ADOPTION MODEL OF GOODS AND SERVICES PROCUREMENT INFORMATION SYSTEM IN UDAYANA UNIVERSITY

I Gusti Ngurah Suaryana¹ Naniek Noviari² I Gst Ayu Eka Damayanthi³

Abstract

The information system is an important resource in the organization in the context of efficient and transparent implementation of activities. One of the information systems implemented at Udayana University is the Information System for the General Plan of Procurement (SiRUPKU) of Budget User Power (KPA) Udayana University. This study identifies the factors that explain the successful implementation of SiRUPKU at Udayana University. This study uses the UTAUT model to explain the user's interest and behavior in using the SiRUPKU application in the packaging process for the procurement of goods and services at Udayana University. There are four main factors that explain interest and behavior in using SiRUPKU, namely performance expectations, business expectations, social influences, and facilitating conditions. The research population is all using the SiRUPKU application, namely PPK (Commitment official/PPK) at Udayana University. The entire population became the research sample. Data were collected using a questionnaire. This study succeeded in collecting 83 questionnaires from 86 questionnaires distributed. The data were analyzed by partial least squares (PLS). The results of the study prove that performance expectations, business expectations, social influences, and facilitating conditions have a positive effect on interest in using SiRUPKU. Interest in using SiRUPKU has a positive effect on behavior in using SiRUPKU.

Kata Kunci: Sistem Informasi, UTAUT, Pengadaan barang dan jasa

Koresponding: Economics and Business Faculty, Udayana University, Bali, Indonesia Email: agungsuaryana@unud.ac.id

Economics and Business Faculty, Udayana University, Bali, Indonesia
INTRODUCTION

The information system is an important resource in the organization in the context of efficient and transparent implementation of activities. One of the information systems implemented within Udayana University is the Information System for the General Plan for the Procurement of KPA at Udayana University. The development of SIRUPKU by Udayana University to facilitate the Commitment Making Officer (PPK) in determining the procurement package announced to the SIRUP (General Procurement Plan System) which is managed by the Goods/Services Procurement Policy Institute (LKPP).

Basically, information technology adoption research examines how and why individuals adopt new information technology. Various models were developed to understand the use of information technology. In general, in this model, interest in using information technology is an important variable to explain the use of new information technology. Figure 1 is a basic framework that describes individual acceptance of new information technology. One of the models developed to explain the use of information technology is the unified theory of acceptance and use of technology (UTAUT). UTAUT was developed by Venkatesh, Morris, Davis, and Davis (2003).

Venkatesh, Morris, Davis, and Davis (2003) examine the variables that affect interest in and use of information technology in eight models. The test results found seven variables that affect interest or use of information technology, then four variables that directly affect interest and behavior in using information technology are formulated, namely performance expectations, business expectations, social influences, and facilitating conditions. Gender, Age, experience, and fun as key moderating variables. The results of research on system adoption with the UTAUT model obtained mixed results (Khechine, Lakhal, & Ndjambou, 2016). The types of information systems studied include communication systems, general purpose systems, office systems, and special business systems.

This study will examine the factors of the implementation of Information System for the General Plan of Procurement of Budget User Power (KPA) Udayana University (SiRUPKU). This research was conducted by modifying indicators of social factors in Hasan and Sukri’s research (2019) by modifying indicators of measuring conditions that facilitate and social factors. The modification of the measurement aims to adjust to the conditions of the application of SIRUPKU at Udayana University and justify the results of Hasan and Sukri’s research (2019) which found social factors had no effect on the usage and usage of direct procurement system.

This study uses the UTAUT model to explain the user’s interest and behavior in using the SIRUPKU application in the packaging process for the procurement of goods and services at Udayana University. SIRUPKU is an information system used by government agencies in Indonesia. The application of this system is to facilitate users in the process of packaging goods and services and compliance with applicable regulations. Research that evaluates the application of this system to formations applied in the government sector has not been widely carried out. For example, the adoption of government information systems in the United Arab Emirates (Rodrigues, Sarabdeen, & Balasubramanian, 2016), India (Rana, Dwivedi, Williams, & Weerakkody, 2016), and Turkey (Kurfali, Arifoglu, Tokdemir, & Paçin, 2017).

