TECHMIND RESEARCH
ISSN: 2292-1648

International Journal of Management Excellence
Volume 16 No.2 February 2021

The Role Of Innovation In An Android-Based Overtime-Tracking Application For Managing Human Resources

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Abstract: *In the field of Management Information Systems, the unified theory of acceptance and use of technology (UTAUT) explains the relationship between many variables and the acceptance of information technology. UTAUT has been applied to different subjects, cultures, and times and has undergone many developments, with many variables added to the original model. This study aimed to be part of the development of UTAUT by including 'innovativeness' as a moderating variable. This study took place in Perusahaan Daerah Air Minum (PDAM), a local drinking water company employed by the local government of Malang, a city in East Java, Indonesia. The research subjects were PDAM employees. Previous studies with the difference in outcomes through the situation was not significant to the three variables after the UTAUT innovativeness variable was included as the moderator stated that if there were more factors to be found, such as employee innovation attitude segmentation. This study investigated innovativeness as a moderating variable and found that the effect of some variables became statistically insignificant even though the effect of the moderated variable was significant.*

Keywords: *UTAUT; User Behavior; Innovativeness; Technology; Human Resources Management*

1. INTRODUCTION

Information Technology (IT) has become inseparable from modern life, especially since it now has a mobile platform. Social media and the businesses increasingly rely on IT, and it is a crucial part of many aspects of modern life from online shopping, education, entertainment (watching movies and listening to music), and transportation (ticketing), to ordering an everyday meal. Globally, this has urged many companies, including those in Indonesia, to invest more in IT development to support their operations. One of the many ways to invest in IT development is recruiting capable employees to increase support for the system. Amid the tight competition in customer service and product sales, every company strives to be a leading business. IT is one of the requirements for winning in such competition, and companies are eager to invest, especially in software development that eases and accelerates data and information processing.

Every company has its hours of operation, and this affects the working hours of its employees. There are also government regulations for employees, such as the Ministerial Degree Number 102 of 2004 concerning Work Hours, Overtime Work Hours, and Overtime Pay. Table 1 shows the application of this regulation by *Perusahaan Daerah Air Minum* (PDAM)[1] of Malang City.

Table 1. Regulation of Overtime Work Hours

Number of Working Days	Work Hours	
	Per Day	Per Week
6	7	40
5	8	40

Source: Ministerial Degree Number 102 of 2004

PDAM Kota Malang has a working day of eight hours, five days a week (Monday to Friday). However, some activities must be managed outside these work hours. The company has two ways to solve this problem: overtime and shifts. Companies with fewer employees tend to adopt the first solution as shifts are harder to manage. PDAM Kota Malang, nevertheless, uses both of these solutions.

We have previously studied innovativeness, but in this study, we combined innovativeness as a mediating variable with the Unified Theory of Acceptance and Use of Technology (UTAUT) to form a new model that allowed us to examine factors involved in and reactions toward the use of IT. In this study, the IT was a new Android-based overtime-tracking application. UTAUT has four variables, namely age, gender, experience, and volunteerism. The present study used innovativeness, which is related to these four original moderating variables, as a mediating variable and this allowed innovativeness to become the sole UTAUT variable. An Android-based application results in different reactions compared with computer-based applications. This study improves the understanding of IT acceptance in the government sector, and in particular, in Regional-owned Enterprises.

[1] Local water company owned by the local government

This study aims to increase understanding of administrative sciences in relation to IT acceptance and to provide insight into IT acceptance in overtime work hours. The research focused on two areas of study:

1. Examining the simultaneous effect of the variables performance expectancy, effort expectancy, social influence, and facilitating conditions on user behavior
2. Examining the simultaneous effect of the variables performance expectancy, effort expectancy, social influence, and facilitating conditions on user behavior when moderated by innovativeness

2. REVIEW OF RELATED LITERATURE

2.1 Unified Theory of Acceptance and Use of Technology (UTAUT)

The unified theory of acceptance and use of technology (UTAUT) is a technology acceptance model proposed by Venkatesh, Morris, and Davis (2003)[20] in their book "User Acceptance of Information Technology: Toward a Unified View." UTAUT aims to explain user intentions to use the information system and the potential user behavior (what to do next). This theory has four main constructs (1) *performance expectancy*, (2) *effort expectancy*, (3) *social influence*, and (4) *facilitating conditions.*

Performance expectancy, effort expectancy, and social influence are direct determinants of intention and user behavior while facilitating conditions is only a direct determinant of user behavior. Gender, age, experience, and volunteerism can be used to moderate the impact of the four main constructs on intention and user behavior. This theory was developed by combining the constructs of eight previous models of user behavior for IT. These eight models were the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), motivational models, the Theory of Planned Behavior (TPB), a combination of TAM and TPB, models of personal computer use, the Diffusion of Innovation Theory (DOI), and social cognitive theory (Venkatesh *et al*., 2003)[20].

