



## **Novice Investors Intention To Use XBRL With Age, Gender, And Experience As Moderating Variables**

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### **Abstract**

The purpose of this study was that novice investors could take the results of this study into consideration for using XBRL-based financial reports which were more flexible than ordinary financial reports. In this study, the behaviour of novice investors in using XBRL financial statements was tested by using the variable performance expectations and facility conditions from the Unified Theory of Acceptance and use of technology (UTAUT) model. The two variables were selected from UTAUT because it was stated that UTAUT was a technology acceptance testing model that was perfect than other technology acceptance models. The population in this study was millennials aged 19 to 28 years old, while the sample was 121. This study used a quantitative method whose data used purposive sampling and for collecting data using questionnaires. For statistical tools, we used WARP PLS for second-order testing and SPSS for the multiple regression. The research showed us that there was a tendency that performance expectations and facility conditions affected the intention of novice investors to use XBRL in processing required financial statement information.

### **How to Cite**

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## INTRODUCTION

In the new era of the global economy, the use of technology and the internet is increasingly widespread, so that various derivative products and other products that use computer technology and the internet continue to proliferate. One of the things that have progressed quite rapidly is the technique of presenting financial statements, which are now increasingly standardised and harmonised globally. One of the efforts is to implement XBRL (eXtensible Business Reporting Language) (Ernst & Young, 2010). XBRL is an application of the computer language XML eXtensible Markup Language, specifically defined for business financial reporting (Taylor, 2010). XBRL is an advanced technology and an extension to communicate corporate reporting in a structured manner in order to be understood and received across borders (Lilias & Rahman, 2015). In several countries whose accounting practices are based on the IASB (International Accounting Standard Board), XBRL is mandatory. Even if they are still voluntary, regulators in these countries have started to move to direct business actors listing on existing stock exchanges to start implementing XBRL. At the beginning of the formation of XBRL, the countries included in the list were still several countries, including Denmark, Japan, Singapore, South Korea, and the United States. Apart from these countries, there are also voluntary countries, namely Australia, Germany, and the Netherlands. XBRL can continue to proliferate since its introduction, because according to Arnold et al. (2012), XBRL will use a standardised marking system for quantitative and qualitative information.

XBRL can increase the reliability and efficiency of financial and non-financial reporting and make it easier for shareholders to extract all the information needed (Yoon et al., 2011). Yoon et al. (2011) also argued that XBRL can reduce the cost of capital and the asymmetry of information circulating in the capital market if it is right on target. Another thing about the data presented in the XBRL report is that it is easy to read by a computer, making it easier to process or analyse (Birt et al., 2017). XBRL also allows users to compare company performance based on time and enables better and more relevant decision making (Baldwin & Trinkle, 2011; Liu et al., 2014). Another advantage is that the transparency of financial

information can also be further improved by XBRL (Alles & Piechocki, 2012; Hodge et al., 2003).

All are special features in presenting financial statements with XBRL (Ernst & Young, 2010). There are several crucial obstacles in applying XBRL; among others, it can be hampered due to the nature of the productivity of information technology itself. Each new technology will take time to be applied effectively and various local constraints in each applicable country. The implementation of XBRL in Indonesia became mandatory in November 2015. Since then, the level of XBRL usage in Indonesia has continued to increase every year. According to [www.IDX.co.id](http://www.IDX.co.id), the rate of use of XBRL for the third quarter of 2019 financial reports reached 95%, compared to when it was first implemented in 2015. In February 2020, the Indonesia Stock Exchange (IDX) launched a new XBRL taxonomy. To replace the old Indonesian XBRL taxonomy, which was launched one year before XBRL became mandatory in Indonesia. IDX is very committed to implementing XBRL to provide complete services for all users of Indonesian financial reports. IDX started implementing XBRL in 2015 because IDX wanted to reach out to investors who were different from existing investors. The type of investor referred to here is a novice investor. Novice investors prefer to avoid risky behaviour or ordinary people who have not had much exposure to capital market knowledge but want to invest in an exchange.