Performance expectations are defined as the extent to which an individual believes that using the system will help him achieve gains in job performance (Venkatesh, Morris, Davis, & Davis, 2003). First, users of the SIRUPKU application will have a good performance appraisal by their superiors, because the procurement of goods and services will be processed after going through the packaging process which is processed in the SIRUPKU application. Second, the SIRUPKU application is designed to facilitate the procurement process as regulated in Presidential Regulation Number 16 of 2018 concerning Government Procurement of Goods and Services (Indonesia, 2018). Users will be facilitated in the process of procuring goods and services because it reduces work time and errors in making documents for procuring goods and services directly. Perceptions of performance expectations will increase individual interest in using the SIRUPKU application. Gender and age are thought to moderate the effect of performance expectations on interest in using SIRUPKU. Performance expectations have a positive effect on interest in using information technology (Venkatesh, Morris,
Davis, & Davis, 2003; Chauhan & Jaiswal, 2016), the effect will be stronger for males and younger users than females and older users (Venkatesh, Morris, Davis, & Davis, 2003; Celik, 2016). This is because younger male users place more emphasis on the benefits of information technology and the ability to acquire technology-related knowledge or handle technology functions than women and older users (Celik, 2016; Arning & Ziefle, 2007; Morris, Venkatesh, & Ackerman, 2005).

Effort expectations are defined as the level of ease associated with the use of a information technology (Venkatesh, Morris, Davis, & Davis, 2003). Business expectation is an individual user's assessment of the extent to which the use of technology is free from effort (Celik, 2016). Effort expectations reflect the user's inner motivation which refers to the process that facilitates outcome expectations (Karahanna, Agarwal, & Angst, 2006). SIRUPKU is expected to facilitate PPK in identifying the procurement of goods and services in the activities carried out. The output produced by the SIRUPKU application facilitates the preparation of procurement documents which takes a long time and more effort if done manually. Business expectations are expected to have a positive effect on individual interest in using the SIRUPKU application (Chauhan & Jaiswal, 2016; Venkatesh, Morris, Davis, & Davis, 2003). Gender and age are thought to moderate the effect of business expectations on interest in using SIRUPKU. The effect of effort expectations on interest in using SIAKU is getting stronger among young male users (Venkatesh, Morris, Davis, & Davis, 2003).

Social influence is defined as the extent to which a person feels that his significant other believes that the individual should use the new system (Venkatesh, Morris, Davis, & Davis, 2003). Social influence in the application of SIRUPKU has been applied at Udayana University. In 2019 the General Bureau held a socialization of the application of SIRUPKU at Udayana University. The socialization is aimed at SIRUPKU users, namely PPK and education staff assigned to assist in the process of procuring goods and services. In 2020, technical guidance was held for PPK, Procurement Officers (PP), and KDP supporters. The technical guidance is given by the Deputy Dean for General Affairs and Finance, the Head of the General Bureau, and the Head of the Goods and Services Division. The socialization and technical guidance provided by important parties in the organization showed support and hope for KDP and KDP supporters to use SIRUPKU. The General Bureau periodically evaluates the implementation of SIRUPKU to ensure that new information technology is applied in the process of procuring goods and services. This reminds users to apply the information technology. Based on this explanation, it can be concluded that social influence has a positive effect on interest in using SIRUPKU. The impact of social influence on interest in using technology involves three mechanisms, namely compliance, internalization, and identification (Venkatesh & Davis, 2000). The impact of social influence on interest is very strong in the mandatory environment to apply new information technology (Venkatesh & Davis, 2000). Age and gender are thought to moderate the impact of social influences on interest in using new information technologies. Older women will strengthen the impact of social influences on interest in using information technology.

