

Interdisciplinary School of Management and Technology Institut Teknologi Sepuluh Nopember Received 21 Jan, 2023; Revised 4 Mar, 2023; Accepted 25 Mar, 2023 | DOI: 10.12962/j24609463.v9i1.953

Analysis of Retailer Secured Channel Technology Platform Acceptance Model Using The UTAUT-2 Method

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ABSTRACT

The national cement industry has experienced oversupply since 2017 coupled with the decline in national cement consumption during the pandemic, these conditions have made business competition in the cement sector increasingly stringent. PT XYZ is one of the companies that produce cement in Indonesia with a marketing and distribution network throughout the archipelago, 85% of the company's revenue is derived from the sale of cement products and the remaining 15% from non-cement products. During the Covid-19 pandemic, there was an increase in the penetration of online shopping for retail products and a change in people's behavior in transactions. The secured channel retailer technology platform built on a digital ecosystem at PT XYZ is expected to be able to increase the number of users and transactions that are still not optimally used by its customers, this has prompted the author to find out what factors influence the level of acceptance and use. In this study, the authors used the UTAUT 2 method by adding the Trust variable. Using the PLS-SEM and SmartPLS methods as data analysis software to test the research hypothesis using data samples from 184 respondents. The results of this study indicate that of the 11 hypotheses tested, 2 were rejected. The influence of Hedonic Motivation and Price Value on Behavioral Intention is not significant because, on the secured channel retailer technology platform, the retail products sold are basic materials, not an item that is a category of routine needs or needs for pleasure. The Trust variable (TR) has the greatest influence on Behavioral Intention (BI) at 62.5% and the Habit variable (HA) has the greatest influence on Use Behavior (UB) at 47.3%. Service providers need to focus on ensuring the security of users' data and learning new habits of users so that interest in using this technology increases.

KEYWORDS: retailer secured channel, PLS-SEM, trust, UTAUT2

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1. INTRODUCTION

The retailer-secured channel is an e-commerce platform developed by PT. XYZ is specifically for retail customers (building material stores) which are used as transaction media on communication channels that are protected by security protocols so that they can protect information transmitted via the internet. Users of this platform are limited to retailers affiliated with PT.XYZ's distribution channels. With this secured channel retailer technology platform, the exchange of data and transaction information does not stop between the company and the distributor but can reach the retailers. On this platform there are applications that have been integrated with ordering systems, stock-level information on distributors, transportation systems, and types of payments used. With this facility, retailers can easily track orders, estimate and guarantee the quality of products ordered from principals.

The cement industry in Indonesia has experienced oversupply since 2017 of 30 million tons and national cement consumption has continued to fall during the COVID-19 pandemic (Kemenperin: Terdampak Pandemi, Kemenperin Jaga Produksi Industri Semen Dan Pelumas, 2020). But on the other hand, there has been an increase in the use of e-commerce technology where consumers feel more comfortable transacting online compared to transacting conventionally (Ayu & Lahmi, 2020). The results of other studies also state that the penetration of online shopping on e-commerce platforms in Indonesia is strongly influenced by financial capabilities and access to the Internet (Ariansyah et al., 2021). Retail products including cement can be sold through e-Commerce (Laudon & Laudon, 2020). (Kemp, 2022) mentioned that in this country almost three-guarters of the total population are internet users and the number of connected mobile devices exceeds the existing population. This is the reason for this research related to the condition of the company PT. XYZ is increasing the utilization of e-commerce technology built by the company for retail consumers under the name of secured channel retailers. With the UTAUT2 approach and model, it is hoped that factors that can significantly influence the acceptance of secured channel retailer technology can be identified.

2. LITERATURE REVIEW

Technology acceptance theory is based on behavioral theory and focuses more on technology-based implementation through proven models, starting with the Theory of Reasoned Action (Fishbein & Azjen, 1975). Then develop again with the theory of the Technology Acceptance Model (TAM) (Davis et al., 1989); (Venkatesh & Davis, 2000) is a model used to explain and predict individual acceptance of technology or information systems and has become one of the most widely used frameworks in technology acceptance studies. This model has also inspired the development of more complex technology acceptance models, such as the UTAUT (Unified Theory of Acceptance and Use of Technology), which considers broader social, psychological, and contextual factors (Venkatesh et al., 2003). UTAUT2 was modified in 2012, expanding to cover more

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constructs. This additional variable is designed to broaden the scope of factors that influence technology acceptance and use (Venkatesh et al., 2012).

