Determinants of Investment Intention in Indonesian Capital Market Moderated by Investor Age

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ABSTRACT

This study was carried on to determine the effect of technology development, investment knowledge, and self-efficacy on investment interest with age as a moderating variable in West of Jakarta society who is interested in doing investment, especially in the capital market. This study has 100 respondents as a subject who are domiciled or staying in the West of Jakarta and has an interest in investing in the capital market. The purposive sampling method is used in this study. This study is using Partial Least Square (PLS) approach by using the SmartPLS application version 3.0 to analyze the data. The discovery of this study shows that technology development and self-efficacy influence investment interest, while investment knowledge does not influence investment interest. Then, age does not moderate the development of technology, investment knowledge, and self-efficacy on investment interest.

Keywords: Technology Development, Investment Knowledge, Self-Efficacy, Age, Investment Interest

1. RESEARCH INTRODUCTION

Investment is the activity of placing funds in an asset for a certain period. This doing is to aim increase in wealth or earning income. Investment has many varieties such as savings, gold, land, certificates, and other instruments. Each investment instrument has its advantages and risk that make it attractive to various investors. Instruments that can be an option in 2021 are stocks and bonds, which is because IHSG has had a positive trend since the beginning of the year.

According to Badan Pusat Statistik (BPS), the amount of investment realization in the country by economic sector increased from 2018 to 2020, wherein 2018 amounted to 328,404 million US$ and in 2020 amounted to 413,535 US$. Despite that, there are still many Indonesians who have not realized the benefits of investing. Although the increase in the number of investors from year to year has increased, if we look at the overall data, there's only 0,75% of Indonesians who have invested in the capital market [1].

Several factors can influence a person's investment interest. OJK said that there are still many people who do not want to make investments due to low levels of knowledge. The higher one's investment knowledge, the higher their investment interest [2]. Technology development nowadays can help people in carrying out daily activities. In investment especially, activities now everything is easier because it can be accessed through a smartphone [3] [4]. Self-confidence or self-efficacy that is owned by an individual can help oneself in doing something. The higher one's self-efficacy, the higher their investment interest [1].

As the next generation in Indonesia, it is expected that the community can take the Indonesian country in a better direction and can make more contributions. Investment activities in the future are not only looking for profits but also to help the country's economy in the long term.

From the background of the problems that have been explained, this study aims to test whether technological development, investment knowledge, and self-efficacy influence investment interest and whether age moderates technological development, investment knowledge, and self-efficacy on influencing investment interest.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Technology Development

Technology can be identified as the scientific method to achieve the practical goal, applied science, or the whole means of delivering the goods needed for the continuity of the means of delivering the goods needed for the survival and comfort of human life [5]. Martono in Ngafifi [6] said that technology promises to change, progress, convenience, and productivity. With technology development, the information contained in it appears which is then processed into information that is useful for humans.

2.2. Investment Knowledge

Knowledge according to Tandio and Widanaputra [7] is the result of oneself discovering about all things or all human actions to understand an object one faces, in another sense interest is the result of human effort to understand a particular object. According to Situmorang [8], investment knowledge is a fundamental knowledge of investing to know about investment objectives, investment risk, return on investment, risk and rate of return relationship, capital market instruments, and general knowledge of other capital markets investments. Basic knowledge about investing makes it easy for a person to make decisions about the investment steps to be taken.

2.3. Self-Efficacy

According to Omrod [9], self-efficacy is a person's belief that he can explain certain tasks or achieve the most specific goals. Feist and Feist [10] say that self-efficacy is acquired, enhanced, or diminished through one or a combination of four sources: the experience of mastering something, the experience of *vicarious*, social security, physical and emotional condition.

2.4. Age

Age is a unit that measures the presence of an object or creature, both living and dead. According to Elisabeth in Wawan and Dewi [11] age of individuals ranges from the moment of birth to one's birthday. Age can affect an individual's knowledge and the experience that such an individual has. The higher/older an individual's age, it will make the individual's confidence will be higher the person who is still young.

