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THE ROLE OF PERSONALITY TRAITS, FINANCIAL LITERACY AND BEHAVIOR ON INVESTMENT INTENTIONS AND FAMILY SUPPORT AS A MODERATING VARIABLE

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Abstract

Investment refers to various actions taken by individuals, including the younger generation in Indonesia, to prepare for the future. There are many programs around investment offered by the government in Indonesia for the short to long term. Therefore, this study aims to examine the direct and indirect effects of personality traits, financial literacy, and behavior and family support on investment intentions using a quantitative approach. In addition, this study is also intended to add to the limited empirical evidence regarding investment among students in Indonesia. The model of this research framework is based on collaboration between theory and previous research as a reference in strengthening the justification of the findings. The sample consisted of 341 students spread throughout Indonesia, while the data was collected using a questionnaire distributed online and analyzed using the Smart-PLS. The overall findings of this study indicate that personality, financial literacy, and behavior have a significant effect on investment intentions among students in Indonesia. Furthermore, financial behavior indicates the role of intermediaries, while family support does not strengthen the effect of financial literacy on investment intentions among students in Indonesia. The students who take financial management courses will be more aware of the importance of financial literacy and financial behavior for investment intentions. Recommendations for further research can relate other variables affecting investment intentions that were not examined in this study.

Keywords personality traits, financial education, financial act, family encouragement, investment intentions

JEL Classification G41, G53

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INTRODUCTION

Investment is a common practice among different classes of people, including students in Indonesia, but the ease of finding relevant information provides more insight on the importance of proper management. In general, investment is an activity performed on one or several assets owned, usually on a long-term basis, to obtain compensation benefits (Hastings & Mitchell, 2020). Several programs are offered as investment opportunities by trusted institutions, including stocks, warrants, rights, and convertible bonds. One of the programs intensively carried out by the Indonesian Stock Exchange is "let's save stocks", which majorly target students as the younger generation. This program is an invitation to the public to invest in shares and the capital market, while prospective investors aim to acquire capital gains. Meanwhile, profit is the positive difference between the selling and the buying price of shares and cash dividends received from the issuer. Consequently, a lower selling price compared to the buying leads to capital loss. Furthermore, one of the goals of an investor is to achieve long and short-term profits (Lathif, 2019).

Financial knowledge or literacy plays an important role in investment intentions and is needed to avoid financial problems such as trade-off, which is a situation where one interest is sacrificed for another (Sugiyanto, 2020). Furthermore, adequate understanding of financial literacy has a positive influence on one's financial behavior, such as managing and allocating funds appropriately (Robb & Woodyard, 2011). Currently, saving activities are still relatively low due to the assumption that only the middle and upper-class population need to invest. Based on the Financial Inclusion Index released by the Financial Services Authority (OJK), the level of financial literacy among students in Indonesia is approximately 64.2%. This figure is low compared to other countries in Southeast Asia (www.ojk.go.id). Furthermore, individual responses vary in relation to investment as younger generations think that investment always leads to losses.

Financial behavior and family support are considered to promote investment intentions among young people (Jorgensen & Savla, 2010), as these individuals do not have an independent source of income and still depend on parental gifts, while some lack management skills. Consequently, the parental role is important as a supportive system for making investment decisions. Therefore, this study aims to examine the direct and indirect influence of personality traits, financial literacy and behavior, as well as family support, on investment intentions.

1. LITERATURE REVIEW AND HYPOTHESES

1.1. Personality traits

The concept of personality traits was proposed by Allport (1937) in The Big Five Personality which stated that "…personality is the dynamic organization of psychophysical systems within an individual which determine the unique adjustment to the environment". Furthermore, The Big Five Personality is an approach used to observe a person's personality through traits organized into five dimensions, namely extraversion, agreeableness, conscientiousness, neuroticism, and openness (Nandan & Saurabh, 2016). Personality traits are demonstrated in the relationships with everyday life such as performance, academic success, attitudes, and spending (Furnham & Fudge, 2008; O'Connor & Paunonen, 2007). It also has a significant influence on financial behavior both in the short and long term (Ashrafi & Rajablou, 2020).

