Effect of Fundamental Factors and Demographic Informations on Personality and Investment Decision

Ika Sisbintari[1*], Suhadak[2], Siti Ragil[3], Nila Firdausi Nuzula[4]

[1*]Post Graduate Program. Administrative Science Doctoral Program, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia. Lecturer at the Business Administration Study Program, Faculty of Social and Political Sciences, Jember University.

[2,3,4] Lecturer in the Administrative Science Doctoral Program, Faculty of Administrative Sciences, Brawijaya University, Malang, Indonesia

Abstract

Investment decision making is a process that involves investor psychology. Many events in capital market are anomalies that traditional finance cannot explain. Researchers in finance field then turn to non-economic aspects of investor psychology which causes behavioral finance to emerge. In principle, behavioral finance is a study of three fields of science, namely finance, psychology and sociology. This study aims to (1) test and explain the effect of fundamental factors on investment decision; (2) test and explain the effect of demographic informations on personality; (3) test and explain the effect of personality on investment decision; (4) test and explain the effect of demographic informations on investment decision. Data collection was carried out using a questionnaire with a response rate of 72.4% (of the 500 questionnaires sent, 362 returned questionnaires that could be analyzed). Data analysis used Generalized Structured Component Analysis (GeSCA). The results showed that (1) fundamental factors had a significant effect on investment decision; (2) demographic informations had a significant effect on personality; (3) personality had a significant effect on investment decision; (4) demographic informations had a significant effect on investment decision.

Keywords: behavioral finance, investment decision, fundamental factors, demographic informations, personality

INTRODUCTION

Classical decision making theory assumes that decision makers in evaluating several alternatives always use rationality. The alternative choices that will provide the greatest benefits will always be chosen. Traditional finance theories assume that humans rationally do not like risk, so investors must get compensation if they will take risks. Theories include Modern Portfolio Theory, Efficient Market Hypothesis, and Capital Asset Pricing Model (CAPM) are unable to provide an explanation of a number of capital market inconsistencies, such as the January Effect, Day of the week effects, returns over trading and non-trading periods, Stock return volatility and the internet phenomenon (including capital market deadlock as a result of falling of internet-based stocks in the late 1990s), capital market crash in 1929 and 1987 and the impact of the subprime mortgage crisis in 2007-2008.

Recognizing traditional finance's inability to explain anomalies in money market and capital market phenomena, financial researchers began to link existing phenomena to aspects of behavioral finance.

Behavioral Finance Theory is an application of psychology in financial disciplines. Behavioral Finance is an investment analysis conducted by investors by taking into account the psychological factors in making these decisions. Behavioral finance theory aims to understand investors' behavior in making decisions as a basis for acting in capital market.

Behavioral Finance has began to develop since the 1990s, but research and scientific work have been carried out by experts since 1841. In 1841, MacKay wrote a chronology of panic that occurred in the market as a reflection of the psychological aspects of investors entitled "Extraordinary Popular Delusions and the Madness of Crowds". It was followed by a study entitled "The Crowd: A Study of the Popular Mind" by Bon in 1895 who proposed an idea about the role of "crowds" which could be interpreted as investors in the market, and the

Correspondence address:
Ika Sisbintari
Email : bintari.laros@gmail.com
Address : Post Graduate Program. Administrative Science Doctoral Program, Faculty of Administrative Science, Universitas Brawijaya

behavior of groups who tried abilities in the field of behavioral finance, social psychology, sociology, and history. Then in 1912, Selden applied behavioral finance in the context of psychology in the post-capital market through a publication entitled "Psychology of the Stock Market". The three books, according to, implicitly and explicitly discussed the emotional and psychological forces of investors and traders in financial markets [1].

Behavioral finance as a study that studies how psychological phenomena affect his behavioral finance [2]. Behavioral finance research is to explain financial market behavior and investor decisions with a model that is not entirely rational decision-making [3]. Behavioral finance explains that individual social, psychological and financial factors will be considered simultaneously. explained that behavioral finance is interdisciplinary from three studies, namely psychology, sociology and finance. Furthermore when discussing behavioral finance, traditional finance is still the center of the section by adding aspects of psychology and sociology as integral catalysts in this field of study [4].

According [4] this research wants to further examine the behavioral finance of three sciences, namely finance, sociology and psychology. In traditional finance perspective, it will be studied through fundamental factors; sociology will be represented by demographic informations; and psychology will be represented by personality.