2.5. Investment Interest

According to Pajar and Pustikaningsih [12], the interest of an investment is the desire or desire of a person to learn everything related to investment up to the stage of the investment movement. This investment interest arises due to one's knowledge and information of the investment itself and capital markets which is continued with direct activities to gain experience about investing. This activity is based on curiosity and pleasure in learning about investing activities, but also accompanied by opportunities and risks contained in it [1].

2.6. The Effect of Technology Development on Investment Interest

Technology development plays an important role in an individual's interest in investing. In this modern era, thanks to the ease and efficiency of ways to invest, one's investment interest increases. Tandio and Widanaputra [7] in their research stated that along with the development of technology, online trading systems emerged. With this system, stock trading can be done online, where investors do not need to go to the exchange to make transactions. Furthermore, technology development has a positive and significant effect on investment interest [3]. Based on the description, the first hypothesis is (H1) is:

H1: Technology development has a positive and significant influence on investment interest.

2.7. The Effect of Investment Knowledge on Investment Interest

Investment knowledge is an important thing to have before someone does investment activities. The knowledge that must be known are the basic things about the investment itself, the return, and the risk obtained. Each investment instrument has its level of return and risk, therefore it takes an analysis of the return and risk generated by the investment instrument before someone makes an investment decision. Furthermore, investment knowledge has a positive and significant effect on investment interest [2] [13]. Based on the description, the second hypothesis is (H2) is:

H2: Investment knowledge has a positive and significant influence on investment interest.

2.8. The Effect of Self-Efficacy on Investment Interest

Everyone has a different self-efficacy with different situations and depends on different situations or circumstances such as other oneself's factors or emotions. Tandio and Widanaputra (2016) revealed that a prospective investor will invest if he has confidence in behaving, with that confidence, investors will find an efficient and effective way to achieve their desires/ interests. . Furthermore, self-efficacy has a positive and significant effect on investment interest [1] [14]. Based on the description, the third hypothesis is (H3) is:

H3: Self-efficacy has a positive and significant influence on investment interest.

2.9. The Effect of Technology Development on Investment Interest with Age as Moderating Variable

We've known technology for a long time and technology continues to evolve. Many studies have shown evidence of a link between the use of technology and age, where age has a role in the use of technology [15] [16]. The older the individual ages, the less knowledge, and experience they have in using technology products, which can influence their activities to access or search for information related to what they want to know including when the individual has an interest in investing [17]. There's no relevant research for age as a moderating variable, that is why researchers would like to research it, so the fourth hypothesis (H4) is:

H4: Technology development has a positive and significant influence on investment interest with age as moderating variable.

2.10. The Effect of Investment Knowledge on Investment Interest with Age as Moderating Variable

According to Notoatmodjo [18], age is a variable that is always considered in epidemiological studies, which is one of the things that affect knowledge. The more mature a person's age, the more knowledge, and experience he has, All the knowledge that the individual gets and has during his life will be a provision for the individual. Much-developed knowledge will increase the interest of the individual [19]. There's no relevant research for age as a moderating variable, that is why researchers would like to research it, so the fifth hypothesis (H5) is:

H5: Investment knowledge has a positive and significant influence on investment interest with age as moderating variable.

2.11. The Effect of Self-Efficacy on Investment Interest with Age as Moderating Variable

Self-efficacy may vary depending on the situation and conditions faced by the individual [10]. According to Notoatmodjo [18], age is a variable that is always considered in epidemiological studies

which is one of the things that affect knowledge. The more mature the age of the individual, the more knowledge and experience he has, as well as the level of self-efficacy that she has. Self-efficacy owned by the individual can help one in carrying out activities related to his investment interests. There's no relevant research for age as a moderating variable, that is why researchers would like to research it, so the sixth hypothesis (H6) is:

H6: Self-efficacy has a positive influence and is significant on investment interest with age as moderating variable.

3. RESEARCH METHODOLOGY

This is quantitative research with a causal research design. The reason this study uses this type of causal research is to figure out the direction of the relationship between one variable and another and measure the relationship strength of each variable. The population used is the entire community domiciled or living in the West Jakarta area that has an investment interest in the capital market. Non-probability sampling is used as the sampling method in this research. The sampling technique used is purposive sampling, because in this study there are people who are domiciled or live in West Jakarta and have an investment interest in the capital market as a research subject so that they have specific criteria. In this study, a sample of 100 individuals who had an investment interest in the capital market and were domiciled or lived in West Jakarta. The data type that is being used is primary data, where data will be obtained through questionnaires shared through online surveys with the help of Google Forms.