In this study, the author wants to examine the behaviour of novice investors who were faced with presenting financial statements, hypothesising that the sample will get financial information labelled XBRL to make it more relevant, understandable, and comparable in its manufacture. Investment decisions compared to the traditional finance reporting format. The authenticity of this study is that the author tries to apply the Unified Theory of Acceptance and Use of Technology (UTAUT) model [Visvanath et al., 2003], which is adjusted to the main objective of this study which aims to examine the behaviour of novice investors (Birt et al., 2017).

eXtensible Business Reporting Language (XBRL) XBRL, according to Lai et al. (2015) is an international financial reporting code which is an XML (eXtensible Markup Language) application, which is used for financial and non-financial data; its purpose is to use various advanced needs analysis of financial reports. In 1998, Charles Hoffman, through

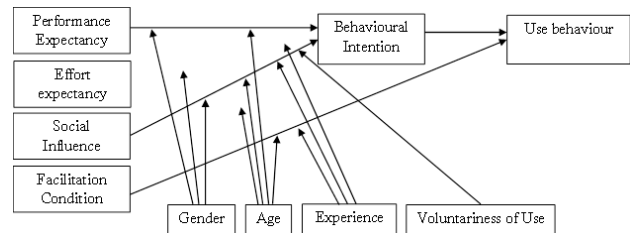
XBRL International, Inc., which was founded in 2000, introduced the XBRL concept. According to Cohen (2009), the main objective is to make financial reporting on a global standard, making it easier for all existing users. The XBRL reporting language is specially created to communicate business information between business people and various financial information users, such as analysts, investors, and regulators, by presenting a standard electronic format for business reporting. Things that can be explained about XBRL include: (1) XBRL is not a new accounting standard, and its application does not require changes to accounting standards that have been applied in a country. (2) XBRL will not change the reporting format that has been set (3) XBRL is not a chart of accounts and not a tool for translating account charts.

Unified Theory of Acceptance and Use of Technology (UTAUT) is an integrated technology acceptance model resulting from modelling developed by Venkatesh et al. (2003). UTAUT model combines several technological elements taken from several existing integrated technology acceptance theories. The theoretical theories that are used as the basis for development include the theory of reasoned action (TRA), the technology acceptance model (TAM), the motivation model (MM), the planned behaviour theory (TPB), the combination of TAM and TPB, the model of PC utilisation (MPTU), Innovation diffusion theory (IDT) and social cognitive theory (SCT).

According to Venkatesh et al. (2003), the UTAUT model has a higher chance of success than other technology acceptance theories because it can explain up to 70% of the variance of users. An essential finding of the UTAUT model in producing four constructs/dimensions can be used as significant direct determinants of behavioural intention or user behaviour in one or more of each model. These constructs/dimensions including 1. performance expectations, 2. business expectations, 3. social influence, 4. facilitation conditions. Apart from these four dimensions, the UTAUT model also has four variables that can be positioned as moderating variables: Gender, Age, volunteerism, and user experience.

For this study, not all dimensions in the UTAUT model were used. In particular, two (2) dimensions/constructs were used, namely Performance Expectancy (PE) and Social Influence

(SI). Only the two variables are used because the target population used is that most of them are younger peoples (Grech & Camilleri, 2017), so the things that are closest to the things that may be the most frequent issues or concerns are chosen. Meanwhile, the moderating variables used are attached to each dimension/construct, namely Gender, Age, and experience.



**Figure 1.** Original UTAUT

Source: Venkatesh et al. (2003)

According to Venkatesh et al. (2003), the UTAUT model has proven its validity to be used in communication and technology research to determine the readiness of individuals to use information technology/systems in various contexts. Based on the description above, 1. Individual Intention to Use Behavioral Technology individual intention is described using the TA model, that the use of a technology or system must be determined by the attitude of the user itself, which in turn will determine whether the design or technology is beneficial or easy to use or not (Davis & Davis, 1989). Normative pressure or subjective norms become influential because a person can be exposed to influences outside himself, such as other people or the environment (Venkatesh et al., 2003).

The UTAUT model explores how individuals accept and use technology in their environment, using four types of dimensions, namely individual performance expectations, business expectations, social influence, and facility conditions (Venkatesh et al., 2003). Based on the above arguments, the first hypothesis is formulated as an intention of novice investor behaviour affects the use of XBRL with Perf exp, Facility Condition, Effort expectancy, social influence as dimensions of Behavioral Intention. Performance Expectancy tries to explain how users believe technology will support users. According to Davis & Davis (1989), this construct is closely related to the benefits that might be felt due to extrinsic motivation. According to Venkatesh et al. (2003), the

relationship between user performance expectations and user intention to use technology will be moderated by Gender and Age. This variable can affect the technology adoption procession (Camilleri & Camilleri, 2019) therefore, the second and third hypotheses can be proposed: Performance expectations positively affect the behavioural intention of individual novice investors to use XBRL. Gender as moderator and Performance expectations positively affect the behavioural intention of individual novice investors to use XBRL. With age as a moderator. Facility condition is the extent to which a person believes that there is an organisational and technical infrastructure to support the use of the system (Venkatesh et al., 2003). Older people may face more difficulties using new technology (Grech & Camilleri, 2017). Gender, age, and experience are also important. Therefore, the following hypothesis is that the facility's condition has a positive effect on the use of XBRL with the moderating variable of age, and Facility conditions have a positive effect on the use of XBRL with experience as a moderating variable. Based on the description above, a research drawing can be made as follows:

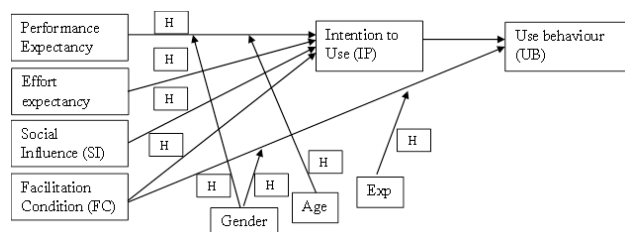


Figure 2. Hypothesis Chart

**METHOD**

This research was a quantitative research method, which is a study that emphasises its analysis on numerical data obtained by statistical methods and carries out by testing hypotheses. A significant relationship between the studied variables was obtained. Warp PLS statistical tools to determine the relationship between the dimensions of intention using xbrl and regression using SPSS to measure the moderation relationship. The population in this study were novice investors, namely investors who never knew about investment science and young enough. Using a purposive sampling technique, several requirements were set for entry into the classification

of novice investors. The sample used can be students or the general public. The research variables consisted of independent variables, moderating variables, and dependent variables. The data collection method was a questionnaire. A questionnaire was used to explore XBRL usage behaviour. This study used statistical analysis to answer research questions and test hypotheses by analysing and testing the empirical model and testing the research hypothesis using Structural Equation Modeling/SEM with the WarpPLS approach and multiple linear regression analysis for moderating variables. The primary consideration in using a structural analysis model was to explain the relationships and dependencies of the research variables. This model was developed as an alternative for situations where the theoretical basis for the model design was weak or had not been found. Some indicators did not meet the reflective measurement model, so they were formative. PLS is a powerful analytical method because it does not require many assumptions, and the sample size can be small or large. PLS can not only be used as a theoretical confirmation (hypothesis testing); it can also be used to build relationships that have no theoretical basis or to test propositions (Sholihin & Ratmono, 2013).

**RESULT AND DISCUSSION**

For H1 testing, using the Warp PLS 7.0 software. This relationship was a second-order construct relationship that sought to explain how the relationship existed between the intention of novice investors to use XBRL and the behaviour of using XBRL. So here, Social influences, effort expectancy, Facility Condition, and Performance Expectancy were the dimensions/constructs of the novice investor intention variables. SI, EE, FC, and PE were formed as reflective variables, while intent and use behaviour were used as formative variables. The test was carried out two (2) times. The first was to test the outer model, while the second was the inner model.

The results of measuring and reading the outer model or measurement model consisted of 2 things, namely, Construct validity, in which there was convergent validity and discriminant validity, and Construct reliability as measured by Cronbach A lpha and composite reliabilities. Further explanation of the two things above was as follows: convergent validity with the expected loading factor score was > 0.5 and

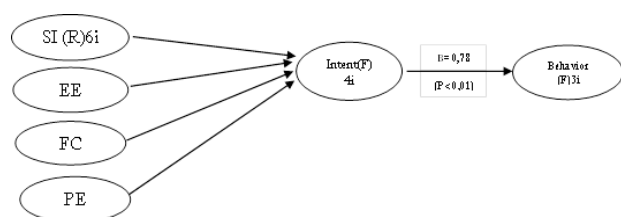
had a P-value <0.05. The variables PE, FC, EE, and SI, had fulfilled the two requirements. 3. Discriminant validity (Correlation among latent Variable AVEs) for reflective latent variables must be > 0.5; PE, EE, FC, SI scores were all more than the determined score, then it had fulfilled. 4. Reliability constructs. To be able to find construct reliability was to look at the value of Cronbach alpha (CA) and composite reliabilities (CR) with a score of > 0.70. The results for CR and CA for the four variables are in Table 1.