Facilitating conditions are defined as the extent to which a person believes that the organization and technical infrastructure provided by the organization to support the use of the system (Venkatesh, Morris, Davis, & Davis, 2003). Several conditions are provided by Udayana University to facilitate the use of SIRUPKU at Udayana University. First, socialization to users to introduce the SIRUPKU application. The socialization covers the benefits, the linkage of SIRUPKU with the regulation of the procurement of goods and services in Indonesia. Second, technical guidance to improve user skills and knowledge in using SIRUPKU. Third, providing internet, hardware, and software networks that support the use of the SIRUPKU application. Third, service complaints to users in the event of a discrepancy in usage. This condition should help users in using SIRUPKU. Venkatesh, Morris, Davis, and Davis (2003) found a direct influence of facilitating conditions on usage behavior. Based on the findings of the study, the better the user's assessment of the conditions that facilitate the use of the information system, the more users will use the SIRUPKU application in the process of packaging purchases of goods and services. Age is thought to moderate the effect of facilitating conditions on SIRUPKU usage behavior. The influence of facilitating conditions on the behavior of using SIRUPKU will be stronger for younger users.

Based on the phenomena and previous research, the formulation of the hypothesis and the conceptual framework formed are as follows: 

Adoption Model of Goods and Services Procurement Information System in Udayana University,
I Gusti Ngurah Agung Suaryana, Naniek Noviari, dan I Gst Ayu Eka Damayanth
H1: Performance expectations have a positive effect on interest in using SIRUPKU.
H2: Gender moderates the positive effect of performance expectations on interest in using SIRUPKU.
H3: Age weakens the positive effect of performance expectations on interest in using SIRUPKU.
H4: Business expectations have a positive effect on interest in using SIRUPKU.
H5: Gender moderates the positive effect of business expectations on interest in using SIRUPKU.
H6: Age weakens the positive effect of business expectations on interest in using SIRUPKU.
H7: Social influence has a positive effect on interest in using SIRUPKU.
H8: Gender moderates social influence on interest in using SIRUPKU.
H9: Age strengthens the impact of social influence on interest in using SIRUPKU.
H10: Facilitating conditions have a positive effect on the behavior of using SIRUPKU.
H11: Age moderates the positive effect of facilitating conditions on interest in using SIRUPKU.
H12: Interest in using technology has a positive effect on the use of SIRUPKU.

RESEARCH METHODS

The design of this study was built from the phenomenon of the development and application of the SIRUPKU application by Udayana University to facilitate PPK in identifying goods and services shopping packages at Udayana University. The application of the SIRUPKU application is mandatory, and is connected to the SIRUP application at LKPP. This study aims to examine the factors that influence the interest and behavior of individuals using the SIRUPKU application.

Based on the existing phenomena, it can be traced to the literature related to the behavior of individuals using the application of new information technology, especially the literature that discusses the theoretical model of the adoption of new information technology. A review of the
literature resulted in several factors that influence interest and behavior in using SIRUPKU, namely performance expectations, business expectations, social influences, and a facilitating environment. The research population is all using the SIRUPKU application, namely PPK and KDP supporters at Udayana University. Data were collected using a questionnaire. The data collected were analyzed by partial least squares (PLS).

The research population is all KDP and KDP supporters at Udayana University who use the SIRUPKU application. The number and names of PPK and PPK supporters were obtained from the General Bureau of Udayana University. This study uses independent variables, intervening variables, and dependent variables. The independent variables of this study are the variables that directly and indirectly influence the behavior of using SIRUPKU, including performance expectations, business expectations, social influences, and facilitating conditions. The intervening variable is the variable that mediates the influence of the independent variable on the behavior of using SIRUPKU, namely interest in using SIRUPKU. The dependent variable is the variable that is influenced, either directly or indirectly by the independent variable, namely the behavior of using SIRUPKU.

Performance expectations are defined as the extent to which an individual believes that using the system will help him achieve gains in job performance (Venkatesh, Morris, Davis, & Davis, 2003). Performance expectations were measured by four modified statements from the research of Venkatesh et al. (2003), namely:

- EK1: I think this system is useful in my work.
- EK2: Using the system allows me to complete tasks faster.
- EK3: Using the system increases my productivity.
- EK4: If I use the system, I will increase my chances of getting a raise.

