The Effect of Financial Literacy, Gender, and Students' Income on Investment Intention: The Case of Accounting Students

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Abstract— **Investment activities are essential to be developed among millennial generation, including college students. The development of *fintech* should be able to make students participate in investing activities in the stock market. However, a survey shows that there is a lack of traders from the younger generation. Therefore, this study investigated the investment intention among accounting students influenced by the variables of financial literacy, gender, and students' income. This study used a quantitative approach by distributing questionnaires and a financial literacy test. The sample was selected through the purposive random sampling technique with a sample size of 232 respondents. The data were analyzed by using multiple regression analysis. The results showed that financial literacy and student income had a positive and significant effect on students' investment intentions. However, gender had no significant effect. As a consequence, they can be used as references to develop other variables related to students' investment intentions.**

Keywords—investment intention; financial literacy; gender; students' income; accounting students.

I. INTRODUCTION

Investment is an activity of placing funds within a certain period to gain profit or investment value increase in the future [1]. For developing countries, investment is a must. Several benefits can be obtained through investment activity. Some among others are labor absorption, elevated produced outcome, foreign exchange saving or addition and other positive impacts. The increase of investment activity will trigger economic growth significantly. It will indeed be true as long as it is a healthy investment activity or profitable in terms of economic. The benefit of investment does not only apply to the country, but the benefit of investment is also for the community. Individual who has already had investment is an individual who is financially well literate or can be called as someone who is having a stable income. It means that the individual has performed proper financial planning that can anticipate financial insecurity in the future or the individual has prepared for their future financial issues [2].

One of the forms of investments that can be undertaken is an investment in the form of paper assets or the stock market. With the advance of financial technology (*fintech*) these days, it enables beginner investors to perform transactions in the stock market. With capital starting from Rp100.000,00, beginner investors can begin paper assets investment through online trading. This online trading facility facilitates investors to perform any transactions anywhere anytime utilizing any gadgets that have internet access. Moreover, investors can access financial statements, stock trends, read news, and assess return as well as the company's valuation utilizing this on-line trading system. In line with that statement, the government through Indonesia Stock Exchange (*PT Bursa Efek Indonesia /BEI)* has issued a program called "Let's Save in Stock or "*Yuk Nabung Saham*" since 2015 that provides the opportunity for the millennial generation to start looking at investment in the form of stocks. The program is a stimulus undertaken by the government to motivate the young generation to get to know stock market investment earlier. Therefore, later on, once they become adults, they are capable of becoming active investors and taking part in advancing the stock market in Indonesia.

According to the data from the Indonesia Stock Exchange, foreign investors still dominate the majority of stock ownership in the Indonesia stock market. It is undoubtedly an irony for Indonesian which vital sectors that affect Indonesian community life are majority dominated by foreign investors. In line with this phenomenon, financial literation and inclusion survey result conducted by Financial Service Authority (FSA) / *Otoritas Jasa Keuangan (OJK)* in 2016 showed that financial instrument in stock market had the lowest index compared to other financial instruments such as banking, insurance, retirement funding, and other funding institutions [3]. It showed a lack of knowledge in community inclusion in Indonesia towards investment in the stock market. In agreement with the survey above, students' comprehension of investment in the stock market is relatively low. That was also mentioned in several types of researches which showed that students' understanding of investment had the lowest average compared to understanding financial management, credit financing, and retirement fund [4,5]. The lack of understanding of investment makes students' interest in investing become low as well.

