

Understanding Behavioral Intention in Implementation of the ICTs Based on UTAUT Model

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Abstract

Innovation on Information Communication and Technology (ICT) are not suddenly accepted and directly used by individuals in work and workplace, even some individuals refuse to work using adoption ICTs. Therefore this research needs to be done to reveal what factors influence this attitude. This article aims to analysis variables or factors such as performance expectancy (PE) as X1, effort expectancy (EE) as X2, social influence (SI) as X3 and facilitating condition (FC) as X4 that contribute to the behavioral intention (BI) as Y of individual in accepted or rejected innovation based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model perspective. The method was applied factor analysis. A technique of collecting data using the checklist of questionnaire instrument, with total the population of 85 people, then according to tables of Isaac and Michael obtained the sample of 68 respondents who came from the Government Employees in the Disdikpora Dharmasraya Regency. The data were analyzed with the software tools of the Statistical Package for the Social Sciences (SPSS) version 22. The data collection time starts from November to December 2018. We found that X1, X2, X3, and X4 have significant effects on user acceptance based on UTAUT model.

Keywords: UTAUT Model, Adoption, Factor Analysis

1. Introduction

Factors affecting the success of the application of Information and Communication Technology (ICT) innovation in an organization can be observed in one's behavior at work [1]. To be able to know the level of management awareness [2] from the adoption of ICT that has been carried out effectively or not, it needs a reliable evaluation tool (maturity) [3]. A person becomes the main attribute in the acceptance or rejection of innovation [4]. ICT is not suddenly acceptable and directly used by individuals in work and the workplace.

There have been many theories related to the rejection or acceptance of the use of innovations built on the various models developed. The first model is the Theory of Reasoned Action (TRA) [5]. The second theory is the Technology Acceptance Model (TAM) [6]. The third model is the Motivational Model (MM) [7]. The fourth model is the Theory of Planned Behavior (TPB) [8]. The fifth model is a combination of TAM and TPB [9]. The sixth model is Model of PC Utilization (MPCU) [10]. The seventh model is the Innovation Diffusion Theory (IDT) [11]. The eighth model is the Social Cognitive Theory (SCT) [12]. The last is the Unified Theory of Acceptance and Use

of Technology (UTAUT) model [13]. UTAUT model is the focus of this research and the main topic to the discussion in this study.

UTAUT is the first concept developed by Venkatesh and colleagues in 2003 based on 8 existing theories or models [14-15]. The basic concept of this model is built from three main factors namely (1) reactions that emerged from a person on the use of innovation, especially ICTs, (2) objectives for using ICTs and (3) the nature of using ICTs [16]. UTAUT 1 has the main factors of improving performance, effort, workplace environment, and condition of the facility will be able to influence the intention of behaving including one's age. Gender, length of service and willingness to use new technology, becomes a moderate variable that becomes the liaison between the free factor construction against the bound factor [17]. In the UTAUT 2, the model concept there are additional factors of motivation, return on investment and customs [18]. The analyze the implementation of innovation based on UTAUT model perspectives has been done and found various findings.

Therefore, based on the concept of the UTAUT model, this research is very important to prove the hypothesis according to Figure 1. The independent variables (X) to be disclosed are performance expectancy (PE) as X1, effort expectancy (EE) as X2, social influence (SI) as X3 and facilitating of conditions (FC) as X4. The dependent variable (Y) is the behavioral intention (BI) to reject or accept the use of adoption or innovation, especially ICTs.

