

Effects of Personality Trait in Financial Risk Tolerance Investor in Surabaya

Njo Anastasia, Mariana Ing Malelak

Finance Program, Petra Christian University, Surabaya, Indonesia

anas@petra.ac.id

Abstract. Personality traits are characteristics that frequently surface and describe the behavior of an individual, such as sensation seeking, locus of control, and ambiguity tolerance. The purpose of this study is to test the effects of personality trait towards financial risk tolerance in investors in Surabaya. Data is taken with purposive sampling technique through questionnaire given among the populace in Surabaya. Sample criteria is those who are in the working force, aged 18 to 55 years, and already had an investment for their future according to their risk tolerance. Data processing is done using SEM-PLS to 100 respondents. Study results have determined that sensation seeking and ambiguity tolerance significantly affects financial risk tolerance. Locus of control, however, do not affect investors' financial risk tolerance in Surabaya. This shows that a heightened stimulation in investors towards risk tolerance encourage them to act boldly on risks. Although, limited and ambiguous information received by investors encourage the acceptance of ambiguity, hence creating a discomfort of uncertainty to the results achieved. Furthermore, the ability of self-control shows no relevance to financial risk tolerance. These condition shows all the more important are studies related to financial behavior, to better undertand personality traits of financial actors to avoid making a biased decision.

Keywords: Sensation Seeking, Locus of Control, Ambiguity Tolerance, Financial Risk Tolerance

1. Introduction

People's awareness to prepare financial needs in the future other than saving encourages the act of investing. The variety of financial products offered, along with the increase of income in the people of Indonesia, also increase their interest to invest. However, there is still no investment instrument matching the exact personal needs of an individual. Individuals looking to make an investment tend to pay attention only to the return offered, and less to the risks presented by the same investment instrument [1]. Every individual has different financial goal, where to achieve said goal, investment planning is needed. Planning can be suited for short, mid, or long term by setting aside a certain amount of money to investment instruments. Financial goal can be achieved depending on the sum of the return of said investment. Return expected comes along with its own risks. According to Redja & McNamara, risk is an uncertainty which causes unwanted loss [2]. Every individual should measure their own tolerance to the risk of which they're capable to accept.

Every investment is bound to have its own risks, and every individual responds differently to it, this is called risk tolerance [3]. Financial risk tolerance refers to an investor's attitude towards risk or a certain amount of uncertainty, or the volatility of an investment's return which the investor can accept when making financial management decisions [4]. Grable & Joo said that differences in risk tolerance will affect the pattern and result of a person's investment [5]. Aggressive investors, those with a high risk tolerance, will be more daring to lose their money in order to receive higher return. On the other hand, conservative investors, those with a lower risk tolerance, tend to choose investments which maintain their principal investment. Every investor has their own preference in determining their assets investment and estimate the risks and returns. An investor will choose an investment instrument he deems appropriate to his own financial risk tolerance. Financial risk tolerance becomes a major determinant in the outcome of several decisions regarding investment and finance [4].

A survey done by Manulife Financial in December 20, 2012, to January 2013 to 500 respondents in Jakarta, Medan, and Surabaya produced the Manulife Investor Sentiment Index (MISI). Investors in Indonesia have the highest level of optimism with the score of 54. This is higher compared to the investor index score from Canada and the USA. While the highest optimism comes from Indonesia, the character is conservative. Investors tend to place funds on low-risk instruments, which is in the form of cash, steady income, inhabited house, and other properties. According to Putut, Business Development Director of PT. Manulife Asset Manajemen Indonesia, respondents' dependency to saving accounts and deposits is still very high. 17% of the respondents entrust their investment to property and hoping property prices will never go down. Conversely, a lot of respondents are still not so interested in investing in the stock market, due to the presumption that the stock market condition is still unstable. This condition shows there is a discrepancy between optimism in financial goals and investment behavior of the people in Indonesia [6].