Effort expectations are defined as the level of ease associated with using the system (Venkatesh, Morris, Davis, & Davis, 2003). Effort expectations were measured by four modified statements from the research of Venkatesh et al. (2003), namely:

- EU1: My interactions with the system will be clear and understandable.
- EU2: It’s easy for me to become an expert in using the system.
- EU3: I would find the system easy to use.
- EU4: Learning to operate the system is easy.

Social influence is defined as the extent to which a person feels that his significant other believes that the individual should use the new system (Venkatesh, Morris, Davis, & Davis, 2003). Social influence was measured by four modified statements from the research of Venkatesh et al. (2003), namely:

- PS1: People who influence my behavior think that I should use the system.
- PS2: People important to me think that I should use the system.
- PS3: The senior management of this business has assisted in the use of the system.
- PS4: In general, the organization has supported the use of the system.

Facilitating conditions are defined as the extent to which a person believes that the organization and technical infrastructure provided by the organization to support the use of the system (Venkatesh, Morris, Davis, & Davis, 2003). Facilitating conditions were measured by four modified statements from the study of Venkatesh et al. (2003), namely:

- KM1: I have the necessary resources to use the system.
- KM2: I have the necessary knowledge to use the system.
- KM3: The system is not compatible with other systems I use.
- KM4: A specific person (or group) is available to help resolve system difficulties.

Interest in using was measured by three modified statements from the research of Venkatesh et al. (2003), namely:
Adoption Model of Goods and Services Procurement Information System in Udayana University, I Gusti Ngurah Agung Suaryana, Naniek Noviar, dan I Gst Ayu Eka Damayanth1

RESULT AND DISCUSSION

Respondents in this study were officials who made commitments and supported officials who made commitments who served in each unit at Udayana University Denpasar, Bali. Data were collected by distributing online questionnaires which were sent directly by the researcher to all research respondents. The questionnaires were distributed to the respondents as many as 86 questionnaires. After confirmation, it was found that all the questionnaires returned as many as 83 questionnaires. The number of questionnaires returned and used in the study was 96.5%. The age distribution of respondents was at most in the age range of 31 years to 40 years as many as 32 people (38.55%), followed by the age range from 21 to 30 years as many as 23 people (27.71%), age range 41 to 50 years as many as 17 people (20.48%) and at least the age range of 51 to 60 years as many as 11 people (13.25%). The gender of the respondents were mostly male (68.67%), while female respondents were 31.33%.

Table 1. Hypothesis Test Results

<table>
<thead>
<tr>
<th>Path</th>
<th>Path Coef.</th>
<th>t statistics</th>
<th>P values</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>EK -&gt; MM</td>
<td>0.132</td>
<td>1.902</td>
<td>0.029</td>
<td>H1 accepted</td>
</tr>
<tr>
<td>EK*Gender -&gt; MM</td>
<td>0.065</td>
<td>0.896</td>
<td>0.185</td>
<td>H2 rejected</td>
</tr>
<tr>
<td>EK*Age -&gt; MM</td>
<td>-0.010</td>
<td>0.112</td>
<td>0.456</td>
<td>H3 rejected</td>
</tr>
<tr>
<td>EU -&gt; MM</td>
<td>0.406</td>
<td>3.595</td>
<td>0.000</td>
<td>H4 accepted</td>
</tr>
<tr>
<td>EU*Gender -&gt; MM</td>
<td>0.186</td>
<td>1.795</td>
<td>0.037</td>
<td>H5 accepted</td>
</tr>
<tr>
<td>EU*Age -&gt; MM</td>
<td>0.297</td>
<td>2.185</td>
<td>0.015</td>
<td>H6 accepted</td>
</tr>
<tr>
<td>PS -&gt; MM</td>
<td>0.289</td>
<td>2.245</td>
<td>0.013</td>
<td>H7 accepted</td>
</tr>
<tr>
<td>PS*Gender -&gt; MM</td>
<td>-0.588</td>
<td>4.369</td>
<td>0.000</td>
<td>H8 accepted</td>
</tr>
<tr>
<td>PS*Age -&gt; MM</td>
<td>0.103</td>
<td>1.153</td>
<td>0.125</td>
<td>H9 rejected</td>
</tr>
<tr>
<td>KM -&gt; MM</td>
<td>0.208</td>
<td>1.689</td>
<td>2.245</td>
<td>H10 accepted</td>
</tr>
<tr>
<td>KM*Age -&gt; MM</td>
<td>-0.405</td>
<td>3.983</td>
<td>0.000</td>
<td>H11 accepted</td>
</tr>
<tr>
<td>MM -&gt; PP</td>
<td>0.729</td>
<td>13.177</td>
<td>0.000</td>
<td>H12 accepted</td>
</tr>
</tbody>
</table>