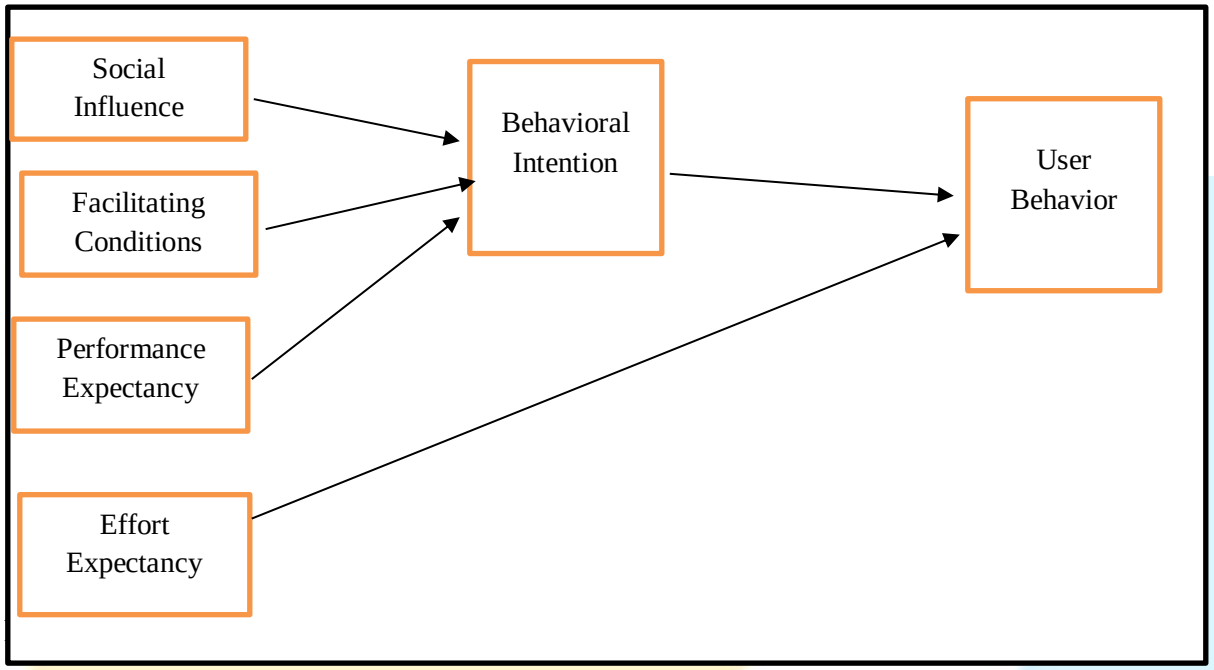
2.2 Integration of UTAUT and Innovativeness

There have been several studies of innovativeness from different perspectives. Rogers and Shoemaker (1971)[17] argued that innovativeness involves a person making a greater effort to do new things or implement new ideas than other people in that person's social group. This means that someone who has a high level of innovativeness is more creative in trying new things. However, Bass (1969) and Midgley and Dowling (1978) criticized this definition, noting that the theory ignored the social behavior and communication processes that characterize the diffusion of innovations. They added that innovativeness is an idea, practice, or object perceived as new by an individual or other unit when adopted, based on the individual's experience when communicating with others. Thus, a person with high innovativeness can accept new ideas and develop them based on their experience and interactions with other people (Rogers and Shoemaker, 1971)[17]. Furthermore, innovativeness involves social factors.

Other researchers have different views of the two levels of innovativeness (1) open-processing (general) innovativeness and (2) domain-specific innovativeness (Rogers and Shoemaker, 1971)[17]. In general, innovativeness is a tendency to change (Bandura, 1977)[3]. From this perspective, innovativeness is how individuals react when they face new sensations, experiences, communications, or products in their environment. In domain-specific innovativeness, individual innovation is specific (related to an area or behavior) rather than related to the individual's personality (Gatignon and Robertson, 1985)[7]. Although domain-specific innovativeness is related to open-processing innovativeness, it is more predictive of certain behaviors. Several researchers have supported this hypothesis, highlighting the relevance of domain-specific innovativeness as a determinant for adopting a new product or behavior.

Martin and Herrero (2012)[13] assumed that online booking of accommodation in rural areas is a form of innovative behavior affected by user innovation in the domain of IT. They investigated the literature on electronic commerce and found the dominance of innovativeness in the domain-specific level of innovativeness. Agarwal and Prasad (1998) [1]proposed that innovation in the field of IT is defined as a person's willingness to try new IT. Other researchers have found empirical evidence for the influence of user innovation in the information technology domain on product acquisition via the web, acquisition frequency (Goldsmith, 2000)[9], and future online purchase intentions (Park and Jun, 2003)[14].

