason, the hypotheses proposed are:

H_4: Gender strengthens the effect of performance expectancy on the intention to adopt and use AIS based IT in hotel industry.

H_5: Age strengthens the effect of performance expectancy on the intention to adopt and use AIS based IT in hotel industry.

H_6: Gender strengthens the affect of effort expectancy on the intention to adopt and use AIS based IT in hotel industry.

H_7: Age strengthens the effect of effort expectancy on intention to adopt and use AIS based IT in hotel industry.

H_8: Gender strengthens the affect of socio-cultural factors on intention to adopt and use AIS based IT in hotel industry.

H_9: Age strengthens the effect of socio-cultural factors on intention to adopt and use AIS based IT in hotel industry.

Facilitating conditions constructs as in Venkatesh et al. (2003) is defined as to the extent a person believes that organizational technique and infrastructure available to support the system usage. The definition of this construct is a combination of the three constructs, i.e. 1) perceived behavioral control in TPB/DTPB, and C-TAM-TPB, 2) facilitating conditions of MPCU, and 3) compatibility from IDT.

Based on an assessment of researches by Venkatesh et al. (2003), Fillion et al. (2010), Heerink et al. (2010), Moran et al. (2010), Baridwan (2012), Venkatesh et al. (2012), it can concluded facilitating conditions that are the predictors of the behavior to adopt and use ITS. Based on this, the hypothesis proposed is;

H$_{10}$: Facilitating conditions influence the adoption and usage behavior of AIS based IT in hotel industry.

The research by Venkatesh et al. (2003), related to the moderating variables (age and experiences) between the facilitating conditions and the usage behavior are supported by Fillion et al. (2010) and Venkatesh et al. (2012). Based on the explanation, the hypothesis proposed is:

H$_{11}$: Age strengthens the effect of facilitating conditions on the adoption and usage behavior of AIS based IT in hotel industry.

The effect of behavioral intention on the usage behavior in information systems research has been started since TRA, TAM, TPB, C-TAM-TPB, and UTAUT. The result of the study by Venkatesh et al. (2003) by using UTAUT model shows that behavioral intention affects the usage behavior. Based on the research by Venkatesh et al. (2003), Al-Gahtani et al. (2007), Venkatesh and Zhang (2010), Brown et al. (2010), Pai and Tu (2011), Baridwan (2012), and Venkatesh et al. (2012), it can be concluded that the behavioral intention affects the usage behavior of ITS, thus the research hypothesis proposed is;

H$_{12}$: Intention to adopt and use AIS based IT influence the adoption and usage behavior of AIS based IT in hotel industry.

3. Research Methodology
3.1 Research Population and Samples
The research data were collected using a self-administered survey method to obtain individual opinions by asking questions or statements individual respondents. The research population is all individual knowledge workers positioned in middle management and the accounting department of hotels that had already used AIS based IT. Sample is taken using purposive sampling method, on the condition that the hotel had adopted AIS based IT and was categorized as a three star hotel or above. The result of the data verification from www.phribali.or.id, the directory of Star Hotels, Motels and Cottages published by Tourism Agency of Bali Province in 2011, www.wego.co.id,www.agoda.co.id, and recommendations from BPD PHRI Bali, 158 hotels were obtained.

Data are gathered from three (3) individuals in each hotel positioned in the middle managers and the accounting department of the hotels. Therefore, the research took samples of 474 individuals (158 hotel x 3 individuals). The selection of the samples was based on the reason that the managers/heads/supervisors and the accounting department were the individuals frequently utilizing, processing, and were directly related to the policies and operations of AIS based IT.

3.2 Definition and Variable Measurement Techniques
The model in this research is based on UTAUT model from the researches by Venkatesh et al. (2003), Venkatesh and Zhang (2010), and Venkatesh et al. (2012), Baridwan (2012) and is developed based on the researches by Bandyopadhay and Fraccstoro (2007), Al-Gahtani (2007), and Suardikha (2012) in the context of *THK* culture in hotel industry. The key constructs (latent variables) of the research are: performance expectancy (PE), effort expectancy (EE), socio-cultural factor (SCF), facilitating conditions (FC), intention to adopt and use (IAU), and adoption and usage behavior AUB). Moderating variables used in the research are gender (GD) and age (AG).