4. RESULT & DISCUSSIONS

The data analysis method of this study used the Partial Least Square-Structured Equation Modeling (PLS-SEM) approach using Smart PLS 3.3.3 software. Data analysis in PLS-SEM uses three-step testing namely the outer model (measurement models), inner model (structural models), and hypothesis testing. In addition, a total of 100 respondents participated in the study, of which 55% were women and 45% were men. The respondents at 17-25 years old had the highest rate of 60% while respondents at 56-65 years old had the lowest rate of 1%. This study also shows that all respondents are domiciled/ staying at Jakarta Barat (100%). After identifying the characteristics of each respondent, outer model analysis was performed to confirm whether each indicator in this study was valid and reliable. The validity test is run by two analyses, convergent validity, and discriminant validity. Convergent validity has a requirement with a loading factor of more than 0.7 and AVE more than 0.5. this study then analyzed the discriminant validity by examining the value of cross-loading and Fornell-Lacker. If the cross-loading value on the associated metric is greater than the other metric cross-loading of the indicator and greater than 0.6, it can be said valid. Fornell-Lacker is measured based on the AVE value of each configuration, which should be greater than the highest correlation with the other configurations. All feasibility tests for all measures in this study exceeded the minimum. After validation, reliability should be checked. This test is performed with overall confidence greater than 0.7 and Cronbach's alpha greater than 0.6. Table 1 shows that all measurements in this study met the measurement requirements described above. At the same time, we can say that all indicators are valid and reliable.

Then, inner model analysis. The value of the coefficient of determination (R^2) is 0.412, indicating that in this study, the proportion of all independent variables affecting investment interest was 41.2%, and the remaining 58.8% was affected by other variables (not in this study). Cross-validated redundancy (Q^2) in this study is 0.262 means that there is predictive relevance in the variables and the research model can be predicted well. From the F^2 analysis in this study, we can see each independent variable affects the dependent variable, the greatest effect as investment interest factor in this study is technology development, followed by self-efficacy, and the last investment knowledge. The goodness of Fit (GoF) analysis was conducted to see how suitable the outer model

and inner model are, the result is 0.653 which is indicating that the match between the outer model and inner model is big.

Path coefficient analysis was conducted to see the direction and the signification of each hypothesis. The minimum significant value on t-statistic is >1.96 and p-value <0.05. It can be seen in table 2 that technology development and self-efficacy have a positive and significant effect on investment interest, which means H1 and H3 are not rejected. Meanwhile, investment knowledge has a positive influence but not significant effect on investment interest, which means H2 is rejected. Also, age does not moderate the effect on technology development, investment knowledge, and self-efficacy on investment interest, which means H4, H5, and H6 are rejected.

Table 1 Measurement & Structural Model Assessment Results

Variable	Indicator	Loading Factor	AVE	Cronbach's Alpha	Composite Reliability	R^2	Q^2	F^2
Technology Development	PT1	0.935	0.782	0.905	0.935	-	-	0.131
	PT2	0.764						
	PT4	0.897						
	PT5	0.931						
Investment Knowledge	PI1	0.953	0.878	0.954	0.967	-	-	0.006
	PI2	0.923						
	PI4	0.927						
	PI5	0.946						
Self-Efficacy	ED1	0.875	0.686	0.846	0.897	-	-	0.125
	ED2	0.814						
	ED4	0.871						
	ED5	0.747						
Investment Interest	MI1	0.923	0.745	0.886	0.921	0.412	0.262	-
	MI2	0.834						
	MI3	0.892						
	MI5	0.799						
Age			1.000	1.000	1.000	-	-	-

Table 2 Patch Coefficient and Hypothesis Test Results

Hypothesis	Path Coefficient	t-statistics	p-values	Results
Technology Development → Investment Interest	0.335	3.280	0.001	Accepted
Investment Knowledge → Investment Interest	0.072	0.639	0.253	Not Accepted
Self-Efficacy → Investment Interest	0.348	3.016	0.003	Accepted
Moderating Effect Technology Development → Investment Interest	0.236	1.881	0.061	Not Accepted
Moderating Effect Investment Knowledge → Investment Interest	-0.015	0.118	0.906	Not Accepted
Moderating Effect Self-Efficacy → Investment Interest	-0.116	0.886	0.376	Not Accepted