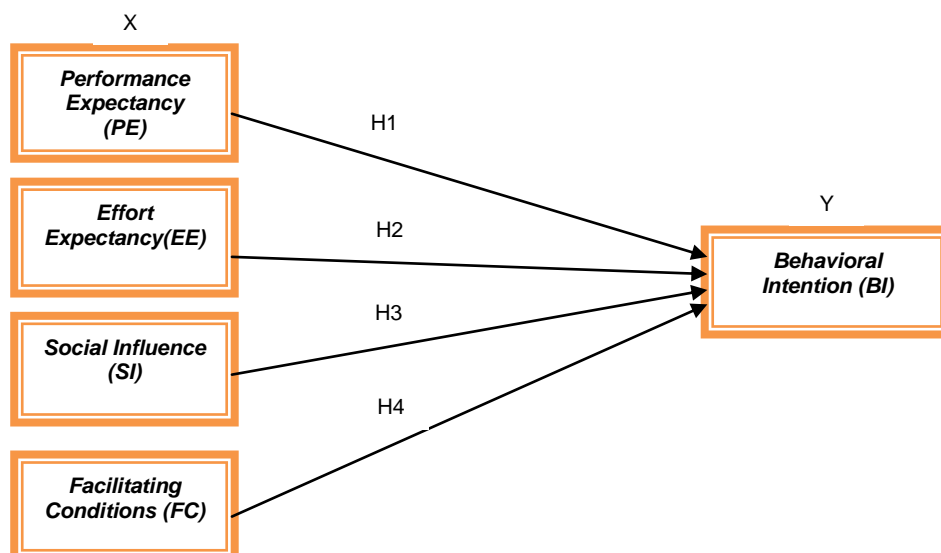


Figure 1. Study Model

The UTAUT model is the result of a synthesis of the theory or model of rejection or acceptance of the adoption of pre-existing ICT [19-20]. UTAUT is a new model that complements previous concepts that have more complete factors [21]. The original UTAUT consists of four major predictor constructions such as performance improvement, efforts, social environmental influences, and facility conditions, on one dependent variable that is the intention to behave in innovation especially computer-based technology [22]. What distinguishes between UTAUT 1 and UTAUT 2 is the factor motivation, investment, and work culture variables [23].

The concept of UTAUT has been proven to successfully reveal and explain up to 70% of variables that affect intentions that lead a person on behaving towards the rejection or acceptance of the use of information technology [24]. The UTAUT can be relied upon in explaining variables and factors in different places in different languages, cultures and developing countries [25]. Some research related UTAUT models that have been used and done in various countries [26-39].

According to [40], UTAUT can also be done with meta-analysis making it easier to apply in explaining invisible constructs to one's behavior on innovation. UTAUT is capable and very suitable to be used to get all the variables and factors that proved the most dominant of the

behavior of individuals both within and outside the organization both government, private and consumer behavior [41]. The study that has been done [42-46] does not include all intervening variables and or moderate variables with the opinion that the variables or factors do not so impact on the object and subject observation because it will tend to be the same results in time cross-section.

UTAUT as a concept, theory, and model has been widely accepted as the most modern basic concept today in various parts of the world to express user acceptance of an innovation, especially in ICT. UTAUT has been massively used in various fields of science, various fields of work and countries for research needs. So it can be said that UTAUT is the result of analysis, synthesis, and evaluation of a number of theories that exist on the concept and theory of acceptance of the use of an innovation which has four (4) independent variables are performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), and one (1) dependent variable is behavioral intention (BI).

The definition of BI according to [47] is the amount of individual intention to perform certain acts. A person's intention to do something will be observable from behavioral intention [48]. BI can be interpreted as a feeling driven by the desire to do something [49]. BI is a storefront of one's behavior and attitude toward his/her perspective on new things [50]. It is understandable that BI is the power of hidden things that can only be seen from the behavior of a person on doing work.

The PE is defined as the amount of expectation that using and utilizing innovation will be able to support a person to gain performance benefits. This is consistent with the PE is directly proportional to the improvement of an organization's performance [51]. According to [52] PE is the high expectation of someone to improve the existing working conditions by utilizing innovation. The idea [53] states that the improvement of performance is the effectiveness and efficiency that one does in working with innovation. It is understood that PE as a benefit to be gained by someone involves innovation while working.

The EE is defined as the ease of using something that the user indication will be happy to adapt to something new. EE is how much duration of time spent getting familiar with the new thing [54]. According to [55] that EE is not a rumor of the use of innovation, so will be able to give birth to confidence, which ultimately brings a sense of security and comfortable wearing it. From both opinions can be said EE is easy to use, not difficult, simple, foster self-confidence, and comfortable in using to something new such as an innovation.

The SI is defined as having reached the extent to which a person believes and be sure when the individual in his or her sphere can influence to be able to use innovation [56]. The SI is indicated by the support of leaders, co-workers and the workplace environment [57]. This suggests that individuals will have a strong desire to utilize innovations such as ICTs if they have the support of other individuals.

The FC according to [58] is the feeling of the perception of behavioral control that is directed towards individual beliefs toward the approved environmental factors of observations that have boundaries of the inner and outer self. While according to [59] FC is that the condition of the facility or the completeness of the facility is believed to be able to influence a person to refuse or accept using an innovation.

2. Research Methods

Type of this research conducted with a quantitative approach. The methods have been applied using factor analysis. Type of data collection is primary and secondary data. Primary data was obtained directly from the data subject and secondary data type was obtained from the literature review. A technique of collecting data using the checklist of questionnaire instrument, with the total population of 85 peoples, with proportional random sampling based on tables Isaac and Michael, obtained as many as 68 samples as respondents. The assessment of the questionnaire instrument was carried out by 5 experts invited as validators in the ongoing process of the Focus Group Discussion (FGD) activity. Object data comes from government employees working on Disdikpora Dharmasraya District. Data were analyzed with the help of software SPSS version 22. Data collection starts from November to December 2018.