Students' interest in investing can be affected by several things, such as financial literacy, gender, and students' income. Financial literacy can be defined as a process in gaining knowledge and skills to manage finance. Financial literacy has two basic components, which are knowledge and attitude or behavior. Financial knowledge is a whole dimension from financial literacy, yet it cannot describe one's financial literacy level wholly. Financial literacy has an additional application dimension which implies that one has to have the ability and self-confidence to apply his financial knowledge to make the decision. There are several components that can measure one's financial literacy level, those are: (a) Understanding the concept of money (money basic) that includes understanding the concept of time value for money, understanding shopping/conducting expenses (purchasing power), and understanding personal financial management (personal financial accounting concept); (b) Understanding debt concept which covers understanding credit card usage, fees in performing loans in either short or long term; (c) Understanding investment, in putting aside present fund for future purpose, such as saving concept, investment in money market such as stocks, obligation, and mutual fund, including preparing retirement fund; (d) Understanding self-protection concept, in this case understanding insurance service concept and capability in risk management [6].

Financial Service Authority (FSA)/*Otoritas Jasa Keuangan (OJK)* defines financial literacy as a series of processes or activities to elevate knowledge, confidence, and skill of consumer and wide community so that they can manage finance better. With that definition, it can be implied that financial product and service consumers, as well as wide community, are expected not only to know and understand financial service institution as well as financial product and service; they are expected to be able to alter or improve community behavior in financial management so that they are capable of increasing their prosperity [3].

Someone who has good financial literacy or is well literate will be more capable of performing financial planning better. He will be able to decide and utilize financial products and services in accordance with needs and will be avoided from investment fraud activities. Based on the above definition, it can be seen that before starting to invest, knowledge and skill in financial literacy are needed; it can decide whether and investment will be profitable or loss-making and how one can manage risks based on personality. Several research results showed that financial literacy affected community participation to invest in the stock market [7,8]. Based on the above items, the first hypothesis (H1) can be formulated as followed.

H_1: there is a significant effect between financial literacy and students' interest to invest in the stock market.

Aside from financial literacy, students' interest to invest in the stock market can also be affected by gender. Gender is generally used to identify the difference between male and female from either social culture aspect or biological anatomy or sex. However, in this research, gender was used as a status symbol of men and women that represented male and female characteristics. A man is identical to the one who has masculine character, which is often perceived to be a mighty, tough, and aggressive human being. Meanwhile, a woman is identical with a feminine characteristic that is symbolized with courtesy, gentle nature, and attention to ethics that is better than male. In the finance term, a male has more confidence in taking financial risks compared to females. However, a female has better financial planning than male [9]. A woman is more comfortable in putting aside some parts of her income in the form of savings to prepare ready funds in case of unexpected activities. On the other hand, a male is more courageous in taking a higher risk upon his investment or as it is commonly said as "no pain no gain".

Nonetheless, these days, women have begun to show emancipation in all lifelines including investment in the stock market. Data from Indonesia Central Securities Depository/*Kustodian Sentral Efek Indonesia (KSEI)* showed that in the past five years, the number of female investors had increased as much as 100%. When compared to previous years, the ratio of male and female investors in the stock market was 70%:30%, yet at the end of March 2019, the number of female investors reached 40%. It is inseparable from history that showed female was more determined in investing. Women in the past put aside their income to purchase gold or other assets such as land or properties. Although in this modern era, investment options are more varied such as investment in the stock market in the form of a mutual fund or stock.

There are several differences between male and female investors. First, female investors are more cautious in performing investment instrument selling and buying activities. It shows that female investors are more patient compared to male, and tend to avoid risk from excessive investment activities. Second, female investors are more discipline in running an investment plan, so that female investors have stronger risk-adjusted returns than male investors; they are more conservative and prefer to orientate on long term investment. Third, female investors are more willing to learn and ask for advice from parties that are considered to have more knowledge of investment compared to males. Males tend to carry their ego not to ask once they face obstacles in investing and find their own way instead of asking a more expert person. Thus, it can be concluded that there is a characteristic difference in investing viewed from gender [10].

Some researches showed gender differences in investing activities in the stock market [11,7,8]. It showed that gender also affected one's investment pattern. Based on that, the second hypothesis can be formulated as followed.

H₂: there is a significant effect between gender and students' interest to invest in the stock market.