The model in this study integrated the UTAUT variables of performance expectancy and behavioral intention with innovativeness. UTAUT has four main constructs that affect behavioral intention (1) performance expectancy, (2) effort expectancy, (3) social influence, and (4) facilitating conditions. There have been many studies on UTAUT, from testing UTAUT variables under different conditions, times, and places, to modifying the model by adding new variables. Martín and Herrero (2011) have used UTAUT as the theoretical basis for their research, but they have also included innovativeness in their research. This variable is important in considering a person's intention to accept IT and improves the prediction capabilities of the UTAUT model. The basic UTAUT model is shown in Figure 1.



(Source: Martín and Herrero, 2011)

The simultaneous effects of the independent variables in this research model can be classified in two ways, according to the method of analysis:

1. the simultaneous effect of performance expectancy, effort expectancy, social influence, and facilitating conditions on user behavior; and
2. the simultaneous effect of performance expectancy, effort expectancy, social influence, and facilitating conditions on user behavior when moderated by innovativeness.

3. RESEARCH METHOD

Data consisted of primary and secondary data. Primary data were collected from respondents directly using questionnaires. Secondary data concerned the existing conditions at the study site (PDAM Kota Malang).

The data collection methods employed were:

1. Observations

This method examines people in natural settings or in naturally occurring situations. Data are collected in the form of a description of the actions and overall interactions within the organization or the experiences of members in the organization. The benefit of this approach is that researchers can comprehensively understand the events and realities (Raco, 2010)[16].

2. Interviews

Intensive interviews with informants explore their perspectives on a particular idea, program, or situation. It also explores the experiences and expectations of the informants, such as their thoughts about the objectives, processes, and results of the research, and any changes they feel as a result of their involvement in the program (Boyce, 2006)[4].

3. Documentation

Documentation involves tracing historical data and complements the observation and interview methods. Documentation explores the archives, data sets, and collections of documents owned by the company and various kinds of literature that are considered relevant. The research instruments were:

a. interview guides;
b. notebooks and recording devices; and
c. the researcher

4. Questionnaires

Questionnaires contain questions for respondents to answer. In the present study, questionnaires were distributed to employees of PDAM Kota Malang.

Questionnaires come in two forms: (1) open-ended and (2) closed-ended questionnaires. Open-ended questions are defined as free-form survey questions that allows a respondent to answer based on their complete knowledge, feelings and understanding. This type of response is not limited to a set of options. A closed-ended survey question provides respondents with a fixed number of responses from which to choose an answer. A closed question is made up of a question stem and answers (the response alternatives). The present study used closed-ended questions in the questionnaires.

Polit and Hungler (1999) [15]defined a population as the totality of all subjects that conform to a set of specifications, comprising the entire group of people of interest to the researcher and to whom the research results

can be generalized. The population in this study was 353 employees of PDAM Kota Malang who:

a. had general understanding of IT;
b. understood the business processes related to their job;
c. used IT at work; and
d. had been working for more than one year.

A sample is a group of people, objects, or items taken from a larger population for measurement using a predefined selection method. A large population prevents researchers from studying the whole population due to limited time, energy, and funds, so a sample is used. Since samples are part of a larger population and the results of the study must represent the whole population, then samples must be chosen so that they are representative of the population.

4. METHODS OF ANALYSIS

Validity refers to how accurately an instrument measures something—in this present study, the instrument was the questionnaire. A validity test aims to check whether the items presented in a questionnaire illustrate what is being studied (Sunyoto, 2011)[19]. The present study used a confidence level of 90% or an alpha value of 0.10.

According to Arikunto (2003)[2], a test or research instrument is considered reliable if it produces consistent results when it is used more than once for the same objects at different times. Reliable instruments produce valid or trustworthy data that are reproducible.

This study used a semantic differential scale to determine a person's view of a construct or concept. Constructs or concepts can cover many areas, such as political issues, education, and schools.

A descriptive analysis describes the collected data without making general conclusions or generalizations (Sinambela, 2014)[18]. This analysis presents data in tables, graphs, and histograms and calculates the central value and distribution of data by calculating the percentage and mode of the collected data.

The term descriptive analysis is rather difficult to define because it involves various activities and processes (Kuncoro, 2012)[11]. Summarizing large amounts of raw data so that results can be interpreted is one form of the activity in a descriptive analysis. Another activity is grouping or separating the relevant components or parts of the overall data to make the data easy to manage. These forms of analysis attempt to describe consistent patterns in the data so that the results can be studied and interpreted in a concise and meaningful manner. All statistical analyses used SPSS version 25.