Constructs, definitions, indicators, and question items of performance expectancy, effort expectancy, facilitating conditions, intention to adopt and use, adoption and usage behavior are taken from the research by Venkatesh et al. (2003), Bandyopadhyay and Fraccastoro (2007), Venkatesh and Zhang (2010), Baridwan (2012), and Venkatesh et al. (2012).

Socio-cultural factor (SCF) is a new construct in this research; therefore, it requires instrument validation in the context of *THK* culture as the organizational culture. The process of the formation of questions and statements items reflecting *THK* culture pursue the process from Davis (1989) and Moore and Benbasat (1991). The stages used for the preparation of socio-cultural factor construct are:

(a) The initial stage of the formation of the construct question and items.

Initial establishment of construct, is started from reviewing the research results of information systems, particularly those related to subjective norms existing in TRA, TPB and C-TAM TPB and social factors existing in SCT, IDT, and UTAUT model. It is also enriched by exploring social cultural theory by Pinkett (2000) which is based on asset-based approach. Lu et al. (2010) describes that moral norm is determinant factor of individual's behavior to pay taxes via online. Based on these assessments, the social factor construct or subjective norm is framed in the form of a new construct, and is named as socio-cultural factor construct. The socio-cultural factor used as the reference in this research is *THK* culture, as it possesses a broader coverage and emphasizes balance and harmony of the three elements, i.e. *pawongan, palemahan, and parahyangan*. Socio-cultural factor is defined to the extent an individual perceives that something is deemed important (the adoption and the use of AIS based IT) which is affected by the presence of surrounding important people, is based individual opinions or ideas and is inspired by the level of spirituality. The formulation of question items and socio-cultural factor statements (in the context of *THK*) is obtained by reviewing books and articles from *THK* Foundation (2012), Windia and Ratna (2011), Putra

(2012), Riana (2011), Suardikha (2012), and Hou (2012).
(b) The second stage is pretest.

Pretest is conducted in two stages. The *first* stage is to conduct discussions and interviews with the experts of *THK* culture and organizational culture. The *second* stage is to conduct focus group discussion (FGD) involving 10 experts, i.e. two assessors of *THK* Awards, one expert of Hinduism, four behavioral research experts, *THK* culture, and AIS, and three Financial Corporate and Accounting Managers. This stage may also be used as an instrument for initial assessment of the reliability and validity by observing the level of agreement from the experts.

(c) The third stage is to conduct instrument tests.

The instruments tests are conducted trough two stages, i.e. pilot test and field test.

(d) The last step is to distribute the questionnaires to the actual respondents.

The indicators used are(1) Praying before going to work, (2) Guilt, (3) Believing in The Law of *Karma Phala,* (4) Remembering God Almighty,(5) Continuity of business enterprises, (6) The Efficiency of archive room, time, and materials, (7) Disclosure of CSR information (8) Support and guidance of the leaders, (9) The emphasis of head department, (10) Feedback from colleagues, (11) The principle of togetherness and balance, and (12) learning process.

The hypothesis tests in this research use SEM (Structural Equation Modeling) which is based on variance-based or component-based using PLS (Partial Least Square) Hartono (2009). The research model is illustrated in figure 3.1.
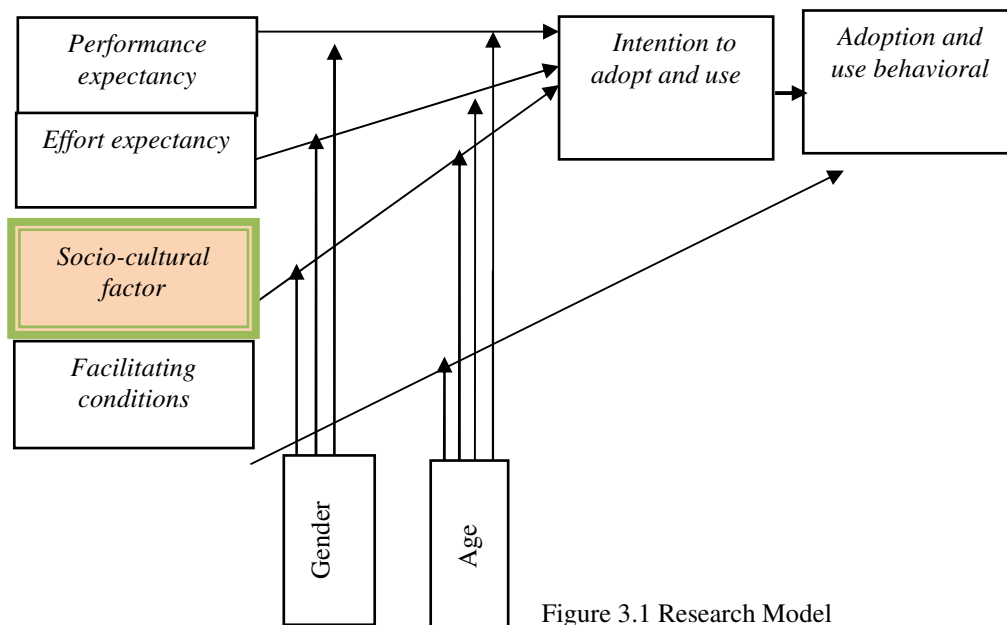