Several studies have explained the relationship between personality traits and finance management. Davey and George (2010) showed a strong relationship between personality traits and financial behavior. Meanwhile, caution and extraversion have been shown to influence the behavior to save or borrow, but minimal attention has been paid to broader financial issues. This is supported by Mutlu and Ozer (2019) and Donnelly et al. (2012) who stated that personality traits such as prudence, friendliness, and openness in managing money positively affect financial behavior. Furthermore, Lai (2019) stated that individual investment intentions are influenced by openness and pleasant personality that also affect subjective norms. Similarly, Sarwar et al. (2020) reported that investment intentions are influenced by the nature of openness, friendliness, awareness, and personal experience.

1.2. Financial literacy

Financial knowledge has an important position in helping someone in identifying financial behavior to manage good financial resources (Tumba et al., 2022). Financial literacy is a person's level of knowledge, skills, and beliefs regarding financial institutions, as well as the products and services offered as outlined in the index parameters (Samsuri et al., 2019). It is also interpreted as a person's ability to understand finances in general, including savings, investments, debt, and insurance. Several previous studies have explained the relationship between financial literacy and investment intentions. According to Dewi and Purbawangsa (2018) and Ilyas et al. (2022), the study showed that financial literacy has a more significant effect on investment intentions compared to other factors such as income and risk. This implies that a good understanding of finance is a major factor in determining an investment decision. Also, Sadiq and

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Azad (2019) stated that financial literacy influences investment and asset management. Aside from financial behavior, an understanding of finances is also needed (Sashikala & Chitramani, 2018).

1.3. Financial behavior

Financial behavior is related to proper management and is also called financial applications. Based on Shefrin (2018), the study stated that financial behavior determines how psychological phenomena specifically affect financial decisions, companies, and markets. It also refers to how wise a person allocates finances to fulfill daily needs. Meanwhile, Yang et al. (2021) explained that the investment decision-making processes require adequate financial knowledge, which depends on the behavior (Ki & Hon, 2012). Several studies have explained the relationship between investment intentions and financial behavior. Cuong and Jian (2014) in a study conducted in Vietnam showed that one of the factors that influence investment intention is behavior, particularly when using money as an asset. This is also supported by Sashikala and Chitramani (2018) who stated that financial behavior is related to how emotional level and cognitive error affect investment intentions. Proper financial attitudes and behavior are needed because financial programs that only rely on a knowledge approach do not change a person's perspective without the right attitude and motivation (Grohmann et al., 2018).

Financial literacy has the potential to contribute to individual well-being through good behavior towards short and long-term investment (Chu et al., 2017). This is supported by Sugiyanto (2020) who stated that financial behavior has a positive effect on investment intentions with financial literacy as a supporting variable, while Hastings and Mitchell (2020) reported that financial literacy correlates with investment intentions and provides insight on how to make better policies. Furthermore, individual personality is also considered to contribute significantly to the management of assets (O'Connor & Paunonen, 2007), while Lathif (2019) showed that personality is one of the key factors that influence investment intentions. This is also supported by a study, which reported that emotional stability, extraversion, openness, friendliness, and prudence are factors that influence the extent to which investment intentions are supported in managing finances.

1.4. Family support

Family support is another factor that has a positive effect on investment intentions. It is the attitude and acceptance of the family members towards an action to be taken (Friedman et al., 2013). Furthermore, family support consists of various dimensions, including emotional, appreciative, informative, and instrumental. Several previous studies have provided empirical evidence on the relationship between family support and investment intentions. Praba and Malarmathi (2015) stated that family support plays an important role in investing, while Jorgensen and Savla (2010) reported that financial literacy and support from parents provide good results in making investment decisions. This is also supported by Baronchelli et al. (2016) and Ryan Dunn et al. (2016) who stated that family involvement positively influences financial decision-making.

1.5. Investment intention

In general, intention is defined as an indication of a person or plan to take an action, while Angelle (2006) stated that it is a form of individual resolution to act in a certain way. Furthermore, an intention is a clear construct of an individual's attitude and intrinsic value that plays an important role in predicting future behavior. According to the Theory of Planned Behavior by Ajzen (1991), intention is assumed to identify the motivational factors that affect behavior and indicate how hard or the effort put into performing a task. Regarding financial products, intentions are associated with asset storage or investment (Ali, 2011; Jahanzeb et al., 2012). Basically, investment is defined as the placement of a certain amount of funds at a specific time with the expectation of profit in the future. The primary target of an investor is to get a high return (Lathif, 2019).