The steps taken are a literature review, compiling and establishing indicators that will be used as measuring instruments in the form of statement items or questions that are inserted on the sheet of questionnaire instruments, collecting data, analyzing and displaying the results of the process. The instrument is given to three experts judgment as of the validator. Instruments are then repaired and ready to carry the spaciousness. After all the required data is collected, inserted to be processed with SPSS tools by testing the data normality, linearity, and multicollinearity. Then by clicking the analyze menu, proceed by choosing the regression button and then selecting the linear button. Input all exogenous (free) variables to be analyzed into independent boxes and endogenous variables into the dependent box. Click the button by selecting the enter technique and finally output is displayed that is the coefficient of regression, from the result of analyzing the correlation and the coefficient of the determinant. Figure 2 shows the steps in these studies.

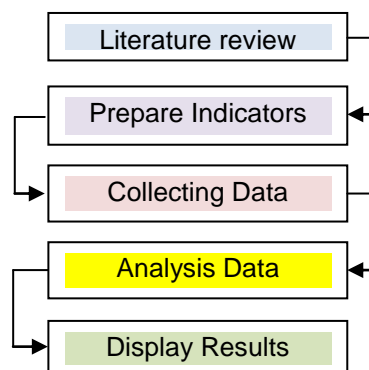


Figure 2. Methodology

3. Result and Discussion

3.1. Result

Before the data is analyzed by factor analysis method, the work to be done is the test of data normality. The normalization of the data applied by the Kolmogorov-Smirnov test technique at an error level of 95%. Data is said to be normal if the Cronbach alpha ($\alpha > 0,05$). The table of normality test as shown in table 1. Performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating of conditions (FC) as dependent variables.

Table 1. Test Normalization

One-Sample Kolmogorov-Smirnov Test					
N		PE	EE	SI	FC
Normal Parameters ^{a,b}	Mean	68	68	68	68
Most Extreme Differences	Std.Deviation	50,8971	32,4118	55,1618	32,8088
	Absolute	4,8994	3,73061	3,90793	2,15972
	Positive	,099	,103	,102	,097
	Negative	,099	,103	,102	,097
Test Statistic		-,081	-,060	-,054	-,094
Asymp. Sig. (2-tailed)		0,99	,103	,102	,097
		,098 ^c	,072 ^c	,075 ^c	,185 ^c

a. Test distribution is Normal.
 b. Calculated from data.

The linearity test is performed on two variables which are said to have linearity correlation using Test for Linearity (Analysis of Variance) technique with a significance error of 0.05. At least two factors will be said to be linearly related if the significance is less than 0.05 and the deviation from linearity is greater than 0.05 (> 0.05). We used the analysis of variance (ANOVA) approach

is able to explain how much difference in influence between one independent variable and the other independent variables and on the dependent variable in this study. F-test is used for discovering a ratio of the one group of variance or two variances influential. Degrees of freedom (df) is practiced to demonstrate indicate or to coefficient estimates hypothesis in a regression model for this study. Significance probability (Sig. / p-value) refuted that the null hypothesis is true in our sample, so that there is no correlation or no linear relationship between the independent variable and the dependent variable, if higher than or equal to Sig., we preserve the null hypothesis. The linearity test results are shown in Table 2.

Table 2. Test Linearity

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
BI * PE	Between Groups	(Combined)	388,452	20	19,423	1,313	,218
		Linearity	186,433	1	186,433	12,601	,001
		Deviation from Linearity	202,018	19	10,633	,719	,781
	Within Groups		695,357	47	14,795		
	Total		1083,809	67			
BI * EE	Between Groups	(Combined)	571,333	17	33,608	3,279	,001
		Linearity	338,363	1	338,363	33,013	,000
		Deviation from Linearity	232,970	16	14,561	1,421	,171
	Within Groups		512,476	50	10,250		
	Total		1083,809	67			
BI * SI	Between Groups	(Combined)	482,667	16	30,167	2,559	,006
		Linearity	250,182	1	250,182	21,225	,000
		Deviation from Linearity	232,485	15	15,499	1,315	,228
	Within Groups			601,142	51	11,787	
	Total						
BI * FC	Between Groups	(Combined)	288,582	10	28,858	28,858	,042
		Linearity	173,388	1	173,388	173,388	,001
		Deviation from Linearity	115,194	9	12,799	12,799	,517
	Within Groups			795,227	57	13,951	
	Total			1083,809	67		

The testing with multicollinearity techniques was performed to determine whether or not multicollinearity symptoms in all independent variables can be recognized from a large number of *Variance Inflation Factor* (VIF). The limit of the VIF is less than 10 and the *Tolerance* number must be greater than 0.1. Table 3 shows the multicollinearity test results.