Figure 3.1 Research Model

4. The Results of the Research and Discussions
4.1The Results of Pre-test, Pilot Tests, and Non-Response Bias

As many as 474 questionnaires are distributed to respondents. Of these, unreturned questionnaires are 291, and those returned are 183. Of the 183 questionnaires returned, 40 are incomplete. Thus, the completed questionnaires and of which content can be processed are 143. The details of the collection of the questionnaires are presented in Table 4.1.

Table 4.1 The Rate of Return Questionnaire

Description	Total	%
The number of questionnaries submitted	474	100%
The number of questionnaries return	183	39%
A questionnaire can not be processed	40	8%
A questionnaire that can be processed	**143**	**30%**

Source: Processed Data, 2014

The results of the pretest and pilot tests on socio-cultural factor construct find two question items and invalid

statements, i.e. SCF02 and SCF07 due to the value of outer loading factor that are less than 0.5. SCF02 is question items and significant statements for *parahyangan* concept, thus after discussions with *THK* experts, question items or statements are maintained and modified, but should have the same meaning.

The result of non-response bias test indicates that P-value are more than 0.05. The result shows no differences in perception between the samples responding at the beginning and the samples responding at the end. It means that there are no differences between the 183 individuals (143 of them that can be processed) who respond and 291 individuals who do not respond to the distributed questionnaires.

4.2 Results and Discussions

4.2.1 Outer Model Tests

The result of convergent validity test indicates that there are three indicators of SCF, i.e. SCF04, SCF07, and SCF09 possessing the value of outer loading factorsbelow 0.5 and the t-statistics < 1.96. Its means the measurement has not fulfilled the requirements of convergent validity. Recalculation (re-estimation) of the convergent validity should be implemented by eliminating the three invalid indicators of SCF construct.

The result of retests indicates that the overall value of outer loading factor of construct indicators has a value above 0.5 and the t-statistics > 1.96. It means the measurement has fulfilled convergent validity. Figure 4.1 shows the measurement model after eliminating the three invalid indicators of SCF construct.
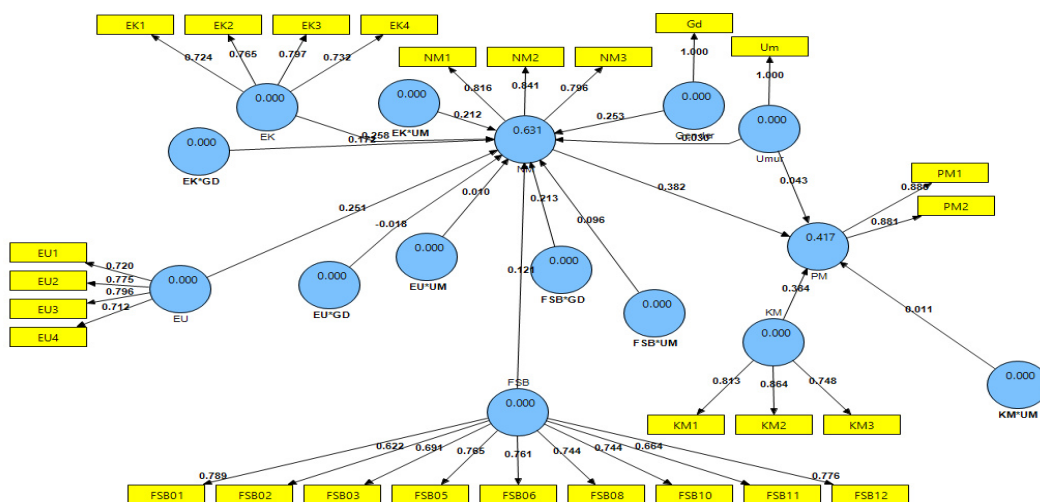