Based on the overall explanation of the hypotheses, which are formulated as follows:

H1: *Personality traits affect investment intentions.*

H2: *Personality traits affect financial behavior.*

H3: *Financial literacy affects investment intention.*

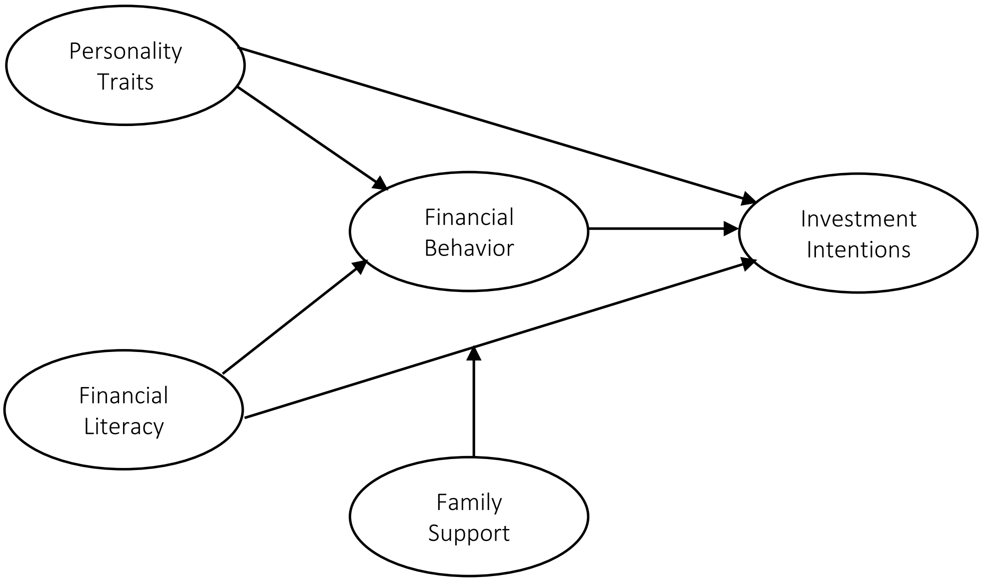

Figure 1. Study conceptual framework

H4: Financial literacy affects financial behavior.

H5: Financial behavior affects investment intentions.

H6: Financial behavior mediates the effect of financial literacy on investment intentions.

H7: Financial behavior mediates the effect of personality traits on investment intentions.

H8: Family support strengthens the effect of financial literacy on investment intentions.

Therefore, by collaborating between the theory and previous studies, a research model was designed as follows (see Figure 1).

2. METHODOLOGY

This is an explanatory study that is based on a theory or hypothesis used to test a phenomenon (Cooper & Schindler, 2013). The method was selected to test the proposed hypotheses and explain the effect of the independent variables, including personality traits, financial behavior and literacy, as well as family support, on the dependent variable, namely investment intention either partially or simultaneously. Furthermore, the data were collected using online questionnaires with a Likert scale of 1-5, and the study population was students spread across Indonesia, while the sample was determined using non-probability sampling as the population size is not clearly identified. The minimum number of samples was determined using the variable of ≤ 5, with a total number of 100. while for the variable ≤ 7 the minimum was 150, and ≥7 was 300 (Hair et al., 2014). Personality traits were measured using 5 indicators adapted from Allport (1937), while financial literacy was measured using 4 indicators from Aren and Dinç Aydemir (2015). Moreover, financial behavior was measured using 2 indicators adapted from Sarwar et al. (2020), while family support was measured using 4 indicators in line with Friedman et al. (2013). Investment intentions were assessed using 2 indicators by (Sadiq & Azad, 2019), while the SPSS Version 25 software was used for data processing, and the study model was tested with the Partial Least Square (PLS), which was also used to measure the relationship between each indicator and its construct. The PLS was also used for confirmation purposes, such as hypothesis testing and exploration.

3. RESULTS

3.1. Characteristics of respondents

Based on the data collected, 341 respondents participated with the following details: Gender, Age, Domicile, and Living Cost.

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Table 1. Respondents' demographics

Gender	Male	121	35.48%
	Female	220	64.52%
Age	18 – 20 year	162	47.51%
	21 – 23 year	190	55.71%
	> 23 year	11	3.23%
Living Cost (For 1 month)	> 100$	12	3.52%
	100$ – 200$	156	45.75%
	200$ – 300$	167	48.97%
	> 300$	6	1.76%
Domicile	Java, Bali, East Nusa Tenggara, and West Nusa Tenggara	201	58.94%
	Sumatra island	23	6.74%
	Kalimantan island	84	24.63%
	Sulawesi island	20	5.87%
	Papua Island	13	3.81%

Note: N = 341 (sample size).