5. DATA COLLECTION AND ANALYSIS

5.1 Data Presentation

PDAM Kota Malang is a local drinking water company managed by the local government of Malang. It was founded under the name of *Waterleiding Verordening* in 1915 by the Dutch Colonial. The water comes from the springs in Karangan, an area that now belongs to Kabupaten Malang (Malang Regency). In 1928, a tapping system (*Brom Captering*) was used to transport water from these sources to reservoirs in Dinoyo and Betek using gravity-flow water-distribution systems. In 1935, the local government of Malang introduced a program to increase water discharge by 215 liters/second by utilizing the Binangun spring in Batu. This was necessary because of the rapidly growing population and the increasing need for clean water. On December 18, 1974, with the issuance of the Local Regulation Number 11 of 1974, the company changed its name to Perusahaan Daerah Air Minum (PDAM) and became a legal entity with autonomous rights to manage the drinking water of the region. PDAM Kota Malang has continued to improve its drinking water supply services by using various technologies, including IT.

The internet of things (IoT) now plays a pivotal role for PDAM Kota Malang because real-time data originating from water sources, reservoirs, and the main pipes are sent, via the internet, to the PDAM servers and processed with the Supervisory Control and Data Acquisition (SCADA) system so that operators can easily take the necessary actions. PDAM implements a comprehensive information system, including shortened administration processes, which result in faster services. Two-Day Service is a program to cut the administration process by utilizing IT. Customers can apply for a new connection and can enjoy clean water within two days of registering as a new subscriber—provided that there is a PDAM pipeline available in front of their house. *Tutupan Sementara* is a program to close customers' water meters due to arrears, and this also uses IT. Customers failing to pay their bill face having their water service connections closed temporarily. However, an officer visits them and explains the situation, and the customers are usually given the chance to pay the bill to the officer. They receive the receipt immediately because it is printed from Android equipment connected to the server in the main office in real-time.

In addition to daily operational data, data on human resources, such as employee overtime, must also be properly managed and accurately collected. Employee overtime data is collected using equipment provided by the company. Every employee doing overtime must be verified by their supervisor and must have a work order. The supervisor verification and the work order are produced by the equipment given to the employee so that everything is in a digital form. Employees who are doing overtime are also required to take a selfie while doing their job and to turn on the GPS to ensure that they are really in the place where they are supposed to be during their overtime hours.

The present study investigated the use of an Android-based application in managing overtime. Traditionally,

employees doing overtime simply wrote their names on an attendance list. This digital transformation aimed to accelerate the payment of overtime. Before the introduction of IT, the finance unit had to process the data on overtime pay manually. Now, data on employees doing overtime can be accessed easily and quickly, and employees receive accurate payments more quickly. IT is used to ease and accelerate the work, but there are both advantages and disadvantages to this system. This is understandable because everyone has different perceptions, different experiences of using applications, different levels of IT knowledge, different levels of innovativeness, and different social influences. The availability of equipment was also one of the factors in this study.

5.2 Descriptions of Respondents

A total of 78 questionnaires were distributed to the people in the sample. Tables 2 to 7 summarize the data collected from the questionnaires. The alphabet f symbolizes number of respondents, while F represents percentage.

Table 2. Age of Respondents

No	Age (Year)	f	F (%)
1	27–34	9	11.54
2	35–42	9	11.54
3	43–50	31	39.74
4	51–56	29	37.18
Total		78	100

(Source: Appendix 2)

Table 3. Gender of Respondents

No	Gender	f	f (%)
1	Male	61	78.21
2	Female	17	21.79
Total		78	100

(Source: Appendix 2)

Table 4. Educational level of Respondents

No	Education	f	f (%)
1	Senior High School	19	24.36
2	Diploma 3	1	1.28
3	Diploma 4	1	1.28
4	Strata 1 (Undergraduate)	52	66.67
5	Strata 2 (Postgraduate)	4	5.13
Total		78	100

(Source: Appendix 2)

Table 2 shows that most of the employees of PDAM Kota Malang were 43–56 years old, with much smaller numbers of employees aged 27–42 years old. The company had more male than female employees (Table 3), and most employees had graduated from Strata 1 or Senior High School (Table 4). The distribution of tenure was calculated using the Sturges formula:

k = 1 + 3.322 log n i = r/k, in which:

k = unit
n = number of data
i = interval
r = the difference between the largest and smallest values

Using n = 78, then k = 1 + 3.322 log 78 = 7.28, which was rounded up to 8. With 35 as the largest value and 2 as the smallest value then i = (35-2)/8 = 4.1, which was rounded down to 4 (see Table 5).