Figure 4.1 Model and Measurement Results

The discriminant validity test indicates that the value of AVE roots from each variable has a higher value than the correlation value with other variables. Therefore, each construct has fulfilled discriminant validity. The result of reliability test using composite reliability and Cronbach's alpha values indicates the value greater than 0.7, thus it can be concluded that all constructs fulfill composite reliability criteria.

4.2.2 Research Findings and Discussions

Goodness of Fit test uses predictive-relevance value (Q^2). R^2 values of each endogenous variable in this research are 1) Y1 variable on intention of adoption and usage (NPP), $R^2$is obtained by 0.6308 2) Y^2 variable, on adoption and usage behavior (PPP), R^2 is obtained by 0.4173. There by, the predictive-relevance value is obtained by the formula:

$$Q^2 = 1 - (1 - R_1^2) (1 - R_2^2)... (1- R_p^2)$$
$$Q^2 = 1 - (1 - 0,6308) (1 - 0,4173)$$
$$Q^2 = 0,7849$$

The computation result indicates that predictive-relevance value is 0.7849 or 78.49%, thus the model can be described as feasible and has a high predictive value. Predictive relevance value by 78.49% indicates that the model can explain the data diversity by 78.49%, or in other words, the information contained in the data which is 78.49%, can be explained by the model, while the remaining 21.51% is explained by other variables (which are not contained in this model) and error.

This research develops UTAUT model in the context of *THK* as organizational culture. The empirical evidence from the result of UTAUT model development is on Table 4.2. The result of the research can be explained as follows:

Table 4.2 Empirical Result

Hipotesis Number	Variabel	Original Sample (O)	T Statistics (O/STERR)	P-value	Decision Hipotesis
H 1	PE -> IAU	0.2584	3.5523	0.0004	Accepted
H 2	EE -> IAU	0.2510	4.1293	0.0000	Accepted
H 3	SCF -> IAU	0.1208	2.2891	0.0221	Accepted
H 4	PE*GD -> IAU	0.1720	2.2960	0.0217	Accepted
H 5	PE*AG -> IAU	0.2124	3.0336	0.0024	Accepted
H 6	EE*GD -> IAU	-0.0179	0.2943	0.7685	Rejected
H 7	EE*AG -> IAU	0.0097	0.1371	0.8910	Rejected
H 8	SCF*GD -> IAU	0.2133	4.2556	0.0000	Accepted
H 9	SCF*AG -> IAU	0.0961	0.7090	0.4783	Rejected
H 10	FC -> AUB	0.3840	4.5314	0.0000	Accepted
H 11	FC*AG -> AUB	0.0111	0.1829	0.8549	Rejected
H 12	IAU -> AUB	0.3817	4.9923	0.0000	Accepted

Source: Processed Data, 2014

Note: PE = Performance Expectancy, EE = Effort Expectancy, SCF = Socio-Cultural Factor, FC = Facilitating Conditions, GD = Gender, AG = Age, IAU = Intention to Adopt and Use, AUB = Adoption and Use Behavioral.

The tests indicates that performance expectancy (PE) positively affects the intention of adoption and usage (IAU) AIS based IT. It means, the higher the value of performance expectancy (PE), the higher the intention to adopt and use (IAU) AIS based IT. The empirical result here is consistent with the results of researches by Hennington (2007), Gupta et al. (2008), McLeod et al. (2009), Brown et al. (2010), Venkatesh and Zang (2010), Martin and Herrero (2011), Baridwan (2012) and Venkatesh et al. (2012) showing that performance expectancy is a predictor of the intention to adopt and use AIS based IT. It means that respondents will adopt and use AIS based IT if it is capable of improving their work productivity. Increased productivity can be viewed from fast, precise, and trust worthy report presentation, thus AIS based IT is capable of providing benefits to all departments in the companies.