In several previous studies conducted on the acceptance of mobile banking technology in Lebanon and the UK, it was stated that the Trust variable was one of the variables that were significantly influenced by Behavioural Intention (Merhi et al., 2019). Another study on the adoption of mobile payment technology acceptance using UTAUT2 stated that the Trust variable is further divided into 4 (four) dimensions, the Trust variable that has the most significant influence on the overall trust variable is the mobile device used, merchants, and payment service providers (Lian & Li, 2021). (Merhi et al., 2019) examines the problem of the low level of adoption of mobile banking in Lebanon with the variable security, privacy, and trust. Other studies of this kind investigated the factors that influence consumers to adopt shopping on live e-commerce (Zhou et al., 2021)). (Alalwan et al., 2017) also conducted research related to mobile banking services in Jordan, using the UTAUT2 model and the additional Trust construct. Research conducted on m- payment users in Gulf countries (Alkhowaiter, 2020) using the meta-UTAUT framework with the construct of Trust and Islamic religiosity. Findings in other studies show that the intention to service in conducting transactions in Mobile-Commerce on mobile devices is significantly influenced by Hedonic Motivation and perceived value (Shaw & Sergueeva, 2019). Research conducted by (Dakduk et al., 2020) on low-income m-commerce users in Ecuador using the UTAUT2 model with the addition of trust and security constructs shows that facilitating conditions, hedonic motivation, habits, and perceived trust significantly and positively predict the intention to use m-commerce. Research conducted by (Owusu Kwateng et al., 2019) on users of mobile banking services in Ghana, found that Habit, Price Value, and Trust are the most dominant factors influencing the adoption and use of mobile banking services in that country.

3. METHODS

This study uses the UTAUT2 approach with the addition of the trust variable according to the research objectives. The research model used refers to the research model as shown in Figure 1. There are 10 main construct variables in this study including Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Hedonic Motivation (HM), Price Value (PV), Habit (HA), Behavioural Intention (BI), Use Behaviour (UB) and Trust (TR).

The data collection method was carried out by conducting an online survey of 184 users of the secured channel retailer technology platform at PT. XYZ. The distribution of the questionnaire began in the third week of June 2023 until the second week of July 2023. The questions on the questionnaire were in the form of structured questions with a choice of answers using a Likert scale. In this study, Scale 3 for Neutral answers was eliminated by modifying the Likert scale to avoid answers with Undecided categories or answers with multiple meanings (multi-interpretable) and answers with a tendency towards central effect or answers for respondents who were indecisive (Hadi, 1991).





4. RESULTS

Measurement Model Evaluation Results (Outer Model)

The initial stage of evaluation is the evaluation of the variable-level measurement model, namely assessing the goodness of the model and the causality between the variables and the measurement items. Table 1 presents the results of the outer loading measurement item test which suggests that all of these measurement items are valid for measuring research variables. All items are valid and can be used to explain or represent measurements of measurement variables.

Variable	Measurement Items	Outer Loading	Cronbach's Alpha	CR	AVE
	EE1 <- EE	0.766			
Effort Expectancy (EE)	EE2 <- EE	0.871	0.723	0.844	0.644
	EE3 <- EE	0.766			
Facilitating Conditions	FC1 <- FC	0.775			
	FC2 <- FC	0.802	0.693	0.830	0.620
(FC)	FC3 <- FC	0.785			
	HA1 <- HA	0.742		0.805	
Habit (HA)	HA2 <- HA	0.784	0.637		0.579
	HA3 <- HA	0.755			
Ladanic Mativation	HM1 <- HM	0.845			
	HM2 <- HM	0.819	0.755	0.859	0.671
	HM3 <- HM	0.792			
Deufermen	PE1 <- PE	0.719			
Ferrormance	PE2 <- PE	0.778	0.691	0.829	0.620
	PE3 <- PE	0.859			

TABLE 1. Outer Loading, Composite Reliability, and Average Variance Extracted

Variable	Measurement Items		Cronbach's Alpha	CR	AVE
	PV1 <- PV	0.768			
Price Value (PV)	PV2 <- PV	0.794	0.648	0.810	0.587
	PV3 <- PV	0.735			
	SI1 <- SI	0.758			
Cocial Influence (CI)	SI2 <- SI	0.792	0.624	0.800	0.572
Social Influence (SI)	SI3 <- SI	0.717			
	TR1 <- TR	0.821		0.848	
Trust (TR)	TR2 <- TR	0.881	0.740		0.652
	TR3 <- TR	0.711			
Behavioral Intention	BI1 <- BI	0.766			
(BI)	BI2 <- BI	0.801	0.710	0.838	0.633
	BI3 <- BI	0.819			
	UB1 <- UB	0.754			
Use Behavior (UB)	UB2 <- UB	0.801	0.716	0.841	0.638
	UB3 <- UB	0.839			

The results of the convergent reliability and validity tests indicated by the Cronbach's Alpha measure, and Composite Reliability stated that overall the measurement variables had a satisfactory level of reliability where the Cronbach's Alpha value was above 0.60 and the Composite Reliability was above 0.70 (reliable). These results confirm that the measurement instrument is reliable or reliable. The estimation results of the PLS model show that the AVE value of each variable is above 0.50 which indicates the level of convergent validity received. The Effort Expectancy (EE) variable has an AVE of 0.644, which means that the three variations of the measurement items EE1, EE2, and EE3 are contained in the Effort Expectancy (EE) variable of 64.4%, which means they have met good convergent validity. Overall, the AVE results confirm that the content of variation in each measurement variable is more than the minimum requirement for good convergent validity, which is above 50%.