Individuals who invest will consider the risks and returns deeply. Wong & Carducci study shows an investor's behavior regarding financial risk tolerance and personality trait which is sensation seeking, locus of control, and ambiguity tolerance [7]. Sensation seeking is an individual's behavior regarding the need to feel new sensations, diverse and complex, and the will to take risks both physically and socially in the experiences they're going through [8]. Individuals with sensation seeking often aim to achieve passion and stimulants in their life, which make them have a higher risk tolerance because they are bold in taking decisions or doing risky actions. This will be different in individuals who have a low risk tolerance, they tend to think that risky decisions and actions may be dangerous to people around them and themselves, and this makes them anxious and create a discomfoting feeling.

Locus of control is a personality and an individual's belief to their ability to control their own fate [9]. Locus of control is an individual's perception about the main cause of an event in their life, which is distinguished into internal and external. Individuals with an internal locus of control have a high risk tolerance, because they believe they can control the repercussion of their actions. Individuals with external locus of control have a lower risk tolerance, because they do not have faith in themselves regarding the repercussions of their actions.

Ambiguity tolerance is an individual's condition when receiving information that are too complex, unbearable, or even conflicting with his own beliefs, thus creating an uncertainty. Budner stated that ambiguity tolerance is an individual's behavior in receiving uncertainty, hence creating a discomfort of not knowing the end result [10]. Ambiguous situations can exist due to the limitedness of information and the ambiguity of the information given. The higher an individual's ambiguity tolerance is, the higher his risk tolerance will be, so the tendency to refuse ambiguous situation caused by limited information will be much higher.

Interesting studies regarding personality trait in investors in Surabaya have been carried out, namely by [7]. Understanding investors' behavior in making investment decisions is vital in creating an efficient market. The study was done in Surabaya as the second largest city in Indonesia, after Jakarta, to investors aged 18 to 55, requiring they are already in the work force and have already prepared an investment for their future according to their own risk tolerance. Detailed discussion regarding literature review is in literature reviews, followed by research method, and study result.

2. Literatures

2.1 Risk

Risk is a probability, danger, loss, unpleasant result of an action, attempt, and so forth (The Great Dictionary of the Indonesian Language) [11]. According to Redja & McNamara, risk is an uncertainty that creates unwanted loss [2]. The definition of risk generally refers to the possibility of the occurrence of unexpected event, perceived as something negative [12]. In finance, the definition of risk tend to refer to the possibility that the received return in an investment is not the return expected. Hence, risk is not only a bad event (where return is less than expected), it can be a good one (where return is more than expected). Investing is the activity of placing fund to one or more assets in the span of a certain period of time in hope to gain an income or return. Investing is categorized into 2 different categories, which is real asset investing and financial asset investing [13]. Tolerance towards risk is a major factor in choosing an investment product, as it directly links to the acceptable level of risk of an investor. Conservative individuals tend to avoid adding unnecessary risks. The level of risk taken will immensely impact potential return expected. Therefore, measuring the level of risk tolerance is important. Risk tolerance is an individual's behavior towards accepting a risk, to determine the right composition of creating asset portfolio optimally [14].

2.2 Personality Traits

Personality traits are characteristics which often surfaces, describing an individual's behavior [15]. Indarti, Hendriani, & Mahda adds that personality is an individual's ability to influence other individual, understand and see one's self, to measure the pattern of external and internal character, and interaction between humans in daily environments [16]. Schultz & Schultz and Coleman states personality factors consist of sensation seeking, locus of control, tolerance of ambiguity, impulsivity, aggression and sociability, extraversion, emotional stability, autonomy orientation, flexibility and competence, anxiety and susceptibility to boredom, achievement motivation, and so on [17] [18]. However, Wong & Carducci study focused on sensation seeking, locus of control, and ambiguity tolerance [7].

Zuckerman states that sensation seeking is an individual's behavior regarding the need to acquire new sensations, diverse and complex, along with the will to take risks both physically and socially in the experiences they're going through [8]. Trait is defined as the tendency to act a certain way in different situations, while trait of sensation seeking points to the tendency to always looking for new things and deeply explore them. Individuals who seeks sensation aims to gain passion and increase stimulants, with the tendency to look for new stimulants which might be dangerous for other people because they create anxiety and unpleasant feelings [19]. The four dimensions of sensation seeking include thrill and adventure seeking, experience seeking, disinhibition, and boredom susceptibility [8]. Wong & Carducci find individuals with the risk seeker type are the high sensation seeking type, and conversely, individuals who avoid risks are the low sensation seeking type [7]. Sensation seeking positively affects risk tolerance, for example, self-esteem and personality as a contributing factor to an individual's risk tolerance. Type A and type B personality correlates with risk tolerance, where type A tends to have more competitive and aggressive behavior compared to type B. Type A also correlates with the will to take bigger risks, while type B does not, and is even scared to take risks.

H₁ : Sensation seeking significantly affects financial risk tolerance

The concept of locus of control was first defined by Rotter based on social studies theory [20]. Locus of control is an individual's belief of his own ability to control fate [9]. An individual's perception regarding the main cause of a certain event in his life, can be translated as an individual's belief of control in his life, where in the same event, an individual considers his success is the fruit of his labor and ability, while the other considers mere luck as the reason. Locus of control is distinguished into two different categories, internal and external locus of control. Internal locus of control refers to the belief that whether it is success or failure, it is the result of a person's own behavior and believes that the only one determining the end result is himself. Individuals with internal locus of control are usually proactive and tend to be adaptive. They have high risk tolerance, because they believe they can control the result to suit their own goal. They tend to be actively seeking out new information and knowledge, so they have a high risk tolerance, caused by having high hopes and expectancies [7]. External locus of control refers to the belief that certain events are caused by fate, luck, and determined by forces outside of a person, so he is not responsible for his own actions. This type of individuals tend to be reactive and refuse oppressing situations. They have a low risk tolerance because they do not have the faith that they will get the result suiting their own goal [21]. These individuals tend to have less confidence in the abilities they possess, dependent to other people, and tend to not own their mistakes [7].

H₂ : Locus of control significantly affects financial risk tolerance

It has been more than fifty years since the theory of measuring ambiguity tolerance by [10] was published. Budner defined ambiguity tolerance as the tendency to ambiguously view a situation, which is caused by lack of information. McLain stated ambiguity tolerance as a denial of a foreign and complex attraction, and conflicting with existing beliefs [22]. Ambiguous situation is a condition where an individual is given information which is too complex, unbearable, and even contradictory that it creates uncertainty within it. Ambiguous situation is often experienced in daily activities, which is novelty (situation where no familiar signs exist), complexity (situation where a great deal of signs need to be considered), and insolubility (situation where there is conflict in the nature because of different signs in the settings) [10]. Ambiguity tolerance affects risk tolerance, because uncertainty regarding making decisions is unique and different. Wong & Carducci stated that the greater the level of ambiguity tolerance, the greater the level of risk tolerance of an individual will be, and so will the tendency to refuse ambiguous situations caused be limited information available [7].

H₃ : Ambiguity tolerance significantly affects financial risk tolerance

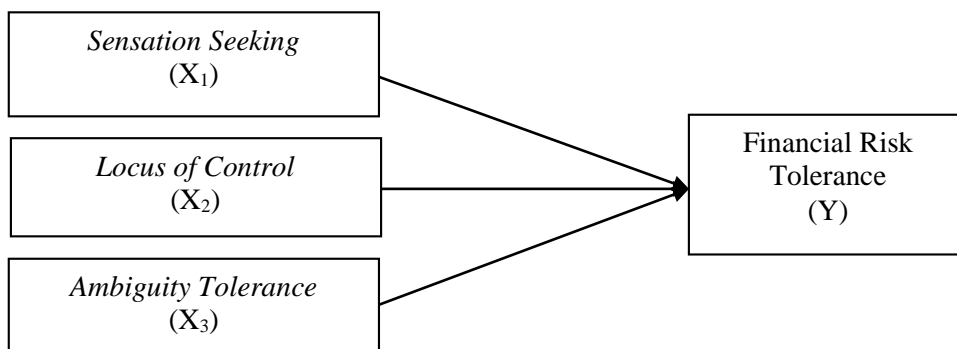


Figure 1. Research Model Frame

3. Method

Associative study is used here to test the effects of sensation seeking, locus of control, ambiguity tolerance towards financial risk tolerance. This study uses purposive sampling technique through questionnaires spread to respondents aged 18 to 55 with educational background of at least graduating high school. This age group is in the productive phase in terms of career development and the ability to work and generating income. High school graduates is assumed to be adequately educated. Respondents chosen are already in the work force and have made an investment. Questionnaires are given in both hardcopy and online through googleform. Dependent and independent variables are shown in Table 1.

Table 1. Research Variable Description

Independent Variable	Operational Definition	Empirical Indicator
Sensation seeking (SS)	Individual behavior that wants new sensations, diverse and complex, along with the will to take risks both physically and socially regarding ongoing experience [8]	Statements which measure individual behavior based on thrill and adventure seeking, experience seeking, disinhibition, and boredom susceptibility [8]
Locus of control (LOC)	Individual belief regarding the ability to control one's own fate [9]	Statements which measure individual belief based on internal locus of control and external locus of control [7]
Ambiguity tolerance (AT)	Individual behavior when receiving uncertainty, which causes discomfort of not knowing the end result [10]	Statements which measure individual behavior based on novelty, complexity, and insolubility [7]
Dependent Variable		
Financial risk tolerance (FRT)	Individual behavior of accepting risk of uncertainty or volatility of investment return in making investment decision [4]	Statements which measures individual risk tolerance regarding investment decision [7]

4. Result and Discussion

This study is focused on people in Surabaya aged 18 to 55, is in the working force and have made an investment. Demographical conditions regarding gender, marital status, age, education, occupation, and income or salary are shown in Table 2.

Table 2. Descriptive Summary of Respondent Profile

Description	Frequency	Percentage
Gender		
Male	64	64,0
Female	36	36,0
Status		
Unmarried	42	42,0
Married	58	58,0
Age		
≥18 - 25 years old	23	23,0
>26 - 35 years old	41	41,0
>36 - 45 years old	21	21,0
>46 - 55 years old	15	15,0

Description	Frequency	Percentage
Education		
High school	31	31,0
Undergraduate	63	63,0
Graduate, Postgraduate	6	6,0
Occupation		
Military personnel	7	7,0
Employee	39	39,0
Entrepreneur	18	18,0
Professional (Lecturer, Doctor, etc)	12	12,0
Civil servant	6	6,0
Others	18	18,0
Monthly income		
≤Rp. 3.000.000	15	15,0
>Rp. 3.000.000-Rp. 8.000.000	53	53,0
>Rp. 8.000.000-Rp. 15.000.000	23	23,0
>Rp. 15.000.000	9	9,0

(Source: Primary Data, 2018)

The majority of respondents male (64%), married (58%), aged 26-35 (41%) educational background of undergraduate (63%). Occupation of employee (39%), with monthly income of Rp. 3.000.000 – 8.000.000 (53%).

Table 3. Sensation Seeking, Locus of Control, Ambiguity Tolerance Description

Code	Statement Indicator	Mean	Total Mean
SS1	I sometimes like to do things that are a little frightening.	2.57	
SS2	I sometimes do "crazy" things just for fun.	2.29	
SS3	I very seldom spend much time on the details of planning ahead.	2.59	
SS4	I would like the kind of life where one is on the move and traveling a lot, with lots of change and excitement.	2.77	2.707
SS5	I often do things on impulse.	2.86	
SS6	I would like to take up the sport of water skiing	2.75	
SS7	I enjoy getting into new situations where you can't predict how things will turn out	2.78	
SS8	I'll try anything once.	3.05	
LOC1	People's misfortunes result from the mistakes they make.	2.96	
LOC2	The success I have is hardly a matter of chance.	2.89	
LOC3	If people try hard enough, they can prevent conflicts.	3.13	
LOC4	Getting what I want has little to do with luck	2.81	2.905
LOC5	Many of the unhappy things in people's lives are partly due to bad luck.	2.79	
LOC6	Getting a good job depends mainly on being in the right place at the right time.	2.86	
AT1	I like parties where I know most of the people more than ones where all or most of the people are complete strangers	3.31	3.056
AT2	I would like to live in a foreign country for awhile	2.91	

Code	Statement Indicator	Mean	Total Mean
AT3	It is more fun to tackle a complicated problem than to solve a simple one	3.12	
AT4	A good job is one where what is to be done and how it is to be done are always clear	2.86	
AT5	Many of our most important decisions are based on insufficient information	3.19	
AT6	There is really no such things as a problem that can't be solved	2.95	
FRT1	My best friend would describe me as a risk taker.	2.68	
FRT2	Giving up a position with <i>2% annual raise and lifetime job security</i> for one with <i>7% annual raise and no job security</i> .	2.74	
FRT3	Lost my job after finishing saving for "once-in-a-lifetime" vacation. <i>Would go for scheduled vacation before searching for new job.</i>	2.83	
FRT4	When thinking of the word "risk", opportunity comes to mind first.	2.58	
FRT5	Would invest savings (worth 3 months' salary) in a venture with <i>60% chance of losing it all and 40% chance of earning 10 times the investment.</i>	2.51	2.700
FRT6	Rating myself a risk taker when compared to others.	2.66	
FRT7	More concerned about possible gains than losses in investing.	2.72	
FRT8	Willing to <i>give up \$1,000 cash prize now to play another round for a 50% chance to win \$5,000 in a game show.</i>	2.85	

(Source: Primary Data, 2018)

Table 3 shows the level of sensation seeking of the people in Surabaya is relatively low, with the mean of 2.707. This shows a behavior which is not big on risks. Locus of control is also relatively low, coming with 2.905, showing that the people in Surabaya do not have sufficient faith in controlling the financial risk tolerance they're facing. However, ambiguity tolerance level is quite high, with 3.056, where people are always gathering the latest information to understand what they should do when faced with their own financial risk. Financial risk tolerance of the people is relatively low, that is 2.70, where people tolerate risks neutrally.

After description analysis, validity and reliability test is done to research model. Test result shows three items which is sensation seeking 8 (0.239), locus of control 3 (0.445), and ambiguity tolerance 4 (0.054), are not used in this study because they do not comply to loading factor score (< 0.5). Items which comply will be retested to prove the requirement of loading factor ($\alpha > 0.5$). Average Variance Extracted (AVE) score from each variable is greater than 0.5, so all three variables in this study have met the requirement of convergent validity test. Result of each variable in Cronbach's alpha test is greater than 0.6 and composite reliability showed scores greater than 0.70, therefore passing reliability test. Table 4 shows AVE score, Cronbach's Alpha and Composite Reliability.

Table 4. AVE Output, Cronbach's Alpha, and Composite Reliability

Variable	AVE	Cronbach's Alpha	Composite Reliability
<i>Sensation Seeking</i>	0.510	0,836	0,878
<i>Locus Of Control</i>	0.543	0,791	0,855
<i>Ambiguity Tolerance</i>	0.512	0,760	0,839
<i>Financial Risk Tolerance</i>	0.539	0,877	0,903

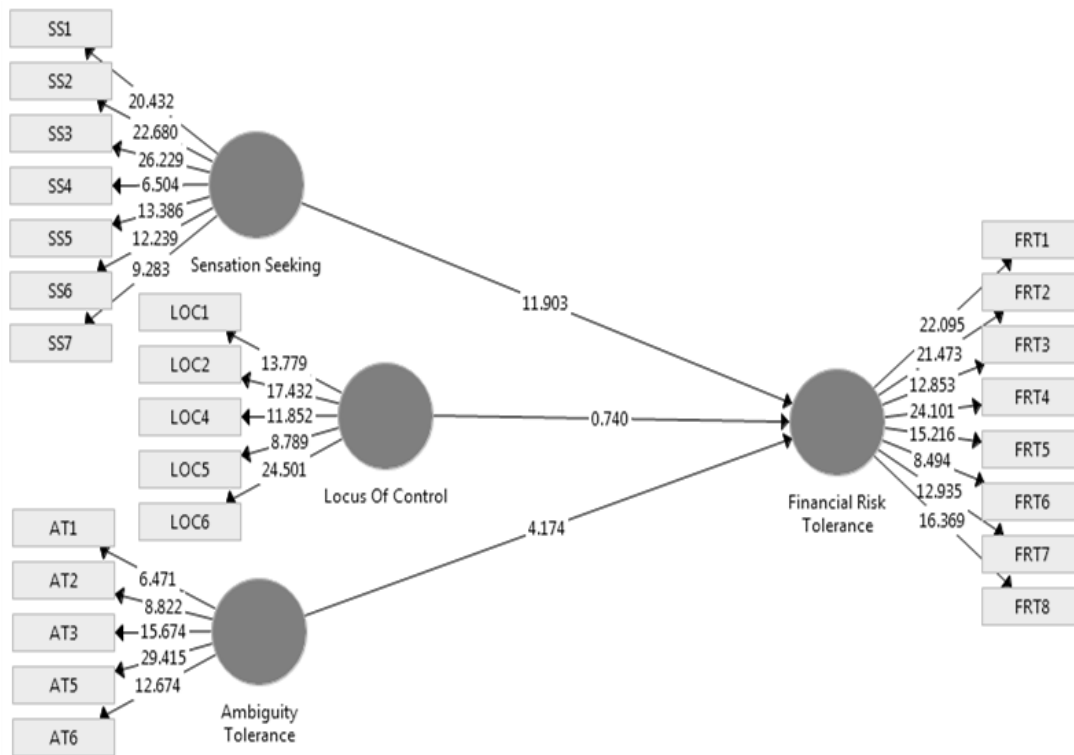


Figure 4. The Result Analysis of Path Diagram
(Source: Primary Data, 2018)

Hypothesis test shows sensation seeking and ambiguity tolerance affects financial risk tolerance, because the t-statistics score of both variables is greater than 1.96 (see Table 5). Locus of control has no significant effect to financial risk tolerance ($t_{stat} < 1,96$). R^2 score from financial risk tolerance is 0,820 which means variables sensation seeking, locus of control, and ambiguity tolerance can explain the change in financial risk tolerance variable in the amount of 82%.

Table 5. Path Coefficient in Structural Model Test

Direct Effect	Original Sample	t-Statistics	Information
SS => FRT	0.666	11.903	Significant
LOC => FRT	0.050	0.740	Not Significant
AT => FRT	0.267	4.174	Significant
R-square		0.82	

(Source: Primary Data, 2018)

Data processing result shows the variable sensation seeking significantly affects financial risk tolerance. People in Surabaya have relatively low sensation seeking level, meaning they are not drawn too hard to activities with high risks. A safe investment with below-average risk is a go-to, as they tend to be more conservative in investing. This is in agreement with Wong & Carducci study [7]. Indicator of sensation seeking regarding thrill and adventure seeking behavior states that people in Surabaya is not heavily drawn to thrilling activities and doing 'crazy' things. Experience seeking behavior in the people in Surabaya explains the dislike towards uncertainty, they always plan ahead in detail. Disinhibition behavior is the tendency to do activities based on own initiative, and dislike towards activities which endanger lives. Boredom susceptibility behavior refers to the fondness of situations where they can predict what is going to happen next.

Locus of control variable does not significantly affect financial risk tolerance. The ability of self-control a person has cannot be used as a reference to his level of risk tolerance in investing. However aggressive an investor gets is not merely because he has a good self-control ability. This result of this study is the opposite of what Wong & Carducci achieved, which states that when an individual has faith regarding the result of an investment, it will encourage him to find information about that investment, hence

increasing the locus of control [7]. Increase of locus of control an individual possesses will affect risk tolerance of said individual when investing. This difference in study result indicates that the people in Surabaya tend to choose investments that still gives a chance, namely property sector, saving and deposits, because they tend to avoid risks.

Variables such as ambiguity tolerance significantly affects financial risk tolerance, so the higher an individual's ambiguity tolerance is, the greater the risk tolerance in investing will be, and vice versa. This result is supported by [7], who stated that individuals with high ambiguity tolerance tend to have high risk tolerance. These individuals can anticipate or even refuse conditions of uncertainty by gathering sure and sound information when investing. Novelty of the people in Surabaya is the fondness of situations where they know the people around them in new environments. Complexity refers to the challenge faced when dealing with complex problems. Insolubility refers to the important decision making based on incomplete and lack of information, where they use intuition rather than logic.

5. Conclusion

Sensation seeking and ambiguity tolerance have an effect on financial risk tolerance, while locus of control do not. Self-confidence in making financial decision on investment asset will be different, caused by different risk tolerance level in each individual. It is suggested that in the next study, behaviors regarding sensation seeking, locus of control and ambiguity tolerance can be expanded with personality traits variable. Studies about behavior become all the more important to be explored further, to create a stable market condition and to increase investors' understanding about correct investment decisions because they are not relying on psychology conditions.

6. References

- [1] A. B. Nuraini, "Kena tipu investasi bodong, salah siapa?," 1 June 2018. [Online]. Available: <https://blog.portofolio.co.id/2018/06/01/kena-tipu-investasi-bodong-salah-siapa/>. [Accessed 20 May 2019].
- [2] G. E. Redja and M. J. McNamara, *Principles of Risk Management and Insurance*, 12th ed., Pearson Education, Inc., 2014.
- [3] M. J. Roszkowski and J. Grable, "How are income and net worth related to happiness?," *Journal of Financial Service Professionals*, vol. 61, no. 1, pp. 64-80, 2007.
- [4] J. Grable and R. H. Lytton, "Financial risk tolerance revisited: the development of a risk assessment instrument," *Financial Services Review*, vol. 8, no. 3, pp. 163-181, 1999.
- [5] J. E. Grable and S. H. Joo, "Environmental and biophysical factors associated with financial risk tolerance," *Journal of Financial Counseling and Planning*, vol. 15, no. 1, pp. 73-82, 2004.
- [6] A. Lilin, H. Hadinata and A. Ardiansyah, "Investor Indonesia masih alergi resiko," 10 April 2013. [Online]. Available: <https://investasi.kontan.co.id/news/investor-indonesia-masih-alergi-resiko>.
- [7] A. Wong and B. Carducci, "Do sensation seeking, control orientation, ambiguity, and dishonesty traits affect financial risk tolerance?," *Managerial Finance*, vol. 42, no. 1, pp. 34-41, 2016.
- [8] M. Zuckerman, *Sensation seeking: beyond the optimal level of arousal*, Hillsdale, N.J. : New York: L. Erlbaum Associates, 1979.
- [9] J. B. Rotter, "Generalized expectancies for internal versus external control of reinforcement," *Psychological Monographs: General and Applied*, vol. 80, no. 1, pp. 1-28, 1966.
- [10] S. Budner, "Intolerance of ambiguity as a personality variable," *Journal of Personality*, vol. 30, no. 1, pp. 29-50, 1962.
- [11] Kamus Besar Bahasa Indonesia, "Risiko," 2018.

- [12] A. H. Manurung and L. T. Rizky, *Successful financial planner: A complete guide*, Jakarta: Grasindo, 2009.
- [13] A. Halim, *Analisa Investasi*, 2nd ed., Jakarta: Salemba Empat, 2005.
- [14] W. G. Droms, "Investment asset allocation for PFP clients," *Journal of Accountancy*, vol. 163, pp. 114-118, 1987.
- [15] S. P. Robbins and T. Judge, *Essentials of organizational behavior*, 9th ed., San Diego State University: Pearson, 2008.
- [16] S. Indarti, S. Hendriani and M. Mahda, "Pengaruh faktor kepribadian pegawai dan lingkungan kerja terhadap kinerja pegawai pada kantor regional XII BKN Pekanbaru," *Jurnal Ekonomi*, vol. 22, no. 1, pp. 1-16, 2014.
- [17] D. P. Schultz and S. E. Schultz, *Theories of Personality*, 11th ed., University of South Florida: Cengage, 2017.
- [18] L. Coleman, *Why managers and companies take risks*, W. A. Muller and M. Bihn, Eds., Physica-Verlag, A Springer Company, 2006.
- [19] J. W. Roberti, "A review of behavioral and biological correlates of sensation seeking," *Journal of Research in Personality*, vol. 38, pp. 256-279, 2004.
- [20] Sumijah, "Locus Of Control pada Masa Dewasa," in *Seminar Psikologi dan Kemanusiaan*, Malang, 2015.
- [21] P. G. Zimbardo, "Mind control: Political fiction and psychological reality," P. Stansky, Ed., New York, Freeman Press, 1984, pp. 197-215.
- [22] D. L. McInain, "The Mstat-I: A new measure of an individual's tolerance for ambiguity," in *Annual Meeting of the Decision Sciences Institute*, Milwaukee, Wisconsin, 1991.