The analysis indicates that effort expectancy (EE) positively affects the intention of adoption and usage (IAU) AIS based IT. It means, the higher the value of effort expectancy (EE), the higher the intention to adopt and use (IAU) AIS based IT. This empirical result is consistent with the results of the researches by Venkatesh et al. (2003), Oshlyansky et al. (2007), Al-Ghatani et al. (2007), Venkatesh and Zang (2010), AbuShanab et al. (2010), Pai and Tu (2011), Baridwan (2012), and Venkatesh et al. (2012) showing that effort expectancy positively affects the intention to adopt and use AIS based IT. It means that the respondents will have the intention to adopt and use AIS based IT, if it does not increase their work load and complexity, or in other words, AIS based IT should be easy to use and the users should be rapidly skilled or familiar.

The result indicates that socio-cultural factor (SCF) positively affects the intention of adoption and usage (IAU) AIS based IT. It means, the higher the value of socio-cultural factor (SCF), the higher the intention to adopt and use (IAU) AIS based IT. This empirical result is consistent with the previous research results suggesting that socio-cultural factor is the determinant factor of the intention to adopt and use AIS based IT. Straub (1994), Straub et al. (1997), and Srite (2006) find that cultural factor can affect the intention to adopt and use AIS based IT. The cultural dimension employed in the researches by Cheng et al. (2011), Venkatesh and Zhang (2010), Bandyopadhyay and Fraccastoro (2007), Straub (1994), Straub et al. (1997), and Srite (2006) is Hofstede's national cultural dimension. Hofstede's national cultural dimension in researches by Straub (1994), Straub et al. (1997), Srite (2006) is operated as external variable affecting the perceived usefulness and perceived ease of use. In contrast, in the research by Bandyopadhyay and Fraccastoro (2007), the cultural dimension is included in social factor by redefining social factors in accordance with the culture of the country (India).

According to Straub, et al. (2002) and Zakour (2003), one of the cultural dimensions that can be included in the research on information technology systems is the organizational culture dimension of Kluckhohn and Strodtbeck, consisting of the nature of people, person's relationship with nature, person's relationship with other people, the primary mode of activity, conception of space, and person's temporal orientation. It means that work

is an act of worship (SCF01), thus before starting the use of AIS based IT, it must be started with submitting to God in prayers in order to obtain the best results. Socio-cultural factor (in the cultural context of *THK*) affects the intention to adopt and use AIS based IT. It indicates that the adoption and the use of AIS based IT are not only affected by social factors (the surrounding environment, such as the influence of important people, senior management, and influential people). However, it is also affected by the arising and growing desire of the individuals over the responsibility towards the environment and God.

The analysis indicates that gender (GD) moderates the effect of performance expectancy (PE) and socio-cultural factor (SCF) on the adoption and usage intention (AUI) of which the nature of moderate is strengthening. It means the effect of the respondents' gender is capable of strengthening performance expectancy (PE) and socio-cultural factor (SCF) on the intention of adoption and usage (NPP). The result of this research supports the previous findings, i.e. gender strengthens the effect of performance expectancy and socio-cultural factor on the intention to adopt and use AIS based IT. In outline, gender theory is classified into two groups (Marhumah, 2011). *Firstly*, gender is determined by biological factors. *Secondly*, gender is determined by socio-cultural factor. Both distinguish the role of gender (males or females) based on the initial formation. Gender may be understood as a consequence of biological anatomy differences, such as reproductive organs, strength, and productivity. Gender may also be regarded as culturally-formed attributes. As the concept of socio-cultural analysis, gender refers to the nature, roles, responsibilities, functions, rights, and behavior attached to males or females. Males are regarded to carry out roles in the society better, since generally, males are considered stronger, more productive, and more potential. Hotel is a service industry operating for twenty four hours. The operation activities result in the division of the hotel industry's employees into three work shifts. Biologically, this work shifts highly determine physical ability and strength to work optimally in the hotel, particularly on the second and third shifts.

The analysis indicates that age (AG) moderates the effect of performance expectancy (PE) on the intention of adoption and usage (IAU) of which the nature of moderate is strengthening. It means, the higher the respondents' age will further strengthen the effect of performance expectancy (PE) on the intention of adoption and usage (IAU). Researches by Venkatesh et al. (2003), Venkatesh and Zhang(2010), Venkatesh et al. (2012) explain that age moderates UTAUT and UTAUT2 models. It is due to younger workers who are more concerned with extrinsic compensations, while older workers tend to avoid risks that may disturb the benefits of superannuation that will be received.