**Table 1.** The Result of Construct Reliability and Cronbach Alpha

	PE	EE	FC	SI
CR	0,954	0,928	0,805	0,927
CA	0,942	0,906	0,849	0,904

Source: Primary Data Processed, 2020

With the three points above fulfilled, then Performance Expectancy (PE), Effort expectancy (EE), Facility Condition (FC), and Social Influence (SI) had met the requirements to become REFLECTIVE variables. Furthermore, after measuring the outer model, what was measured next was the inner model called the structural model; this model was a continuation of the outer model, which clearly described the relationship between the intentions of novice investors to use XBRL to the behaviour of using XBRL with PE, FC, EE and SI as the second-order construct dimension of the novice investor intention variable to use XBRL. The resulting model image is as follows



**Figure 3.** The result of the second-order test on Warp PLS

Source: Primary Data Processed, 2020

Second-order construct model, SI, EE, FC, PE as variables that functioned as the dimension or factor from an intent variable which affected behaviour variable. The dashed line was a symbol of the second-

order relationship built from the intention variable in the relationship with the behaviour variable. From the picture above, the following readings can be generated. When viewed from the indicator weight, to be a variable that fulfilled the concept of formative construction, P values must be <0.05. As an illustration, the two variables, namely intent, and behaviour had different indicators for each variable. The intent variable had four indicators, namely LvPE, LvFC, LvEE, and LvSI. The four indicators had a P-value of P <0.001, which fulfilled accordingly because it was <0.05. Meanwhile, the behaviour variable had three indicators, namely UB1, UB2, UB3, where each indicator had a P Value of <0.001, COMPLETE because it was <0.05. The next one was the multicollinearity test. All indicators had ACCORDED to the requirements because the VIF value <10.

In order to answer the 1/H1 hypothesis, the results of the last reading were path coefficient analysis or relationship path coefficient analysis between the novice investor’s intention to use XBRL and the behavioural variables using XBRL. As a second-order construct model, the intention variable concerning its influence on user behaviour, intention variable had four (4) dimensions, namely Performance Expectancy (PE), Effort Expectancy (EE), Facility condition (FC), and Social influences (SI). The result of the path coefficient analysis had an effect of 0.779 and was significant and positive with a P-value <0.001.

This means that the first hypothesis was fulfilled. These results aligned with the results of research from Venkatesh et al. (2003) that UTAUT was the best technology acceptance model because of the combination of TAM and TPB. So, the proposed construct was a construct that was entirely appropriate to measure a new technology, whether it was easy to accept or not. H2, which reads: performance expectancy (PE) positively affects the behaviour intention of individual novice investors to use XBRL. With the Gender variable as moderating. The test results using SPSS were as follows. The adjusted R square value of multiple linear regression analysis of the relationship between PE and Intent was 0.610 or 61%, and PE significantly positively influenced the intention variable with a significance level of <0.05, meaning that H2 was met.

**Table 2.** Model Summary PE and Intention

Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783a	.613	1.7633

a. Predictors: (Constant), PE

Source: Primary Data Processed, 2020

While the regression test results with the existence of the variable Gender as a moderating variable, the following results were obtained with the adjusted R square value to 0.616 or 61.6%, which means that Gender was a moderating variable which strengthened the influence of the PE variable on the intention of professional investors using XBRL. Because it was greater than the adjusted R square PE of 0.610 or 61%. The above SPSS results proved that

according to the words (Davis & Davis, 1989), performance expectancy emphasised the motivational side; this new motivation was often associated with gender matters. This time the test was successful in showing this. Maybe if you wanted to clarify whether gender was included in the external or internal motivation, or other things might bring out which ones were internal or external motivations.

**Table 3.** Model Summary Gender as moderating variable between PE and Intention

Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	.789a	.622	1.7500

Predictors: (Constant), PG, PE

Source: Primary Data Processed, 2020

Hypothesis 3 that performance expectancy positively affected the behaviour intention of individual professional investors to use XBRL. With age as a moderator. After testing, the adjusted R Square value was 0.612 or 61.2%, which was greater

than the adjusted R Square Pe, which was 0.610 or 61%, which means that age in the third hypothesis as a moderating variable strengthened the relationship between PE and Intention. This means that H3 was fulfilled.

**Table 4.** Model Summary age as moderating variable between PE and Intention

Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786a	.618	1.7592

a. Predictors: (Constant), PU, PE

Source: Primary Data Processed, 2020

Based on the above test regarding the relationship between PE and age-moderated intention, this was in line with research by Camilleri & Camilleri (2019) that the age factor was very influential in various matters regarding accepting a technology. Because often, the biggest obstacle in implementing new technology was age. Although most of the respondents were also relatively young in this study,

this did not prevent the age problem in applying technology. H4: Facility condition (FC) positively affects the use of XBRL with Age as the moderating variable. From the test results using SPSS, the R Square value of the relationship between FC and User Behavior (UB) was 0.425 or 42.5%, and FC had a significant positive effect on UB because of the significance <0.05. This means that H4 was fulfilled.