Table 5. Tenure of Respondents

No	Tenure (Year)	f	f (%)
1	2-10	9	11.54
2	11-18	12	15.38
3	19-27	48	61.54
4	27-36	9	11.54
Total		78	100

(Source: Appendix 2)

Table 6. Work Unit of Respondents

No	Unit	f	f (%)
1	Satuan Pengawasan Internal (Internal Control)	1	1.28
2	Pusat Penelitian dan Pengembangan (Research and Development)	1	1.28

3	Pusat Sistem Informasi Manajemen (Management Information System)	3	3.85
4	Keuangan (Finance)	4	5.13
5	Hubungan Pelanggan (Customer Service)	14	17.95
6	Umum (General)	7	8.97
7	SDM (Human Resource)	3	3.85
8	Pengadaan (Facility)	1	1.28
9	Perencanaan Teknik (Technical Planning)	4	5.13
10	Perawatan (Maintenance)	5	6.41
11	Jaringan Pipa Pelanggan (Pipeline Transport)	10	12.82
12	Produksi (Production)	11	14.10
13	Pengawasan Pekerjaan (Supervision)	5	6.41
14	Kehilangan Air (Leakage)	9	11.54
Total		78	100

(Source: Appendix 2)

The Customer Service Unit had the most respondents (14) and the most employees.

6. RESULT AND DISCUSSION

The regressions carried out were (1) performance expectancy (PE) on user behavior (UB), (2) effort expectancy (EE) on user behavior (UB), (3) social influence (SI) on user behavior (UB), and (4) facilitating conditions (FC) on user behavior (UB).

Regressions involving innovativeness (INNOV) as a moderator were also carried out (1) performance expectancy (PE) on user behavior (UB) moderated by innovativeness (INNOV), (2) effort expectancy (EE) on user behavior (UB) moderated by innovativeness (INNOV), (3) social influence (SI) on user behavior (UB) moderated by innovativeness (INNOV), and (4) facilitating conditions (FC) on user behavior (UB) moderated by innovativeness (INNOV).

The Simultaneous Effect of Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions on User Behavior

We first investigated the effect of the independent variables PE (X1), EE (X2), SI (X3), and FC (X4) on the dependent variable UB (Y). Table 7 shows that the p-values for all variables were smaller than 0.05, so the effect of each of these independent variables on UB was statistically significant.

Table 7. Results of Regression of X1, X2, X3, X4 on Y

No	Independent Variable	Bi	t-count	P	Note
1	Performance Expectancy (PE) (X1)	0.204	3.650	0.000	Significant
2	Effort Expectancy (EE) (X2)	0.297	5.273	0.000	Significant
3	Social Influence (SI) (X3)	0.313	5.173	0.000	Significant
4	Facilitating conditions (FC) (X4)	0.191	2.697	0.009	Significant
Y = User Behavior (UB) R^2 adjusted = 0.603 R adjusted = 0.790 F-count = 30.226 Significance = 0.000					

(Source: Appendix 3)

The Simultaneous Effect of Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions on User Behavior Mediated by Innovativeness

Next, we investigated the effect of PE (X1), EE (X2), SI (X3), FC (X4), and PE moderated by INNOV (X1Z) on the dependent variable UB (Y). Table 8 shows that only the p-value for the effect of FC was not statistically significant (p-value 0.545 > 0.05).

Table 8. Results of Regression of X1, X2, X3, X4, and X1Z on Y

No	Independent Variable	Bi	t-count	P	Note
1	Performance Expectancy (PE) (X1)	-0.426	-4.559	0.000	Significant
2	Effort Expectancy (EE) (X2)	0.165	3.602	0.001	Significant
3	Social Influence (SI) (X3)	0.173	3.523	0.001	Significant
4	Facilitating Conditions (FC) (X4)	0.035	0.608	0.545	Not Significant
5	Performance Expectancy (PE) x Innovativeness (INNOV) (X1Z)	0.025	7.550	0.000	Significant
Y = Use Behavior (UB)					

R^2 adjusted = 0.775
R adjusted = 0.889
F-count = 54.186
Significance = 0.000

(Source: Appendix 4)

When the effect of EE (X2) on UB (Y) moderated by INNOV (Z) was included in the regression analysis, Table 9 shows that only the p-value for the effect of PE was also not statistically significant (p-value 0.133 > 0.05).

Table 9. Results of Regression of X1, X2, X3, X4, and X2Z on Y

No	Independent Variable	Bi	t-count	P	Note
1	Performance Expectancy (PE) (X1)	0.071	1.521	0.133	Not Significant
2	Effort Expectancy (EE) (X2)	-0.307	-3.292	0.002	Significant
3	Social Influence (SI) (X3)	0.184	3.720	0.000	Significant
4	Facilitating Conditions (FC) (X4)	0.042	0.076	0.470	Not Significant
5	Effort Expectancy (EE) x Innovativeness (INNOV) (X2Z)	0.024	7.312	0.000	Significant

Y = Use Behavior (UB)
R^2 adjusted = 0.69
R adjusted = 0.886
F-count = 52.304
Significance = 0.000

(Source: Appendix 5)

When the effect of SI (X3) on UB (Y) moderated by INNOV (Z) was included in the regression analysis, Table 10 shows that only the p-value for FC was not statistically significant (p-value 0.400 > 0.05).