The analysis also shows that facilitating conditions (FC) and intention of adoption and usage (IAU) positively affects the adoption and usage behavior (AUB) AIS based IT. It means the better facilitating conditions (FC) and intention of adoption and usage (IAU) the higher the adoption and usage behavior (AUB) AIS based IT. The result of this research is consistent with Venkatesh et al. (2003), Fillion et al. (2010), Heerink et al. (2010), Moran et al. (2010), and Venkates et al. (2012) which conclude that facilitating conditions (FC) and intention of adoption and usage (IAU) are predictors of adoption and usage behavior (AUB) of AIS based IT in the context of different technology and methods. It means that facilitating conditions construct (FC) is high due to the high value of AIS based IT from the respondents in adopting and using AIS based IT. In addition, the intention of adoption and usage (IAU) is high due to high tendency of the respondents to utilize AIS based IT.

5.1 Conclusion

This research develops adoption and usage model of AIS based IT using UTAUT model in the context of *THK* as the organizational culture. The empirical evidence shows that the results of the development of UTAUT model are as follows.

Socio-cultural factor (in the cultural context of *THK*) affects the intention of adoption and usage of AIS based IT. It indicates that the adoption and usage of AIS based IT is not only affected by social factors (the surrounding environment, such as the influence of important people, senior management, influential people) but also by the arising and growing desire over individual responsibility towards the environment and God.

Performance expectancy (PE) positively affects the intention of adoption and usage (IAU) AIS based IT. The result indicates that the higher the value of performance expectancy (PE), the higher the intention to adopt and use (IAUP) AIS based IT. Effort expectancy (EE) positively affects the intention of adoption and usage (IAU) AIS based IT. The result indicates the higher value of effort expectations (EE), the higher intention the adoption and usage (IAU) of AIS based IT.

Exogenous manifest variable of gender moderator strengthens the effect of performance expectancy and socio-cultural factors on the intention of the adoption and usage of AIS based IT. However, gender does not strengthen the effect of effort expectancy on intention of adoption and usage of AIS based IT. Exogenous manifest variable of age moderator strengthens the effect of performance expectancy factor on the intention of adoption and usage of AIS based IT. However, age does not strengthen the effect of effort expectancy and socio-cultural factor on the intention of the adoption and usage of AIS based IT, and does not strengthen facilitating conditions on the adoption and usage behavior of AIS based IT.

Facilitating conditions (FC) positively affect adoption and usage behavior (AUB). The result indicates that the better facilitating conditions (FC), the higher the adoption and usage behavior (AUB) AIS based IT. Intention of

adoption and usage (IAU) positively affects adoption and usage behavior (AUB) AIS based IT. The result indicates that the higher value of the intention of adoption and usage (IAU), the higher the adoption and usage behavior (AUB) AIS based IT.

5.2 Limitations, Suggestions, and Implications

This research yields empirical model on the adoption and usage of AIS based IT in the context of *THK* as an organizational culture. Limitations, suggestions, and implications of further researches:

The time frame of the researches should be in the form of longitudinal study, as conducted by Venkatesh et al. (2003). The time division of the surveys should at least before (T-1) and after (T+1) the adoption and usage of AIS based IT, so that the respondents understand and are able to distinguish before and after the adoption and usage of AIS based IT.

The researchers have frequently stated that organizational culture plays an important role in information systems research. This research is designed to observe the effect of regional culture (sub-national culture) that has been adopted into organizational culture. Further researches should consider Hofstede's national cultural dimension (2010), such as masculinity/femininity, power distance, individualism, uncertainty avoidance and long term orientation. Baridwan (2012) conducted a research on the implementation of information systems by using different measurements of masculinity/femininity dimension. Straub et. al. (2002) and Zakour (2004) explain that several cultural dimensions can be used in the research on information systems, one of which is Chinese Culture Connection, by using cultural dimension of Confucian Work Dynamism.

This research reconstructs the definition and measurement of socio-cultural factor construct in the cultural context of *THK*, which is based on Hinduism. Further researches should observe the terms of spiritual cultural dimension of other religions. Al-Gahtani (2007) conducted a study in Saudi Arabia due to cultural and spiritual differences between USA and Saudi Arabia. While the research by Bandyopadyay and Fraccastoro (2007) was conducted in India.

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