The next one is analyzing investment interest with students' income. Income is an economic ability addition that is acceptable to be used for consumption activity or adding an asset list. For students who have not worked, income is the amount of allowance they receive from their parents or other parties such as scholarship that is used for living expenses or other expenses, for example, saving or investing. Income correlates with investment. The greater one's income, the greater the investment is. It is due to the cause that all basic necessities have been fulfilled, so they consider investing. Aside from that, students with high incomes will have more opportunities to access information related to financial technology. For instance, they are accustomed to use cashless payment applications, online investment applications, and other financial activities. These cause students with high income are accustomed to get involved in productive financial activities.

The research result mentioned that individuals with a lower income would choose to invest in a lower-risk investment product. However, as the income increases then risk tolerance towards other investments will decrease, which will impact riskier investment purchase with the higher return [12]. Several research results showed that the higher the income then risk acceptance upon investment loss decreased. It would increase their interest to invest more in the stock market[13,14]. Based on the theory and study explanation above, the third hypothesis can be formulated as followed.

H₃: there is a significant effect between income and students' interest to invest in the stock market.

II. RESEARCH METHOD

This research applied the ex post facto approach with a descriptive analysis technique and double regression analysis. The population in this research was the entire undergraduate students of Accounting Department, Universitas Pendidikan Ganesha who were in the 4th and 6th semesters of 2018/2019 Academic Year and had already undergone Investment and Stock Market subjects. The sampling technique applied was purposive sampling. Data collection in this research was conducted in the financial literacy test and questionnaire. The financial literacy test in this research applied test instrument (True or False) because it would test one's financial knowledge aspect. This financial literacy was arranged into an objective question type (multiple choices). The correct answer was scored 1, and the incorrect answer was scored 0. Data on interest in investing in the stock market was collected through questionnaires. The questionnaire was arranged with a Likert scale with scores 1-5 or strongly agrees to strongly disagree. Before being used, the instrument validity and reliability test were conducted with 40 respondents. The test result showed that the entire items to be confirmed as valid ($\alpha > 0.3$) and

reliable with the range from 0.60 to 0.90. Since it was above 0.6, the instrument could be confirmed as reliable. In this research questionnaire, there was 232 pieces which would then be analyzed by utilizing descriptive statistics and double regression analysis. In descriptive statistics, it provided financial literacy level description and students' interest to invest, which could be seen from the average (mean), deviation standard, maximum and minimum value. Through this descriptive statistic, students' financial literacy, it could be seen whether they were considered to be well literate, sufficient literate, or less literate. The next analysis was multiple linear regression analysis with the OLS model that was used to find out the effect of financial literacy, gender, and student's income towards interest to invest in the stock market. All statistical testing was conducted utilizing SPSS software for Windows Released 19.0 Program. The research design can be seen in figure 1.
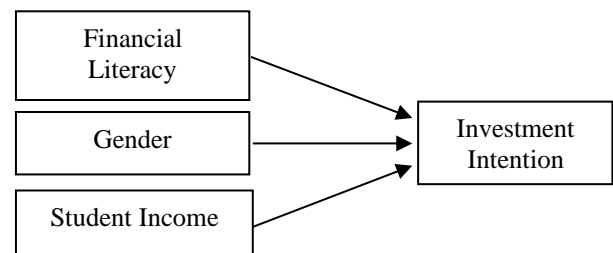
Fig. 1. Research Design

III. RESULTS AND DISCUSSION

Respondent's general description and descriptive data statistic can be viewed in Table 1 and Table 2 as followed.

TABLE I. RESPONDENTS' GENERAL DESCRIPTION

No	Characteristic	Classification	Number of Person	Percentage
1	Gender	Male	74	32%
		Female	158	68%
	Amount		**232**	**100%**
2	Income (Student's allowance)	< 600 thousand	89	38%
		600 th- 1 mil	104	45%
		> 1 million	39	17%
	Amount		**232**	**100%**

From Table 1 above, it could be seen that most respondents were female (158 persons or 68%). Viewed from student's income through monthly allowance, on average majority or 44% was ranging from Rp600,000 – Rp1,000,000.