Source: Processed Data, 2021

Information:
EK: Performance expectations
EU: Business Expectations
PS: Social Influence
KM: Facilitating Condition
MM: Behavioral Intentions

The results of testing the first research hypothesis (H1) prove that performance expectations (EK) have a positive effect on interest in using (MM) SIRUPKU. Performance expectations measure
Adoption Model of Goods and Services Procurement Information System in Udayana University, I Gusti Ngurah Agung Suaryana, Naniek Noviar, dan I Gst Ayu Eka Damayanth

The results of descriptive analysis found that most of the respondents using SIRUPKU answered agree and strongly agreed on the statement that the use of SIRUPKU can increase productivity, be useful in carrying out work, and speed up time to carry out tasks. A good perception of the respondent's performance is followed by an interest in using SIRUPKU. The results of this study support the results of studies that found a positive effect of performance expectations on user interest, such as Venkatesh et al. (2003); Dwivedi, Rana, Jeyarad, Clement, and William (2019); Queiroz and Wamba (2019); Shaw and Sergueeva (2019); Tamilmani, Rana, Prakasam, and Dwivedi (2019); Chao (2019); Chopdar, Korfiatis, Sivakumar, and Lytras (2018); Okumus, Ali, Bilgihan, and Ozturk (2018); Gupta, Dogra, and George (2018); Alalwan, Dwivedi, and Rana (2017); Hoque and Sowar (2017); Briz-Ponce, Pereira, Carvalho, Juanes-Mendez, and García-Penalvo (2017). The application of the SIRUPKU application increases the user's perception of the expected performance to be obtained. The application of the SIRUPKU application makes it easier for users to create procurement packages and procurement documents. Several procurement documents that were previously created one by one, can be created simultaneously with the application. Users will be facilitated in the process of procuring goods and services because it reduces the work time of making documents, and errors in making documents for procuring goods and services directly, thereby increasing user interest in using the SIRUPKU application. It can be concluded, users rate the SIRUPKU application as providing additional value for performance in carrying out the task of procuring goods and services.

Test results The second hypothesis (H2) did not succeed in proving that gender moderated the positive effect of performance expectations on interest in using the SIRUPKU application. This study found no difference in the effect of performance expectations on interest in using applications for male and female users. The results of testing the third research hypothesis (H3) also failed to prove that age weakened the positive influence of performance expectations on interest in using SIRUPKU. These results do not support the results of Venkatesh et al. (2003). This shows that users who have a high perception of performance expectations will have a higher behavioral intention to use the SIRUPKU application in the procurement of goods and services. Regardless of the user's gender and age group, based on these results, the best way for university leaders to promote the use of the SIRUPKU application is through socialization to provide explanations to users about the performance that will be obtained after using the application.