Based on Table 1, the respondents in this study are students in Indonesia who have taken financial management courses. The results showed that female students with an age ranged between 21–23 years, 200$–300$ total cost of living for 1 month, and domiciled on the Java islands, Bali, East Nusa Tenggara, and West Nusa Tenggara have the intention to invest compared to the males.

3.2. Construct validity and reliability test

The Goodness of Fit test on the outer model was carried out with three measurements, namely convergent and discriminant validity, as well as composite reliability. The outer loading on each variable is declared valid when the value is above 0.5. The test results are presented in Table 2.

Table 2. Convergent validity test results

Source: The result of data processing from SmartPLS.

Variable	Indicator	Outer Loading	Description
Personality Traits (PT)	Extraversion	0.656	Valid
	Agreeableness	0.754	Valid
	Conscientiousness	0.695	Valid
	Neuroticism	0.690	Valid
	Openness	0.701	Valid
Financial Literacy (FL)	Knowledge	0.753	Valid
	Confidence	0.812	Valid
	Skill	0.697	Valid
	Attitude	0.760	Valid
Finance Behavioral (FB)	Magnitude	0.873	Valid
	Generality	0.888	Valid
Family Support (FS)	Emotional Support	0.849	Valid
	Instrumental Support	0.854	Valid
	Information Support	0.861	Valid
	Award Support	0.848	Valid
Investing Intention (IIV)	Return	0.901	Valid
	Risk	0.914	Valid

The data processing results show that all outer loading variables are above 0.6, hence, it was concluded that all construct measurement indicators are declared valid.

When the composite reliability value is above 0.7, then the variable is declared a reliable construct. The reliability measurement results are presented in Table 3.

Table 3. Reliability test results

Source: The result of data processing from SmartPLS.

Variable	Composite Reliability	Description
Personality Traits (PT)	0.827	Reliable
Financial Literacy (FL)	0.842	Reliable
Finance Behavioral (FB)	0.874	Reliable
Family Support (FS)	0.914	Reliable
Investing Intention (IIV)	0.903	Reliable

The test results state that all composite reliability values are > 0.7, hence, all indicators are applicable as measurements.

3.3. PLS analysis

The PLS analysis was carried out in several steps, including the Goodness-of-Fit model, as well as the outer and inner model results evaluation. The equations of the PLS model of this study are as follows:

$$\eta = \beta 0 + \beta 1\xi + \beta 2\xi + \beta 3\xi + \beta 4\xi \cdot \mu 1 + \varepsilon. \quad (1)$$

The information:

ξ = independent variable, η = dependent variable, $\mu 1$ = moderating variable, $\beta 0$ = constant, $\beta 1 - \beta 4$ = coefficient beta, ε = error.