Table 3. Test Multicollinearity

Independent Variable	Tolerance	VIF	Evidence
PE	,888	1,126	No multicollinearity
EE	,640	1,563	No multicollinearity
SI	,775	1,291	No multicollinearity
FC	,823	1,216	No multicollinearity

Based on the test results shown in table 3 above, it is known that all exogenous variables have VIF numbers smaller than 10 and *Tolerance* numbers greater than 0.1, so it can be said that the absence of multicollinearity among exogenous variables in this study. The hypothesis that has been formulated, tested with a statistical tool that is with a simple factor analysis method with a regression model. All hypothesis test results for coefficient values are shown by table 4 which expresses each variable contribution of PE to BI, EE to BI, SI to BI and FC to BI.

Table 4. Test of Coefficient Regression of Each Variable X to Y

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	30,039	4,701		6,390	,000
PE	,340	,092	,415	3,703	,000
(Constant)	27,843	3,590		7,755	,000
EE	,602	,110	,559	5,473	,000
(Constant)	28,003	4,372		6,405	,000
SI	,494	,111	,480	4,451	,000
(Constant)	22,930	6,908		3,319	,001
FC	,745	,210	,400	3,545	,001

a. Dependent Variable: BI

The test result of magnitude influence of each exogenous variable to the endogenous variable can be known by looking at the coefficient of determination, as shown in table 5.

Table 5. Test of Coefficient Determination of Each Variable X to Y

Model	Model Summary			
	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,415 ^a	,172	,159	3,68736
a. Predictors: (Constant), PE				
1	,559 ^a	,312	,302	3,36075
a. Predictors: (Constant), EE				
1	,480 ^a	,231	,219	3,55397
a. Predictors: (Constant), SI				
1	,400 ^a	,160	,147	3,71406
a. Predictors: (Constant), FC				

The result of hypothesis test which has been done by factor analysis method with simple regression technique can be disclosed that all exogenous variables such as PE, EE, SI, and FC together there is an influence of significance to endogen variable that is BI. These are consistent with some of the research findings conducted by other earlier researchers who also excluded moderate variables. Table 6 will show the results of the independent variables test that are X1, X2, X3 and X4 on the dependent variable (Y).

Table 6. Test Results Regression Coefficient X1, X2, X3, X4 to Y

Model	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	,087	7,067		,012	,990
PE	,248	,078	,302	3,159	,002
EE	,274	,121	,254	2,260	,027
SI	,256	,105	,249	2,434	,018
FC	,480	,185	,258	2,600	,012

a. Dependent Variable: BI

How big are all exogenous variables together in explaining endogenous variables, can be known from the coefficient of determination (R^2). The result of the test with the determination technique has revealed that there is a diversity of different numbers that influence from exogenous factors to endogenous variables. The value of R^2 can be expressed in table 7.

Table 7. Test Results Coefficient of Determination X1, X2, X3, X4 to Y

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,700 ^a	,490	,458	2,96222

a. Predictors: (Constant), PE, EE, SI, FC

Whether or not the multiple regression model is established, should be proven by testing the feasibility of the model using the F test. Table 8 shows the results of the F coefficient test.

Table 8. The Analysis of F Test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	530,998	4	132,750	15,129	,000 ^b
	Residual	552,811	63	8,775		
	Total	1083,809	67			

a. Dependent Variable: BI
 b. Predictors: (Constant), PE, EE, SI, FC

Based on table 8 above obtained that the number F count of 15.129 with a significant value of 0.000. This value is smaller than $\alpha = 0.05$. This indicates that the model or regression equation is made good or feasible to use. These means that there is a significant influence of factors PE, EE, SI, and FC to BI. The summary of the hypothetical test results from this study can be seen in table 9.

Table 9. Summary of Hypothesis Testing Results.

No	Hypothesis	Result
1	H1: there is significant influence between the variable of PE to BI	Accepted
2	H2: there is significant influence between the variable of EE to BI	Accepted
3	H3: there is significant influence between the variable of SI to BI	Accepted
4	H4: there is significant influence between the variable of FC to BI	Accepted

3.2. Discussion

Based on H1 can be explained that there is a significant influence between the PE against the BI with large t count of 3.703 on the significance of 0.000. This value is smaller than 0.05 ($p < 0.05$) which indicates its significance. The value of correlation (r) variable of PE (X1) to BI (Y) is 0,415. The value of this correlation is it the level of moderate relationship with the direction of a positive correlation. These means that the better the PE employees, the better the BI in using innovation. The magnitude of the effect of PE to BI is shown by the determinant coefficient of 17.2%. These illustrate that the variable of PE can explain the BI of 17.2%, while the rest is influenced by other variables outside the regression equation $Y = 30.039 + 0.340X1$.