TABLE II. DESCRIPTIVE STATISTIC DATA

Variables	Min Value	Max Value	Average	Data Tendency	
				Relative %	Criteria
Financial Literacy	2	9	4.93	68%	Low
Investment Interest	10	25	19.81	65%	High

Based on Table 2 above, it could be seen that students' financial literacy got an average of 4.93, so it could be concluded that students' financial literacy average was considered low (less literate). However, students' interest to invest was considered high.

The next analysis was hypothesis testing by utilizing double regression analysis. However, before hypothesis testing classic assumption testing was needed to avoid prediction bias from the proposed regression model. A classic assumption testing result showed normality test through the Kolmogorov-Smirnov (K-S) test with significance at 0.200> 0.05, so it could be concluded that data in this research was distributed normally. Afterward, multicollinearity testing; a VIF value of ≤ 10 was achieved with a tolerance value of $\geq$ 0.1. This testing result showed that there was no multicollinearity symptom inter of independent variables in the regression model. Next was heteroscedasticity by utilizing *glejser* test. Based on *glejser* test, it was found out that all variables had a significance value of ≥ 0.05. This could be concluded that there was no heteroscedasticity in the regression model. With the fulfillment of classic assumption testing, then regression analysis could be continued. Regression analysis was used to test whether there was an effect between independent variables, in this case, financial literacy, gender, and income, towards dependent variables, which was investing interest in the stock market. The summary of regression analysis could be seen in Table 3 as followed.

TABLE III. REGRESSION ANALYSIS RESULT

Variables	Standardized Coefficients Beta	Std. Error	t- Statistic	Sig.
Constant	16.497	1.197	13.780	0.000
Financial Literacy	0.153	0.151	2.427	0.016
Gender	0.072	0.410	1.132	0.259
Income (Allowance)	0.253	0.269	3.994	0.000
R- Square	0.097			
Adj. RSquare	0.085			
F-Statistic	8.159			
Sig. F-Statistic	0.000			

Source: SPSS output result

Based on Table 3 above, it could be seen that several analyses related to the regression test as the following. Firstly, simultaneous testing through the F Test that was visible in Sig. F- Statistic value. In Sig. F-Statistic part in Table 3 above, it was visible that simultaneously independent variables (financial literacy, gender, and student's income) had a significant effect on investing interest variable, which was shown from Sig. $0.000 < \alpha=0.05$ value. Based on that testing, it could continued with individual or partial tests through t-test. Based on Table 3 above, it showed that the amount of determinant coefficient or variable contribution of financial literacy(X_1), gender (X_2), and student's income (X_3)towards students' interest to invest in stock market (Y) was (Adjusted $R_{square} = R^2_{x1x2}$) = 0.085, which meant that 8.5% of investing interest variation (Y) could be defined by financial literacy (X_1), gender (X_2), and student's income (X_3) variation. The amount of residual coefficient (1 – 0.085) = 0.915 or 92%was defined by other variables outside the model.

Then, in order to see the amount of the effect of financial literacy (X_1), gender (X_2), and student's income (X_3) towards students' interest to invest in the stock market (Y) partially or individually, t-test was utilized. Meanwhile, in order to see the amount of the effect Beta number in Standardized Coefficient was used. Based on the testing result in Table 3, independent variables (financial literacy, gender, and student's income) effect regression equation towards the dependent variable (investing interest) could be formulated as followed.

Investing Interest (Y) = 16.497 + 0.153financial literacy+ 0.072 gender + 0.253student's income

Constant value as much as 16.497 stated that if independent variables were considered constant, then average students' interest to invest in the stock market was as much as 16.497. Aside from that, the regression equation above showed the effect of each independent variable towards the dependent variable, which could be seen from sig. value in Table 3.