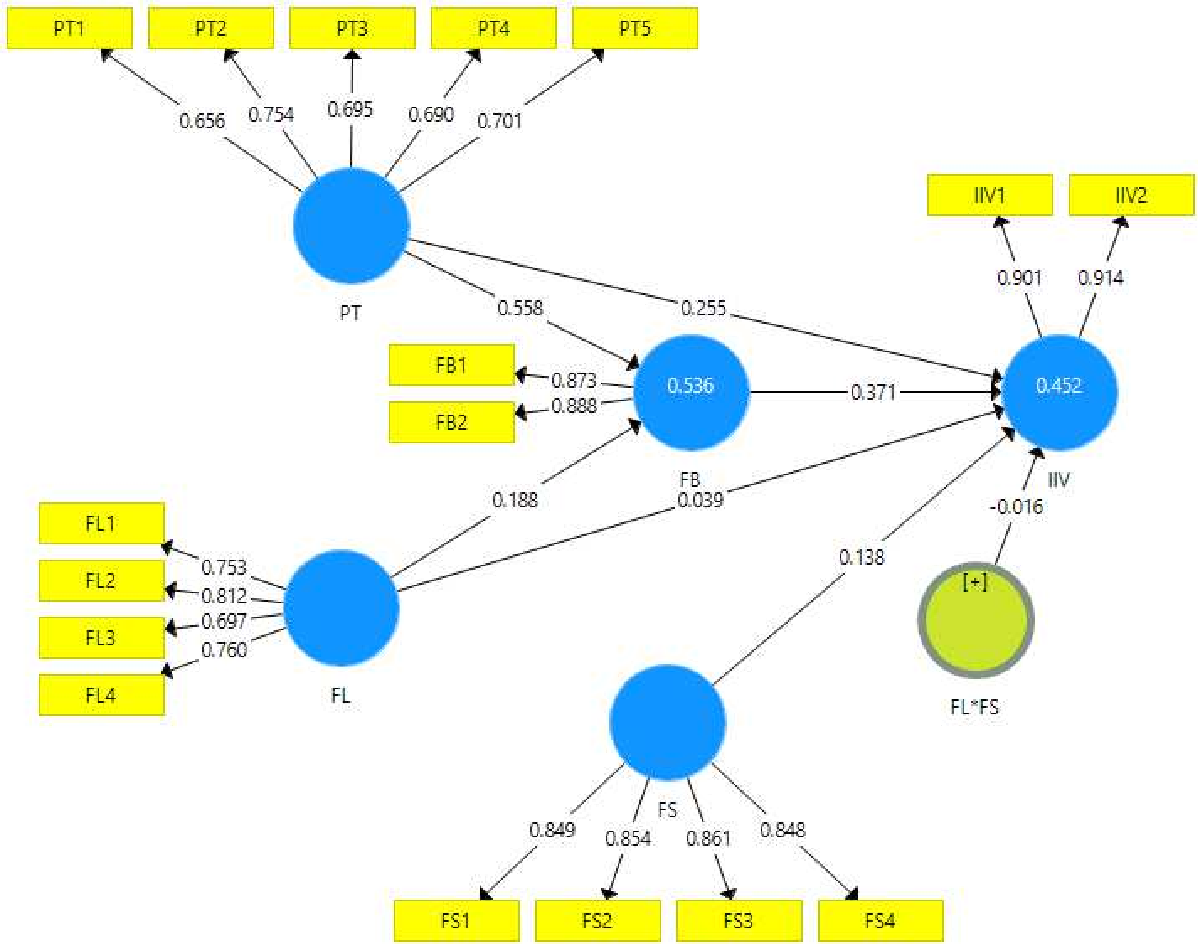

Figure 2. Data processing results using SmartPLS

3.3.1. The goodness of fit model

Each endogenous variable is expressed by the R^2 value, among others:

(1) The endogenous variable of Financial Behavior (FB) with 0.536 or 53.6% and is influenced by Personality Traits (PT) and Financial Literacy (FL).

(2) The Investment Intention (IIV) with 0.452 or 45.2% and is influenced by Financial Behavior (FB), Personality Traits (PT), and Financial Literacy (FL).

The predictive value of relevance (Q^2) is calculated as follows:

$$Q^2 = 1-\left(1-R_1^2\right)\left(1-R_2^2\right)= \tag{2}$$
$$=1-\left(1-0.536^2\right)\left(1-0.452^2\right)=$$
$$=1-\left(0.713\right)\left(0.796\right)=$$
$$=1-0.567=0.432$$

The calculation above shows a value of 0.432, hence, the model was declared to have a predictive relevance value. The result of 43.2% indicates that the PLS model is capable of explaining the data diversity, while results with 56.7% were explained by other variables.

3.3.2. Outer model

The largest outer-loading provides an overview of the indicators on these dominant variables. It is declared significant when the t-test value is more than 1.96 and the P-value is less than 0.05.

Personality Traits variable

Personality Traits are reflected by 5 indicators, namely Extraversion (PT1), Agreeableness (PT2),

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Conscientiousness (PT3), Neuroticism (PT4), and Openness (PT5). Based on the results, Personality Traits were dominated by agreeableness.

Table 4. Outer test results of the Personality Traits variable model

Source: The result of data processing from SmartPLS.

Indicator	Outer Loading	*T*-stats	*P*-value	Description
PT1	0.656	14.670	0.000	Significant
PT2	0.754	23.867	0.000	Significant
PT3	0.695	16.668	0.000	Significant
PT4	0.690	17.580	0.000	Significant
PT5	0.701	17.963	0.000	Significant

Financial Literacy (FL)

Table 5. Results of the outer model test of the Financial Literacy variable

Source: The result of data processing from SmartPLS.