The H2 can be explained that there is a significant influence between EE on BI with a significant number of 0.000. The p value $< 0,05$ indicates significant. The value of correlation (r) variable EE to BI is 0,559. This correlation value is it the level of moderate relationship with positive (r) relationship direction. This means that the better EE, than the better BI in the implementing of innovation. This illustrates that the EE variable can explain BI by 31.2%, while the rest can be perceived or influenced by other variables outside the regression equation. The regression equation obtained is $Y = 27.843 + 0.602X2$.

For the H3, there is significant influence between SI and BI with t value count is 4,451 has significant. The $p < 0.05$ have shown significant. The value of correlation (r) variable SI with BI is 0.480. This correlation value is the level of moderate relationship with positive (r) relationship direction. This means SI is good, then the better is also to BI in the implementation of innovation. The magnitude of the effect shown by the number R^2 is 23.1%. This illustrates that the SI variable can explain BI by 23.1%, while the rest is perceived or influenced by other variables outside the regression equation. The regression equation obtained is $Y = 28.003 + 0.494X3$.

The H4 explained that there is a significant influence between FC and BI in the implementation of innovation with a significance value of 0.001. This value is smaller than 0.05 ($p < 0.05$) which indicates significant. The value of correlation (r) of FC variable to BI is 0,400. The value of this correlation is the level of moderate relationship with the direction of a positive relationship because of the value of r positive. This means the better the FC, the better the BI in the implementation of innovation. The amount of influence indicated by the value of the determinant coefficient of 0.16. This illustrates that the FC variable can explain BI by 16%. This correlation and influence values are moderate to near-low, this suggests that there are other factors that have a > effect on BI beyond the regression equation. The regression equation obtained is $Y = 22,930 + 0,745 X4$.

The significance value of all exogenous variables together with the endogenous variables is smaller than alpha 0.05 which indicates a significant influence between PE, EE, SI, FC together with BI. The correlation value (r) of the independent variables together is 0.700. The coefficient of determination or R square is 0.490 which implies that the influence of variables of PE (X1), EE (X2), SI (X3), FC (X4) together to BI (Y) is 49% while the rest can be perceived to be influenced by other variables outside the regression equation. Analysis of regression model that aims to see the direction of the relationship of exogenous variables to endogenous variables in the research that is applied by looking at the value of the coefficient of Beta (B) of each variable. The constant value (a) is 0,087, coefficient B X1 equal to 0,248, coefficient B X2 equal to 0,274, coefficient B X3 equal to 0,256 and coefficient of B X4 equal to 0,480, so that obtained by equation of multiple regression model that is $Y = 0,087 + 0,248 X1 + 0,274 X2 + 0,256 X3 + 0,480 X4$. The results of this research indicate that the method with a simple linear regression is estimated to be able to explain the effect of an exogenous variable on endogenous variables, thus also can be concluded that the UTAUT model is acceptable and suitable for use in this study.

4. Conclusion

All exogenous variables have been shown to have a significant influence on endogen variables PE, EE, SI, and FC are explanatory factors of BI in the implementation of innovation, especially ICT in employees Disdikpora Dharmasraya Regency. The better the PE, EE, SI, and FC, the better the BI. In this research, the adopted UTAUT model has ruled out all the variables so as to

produce findings that are not the same as other studies that include all moderate variables such as age, gender, motivation, work culture, and the others. The instruments used as measuring instruments with different indicators are considered to also differentiate the final results of the study. Although this questionnaire has been declared valid by the expert and declared reliable, however, it can not be ruled out that the grain of statement or problem is not free from bias condition. Hopefully, this research model can be developed more deeply and expanded by adding other independent variables such as interpersonal and include intervening variables such as lifestyles so that new theories outweigh the popularity of the UTAUT model.