Table 50. Results of Regression of X1, X2, X3, X4, and X3Z on Y

No	Independent Variable	Bi	t-count	P	Note
1	Performance Expectancy (PE) (X1)	0.071	1.555	0.124	Not Significant
2	Effort Expectancy (EE) (X2)	0.175	3.870	0.002	Significant
3	Social Influence (SI) (X3)	-0.287	-3.150	0.002	Significant
4	Facilitating Conditions (FC) (X4)	0.048	0.847	0.400	Not Significant
5	Social Influence (SI) x Innovativeness (INNOV) (X3Z)	0.026	7.587	0.000	Significant

Y = Use Behavior (UB)
R^2 adjusted = 0.776
R adjusted = 0.889
F-count = 54.487
Significance = 0.000

(Source: Appendix 6)

When the effect of FC (X4) on UB (Y) moderated by INNOV (Z) was included in the regression analysis, Table 11 shows that only the p-value for PE was not statistically significant (p-value 0.212 > 0.05).

Table 11. Results of Regression of X1, X2, X3, X4, and X4Z on Y

No	Independent Variable	Bi	t-count	P	Note
1	Performance Expectancy (PE) (X1)	0.060	1.260	0.212	Not Significant
2	Effort Expectancy (EE) (X2)	0.160	3.369	0.001	Significant
3	Social Influence (SI) (X3)	0.173	3.430	0.001	Significant
4	Facilitating conditions (FC) (X4)	-0.467	-4.386	0.000	Not Significant
5	Social Influence (SI) x Innovativeness (INNOV) (X3Z)	0.029	7.192	0.000	Significant

Y = Use Behavior (UB)
R^2 adjusted = 0.766
R adjusted = 0.884
F-count = 51.385
Significance = 0.000

(Source: Appendix 7)

The Simultaneous Effect of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions on User behavior

We found that the effect of PE on UB was statistically significant, which was consistent with previous studies by Venkatesh *et al*. (2003)[20], who found that performance expectancy significantly affected behavioral intention, and by Calderón *et al*. (2017), who found that performance expectancy significantly affected user behavior. The present study examined the effect of performance expectancy on user behavior for an Android-based overtime-tracking application in PDAM Kota Malang, regulated in the Decree of the Board of Directors.

Using an Android-based application brought significant improvements in the performance of employees. The improvement resulted from accurate data for the extra hours worked by the employees (the time they started and finished), the duration, the location, and the payment they received. This data helped the finance unit to summarize the overtime report faster, so the employees received their overtime payment on time. This finding supported the study of Ghalandari (2012)[8], who found that an e-banking application had a significant effect on performance expectancy and provided a new experience for customers by making transactions easier. Chauhan and Jaiswal (2016)[6] reported that training on the use of software like ERP aimed to improve perceived performance.

The employees of PDAM Kota Malang had been waiting for a long time for software applications to accelerate overtime reporting and payments. Once implemented, the overtime reports became more accurate, especially calculating the extra hours worked by the employees, so payment was also accurate. This contributed to the whole process becoming clearer, such as the duration of overtime needed and the person in charge.

We also found that the effect of EE on UB was statistically significant. The employees preferred to use the Android-based application because it was simple and easy. This finding supported previous studies by Ghalandari (2012)[8], who reported that customers preferred an e-banking application because it was easy to use. Our finding was also consistent with the study of Chauhan and Jaiswal (2016)[6], who found that ease of use was the main factor to consider when using software like ERP and must become the first consideration in planning software training. Martin and Herrero (2012)[13] reported that the effect of effort expectancy on the purchasing intention of rural people was statistically significant. They found that the nature of the online shopping application led to both performance expectancy and effort expectancy having a bigger effect than social influence.

The employees of PDAM Kota Malang found the overtime-tracking application easy to use. They could socialize easily and quickly learned how to use the application. In their daily life, they had the experience of using other Android-based applications, such as Whatsapp, Instagram, online transportation, and online shopping.

In this study, we also found that the effect of SI on UB was statistically significant. This correlation between social influence and user behavior showed that the employees were influenced by other people's opinions when using the application. They interacted with other employees within the same unit and told each other their experiences of using the application, which affected their perception.

Based on observations and empirical data, it was concluded that the employees used the application after listening to the experiences of their colleagues who had used the application. This was consistent with the findings of Ghalandari (2012)[8] that social influence significantly affected the use of an e-banking application. However, our finding contradicts the study of Martin and Herrero (2012)[13], who reported that social influence had no significant effect on the online purchasing of rural people. Rural people still thought that using the internet would weaken the social bonds between them, and this affected the social influence and led to the low acceptance of new information technology. Carlsson *et al.* (2006) [5]stated that social influence had no significant effect on user behavior and behavioral intention.