According [4] to the opinion of who stated that traditional finance is a core study of behavioral finance and it has been stated that from this point of view, fundamental factors will be taken. Important factors in making investment decision for investors need to pay attention to fundamental factors. This opinion was stated in Theory of Security Analysis [5]. Theory of Security Analysis explains that in an investment decision, an investor must really pay attention to fundamental factors. Graham suggested that fundamental factors become very important in determining investment policies.

Study conducted [6] showed that the fundamental factors in the form of information about economic and market factors, industrial factors and company factors have a significant influence on investment decision. Fundamental factor influence investor investment decision in the United States and Thailand [7]. Fundamental factors greatly influence investor decisions in stock investing [3].

Decision making is a process that occurs in humans. Likewise with investors in investment decision. Personality is a guide to what a person should do [8]. A person's personality will shape the behavior of each individual [9]. Personality traits are associated with various investment decision and outcomes [10]. Personality influences decision investment [11] [12]. A negative relationship between personality (extraversion) and investment decision [10].. Personality (extraversion and conscientiousness) positively moderates the effect of acquisition information and investment decision [12]. Meanwhile, openness personality negatively moderates the relationship between acquisition information and investment decision. Noting the findings of the studies that have been mentioned above, it is interesting to examine the effect of personality on investment decision.

Investor demographic informations influence investment decision making in the capital market [3][13]. Demographics has a significant effect on investment decision. The findings that demographic informations that significantly influence investment decision are gender, marital status and occupation [14]. The dominant demographic informations affecting investors in decision making are income and education [13] . But the findings of some researcher showed different results. Investor demographic informations do not affect investment decision making [15][16]. Noting the findings of these research, it is interesting to examine the effect of demographic informations on investment decision. Paying attention to the description above, it means that demographic informations such as age, gender, marital status, education, job and culture will also affect investment decision.

Based on the description that has been stated, the main problems of this research are formulated as follows.
1. Do fundamental factors affect investment decision?
2. Do demographic informations affect personality?
3. Does personality affect investment decision?
4. Do demographic informations affect investment decision?

The purpose of this study, to:
1. Test and explain the effect of fundamental factors on investment decision.

2. Test and explain the effect of demographic informations on personality.
3. Test and explain the effect of personality on investment decision.
4. Test and explain the effect of demographic informations on investment decision.

MATERIAL AND METHOD

Types of research. In accordance with the purpose of this research, namely to test and analyze the effect of independent variables on the dependent variables, the type of this research is explanatory research. The purpose of explanatory research is to explain the causal relationship between the variables studied through empirical hypothesis testing [17]. Causal research besides questioning or explaining the causal problem also shows the direction of the relationship between the independent variables and the dependent variables[18].

Research sites. The study was conducted on investors in securities companies in Surabaya, Malang and Jember Regencies in East Java Province of Indonesia.

Analysis method. Data analysis method used in this research was descriptive statistical analysis and inferential statistical analysis. Descriptive analysis was used to provide an empirical description of respondents' answers presented in the form of frequency distribution and measured the average value. Inferential statistical analysis used was Generalized Structured Component Analysis (GeSCA).

Data Collection

Researchers sent 500 questionnaires and returned and analyzed a total of 362 pieces of questionnaire, so it can be said that the response rate was 72.4%.

Data collection was carried out using a research questionnaire. Data measurement used a Likert scale with respondents' answers classification of 1 for very disagree answers, 2 for disagree answers, 3 for neutral or doubtful answers, 4 for agree answers, and 5 for very agree answers.

Respondents' Gender. The results showed that the majority of respondents were male (70%) and the rest were female.

Respondents' Age. The results showed that the majority of respondents were 124 people (34.25%) aged 35-44 years. Furthermore, as many as 77 people (21.27%) aged 45 - 54 years,

followed by the age group of 25 - 34 years as many as 76 people (20.99%). Respondents aged more than 54 years were 54 people (14.92%) and at least (31 people or 8.56%) aged 18-24 years.

Respondents' Age. The results showed that most respondents had jobs as entrepreneurs, as many as 166 people (45.86%), followed by respondents who had jobs as private employees, as many as 117 people (32.32%). Furthermore, as many as 76 people (20.99%) had other jobs (housewives, retirees, and students), while the respondents who had jobs as civil servants were only 3 people (0.83%).