**Table 5.** Model Summary FC to User Behavior

Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	.655a	.429	3.2152

a. Predictors: (Constant), FC

Source: Primary Data Processed, 2020

**Table 6.** Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	
	B	Std. Error	Beta	t
1(Constant)	5.494	1.373		4.001.000
FC	.621	.067	.655	9.305.000

a. Dependent Variable: UB

Source: Primary Data Processed, 2020

While the regression test results with the presence of the variable age as a moderating variable, the following results were obtained with the adjusted R square value to 0.424 or 42.4%, which means that age was a moderating variable which did not strengthen the influence of the FC variable on the UB variable using XBRL because it was smaller than adjusted R Square of the relationship between FC and UB which was 0.425 or 42.5%. This shows that the condition of

the facility was indeed very important for the application of new technology; this was in line with research by Venkatesh et al. (2003), and that age as a moderator was not reinforcing it showed that of all ages agreed, that good technological facility was needed. Moreover, a sophisticated facility was needed so that new technology could be applied smoothly.

**Table 7.** Model Summary age as moderating variable between FC and UB

Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	.658a.433	.424	3.2181

a. Predictors: (Constant), FU, FC

Source: Primary Data Processed, 2020

Hypothesis 5 that facility condition positively affected the use of XBRL with experience as a moderating variable. After testing, the adjusted R Square value was 0.450 or 45%, which was greater than the R Square FC, which was 0.425 or 42.5%, which means that the experience in the fifth hypothesis as a moderating variable strengthened the relationship between FC and UB. This means H5 was fulfilled. The

fulfilment of H5 showed that the results obtained were in line with the research of Grech & Camilleri (2017) that the existence of a promising technology facility was in line with the sufficient experience of its users so that when there was the application of new technology, it did not experience significant difficulties.

**Table 8.** Model Summary experience as moderating variable between FC and UB

Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	.678a.459	.450	2.0940

a. Predictors: (Constant), FExp, FC

Source: Primary Data Processed, 2020

## CONCLUSION

From the results and discussion above, it could be concluded that the use of Age, Gender, and experience as moderating variables had different effects according to each dimensional variable of intent used (PE and FC). If something was not fulfilled as a moderating variable but positively influential, some things may not be recorded and measured correctly.

To be more precise, for the variable performance expectation (PE), it turned out that the existence of the gender moderation variable strengthened its positive influence on the intention to use XBRL. This means that there were differences in performance preferences between men and women expected from the choice to use XBRL technology (Blankespoor et al., 2014). This can be used as further research to examine which expectations are higher among each Gender

specifically. The age difference also turned out to be a moderating variable that strengthened the positive relationship between performance expectations and intentions to use XBRL technology. The older it was assumed, the more experienced an individual was. Based on this experience, the intention to use XBRL would increase because an expectation of performance when using XBRL compared to conventional financial reporting models it will be much better when using XBRL. Facility condition (FC) variables with age and experience as moderating variables affected behaviour using XBRL technology (Baldwin & Trinkle, 2011).

The use of the age variable showed, although as a moderating variable in the relationship between FC and the user behaviour, the results were still positive; the results were not collaborating. This could be because regardless of age, it did not affect any excellent or bad facilities, but it was also not wholly unaffected. This requires further research, perhaps using more stringent parameters for a facility condition variable. Furthermore, with experience as a moderating variable, there was a positive and reinforcing relationship. That means a user's experience was significant, and it could be a facility with advanced technology (Efendi et al., 2014). However, inexperienced, there would be no effect compared to those with experience; it was more capable of maximising the condition of a facility by using XBRL technology.

Furthermore, this research implied that it was more convincing to novice users of financial reports that a digital-based financial reporting format offered flexibility in processing financial reports in the database, making it easier for novice investors to make investment decisions. Submission of social influences, performance expectations, facility conditions, and effort expectancy as the second-order construct of the intention of novice investors to use XBRL concerning user behaviour in using XBRL obtained positive and significant results (Harris et al., 2012). This means that the four variables were qualified and could be used as dimensions to measure the intention to use XBRL technology. Further research can use variables related to technology acceptance other than the UTAUT model.

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