Social influence also affected the way the employees of PDAM Kota Malang experienced the overtime-tracking application. The communication intensity between employees seemed to have a great influence on their experience of using the application. When an employee said something bad about the application, their views would circulate and lead to a negative review of the application, increasing the possibility of rejection of the application by employees. In contrast, a good review would lead to a positive perception of the application.

Our investigation of FC found that it significantly affected UB. This finding showed that the employees using the overtime-tracking application depended on the Android-based platform to run the application.

Ghalandari (2012)[8] reported that the effect of facilitation conditions on using an e-banking application was significant. The personal resources of an individual in using the application and the device was an absolute requirement. Users of the e-banking application found the application helpful as it provided information and data quickly. In contrast, Martin and Herrero (2012) [13]found that facilitating conditions had no significant influence on the online shopping of rural people. They found that using facilitating conditions as a variable may have had limitations due to the different backgrounds of the research subjects. They added that using the internet and the information it provided weakened the social bonds leading to people seeing the internet negatively.

The employees of PDAM Kota Malang did not work in rural areas as the company was located in an urban area. The facilities available in the company affected the way the employees worked, both in the office and in the field. At first, the employees felt uneasy about the obligation to use their personal Android-based device. To solve this problem, the company decided to provide the devices needed by the employees during the extra hours.

The Simultaneous Effect of Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions on User Behavior Moderated by Innovativeness

We found that PE had a significant effect on UB when moderated by INNOV. The addition of the variable PE x INNOV resulted in the effect of FC on UB becoming statistically insignificant. This meant that innovative employees became the driving force in using the overtime-tracking application since they expected that their performance would also increase after using the application. This finding was consistent with the study of Martin and Herrero (2012)[13]. They found that for innovative users, online shopping processes were expected to become a driving force in the growth of their purchasing intentions through websites.

The creativity and innovativeness of the employees of PDAM Kota Malang in using the application played a significant role in encouraging other employees to use the application so that performance improvements could take place. The employees adapted themselves to technological advancement. Their speed of adaption to the new technology depended largely on how often they used the application. Those innovative employees who had experience of other applications from their personal Android-based device might have been the cause of FC not being significant. Age may also have played a role in FC being insignificant since 37.18% of the employees were in the age range of 51–56 years old, and 39.74% were in the age range of 43–50 years old.

When we investigated the effect of EE on UB moderated by INNOV, we found that it was statistically significant. When the variable EE x INNOV was used, the effect of FC was statistically insignificant. This meant that the innovative employees became the driving force in using the overtime-tracking application since they expected that the application would make overtime-tracking easier and simpler. This was consistent with the finding by Martin and Herrero (2012)[13] that the innovativeness of users became the driving force for effort expectancy in the use of an application, and there was a need for segmentation based on the level of innovativeness in exploring the application. Segmentation was not part of the present study.

We found that innovative employees had been using the Android application on their personal device—they did not just wait for the company to provide them with the device they needed. The employees with high performance expectancy also had high effort expectancy—they simply expected that it would be easy to use the application for work. This situation led to the effects of facilitating conditions and performance expectancy becoming insignificant. The older age of most of the employees also played a part in functioning conditions becoming insignificant. Age also played a part in the effect of performance expectancy as most employees (61.57%) had a tenure of 19–27 years. These employees seemed to have been bored because they did not have a significant position in the company even though they had worked in the company for a long time.

We also found that SI had a statistically significant effect on UB when moderated by INNOV. The addition of the variable SI x INNOV resulted in the effect of PE on UB becoming insignificant. This finding showed that innovative employees had become a driving factor in using the overtime-tracking application—employees interacted with one another and influenced their colleagues. Martin and Herrero (2012)[13] proposed that user segmentation based on innovativeness is necessary when innovativeness does not automatically become a social influence for user behavior

We found that innovative employees had been using the application. Also, those with high levels of social interaction did not rely much on the performance expectancy of the application—for these employees, their colleagues' experience was the most important factor in using the application. This explained why FC and PE did not significantly affect UB. This situation was analogous to our earlier finding that FC did not automatically affect user behavior because most users were older, so they could not easily adapt to the application. For the younger employees, performance expectancy was not significant because they were already used to using Android-based applications in their daily life.

Finally, we found that FC had a significant effect on UB moderated by INNOV. The addition of the variable FC x INNOV resulted in the effect of PE on UB becoming insignificant. We found that innovative employees became the driving factor for the FC for the overtime-tracking application. This differed from the study by Martin and Herrero (2012), who reported that the innovativeness of users did not encourage FC for the use of an application and proposed that there was a need for segmentation based on the level of innovativeness.