Respondents' marital status. The results showed that the marital status of the majority of respondents (75%) were married and the rest were unmarried/widowed.

Respondents' investment duration. The results showed that most respondents had an investment period of more than 3 years, namely as many as 73.20% (265 people). Respondents who had an investment period of 1 to 3 years were 54 people (14.92%). Respondents who had an investment period of less than 1 year turned out to have the least percentage, namely11.88%.

Respondents' investment value. The results showed that the majority of respondents (160 people or 44.20%) had an investment value greater than Rp. 200 million. The number of respondents who had an investment value of more than Rp. 150 million to Rp. 200 million was 44 people or 12.15%. Respondents who had an investment value of more than Rp. 100 million to Rp. 150 million were as many as 37 people or 10.22%. Respondents who had an investment value of between Rp. 50 million to Rp. 100 million were as many as 49 people or 13.54%. Respondents who had an investment value of less than Rp. 50 million were as many as 72 people.

Respondents' investment location. The results showed that the majority of respondents (152 or 42%) had investment locations in Surabaya City. Respondents who had investment locations in Malang City were 118 people (32.6%), while Jember Regency was 92 people (25.4%).

RESULT AND DISCUSSION

Descriptive analysis Descriptive statistical processing in this research was research instrument descriptive statistics (variables). In the process of calculating the descriptive

statistics of research instruments, the average for each variable was obtained as follows:

Table 1. Average of Respondents' Answers on Each Variable

Variables	Mean	Standard Deviation
Fundamental Factors	3.714	1.173
Demographic informations	3.694	1.174
Personality	3.658	1.175
Investment Decision	3.733	1.175

Sources: GSCA results, 2018

Based on table 1 above, it is known that respondents had an average answer to agree on each of the variables studied. Paying attention to the respondents' average answers shows that they tend to agree to the statements in the research questionnaire.

Inferential Statistical Analysis. Measurement Model Suitability Evaluation. Next, the analysis was carried out by evaluating the suitability of the measurement model. The results of the analysis showed that the indicators of X1 (fundamental factors), X2 (demographic informations), Y1 (personality), and Y2 (investment decision) were indicators that influenced the latent variables, which can be shown in Table 2, as follows:

Table 2. Measurement of Validity and Reliability

Indicators	AVE	Composite reliability
Fundamental Factors	0.505	0.807
Demographic informations	0.607	0.864
Personality	0.577	0.908
Investment Decision	0.595	0.829

Sources: GSCA results, 2018

Based on table 2 above, the AVE value obtained in each latent variable was greater than 0.5 and the composite reliability value was above 0.7. So it can be concluded that the indicators used in this research were valid and reliable in measuring the latent variables.

Path Coefficients

The analysis continued with the evaluation of the structural model. Based on the results of the calculation, the results found in table 3 are as follows.

Table 3 Parameter Estimates for Structural Models

Variable Correlation		Estimation	Std Error	Critical Ratio	Test Results
Demographic informations	Personality	0.548	0.063	8.688*	Significant
Fundamental Factors	Investment Decision	0.444	0.104	4.257*	Significant
Demographic informations	Investment Decision	0.342	0.065	5.245*	Significant
Personality	Investment Decision	0.622	0.061	10.262*	Significant

* Significant at level .05

Based on table 3 above, it can be seen that all latent variable relationships had a significant effect. It was indicated by the value of the critical ratio in each variable relationship that was more than 1.96. Based on table 3, two structural models can be formed from the parameter estimation results in the structural model, as follows:

1. Structural models with endogenous variable of personality can be seen in the equation:

Personality = 0.548 of demographic informations

Path coefficient value of relationship of demographic informations to personality was 0.548 with a critical value of 8.688 * (CR> 1.96) which stated that significant demographic informations had a positive effect of 0.548 on personality.

2. Structural models with endogenous variable of investment decision can be seen in the equation below:

Investment decision = 0.444 of fundamental factors + 0.622 of personality + 0.342 of demographic informations

The path coefficient value of relationship of fundamental factor to investment decision was 0.444 with a critical value of 4.257 (CR> 1.96) which stated that fundamental factors had a

significant positive effect of 0.444 on investment decision. Path coefficient value of relationship of personality to investment decision was 0.622 with a critical value of 10.262 (CR> 1.96) which stated that personality had a significant positive effect of 0.622 on investment decision. The path coefficient value of relationship of demographic informations to investment decision was 0.342

with a critical value of 5.245 (CR> 1.96) which stated that demographic informations had a significant positive effect of 0.342 on investment decision.