The results of testing the fourth hypothesis (H4) succeeded in proving the positive influence of business expectations on interest in using the SIRUPKU application. Most users find the SIRUPKU application easy to use and easy to understand, so they are interested in using the application in the process of procuring goods and services. Based on the results of the interviews, users judged that the implementation of procurement regulations was very complicated and time-consuming. The existence of the application is very helpful in facilitating the implementation of the procurement of goods and services in accordance with applicable regulations. In addition, an attractive and simple appearance and interface will increase the user's perception of ease in applying SIRUPKU for the procurement of goods and services. The results of this study support previous studies, such as Venkatesh et al. (2003), Haque and Sorwar (2017), Alalwan et al. (2017), Chopdar et al. (2018), Chao (2019), El-Masri and Tarhini (2017), Rahman, Lesch, Horrey, Strawderman (2017), Baptista and Oliveira (2017).

The results of testing the fifth hypothesis (H5) succeeded in proving that gender moderated the positive effect of business expectations on interest in using the SIRUPKU application. The test results found that positive business expectations on interest in using the SIRUPKU application were stronger for the male gender than for the female gender. The results of this study support Venkatesh et al. (2003). The results of testing the sixth hypothesis (H6) prove that age strengthens the effect of
business expectations on interest in using the SiRUPKU application. The effect of business expectations on interest in using the system is getting stronger with the increasing age of system users. The results of this study contradict the results of research by Venkatesh et al. (2003). Age of users Most of them are in the age range of 31-40 years as much as 38.55%, followed by the age range of 21-39 years of 27.71%, the age range of 41-50 as much as 20.48%, and the age range of 51-60 years as much as 13.25%. Users with relatively older age have longer experience in work, especially procurement of goods and services. Longer experience will strengthen the effect of perceived ease of use on interest in using the system. Based on the research results, university leaders need to pay attention to gender and age groups in socialization and technical guidance, especially in explaining the ease that will be felt by users after using the SIRUPKU application. Information on convenience when technical guidance is more emphasized on older male users.

The results of testing the seventh hypothesis (H7) found that social influence had a positive effect on interest in using the SiRUPKU application. Social influence describes the support of leaders and co-workers on application users. Users assess the support of leaders and co-workers is very important in using the SiRUPKU application. The results of this study support Venkatesh, Morris, Davis, & Davis (2003) and Venkatesh & Davis (2000). The results of this study found that gender moderated the influence of social influences on interest in using the system (H8). The impact of social influence on interest in using the system is stronger for women than men. The results of this study indicate that social influence, in the form of leadership support and organizational support, is very important so that users are interested in using the system, especially female users. Support from superiors at faculties and universities is given in the form of directions in the form of having to use the system and support in the form of technical assistance, such as training, providing supporting facilities, and providing technical assistance if problems occur in running the system. The results of this study do not support the ninth hypothesis (H9) which suggests that age moderates social influence on interest in using the system. The results of this study did not support the research of Venkatesh, Morris, Davis, & Davis (2003). This study found no difference in the impact of social influence on interest in using the system.

The results of the study prove that facilitating conditions (KM) have a positive effect on interest in using the system (H10). The results of the study indicate the importance of preparing facilities, infrastructure and parts of information systems in increasing user interest in using the system. Provision of facilities and infrastructure, such as workplaces, personal computers, networks, internet, systems that are compatible with the SiRUPKU application. The part of the information system that provides technical assistance in case of system problems, such as damage to personal computers, networks, and information systems, is very important to increase the interest of system users. The effect of facilitating conditions on interest in using the system was found to be stronger in younger users (H11). This finding supports Venkatesh, Morris, Davis, & Davis (2003). The final hypothesis of this research is the interest in using the system has a positive effect on behavior using the system (H12). The test results provide empirical support for H12. These results support the research of Venkatesh, Morris, Davis, & Davis (2003).

IMPLICATION

The research results have practical implications, especially in the implementation of new mandatory applications by organizations. Some things that must be considered by organizational leaders in implementing mandatory applications. The SIRUPKU application proves to be valuable for
Adoption Model of Goods and Services Procurement Information System in Udayana University, 
I Gusti Ngurah Agung Suarayana, Naniek Noviar, dan I Gst Ayu Eka Damayanth
REFERENCES


Adoption Model of Goods and Services Procurement Information System in Udayana University, I Gusti Ngurah Agung Suaryana, Naniek Noviari, dan I Gnst Ayu Eka Damayanthi.