Innovative employees had been using the application on their own Android device—they did not simply wait for the office to provide them with a device. Interestingly, when we moderated FC with innovativeness, performance expectancy had a stronger effect on user behavior. Innovativeness can be said to encourage better facilitating conditions such as the use of the overtime-tracking application. The employees having appropriate facilitating conditions and acting innovatively, did not think much about performance expectancy when using the overtime-

tracking application since they were used to using Android-based applications in their daily life. This explained why performance expectancy did not significantly affect user behavior. This was similar to how the FC did not automatically affect the user behavior of employees because most of them were older and could not easily adapt to using the application. These older employees seemed to have been bored because they did not have a significant position in the company even though they had been working in the company for a long time – in other words, they seemed to be simply waiting for retirement.

7. CONCLUSION

This study used UTAUT, and the results supported previous studies in different regions, such as by Ghalandari (2012)[8] in Saudi Arabia, Chauhan and Jaiswal (2016)[6] and Venkatesh *et al.* (2003)[20] in India. Although these studies took place in different regions and with different inputs, the output was the same.

As a moderating variable in UTAUT, innovativeness strengthened and encouraged dependent variables by independent variables. This study complements previous studies that did not find this effect, such as the study by Martin and Herrero (2012)[13].

Including innovativeness in UTAUT made some of the effects of some of the other independent variables insignificant. This difference in behavior was not found in previous studies as they did not include innovativeness as a research variable.

Source of Funding:
Faculty of Administrative Sciences of Brawijaya University, through the Non-Tax State Revenue Fund, in accordance with *Daftar Isian Pelaksanaan Anggaran (DIPA)* Brawijaya University Number: DIPA-023.17.2.677512/2020 and *Kontrak Penelitian Program Hibah Guru Besar dan Doktor* Year 2020 Number 3554/UN10.F03.06//PN/2020.

8. REFERENCES

[1] Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. Information Systems. Research, 9(2), 204-2015.
[2] Arikunto, S. (2010). Prosedur Penelitian Suatu Pendekatan Praktik. Jakarta: Rineka Cipta.
[3] Bandura, A. (1977). Social Learning Theory. New Jersey: Prentice-Hall, Inc.
[4] Boyce, C. (2006). Conducting an In-depth Interview. Watertown: Pathfinder International.
[5] Carlsson, C. (2006). Adoption of Mobile Devices/Services—Searching for Answers with the UTAUT. Proceedings of the 39th Annual Hawaii International Conference on System Sciences (HICSS'06), (pp. pp. 132a-132a). Hawai.
[6] Chauhan, S., & Jaiswal, M. (2016). Determinants of acceptance of ERP software training in business schools: Empirical investigation using the UTAUT model. The International Journal of Management Education., Vol. 14 (2016), pp. 248-262.
[7] Gatignon, H., & Robertson, T. S. (1985). A Proportional Inventory for New Diffusion Research. Journal of Consumer Research, 11(4), 849.
[8] Ghalandari, K. (2012). The Effect of Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating conditions on Acceptance of E-Banking Services in Iran: the Moderating Role of Age and Gender. Middle-East Journal of Scientific Research, Vol. 12 No. 6, pp. 801-807.
[9] Goldsmith, R. E. (2000). how innovativeness differentiates online buyers. Quarterly Journal of Electronic Commerce, 1(4), 323-333.
[10] KEPMEN. (2004). WAKTU KERJA LEMBUR DAN UPAH KERJA LEMBUR. No.102.
[11] Kuncoro, M. (2006). Strategi; Bagaimana Meraih Keunggulan Kompetitif. Jakarta: Erlangga.
[12] Malhotra, N. K. (2004). Marketing Research: An Applied Orientation.
[13] Martin, H., & Herrero, A. (2012). Influence of the user's psychological factors on the online purchase intention in rural tourism: integrating innovativeness to the UTAUT framework. Tourism Management, 33(4), 341-350.
[14] Park, C., & Jun, J. K. (2003). A cross-cultural comparison of online buying intention: the effects of internet usage, perceived risk, and innovativeness. International Marketing Review, 20(5), 534-553.
[15] Polit, D., & Hungler, B. (1999). Nursing Research: Principle and Method, 416-417.
[16] Raco, J. (2010). Metode Penelitian Kualitatif: Jenis, Karakteristik, dan Keunggulannya. Jakarta: PT. Grasindo, Gramedia, Kompas.
[17] Rogers, E. M., & Shoemaker, F. F. (1971). Communication of Innovation A Cross-Cultural Approach. 2nd Edition. New York: The Free Press.
[18] Sinambela, L. P. (2014). Metodologi Penelitian Kualitatif. Yogyakarta: Graha Ilmu.
[19] Sunyoto, D. (2011). Analisis Regresi dan Uji Hipotesis. Yogyakarta: MedPress.
[20] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly.