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Stock Investment Decision: The Effects of Personal Factors and Moderating Role of Years of Service

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Abstract: - This paper aims to elaborate stock investment decision and to examine the impact of five influential factors as independent variables and the influence of years of investment as mediating variable. This paper is based on empirical study which involved 286 individual investors in Indonesia Stock Exchange using data from Riri et.al (2020). Structural equation modelling approach was used for estimating relationship between influential factors (e.g., personal financial needs, overconfidence, advocate recommendation, social relevance, and self or firm image) on stock investment decisions. The result found that decision on stock investment is determined by social relevance, overconfidence, personal financial need, and advocate recommendation significantly and positively. Years of Investment has played moderating role on relationship between for advocate recommendation and personal with stock investment decisions. Years of Investment is moderating variable to become a novelty this paper.

Key-Words: - stock investment decisions, years of investment, structural equation model

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1 Introduction

Investment in stock has high risk compared to other investment instrument. Investor should consider many things before, during, and after making decision in a stock investment in the market. The discussion on stock investment decision is a combination of psychology and finance theories which is called behaviour finance. Topic behaviour finance become a hot topic discussion in area of Finance Research. Some researcher investigated

psychological aspect especially personal factor on stock investment decisions. Zahera and Bansal (2018) developed systematic literature review on individual behaviour to stock investment decisions. Wang (2001) have explored non-rational investors' survival in a game model with a large population. The study focused on sentiment and overconfidence of the investors Nagy and Obenberge (1994) investigated this case to individual equity investors with substantial holdings in Fortune 500 firm. Rizvi and Abrar (2015) and Ahmad (2017) studied

affecting factors on individual investor behaviour in Pakistan. Phan and Zhou (2014a, 2014b) examined influential factors on individual investor behaviour in Vietnam. Chang (2010) and Riri and Manurung (2020) investigated the psychological factors which influences investment decision making in Indonesia.

Intention to buy stock in the market is sometimes called as stock investment decisions. Research in this area mostly related to psychology and finance. Selden (1912) introduced psychological aspect which is related in the stock market at the first time. Then, it was followed by Festinger (1957) who introduced theory of cognitive dissonance; Slovic (1972) who studied psychological of human judgment and its implications in investment decision making. Kahneman and Tversky (1979) introduced theory of prospect which is linked to analysis about decision making under risk. Daniel et.al (1998) have examined the relationship between psychology of investors and stock market over and under reaction. Daniel et.al (2002) have examined the psychology of investor in policy implication and capital markets. Markowitz (1952) introduced portfolio theory that it explained behaviour of investor individual. They select high return and small risk for investment instrument. Boda and Sunitha (2018) have studied the psychology of investors in investment decision making which were focused on cognitive psychology and arbitrage limits. Pang and Zhou (2014) have proved that excessive optimism, overconfidence, psychology of risk, and herd behaviour on behavioural intention which mediated by attitude toward investment behaviour. Riri and Manurung (2020) stated that there are five personal factors (e.g., self or firm image, overconfidence, advocate recommendation, social relevance, and personal financial needs) have impacted on decisions of stock investment.

Previously empirical studies examined psychology factors directly impact on stock investment decisions. This paper addressed years of investment as moderating variable. Does year of investment strengthen or weaken the relationship five personal factors (e.g., firm or self-image, overconfidence, personal financial needs, social relevance, and advocate recommendation) on the decision of stocks investment? As moderating variable, years of investment could strengthen or weaken relationship between dependent and independent variables (Manurung, 2019, Sharma 1981). Moderating variable is a research contribution for stock investment decisions. This paper proposes a contribution by examining years of investment as moderating variable.

2 Literature Review

Stock investment decisions is about individual perspective on making decisions about how individual to decide buying or selling stocks in the market. At least, there are three conceptual theories: (1) utility theory, (2) personal intention, and (3) theory of planned behaviour (TPB). Utility theory is related on investment decision and explained how goods or services provide benefit to the individual by doing personal investment activities. Second, Selden (1912) had pioneered to establish the conceptual connection between psychology and stock market activities. Slovic (1972) studied psychological of human judgment and impacted on investment decision making. Kahneman and Tversky (1973) introduced a judgmental heuristic analysis on stock investment decision. Tversky and Kahneman (1979) introduced the theory of prospect to investment decision. This theory improved theory of utility, theory of cognitive dissonance advices that people have an inner drive to avoid dissonance or disharmony or to hold all related attitudes and behaviour in a dynamic harmony (Festinger, 1957). This is known as the principle of cognitive consistency

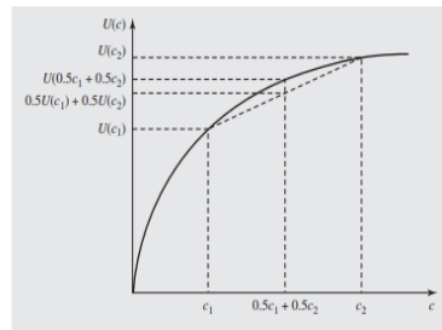


Figure 1. Utility for Personal

Source: Danthine and Donaldson (2015, p.5).

Third theory is theory of planned behaviour (TPB) which explains about individual intention for buying something. TPB was introduced by Ajzen (1991) which stated the intentions can be estimated with high accuracy from attitudes toward the perceived behavioural control, and subjective norms.

3 Methods

This paper is based on quantitative study which cross-sectional approach for examining the relationship between five individual factors as independent variables and year of investment as mediating variable with stock investment decision as dependent variable. Structural equation modelling

was used for estimating effects of independent and mediating variables on dependent variable. The research used data which were provided by Riri et al (2020). The respondent profile is demonstrated on Table 1. The data was collected by utilizing online questionnaire from 385 individual stock investors in Indonesia Stock Exchange. The questionnaire consists of 29 indicators with Likert scale for measuring seven variables.

4 Methodology

Figure 2. shows the research model which consist of one moderating, one dependent, and five independent variables. The independent variables consist of personal financial needs, overconfidence, social relevance, self or firm image, and advocate recommendation. Stock investment decisions is a dependent variable and years of investment as moderating variable.

The mathematic model is as follows:

$$SID_i = a_1 PFN_i + a_2 OVC_i + a_3 SR_i + a_4 SIM_i + a_5 AVR_i + a_6 YOI_i + a_7(PNF*YOI)_i + a_8(OVC*YOI)_i + a_9(SR*YOI)_i + a_{10}(SIM*YOI)_i + a_{11}(AVR*YOI)_i + \varepsilon$$

SID = Stock Investment Decisions for i
 PFN = Personal Financial Needs for i
 OVC = overconfidence for i
 SR = Social Relevance for i
 SIM = Self Image / Firm Image for i
 AVR = Advocate Recommendation for i
 YOI = Years of Investment.

In this discussion, research reported three finding which are validity and reliability instruments. It followed to discuss relationship independent variable to dependent variable. At the end, discussion of years of investment used as moderating variable in in this research.

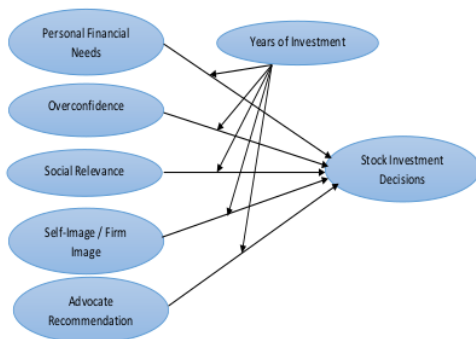


Figure 2. Research Model

5 Hypothesis

Someone needs more income to provide their life. Income is a variable of Personal Needs. Ali and Tariq (2013), Kabete and Kipkirong (2018) and Riri et al (2020) has proved their Hypothesis which is Personal Financial Needs affected Stock Investment Decision. Wang (2001), Zhou (2014), Xia et al (2014), Tekc, B., and N. Yılmaz and Riri et al (2020) has done research for Overconfidence to affect Stock Investment Decision.

Ali and Tariq (2013) and Riri et al (2020) has also proved their hypothesis about firm image affect stock Investment Decision.

Ali and Tariq (2013), Akbar et al (2016) and Riri et al (2020) also proved the hypothesis of advocate recommendation affected stock investment decision.

6 Result and Data Analysis

Data is collected using a questioner which is processed by Smart PLS. The Result is shown by Table 1, Table 2. Table 3 and Table 4. Table 1 showed that Statistical Descriptive about profile the sample. Table 2 and 3 show the validity and Reliability test. This research used Questionnaire to get data for analysing of Stock Investment Decisions which are affected some variables. Loading Factor, AVE, communalty, and composite reliability is used to test validity.

Value of AVE should be more than 0.5 that it explained variance of indicator. Chain (1998) stated that an indicator should have validity when it has loading factor equal and more than 0.7 and T-Statistics more than 1.96. There are 27 indicators for 5 constructs. These indicators have Loading factor varying from 0.714 to 0.873, and AVE also varying from 0.609 to 0.728. It means that all indicator has validity to reflect constructs.

Then, this research also tested the reliability of indicators or instrument. CR (composite reliability) and CA (Cronbach's alpha) scores used to indicate reliability. CA score should be more than 0.7 and CR score should be also more than 0.7. CA scores are varying from 0.786 to 0.875. CR scores of constructs are varying from 0.862 to 0.901. The results indicate all constructs have reliability significantly. Based on the results, the instrument has validity and reliability, and it could be to do further exploration.

Table 4 shows the result of Hypothesis testing. Variable of Overconfidence, Advocate Recommendation, Social Relevance and Personal Needs significantly affected Stock Investment Decision. Firm Image does not affect Stock Investment Decision. Year of Investment as Moderating Variable could moderate Personal Needs

and Advocate Recommendation to Stock Investment Decision.

7 Discussion

Categories				
Gender	Male	252	65.28%	65.28%
	Female	134	34.72%	100.00%
Marital Status	Single	193	50.00%	50.00%
	Married	175	45.34%	95.34%
	Divorced	18	4.66%	100.00%
Age	Less than 26-year-old	92	23.83%	23.83%
	26- to 35-year-old	187	48.45%	72.28%
	36- to 45-year-old	94	24.35%	96.63%
	More than 45-year-old	13	3.37%	100.00%
Profession	Governmental employee	42	10.88%	10.88%
	Private sector employee	123	31.87%	42.75%
	Entrepreneur	118	30.57%	73.32%
	Other	103	26.68%	100.00%
Education	Senior high school	39	10.10%	10.10%
	Vocational education	37	9.59%	19.69%
	Bachelor's degree	260	67.36%	87.05%
	Master's degree	50	12.95%	100.00%
Years of Investment	Less than 1 year	78	20.21%	20.21%
	1 - 3 years	136	35.23%	55.44%
	4 - 5 years	106	27.46%	82.90%
	Less than 5 years	66	17.10%	100.00%

Table 1. Respondent Profile

In this sub-section, the discussion is how relationship overconfidence, self or firm image, advocate recommendation, personal needs, and social relevance toward decisions on stock investment. Riri et.al (2020) investigated determinant of stock investment decisions which are firm image or self-image, overconfidence, social relevance, personal financial need, and advocate recommendation. The research model shows the results on Figure 2 and Figure 3.

Personal Need is a factor that someone to do for fulfil it. Income from salary does not enough to fulfil daily expenditure for his life, so she should do something to get another income by investment.

Personal need has relationship to stock investment decision which has weak relationship and significant of 10%.

The coefficient path is 0.227 or less than relationship advocate recommendation with stock investment decision that it is small, and it called weak relationship. This personal need has the second highest effect to stock investment decision.

This research supports the previous research and the theory. Ali and Tariq (2013) investigated Personal Needs on Stock Investment Decisions. They found that strong influence Personal needs on individual equity investor decision making. Kabete and Kipkirong (2018) investigated personal need on stock investment decision. They found that personal financial needs had a positive effect on individual short-term investment decisions. Riri et.al (2020) examined effect of overconfidence on Stock Investment Decisions. They found that Personal Need significantly positive affect stock investment decisions.

Sources: Process by Researcher

Table 2. The Analysis of Validity and Reliability

VARIABLE	ITEMS	OUTER LOADING	AVE	CA	CR
Overconfidence	OC01	0.833	0.728	0.875	0.914
	OC02	0.873			
	OC03	0.867			
	OC04	0.838			
Firm Image	FI01	0.826	0.602	0.868	0.901
	FI02	0.744			
	FI03	0.799			
	FI04	0.777			
	FI05	0.759			
	FI06	0.799			
Social Relevance	SR01	0.839	0.682	0.845	0.895
	SR02	0.848			
	SR03	0.8			
	SR04	0.815			
Advocate Recommendation	AR01	0.816	0.657	0.826	0.884
	AR02	0.752			
	AR03	0.826			
	AR04	0.844			
Personal Need	PN01	0.827	0.609	0.786	0.862
	PN02	0.783			
	PN03	0.794			
	PN04	0.714			
Stock Investment Decision	SID01	0.761	0.613	0.842	0.888
	SID02	0.815			
	SID03	0.817			
	SID04	0.748			
	SID05	0.771			

Sources: Process by Researcher

Table 3. Analysis of Discriminant Validity

Dimension	[1]	[2]	[3]	[4]	[5]	[6]
[1] <i>Advocate Recommendation</i>	0.810					
[2] <i>Firm Image</i>	0.764	0.776				
[3] <i>Overconfidence</i>	0.686	0.675	0.853			
[4] <i>Personal Need</i>	0.827	0.634	0.633	0.781		
[5] <i>Stock Investment Decision</i>	0.780	0.733	0.683	0.733	0.783	
[6] <i>Social Relevance</i>	0.730	0.852	0.625	0.654	0.721	0.826