The research showed that the first hypothesis (H1) is accepted. This discovery is accordant with previous research that verifies technology development has a positive and significant effect on investment interest [3]. This shows that the more developed technology or the more advanced a technology will increase one's investment interest in the capital market. The development of technology will facilitate the access of individuals in accessing the information they need related to the type of investment that is in demand.

The research showed that the second hypothesis (H2) is not accepted. This discovery is not accordant with previous research which cannot verify that investment knowledge does not affect investment interests [2] [13]. This shows that without the knowledge of investment as a provision in making investments, individuals can still have an investment interest and still make investments.

The research showed that the third hypothesis (H3) is accepted. This discovery is accordant with previous research which verifies that self-efficacy has a positive and significant effect on investment interest [1] [14]. This indicates that the bigger self-efficacy that the individual has, the higher the interest in the individual's investment. This also indicates that the confidence that individuals have influences investment interests that will encourage them to make transactions in the capital market in the future.

The research showed that the fourth hypothesis (H4) is not accepted. This discovery shows that age does not moderate technological developments with investment interests. This shows that no matter what age the individual has, as long as there is a desire from within the individual, the individual can still access technology to find information or make transactions related to their investment interests.

The research showed that the fifth hypothesis (H5) is not accepted. This discovery shows that age does not moderate investment knowledge with investment interests. This shows that no matter what age the individual has, as long as there is a desire from within the individual to get knowledge related to investments that are in demand, individuals can still get investment knowledge related to their investment interests.

The research showed that the sixth hypothesis (H6) is not accepted. This discovery shows that age does not moderate self-efficacy with investment interests. This shows that no matter what age the individual has can have a level of confidence or self-efficacy that can increase the investment interest they have. Self-efficacy owned by the individual is not adrift of age, but rather the efforts made by the individual to improve the efficacy of the self he has.

5. CONCULSIONS & IMPLICATIONS

Based on this research, it concludes that technology development and self-efficacy affect investment interest, investment knowledge does not have an effect on investment interest, and age does not moderate the effect of technology development, investment knowledge, and self-efficacy on investment interest. This study also helps to increase understanding of businesses/ organizations/ governments about the level of investment interest in the society. In this fast-changing world, it is important to keep up with the update of technology and learn to use them because all of our basic things and our activities are related to technology. Companies/organizations/governments can use the technology and its platform to increase society's knowings about investment and ensure that is a safe place for them to put their money on. Not only knowing but also an understanding and knowledge about the investment itself, as an example they can hold any webinar with a speaker in the investment field and build a platform for society to access information related to the investment. This doing will help society to know and to have more self-confidence in doing investment later on. This discovery in this study can also provide insight for people who are interested in doing some investment, especially in the capital market. They can search for more information related to the investment type they are interested in, gain more knowledge related to the investment, and grow more self-confidence on it, and not only doing it by fo-mo. They can find information on social media, or join an investment community with other people to have more information related to the investment.

6. LIMITATIONS & SUGGESTIONS FOR FUTURE RESEARCH

Comprehensive statistical data has been explained in this study, which allows further research to compare, distinguish, and study investment interest levels on society in various cities or countries. Future studies can use other variables that are not used in this study to add more diversity to the investment interest study and to know if other variables influence investment interest. Also, for future studies to use more age as moderating variable as in there is very minimum studies about age in moderating factor to influence investment interest out there. Companies / organizations / governments can share about investment more to the society and make more platform to get more knowledge and secure transaction place for investing.

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REFERENCES

[1] Y. A. Trisnatio, "Pengaruh Ekspektasi Return, Persepsi Terhadap Risiko, Dan Self Efficacy Terhadap Minat Investasi Saham Mahasiswa Fakultas Ekonomi Universitas Negeri Yogyakarta.," *Jornal Profita: Kajian Ilmu Akutansi,* vol. 6, no. 3, 2017.