Based on Table 3 above, it could be seen that the cognitive aspect of financial literacy had a positive and significant effect on investing interest. This could be seen from sig. value =0.016 <0.05; t.= 2.427; β= 0.153, which indicated that if financial literacy increased as much as 1 point, then students' interest to invest would increase as much as 0.153 points. Based on that testing result, it could be concluded that **H1 was acceptable** in which there was a significant effect between the cognitive aspects of financial literacy towards investing interest in the stock market. Someone who was well financial literate had four skills; among others were understanding upon credit, understanding upon saving and investment, and insurance. These four skills made someone certain with the financial decision he chose. Investment in the stock market is one of the investments with varied risks; starting with money market investment and mutual fund or steady income which is moderate with low

risk, or choosing the investment with higher risk, for instance, stocks. Whatever investment decision made, it requires knowledge and skill in financial management, in this case, financial literacy. The higher one's financial literacy, the better their interest in performing investment is. This research is in line with other researches such as [7,8,15] which stated that financial literacy affects significantly towards the interest in investing.

Afterward, gender effect testing towards the interest in investing; research result showed that there was no significant effect between gender and interest in investing. From Table 3 above, it could be seen that sig. value =0.450 >0.05; t= 0.057; β= 0.049. So, it could be concluded that **H2 was declined or** there was no significant effect between gender and interest in investing. This research result proved that presently female has begun to take part in stock exchange in Indonesia. While in previous years, it was dominated by males, now female investors are participating actively to invest in the stock market. The matter of investing these days is no longer solely male's business since it is identical to the risk-taking consumption pattern that advances high returns. Females in this era are observant in looking at opportunities in making income, including investing in the stock market. It proved that gender did not affect interest in investing in the stock market, or it could be said that there was no difference in interest in investing between males and females. This research was in accordance with research [11] which showed that gender did not have any effect on the interest in investing. On the other hand, this research was not in line with research [7,16]. The results also show that gender has not been consistently shown to influence financial behavior. In this case, it is associated with the interest in investing in the stock market.

Subsequently, testing on students' income effect was viewed from allowance towards the interest in investing. Based on Table 3 above, it could be seen that students' allowance hade a positive and significant influence on the interest in investing. It could be seen from sig. value =0.004 < 0.05; t.= 2.902; β= 0.185,which indicated that if students' allowance increased as much as 1 point, then students' interest in investing would also increase as much as 0.185 point. Based on that testing, it could be concluded that **H3 was accepted** which meant that there was a significant effect between students' income and their interest to invest in the stock market. This research showed that students' income affected students' interest in investing. The positive coefficient showed that the higher student's income was, students' interest in investing was also higher. It showed a positive phenomenon, which meant that currently, students start to think about how to put aside some of their income into savings or being invested. This research was in accordance with several studies, such as [14,13].

IV. CONCLUSION, SUGGESTION, AND RESEARCH LIMITATION

Based on the discussed research result, it could be concluded as followed: financial literacy and students' income

have a significant effect on interest to invest in the stock market. However, gender does not have any significant effect. On average students' intention to invest in the stock market is considered high. It is a positive signal, which shows that there is interest to perform investment activity so that consumptive behavior can be reduced. Next, financial literacy is proven to have a significant effect on the interest in investing. However, when it is viewed from students' financial literacy index, which is still low, it take some more intense financial literacy efforts. The efforts are either in financial learning development that can be applied in curriculum or through socialization activity in the form of seminars or intensive financial training. Moreover, investment galleries owned by the university has to be elevated in quality by actively conducting training and seminars on stock market investment. Besides, error values that remain high indicate that other researches are needed to study factors that affected the interest to invest in the stock market in addition to financial literacy, gender, and income. This research has limited respondents that only uses students in only one university, thus in the future; it could be widened by involving several universities in Bali.

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