References

- [1] E. Triandini, A. Djunaidy, and D. Siahaan, "Factors Influencing E-Commerce Adoption by SMES Indonesia: A Conceptual Model," *Lontar Komputer Jurnal Ilmiah Teknologi Informasi*, vol. 4, no. 3, pp. 301–311, Dec. 2013.
- [2] I. K. A. Purnawan, "Pedoman Tata Kelola Teknologi Informasi Menggunakan IT Governance Design Frame Work (Cobit) Pada PT . X," vol. 6, no. 3, *Lontar Komputer Jurnal Ilmiah Teknologi Informasi*, pp. 200–205, Dec. 2015.
- [3] S. Hanief, "Audit TI untuk Menemukan Pola Best Practice Pengelolaan TI pada Perbankan (Studi Kasus PT. Bank Syariah Mandiri Cabang Denpasar)," *Lontar Komputer Journal Ilmiah Teknologi Informasi*, vol. 4, no. 2, pp. 324–335, Dec. 2013.
- [4] Krismadinata, Y. Arnovia, Syahril, and Yahfizham, "Kontribusi Ekspektasi Kinerja, Usaha, Faktor Sosial dan Fasilitas Terhadap Sikap Operator Sistem Informasi," *Jurnal Teknologi dan Sistem Informasi (TEKNOSI)*, vol. 4, no. 1, pp. 44–52, April 2018.
- [5] C. Hsu, Y. Chun-Po, H. Li-Ting, "Understanding Exchangers' Attitudes and Intentions to Engage in Internet Bartering Based on Social Exchange Theory (SET) and the Theory of Reasoned Action (TRA)," *International Journal of Business and Information*, vol. 12, no. 2, pp. 149-182, Jun. 2017.
- [6] M. I. Hamid, P. Hanapi, and N. Hussin, "Technology Trust for Government and Private Sector: Approach Technologies Acceptance Model (TAM)," *International Journal of Academic Research in Business and Social Sciences*, vol. 7, no. 12, pp. 783–790, 2017.
- [7] E. Enkel and K. Bader, "Why do experts contribute in cross-industry innovation? A structural model of motivational factors, intention and behavior," *R&D Management*, pp. 1–20, 2015.
- [8] I. Ajzen, "The Theory of Planned Behavior," *Organizational Behavior And Human Decision Processes*, vol. 50, pp.179-211, 1991.
- [9] M. T. Dishaw and D. M. Strong, "Extending the technology acceptance model with task - technology fit constructs", *Information & Management*, vol.36, pp.9–21, 1999.
- [10] B. R. L. Thompson, C. A. Higgins, and J. M. Howell, "Personal Computing: Toward a Conceptual Model of Utilization", *MIS Quarterly*, pp.125–143, March, 1991.
- [11] T. W. Valente and E. M. Rogers, "The Origins and Development of the Diffusion of Innovations Paradigm as an Example of Scientific Growth", *Science Communication*, vol. 16, no. 3, pp. 242-273, 1995.
- [12] M. F. Hawkins, "Self-Efficacy: A Predictor but not A Cause of Behavior", *Journal of Behavior Therapy & Experimental Psychiatry* vol. 23. no. 4, pp.251-256, 1992.
- [13] V. Venkatesh, J. Y. L. Thong, X. Xu, "Unified Theory of Acceptance and Use of Technology: A Synthesis and The Road Ahead," *Journal of the Association for Information Systems*, vol. 17, no. 5, pp. 328–376, 2016.
- [14] Y. Dwivedi, N. Rana, H. Chen, and M. Williams, "A Meta-analysis of the Unified Theory of Acceptance and Use of Technology (UTAUT)", *Springer, IFIP Advances in Information and Communication Technology, AICT- 366*, pp.155-170, 2011.
- [15] M. D. Williams, N.Rana, and Y. K. Dwivedi, "The unified theory of acceptance and use of technology (UTAUT): a literature review", *Journal of Enterprise Information Management*, vol. 28, no. 3, pp.443 - 488, 2015.
- [16] N. F. Ismail, M. H. Hasan, and E. E. Mustapha, "Technology Use, Emotional Connection and Their Relationship: A Literature Review", *Journal of Theoretical and Applied Information Technology*, vol. 96, no. 1, pp.127-139, 2018.
- [17] V. Venkatesh, M. G. Morris, G. B. Davis, and F. D.Davis, "User Acceptance of Information