[2] D. W. Atmaja and S. Widioatmodjo, "Pengaruh motivasi, persepsi risiko dan pengetahuan investasi terhadap minat berinvestasi di masa pandemi covid-19," *Jurnal Manajerial dan Kewirausahaan,* vol. 3, no. 3, pp. 641-648, 2021.

[3] T. O. Marawali, W. N. Yamani, Y. Z. Fauzi and R. Firmansyah, "Pengaruh Perkembangan Teknologi Terhadap Minat Investasi," *Prosiding National Seminar on Accounting, Finance, and Economics (NSAFE),* vol. 1, no. 8, pp. 9-18, 2021.

[4] S. Sukirno, Teori Pengantar Ekonomi Makro, Jakarta: In Jakarta, 2011.

[5] Kamus Besar Bahasa Indonesia.

[6] M. Ngafifi, "Kemajuan teknologi dan pola hidup manusia dalam perspektif sosial budaya," *Kemajuan Teknologi dan Pola Hidup Manusia...Muhamad Ngafifi33Jurnal Pembangunan Pendidikan: Fondasi danAplikas,* vol. 2, no. 1, pp. 33-47, 2014.

[7] T. Tandio and A. Widanaputra, "engaruh pelatihan pasar modal, return, persepsi risiko, gender, dan kemajuan teknologi pada minat investasi mahasiswa," *E-Jurnal Akuntansi Universitas Udayana,* vol. 16, no. 3, pp. 2316-2341, 2016.

[8] M. Situmorang, Andreas and R. Natariasari, "Pengaruh motivasi terhadap minat berinvestasi di pasar modal dengan pemahaman investasi dan usia sebagai variabel moderat," *JOM FEKON ,* vol. 1, no. 2, 2014.

[9] J. E. Omrod, Psikologi Pendidikan Membantu Siswa Tumbuh dan Berkembang, Jakarta: Erlangga, 2009.

[10] J. Feist and G. J. Feist, Teori kepribadian buku 2 edisi 7, Jakarta: Salemba Humanika, 2010.

[11] Wawan and Dewi, Teori dan Pengukuran Pengetahuan, Sikap dan Perilaku Manusia, Yogyakarta: Nuha Medika, 2010.

[12] R. C. Pajar and A. Pustikaningsih, "Pengaruh Motivasi Investasi Dan Pengetahuan Investasi Terhadap Minat Investasi Di Pasar Modal Pada Mahasiswa FE UNY," *Jurnal Profita: Kajian Ilmu Akuntansi,* vol. 5, no. 1, 2017.

[13] F. Cuandra, "The Analysis of Investment Interests of Millennial Generation in Batam City with Planned Behavior Theory," *Jurnal Ilmiah MEA (Manajemen, Ekonomi, & Akuntansi),* vol. 4, no. 3, pp. 1784-1809, 2020.

[14] M. C. Sondari and R. Sudarsono, "Using Theory of Planned Behavior in Predicting Intention to Invest: Case of Indonesia," *International Academic Research Journal of Business and Technology,* vol. 1, no. 2, pp. 137-141, 2015.

[15] K. Arning and M. Ziefle, "Different Perspectives on Technology Acceptance: The Role of Technology Type and Age," *A. Holzinger and K. Miesenberger (Eds.): USAB,* pp. 20-41, 2009.

[16] V. Venkantesh and M. G. Morris, "A. Holzinger and K. Miesenberger (Eds.): USAB 2009," *MIS Quarterly,* vol. 24, no. 1, pp. 115-139, 2000.

[17] R. Restyandito and E. Kurniawan, "emanfaatan teknologi oleh orang lanjut usia di Yogyakarta," *In Prosiding Seminar Nasional XII,* 2017.

[18] S. Notoatmodjo, Pendidikan dan Perilaku Kesehatan, Jakarta: Rineka Cipta, 2003.

[19] Dharmawati, S. Rahayu and S. Mahanal, "Pengembangan instrumen asesmen berpikir kritis untuk siswa SMP kelas VII pada materi interaksi makhluk hidup dengan lingkungan," *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan,* vol. 1, no. 8, pp. 1598-1606, 2016.