Sources: Process by Researcher

Advocate recommendation has relationship to stock investment decision which has weak relationship and significant of 1%. The coefficient path is 0.263 or higher than relationship between Overconfidence and Stock Investment Decision, relationship firm image and stock investment decision a that is small, and it called weak relationship. These results supported previous

Social relevance has relationship to stock investment decision which has weak relationship and significant of 10%. The coefficient path is 0.149 or higher than relationship firm image with stock investment decision that is small, and it called weak relationship. These results supported previous studies and theory. William (2007) investigated social relevance on stock investment decisions. They found

Table 4. Hypotheses Testing

Structural Model		Path Coefficient	t-Statistics	p-Values	Conclusion
H1	Overconfidence ==> Stock Investment Decision	0.186	4,041	0.000	Accepted
H2	Firm Image ==> Stock Investment Decision	0.127	1,955	0.051	Rejected
H3	Advocate Recommendation ==> Stock Investment Decision	0.263	3,706	0.000	Accepted
H4	Social Relevance ==> Stock Investment Decision	0.149	2,485	0.013	Accepted
H5	Personal Need ==> Stock Investment Decision	0.227	4,081	0.000	Accepted
Moderating Role		Path Coefficient	t-Statistics	p-Values	Conclusion
Years of Investment	Overconfidence ==> Stock Investment Decision	0.052	1,233	0.218	Rejected
	Firm Image ==> Stock Investment Decision	-0.039	0.687	0.493	Rejected
	Advocate Recommendation ==> Stock Investment Decision	-0.173	2,458	0.014	Accepted
	Social Relevance ==> Stock Investment Decision	-0.012	0.107	0.915	Rejected
	Personal Need ==> Stock Investment Decision	0.170	2,524	0.012	Accepted

Sources: Process by Researcher

studies and theory.

Ali and Tariq (2013) found advocate recommendation on Stock Investment Decisions. They found that strong influence advocate recommendation on individual equity investor decision making. Akbar et.al (2016) examined investor decision to buy shares that stated based on recommendation by stock brokerage, colleague in office, friend, and family.

Somathilake (2020) investigated advocate recommendation on stock investment decisions. He found that advocate recommendation influenced the individual investment decisions, but they do not much consider about accounting information. Riri et.al (2020) studied effect of advocate recommendation on Stock Investment Decisions. They found that advocate recommendation significantly positive affect stock investment decisions.

that it strong influenced to invest in stocks. Riri et.al (2020) explored effect of Social Relevance on Stock Investment Decisions. They found that Social Relevance significantly positive affect Stock Decisions.

Years of Investment

In this research, year of investment was used to be moderating variable to estimate relationship Overconfidence, self-image / firm image, Social Relevance, Advocate Recommendation, Personal Financial Needs on stock investment decisions. Sharma (1991) and Manurung (2019) stated that moderating variable is a variable to strength or weak the relationship independent variable to dependent variable. This research found that Advocate Recommendation and Personal Financial Needs Variables are significantly to have relationship with stock investment decisions by year of investment as moderating variable.

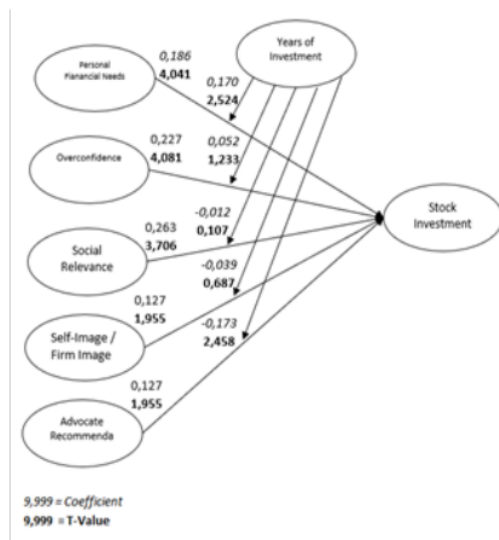


Figure 3. Statistical Output

8 Conclusion

This research has objective to investigate internal and external personal variable to affect stock investment decisions. This research is a research of behavior finance which is combined investment and psychology. Previous research mostly investigated directly factors affecting stock investment Decision without including moderating variable. This research entered year of investment as moderating variable. Based on result and previously explanation, this paper come to two conclusions: (1) all variable internal and external personal variable has effect to stock investment decisions by individual investor. (2) Year of investment could be a moderating variable for relationship between personal needs and advocate recommendation with stock investment decisions.

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