	BI	EE	FC	HA	НМ	PE	PV	SI	TR	UB
Behavioral Intention (BI)										
Effort Expectancy (EE)	0.767									
Facilitating Conditions (FC)	0.726	0.487								
Habit (HA)	0.883	0.681	0.566							
Hedonic Motivation (HM)	0.738	0.608	0.566	0.736						
Performance Expectancy (PE)	0.610	0.463	0.356	0.411	0.548					

TABLE 2. HTMT (Heterotrait Monotrait Ratio)

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	BI	EE	FC	HA	HM	PE	PV	SI	TR	UB
Price Value (PV)	0.560	0.637	0.465	0.888	0.576	0.514				
Social Influence (SI)	0.820	0.730	0.686	0.715	0.527	0.457	0.577			
Trust (TR)	0.688	0.451	0.287	0.460	0.498	0.499	0.266	0.338		
Use Behavior (UB)	0.874	0.630	0.658	0.845	0.605	0.521	0.569	0.706	0.602	

Based on the results of the HTMT testing data processing recommended by (Hair et al., 2019) in Table 2, the discriminant validity value is reached. This can be seen from all HTMT values of pairs of variables less than 0.90. The variable divides the variation of measurement items against items that measure it more strongly than dividing the variance into other variable items. Discriminant validity with HTMT criteria is met.

Structural Model Evaluation Results

Based on the results of the processing of the VIF (Variance Inflated Factor) inner values in Table 3 that affect Behaviour Intention (BI) and variables that affect Use Behaviour are less than 5, and the multi-collinearity between variables is low (can be ignored). These results indicate that the resulting PLS parameter estimates are acceptable/unbiased.

TABLE 3. Inner VIF

	Behavioral Intention (BI)	Use Behavior (UB)
Behavioral Intention (BI)		1.817
Effort Expectancy (EE)	1.649	
Facilitating Conditions (FC)	1.399	1.370
Habit (HA)	1.950	1.571
Hedonic Motivation (HM)	1.711	
Performance Expectancy (PE)	1.366	
Price Value (PV)	1.674	
Social Influence (SI)	1.573	
Trust (TR)	1.314	1.817

Based on Table 4. of the 11 (eleven) hypotheses tested in this study, there were 9 (nine) hypotheses that were declared significant, namely H1, H2, H3, H6, H7, H8, H9, H10, and H11. The other 2 (two) hypotheses were declared insignificant, namely H4 and H5.

TABLE 4.	Hypothesis	Significance	Test	Value
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Hypothesis	Hypothesis Statement	Estimate	T Statistic	P Values	Description
H1	PE -> BI	0.111	2.263	0.024	Significant
H2	EE ->BI	0.167	3.048	0.002	Significant
H3	SI -> BI	0.165	2.600	0.010	Significant
H4	HM ->BI	0.098	1.659	0.098	Not significant
H5	PV -> BI	-0.075	1.101	0.272	Not significant
H6	TR -> BI	0.233	4.823	0.000	Significant
H7	FC -> BI	0.182	2.692	0.007	Significant
H8	HA -> BI	0.258	2.818	0.005	Significant

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H9	FC -> UB	0.164	2.367	0.018	Significant
H10	HA -> UB	0.292	3.685	0.000	Significant
H11	BI -> UB	0.368	4.960	0.000	Significant

The f-square measure is used to determine the effect of variables at the structural level. The following shown in Table 5 is the result of f square (f2) for the direct effect. The effect size f square for direct effect can be interpreted as low influence (f square = 0.02), medium effect (f square = 0.15), and high influence (f square = 0.35(Hair et al., 2021).

TABLE 5. Effect Size (f²) Test Value

Variable	Behavior Intention (BI)	Use Behavior (UB)
Performance Expectancy (PE)		1.817
Effort Expectancy (EE)	1.649	
Social Influence (SI)	1.399	1.370
Hedonic Motivation (HM)	1.950	1.571
Price Value (PV)	1.711	
Trust (TR)	1.366	
Facilitating Conditions (FC)	1.674	
Habit (HA)	1.573	
Behavioral Intention (BI)	1.314	1.817

The test results show that the variables that have the highest influence on Behavioural Intention (BI) are habit (HA) (r=0.258) and trust (TR) (r=0.233) and there are 2 (two) variables that are not significant, namely Hedonic Motivation (HM) and Price Value (PV). The variables that influence Use Behaviour (UB) are Facilitating Conditions (FC), Habit (HA), and Behavioural Intention (BI), the highest influence is on Behavioural Intention (BI) (r=0.368).

Overall Model Results

PLS is a variance-based SEM analysis with the aim of testing model theory that focuses on predictive studies. Therefore, several measures were developed to state that the proposed model is acceptable, such as R square, Q square, SRMR (Standardized Root Mean Square Residual), (Sarstedt et al., 2017), and PLS prediction (Hair et al., 2019).

The statistical measure R square describes the magnitude of the variation in the endogenous variables that can be explained by other exogenous/endogenous variables in the model. Based on the processing results shown in Table 6, it can be said that the magnitude of the influence of the variables in the model on Behavioural Intention (BI) is 62.5%, and on Use Behaviour (UB) is 47.3%.



FIGURE 2. Research Model (Outer Model and Path Coefficient)

The Q square statistical measure describes a measure of prediction accuracy, namely how well each change in exogenous/endogenous variables is able to predict endogenous variables. This measure is a form of validation in PLS to state the predictive relevance of the model. The value of q square above (zero) 0 indicates the model has predictive relevance. Based on the processing results in Table 6, it shows that the Q square variable Behavioural Intention (BI) and Use Behaviour (UB) values are (0.363 and 0.277) above 0 indicating that the model built has predictive relevance.

TABLE 6. R Square

Variable	R-square	Q Square	SRMR
Behavioral Intention (BI)	0,625	0,363	0.006
Use Behavior (UB)	0,473	0,277	0.066

SRMR is Standardized Root Mean Square Residual where according to (Yamin, 2021), SRMR is a measure of the fit model (fit model). this value is obtained from the difference between the data correlation matrix and the estimated model correlation matrix. In (Sarstedt et al., 2017), an SRMR value below 0.08 indicates a fit model. Nonetheless (Schermelleh-Engel et al., 2003) stated that the SRMR value of 0.08 – 0.10 is still an acceptable fit.

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	Variable	Model PLS		Model PLS Model LM		The difference between the PLS Model and the LM Model				
		RMSE	MAE	RMSE	MAE	RMSE	MAE			
	BI1	0,600	0,410	0,667	0,454	-0,067	-0,044			
	BI2	0,757	0,554	0,808	0,609	-0,051	-0,055			
	BI3	0,599	0,405	0,652	0,446	-0,053	-0,041			
	UB1	0,832	0,584	0,884	0,630	-0,052	-0,046			
	UB2	0,757	0,538	0,799	0,589	-0,042	-0,051			
	UB3	0,711	0,492	0,814	0,560	-0,103	-0,068			

TABLE 7. PLS Predict Test Value

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PLS predict complements the previously used R square as a prediction measure. PLS predict works as a form of validation of the PLS predictive power test (predictive power). To show that the PLS results have a good measure of predictive power, it is necessary to compare it with the basic model, namely the linear regression model (LM) because the linear regression algorithm also has the same goal as a predictive study, (Sarstedt et al., 2019). The PLS model is said to have high predictive power if the RMSE (Root mean squared error) or MAE (mean absolute error) size of the PLS model is lower than the linear regression model. The evaluation results in Table 7 show that all endogenous variable indicators (Behavioural Intention (BI) and Use Behaviour (UB)) of the PLS model have RMSE and MAE values lower than the LM model (linear regression) so the proposed PLS model has high predictive power.



FIGURE 3. Final Research Model

5. CONCLUSIONS

From the results of this study, it can be seen that the Trust Variable has the most significant influence on Behavioural Intention compared to Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, and Habit, this illustrates the level of user trust in secured channel retailer technology. Respondents feel confident and have confidence that the security of personal data that has been provided when registering or carrying out activities on this technology platform is guaranteed. Respondents also believe that when there are problems with the application, problems that arise can be resolved immediately.

From the results of this study, a model is obtained that can be applied in the context of receiving secure channel retailer technology platforms. The model produced through PLS-SEM analysis consists of Performance Expectancy, Effort Expectancy, Social Influence, Trust, Facilitating Condition, Habit, Behavioural Intention, and Use Behaviour. For the level of predictive power of the model in this study, it is still moderate, namely 62.5%.

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How to cite this article:

Wahyudin, A., & Suryani, E. (2023). Analysis Of Retailer Secured Channel Technology Platform Acceptance Model Using The Utaut2 Method. *Jurnal Teknobisnis*, *9*(1): 01-11. DOI: 10.12962/j24609463.v9i1.953