Indicator	Outer Loading	*T*-statistics	*P*-value	Description
FL1	0.753	20.684	0.000	significant
FL2	0.812	32.868	0.000	significant
FL3	0.697	16.740	0.000	significant
FL4	0.760	22.794	0.000	significant

Financial Literacy (FL) is reflected by 4 indicators, namely Knowledge (FL1), Confidence (FL2), Skill (FL3), and Attitude (FL4). Based on the results, the second indicator, namely Confidence, shows the highest value, therefore, it was concluded that Financial Literacy was dominated by Confidence.

Financial Behavior (FB)

Table 6. Results of the outer model test of the Financial Behavior variable

Source: The result of data processing from SmartPLS.

Indicator	Outer Loading	*T*-statistics	*P*-value	Description
FB1	0.873	56.663	0.000	significant
FB2	0.888	67.584	0.000	significant

Financial Behavior (FB) is reflected by 2 indicators, namely Magnitude (FB1) and Generality (FB2). The results showed that the second indicator, namely Generality, shows the highest value, therefore, it was concluded that Financial Behavior was dominated by Generality.

Family Support (FS)

Table 7. Results of the outer model test of the Family Support variable

Source: The result of data processing from SmartPLS.

Indicator	Outer Loading	*T*-statistics	*P*-value	Description
FS1	0.849	36.548	0.000	significant
FS2	0.854	26.949	0.000	significant
FS3	0.861	38.760	0.000	significant
FS4	0.848	37.567	0.000	significant

Family Support (FS) is reflected by 4 indicators, namely Emotional (FS1), Instrumental (FS2), Information (FS3), and Appreciation (FS4) Supports. The results showed that the third indicator, Information Support, shows the highest value, therefore, it was concluded that Family Support was dominated by Information Support.

Investment Intention (IIV)

Table 8. Results of the outer model test of the Investment Intention variable

Source: The result of data processing from SmartPLS.

Indicator	Outer Loading	*T*-statistics	*P*-value	Description
IIV1	0.901	17.580	0.000	significant
IIV2	0.914	17.963	0.000	significant

Investment Intention (IIV) is reflected by 2 indicators, namely Return (IIV1) and Risk (IIV2). The results showed that the second indicator, namely Risk (IIV2), shows the highest value, therefore, it was concluded that investment intentions were dominated by risk.

3.3.3. Inner model

Partial testing with t-test and P-values on each path was carried out, and two types of effects were produced, namely direct and indirect. The effect was measured from one variable to another through an intermediary, and the P-value of >0.05 shows an insignificant result, while < 0.05 shows significance. The test calculation is as follows (see Table9).

Table 9. Results of direct and indirect effect

Source: The result of data processing from SmartPLS.

Direct and Indirect Effect	Original sample	T-statistic	*P*-value	Conclusion
Personality Traits → Investment Intention	0.225	2.428	0.016	Sig.
Financial Literacy → Investment Intention	0.139	2.405	0.007	Sig.
Personal Traits → Financial Behavior	0.558	7.854	0.000	Sig.
Financial Literacy → Investment Behavior	0.188	2.625	0.000	Sig.
Investment Behavior → Investment Intention	0.371	5.611	0.000	Sig.
Personality Traits → Financial Behavior → Investment Intention	0.207	4.370	0.000	Sig.
Financial Literacy → Financial Behavior → Investment Intention	0.070	0.0209	2.390	Sig
Financial Literacy → Family Support → Family Support	-0.016	0.562	0.575	Insig.

4. DISCUSSION

This study was conducted to measure the relationship between personality traits and financial literacy on investment intentions mediated by financial behavior and moderated by family support among students in Indonesia. A total of 8 hypotheses were proposed, while the data analysis results showed that personality traits have a positive and significant effect on investment intentions. These findings indicate that an open personality, awareness of personal abilities, and the nature of socialization with others have a significant effect on investment intentions (Furnham & Fudge, 2008). Furthermore, self-assessment ability and a sense of curiosity also contribute positively to the investment intentions. These findings are similar to Ashrafi and Rajablou (2020), Hutomo et al. (2020), Sadiq and Azad (2019), and Sarwar et al. (2020) who stated that personality traits have a significant effect on investment intentions.

According to the second hypothesis, personality traits have a significant positive effect on financial behavior among Indonesian students. The 5 personality traits measured in this study, namely extraversion, agreeableness, conscientiousness, neuroticism, and openness, all influence financial behavior (Donnelly et al., 2012). Conscientiousness and extraversion have been shown to affect the behavior towards saving or borrowing, but minimal attention has been paid to broader financial issues. These findings are similar to Davey and George (2010) and Mutlu and Ozer (2019) who reported that personality traits have a strong correlation with assets or finance management. The results are also supported by Lai (2019) who stated that investment intentions are affected by openness, while pleasant personality affects subjective norms.