- Technology: Toward a Unified View", *Management Information Systems*, vol. 27, no. 3, pp. 425–478, 2011.
- [18] B. Kaba and B. Toure, "Understanding Information and Communication Technology Behavioral Intention to Use: Applying the UTAUT Model to Social Networking Site Adoption by Young People in a Least Developed Country", *MIS Quarterly*, vol. 36, no. 1, pp.157–178, 2012.
- [19] M. Alshehri, S. Drew, and R. Alghamdi, "E-Government Services : Applying The UTAUT Model," *IADIS International Conference Theory and Practice in Modern Computing and Internet Applications and Research*, pp. 69–76, 2012.
- [20] M. Alshehri., et al, "The Effects of Website Quality on Adoption of E-Government Service : An Empirical Study Applying UTAUT Model Using SEM", *23rd Australasian Conference On Information Systems*, pp.1–13, 2012.
- [21] S. Attuquayefio, and H. Addo, "Review of Studies With UTAUT as Conceptual Framework", *European Scientific Journal*, vol. 10, no. 8, pp. 249–258, 2014.
- [22] S. Parameswaran, R. Kishore, and P. Li, "Information & Management Within-study measurement invariance of the UTAUT instrument: An assessment with user technology engagement variables", *Information & Management*, vol. 52, pp. 317–336, 2015.
- [23] M. K. F. Al-Sammarraie, A. K. Faieg and M. M. Rasheed, "The factors affecting sustainable of growing development by implementing UTAUT 2: a Case study of the worst country in using ICT in the world", *ResearchGate in Conference Paper*, pp.1-7, 2016.
- [24] R. K. J. Bendi and S. Andayani, "Analisis Perilaku Penggunaan Sistem Informasi Menggunakan Model UTAUT", *Seminar Nasional Teknologi Informasi & Komunikasi Terapan* (Semantik Semarang), pp. 277–282, 2013.
- [25] M. Peris., et al, "Acceptance of Professional Web 2.0 Platforms in Regional SME Networks: An Evaluation Based on the Unified Theory of Acceptance and Use of Technology", *46th Hawaii International Conference on System Sciences*, pp. 2793–2802, 2013.
- [26] V. Venkatesh, T. A. Sykes, and S. Venkatraman, "Understanding e-Government portal use in rural India: role of demographic and personality characteristics", *Information Systems Journal*, vol. 24, pp. 249–269, 2013.
- [27] V. Venkatesh and X. Zhang, "Unified Theory of Acceptance and Use of Technology: US Vs China", *Journal of Global Information Technology Management*, vol. 13, no. 1, pp. 5-27, 2010.
- [28] E. A. Abu-shanab, "Telematics and Informatics E-government familiarity influence on Jordanians' perceptions", *Telematics and Informatics*, vol. 34, pp.103–113, 2017.
- [29] B. Kaba and B. Touré, "Understanding Information and Communication Technology Behavioral Intention to Use: Applying the UTAUT Model to Social Networking Site Adoption by Young People in a Least Developed Country," *Journal of The Association for Information Science and Technology*, vol. 65, no. 8, pp. 1662–1674, 2014.
- [30] A. Alharbi and P. I. Hawryszkiewicz, "The Influence of Trust and subjective Norms on Citizens' Intentions to Engage in E-participation on E-government Websites", *Australasian Conference on Information Systems, Adelaide*, pp.1–12, 2015.
- [31] O. Al-hujran., et al, "Computers in Human Behavior The imperative of influencing citizen attitude toward e-government adoption and use," *Computers in Human Behavior*, vol. 53, pp. 189–203, 2015.
- [32] L. Alzahrani, W. Al-karaghoul, and V. Weerakkody, "Analysing the critical factors in fluencing trust in e-government adoption from citizens' perspective: A systematic review and a conceptual framework", *International Business Review*, pp.1-12, 2016.
- [33] F. Amagoh, "Determinants of e-government diffusion in Nigeria: An examination of theoretical models", *Information Development*, pp.1-18, 2015.
- [34] E. Hartati, "Analisis Faktor – faktor Yang Berpengaruh Terhadap Efektivitas Penerapan E-Government Dengan Menggunakan Metode UTAUT (Unified Theory Of Accepted Use Of Technology) di Kota Palembang", *Seminar Nasional Teknologi Informasi dan Multimedia, STMIK AMIKOM Yogyakarta*, pp.7–12, 2013.
- [35] K. J. Bwalya and S. Mutula, "A conceptual framework for e-government development in resource-constrained countries: The case of Zambia", *Information Development*, pp.1-16, 2015.
- [36] F. Ojaide., and B. OnyejiakaAgochukwu, "The effect of effort expectancy on computer-

- assisted audit techniques usage by external auditors in Nigeria”, *IJMSR*, vol. 3. no, 1, pp. 193–204, 2014.
- [37] M. Dahi and Z. Ezziane, “Measuring e-government adoption in Abu Dhabi with technology acceptance model (TAM)”, *International Journal of Electronic Governance*, vol. 7, no. 3, pp. 206–231, 2015.
- [38] R. Hussein., et al, “G2C Acceptance in Malaysia: Trust, Perceived Risk, and Political Efficacy”, pp.165–174, 2007.
- [39] I. K. Mensah, “Citizens’ Readiness to Adopt and Use E-government Services in the City of Harbin, China,” *International Journal of Public Administration*, vol. 41, no. 1, pp. 1–11, 2017.
- [40] N. P. Rana, Y. K. Dwivedi, and M. D. Williams, “A meta-analysis of existing research on citizen adoption of e-government”, *Information System Frontier*, pp. 1-17, 2013.
- [41] G. Putra and M. Ariyanti, “Modified Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2) Terhadap Niat Prospective Users Untuk Mengadopsi Home Digital Services PT. Telkom di Surabaya”, *Jurnal Manajemen Indonesia*, vol. 12, no. 4, pp. 59–76, 2013.
- [42] R. K. J. Bendi dan A. Aliyanto, “Analisis Pengaruh Perbedaan Gender pada Model UTAUT”, *Seminar Nasional Teknologi Informasi & Komunikasi Terapan (Semantik Semarang)*, pp. 228–234, 2014.
- [43] N. N. Ahmad., et al, “The Application of Unified Theory of Acceptance and Use of Technology (UTAUT) for Predicting the Usage of E-Zakat Online System”, *International Journal of Science and Research (IJSR)*, vol. 3, no. 4, pp. 63–67, 2014.
- [44] A. A. Taiwo and A. G. Downe, “The Theory of User Acceptance and Use of Technology (UTAUT): A Meta-Analytic Review of Empirical Findings”, *Journal of Theoretical and Applied Information Technology*, vol. 49, no. 1, pp. 48-58, 2013.
- [45] H. Kavandi and M. Westerlund, “Using Entrepreneurial Marketing to Foster Reseller Adoption of Smart Micro-Grid Technology”, *Technology Innovation Management Review*, vol. 5, no. 9, pp. 5–16, 2015.
- [46] M. Gagnon., et al, “Electronic health record acceptance by physicians: Testing an integrated theoretical model,” *Journal of Biomedical Informatics*, vol. 48, pp. 17–27, 2014.
- [47] L. Abdulwahab., et al, “A Conceptual Model of Unified Theory of Acceptance and Use of Technology (UTAUT) Modification with Management Effectiveness and Program Effectiveness in Context of Telecentre”, *African Scientist*, vol. 11, no. 4, pp. 267–275, 2010.
- [48] A. Zolait, “Determinants of Behavioral Intentions towards Using E-Government Services in the Kingdom of Bahrain Determinants of Behavioral Intentions towards Using E-Government Services in the Kingdom of Bahrain”, *International Journal of Computing and Digital Systems*, vol. 5, no. 4, pp. 345-355, 2016.
- [49] J-C. Oh and S-J. Yoon, “Predicting the use of online information services based on a modified UTAUT model”, *Behaviour & Information Technology*, vol. 33, no. 7, pp. 37–41, 2014.
- [50] J. J. Sondakh, “Behavioral Intention to Use E-Tax Service System : An Application of Technology Acceptance Model”, *European Research Studies Journal*, vol. XX, no. 2A, pp. 48–64, 2017.
- [51] K. Al-qeisi., et al, “How Viable Is the UTAUT Model in a Non-Western Context ?”, *International Business Research*, vol. 8, no. 2, pp. 204–219, 2015.
- [52] N. A. Diep., et al, “Predicting adult learners’ online participation: Effects of altruism, performance expectancy, and social capital,” *Computers & Education*, pp.1-35, 2016.
- [53] Y. K. Dwivedi., et al, “Re-examining the Unified Theory of Acceptance and Use of Technology (UTAUT): Towards a Revised Theoretical Model,” *Information System Frontier*. pp.1-16, 2017.
- [54] K. Ghalandari, “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, 2012.
- [55] M. Bellaj, I. Zekri, and M. Albugami, “The Continued Use of E-Learning System : An Empirical Investigation Using UTAUT Model at The University of Tabuk”, *Journal of Theoretical and Applied Information Technology*, vol. 72, no. 3, pp. 464–475, 2015.
- [56] S. A. Vannoy and P. Palvia, “The Social Influence Model of Technology Adoption”,

- Communications of The ACM*, vol. 53, no. 6, pp. 149–153, 2010.
- [57] R. Fischer, “Social influence and power”, *ResearchGate in A Psicologia Social Brasileira: Principais temas e vertentes*, pp. 1-35, 2015.
- [58] M. Workman, “Computers in Human Behavior New media and the changing face of information technology use: The importance of task pursuit, social influence, and experience,” *Computers in Human Behavior*, vol. 31, pp. 111–117, 2014.
- [59] P. C. Lai, “The Literature Review of Technology Adoption Models And Theories for The Novelty Technology”, *JISTEM-Journal of Information Systems and Technology Management*, vol. 14, no. 1, pp. 21–38, 2017.