The third hypothesis shows that financial literacy has a positive effect on investment intentions among Indonesian students. It is the ability to understand finances, including knowledge on savings, investments, debt, insurance, and others. In general, college students have a shallow understanding of financial literacy as evidenced by the way the price of a product is examined before buying. Besides, the thought of saving and managing existing finances or investing for the future proves that students have real knowledge of money. Conscientiousness in distinguishing between necessary and unnecessary needs is a good attitude to understand finance management. These findings are supported by Aren and Dinç Aydemir (2015), Hastings and Mitchell (2020), and Sadiq and Khan (2018), who stated that financial literacy has a significant effect on investment intentions. In other words, the better the financial knowledge, the higher the investment intentions.

Based on the fourth hypothesis, financial literacy has a positive effect on financial behavior among students in Indonesia. One of the advantages of understanding financial literacy is the ability to avoid fraud, while prudence in managing finances depends on adequate knowledge. The results obtained from this study are in line with Fernandes et al. (2014) and Robb and Woodyard (2011), who stated that financial literacy objectively and subjectively affects financial behavior with subjective knowledge having a relatively greater impact. Therefore, the better the financial literacy, the better the financial behavior.

The fifth hypothesis showed that financial behavior has a significant effect on investment intentions, the better the financial behavior, the higher the investment intentions on existing assets. Proper

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sensitivity helps investors to consider all forms of risks, while the confidence to make the right decision with money or assets affects investment intentions (Sashikala & Chitramani, 2018). These findings are in line with Asad Khan et al. (2020) who stated that investment intentions are affected by good financial behavior, while Abdillah et al. (2019), Ki and Hon (2012), and Yang et al. (2021) reported that wise financial management influences investment intentions.

The position of financial behavior as a mediating factor between personality traits, and financial literacy on investment intentions was explained by the sixth and seventh hypotheses. Personality traits, including extraversion, agreeableness, openness, neuroticism, and conscientiousness, are good reasons to invest and are also supported by self-awareness, prudence, and the understanding of risks regarding financial management. This is consistent with Nandan and Saurabh (2016) who stated that 5 dimensions have a perfect relationship with investment intentions mediated by behavior towards financial risk. Furthermore, the behavior has a positive relationship with investment intentions based on financial literacy as the confidence level, attitudes, and skills help the investor to consider future risks. The ability to distinguish between necessary and unnecessary expenses enhances successful finance management. This is also in line with Hastings and Mitchell (2020).

Finally, the last hypothesis explains the relationship between financial literacy and investment intentions moderated by family support. Based on the results, family support does not moderate the effect of financial literacy on investment intentions. Financial literacy enables a student to invest even without support from the family due to the appropriate understanding of future risks. However, this result is different from Baronchelli et al. (2016), which stated that family involvement positively influences financial decision-making.

CONCLUSION

The results of this study indicate that personality traits have a positive effect on investment intentions, financial knowledge has an effect on investment intentions, and financial behavior also has a positive effect on investment intentions of Indonesian students. Family support also has a positive effect but does not strengthen students' investment intentions in Indonesia. In addition, students tend to have the right investment intentions with appropriate financial literacy and good personality with or without financial behavior as a mediating factor. Meanwhile, family support does not strengthen the relationship between financial literacy and investment intentions because of the presence of appropriate financial literacy. This study provides several practical implications for maintaining a wise personality in understanding the importance of investing in the future. Students who take financial management courses will be more aware of the importance of financial literacy and financial behavior for investment intentions. However, there are some limitations, for example, despite using online questionnaires that are massively available for respondents throughout Indonesia, incomplete answers due to time constraints are obtained, taking into account the psychology of respondents when filling out question items.

AUTHOR CONTRIBUTIONS

Conceptualization: Bambang Widagdo, Kenny Roz.
Data curation: Kenny Roz.
Formal analysis: Kenny Roz.
Project administration: Bambang Widagdo, Kenny Roz.
Supervision: Bambang Widagdo.
Validation: Bambang Widagdo, Kenny Roz.
Writing – original draft: Bambang Widagdo, Kenny Roz.
Writing – review & editing: Bambang Widagdo, Kenny Roz.

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