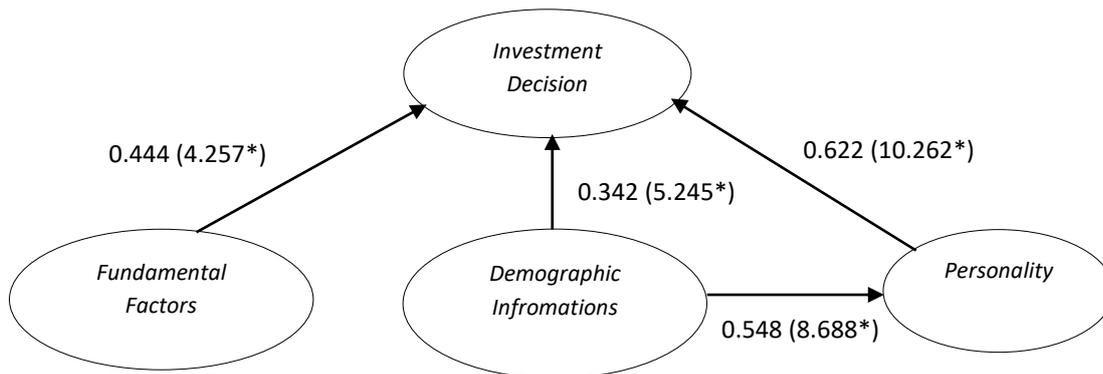Overall structural models that were formed from investment decision can be explained by Figure 1 below.

Figure 1. Results of Investment Decision Structural Model Research

Testing of the Measurement of Fit Model

The next step was to test the fit model of the model that has been formed. Based on the R software output, a summary evaluation of the fit model test in table 4 can be made, as follows:

Table 4. Summary of FIT Model Test Evaluations

FIT Model Test	Value
FIT	0.3239
AFIT	0.3168
GFI	0.9972
SRMR	0.1111

Sources: GSCA results, 2018

1. Based on Table 4, it can be seen that the FIT value was 0.3239 which indicated that the research model could explain 32.39% of variation in data. In other words, the variables of fundamental factors, personality and demographic informations affect investment decision by 32.39% at 95% confidence level and the remaining 67.61% can be explained by other variables outside the model.
2. GFI value was known to be 0.9972 or it can be said that this research model was very good or very precise in measuring investment decision on research samples.

3. It was known that the SRMR value was 0.111, this stated that the measurement model was not fit (poor fit) in the population. This may be because the value of GFI was very precise in measuring investment decision on research samples, so that the model was said to not be suitable in the population (general).
4. The NPAR value or number of free the estimated parameters in the table above showed how many free parameters used in the calculation, namely 110 parameters.

Discussion

The results showed that fundamental factors had an effect on investment decision. The results of this research showed that fundamental factors greatly influence investor decision in stock investing [3][6][7]. These results also supported statement [14] on the conclusion of their research which stated that whenever an investor makes an investment decision, firstly, they must evaluate all information related to the company's fundamentals and consult with investment experts and do not involve emotions. Fundamental analysis is the key instrument used by the stock investors in the developed markets. Buffet employed primarily fundamental analysis, which includes assessing such ratios as ROE, debt/equity, stability of profit margins, valuation [19].

The results of this research were also in accordance with Analysis Securities theory which explains that in investment decision, an investor must really pay attention to fundamental factors. Graham suggested that fundamental factors become very important in determining investment policies. The results of this research also supported the opinion [20] which explained that Graham's theory is still feasible to be used in analyzing stocks. So the results of this research proved that the analysis securities theory is still relevant to be applied by investors in making trade decisions in securities markets.

The results of this research also found that demographic informations affected personality. The results also supported the concept [9] which stated that personality is a result of the interaction between heredity factors and environment factors. In other words, personality as a result of a combination of hereditary factors and environmental factors consists of demographic informations (cultural, social and situation factors).

This finding showed that empirically personality is a determinant of investment decision. The direction of personality's influence on decision is positive, meaning that the stronger the personality, the stronger the investment decision. The results of this research do not support the findings who found a negative relationship between personality (extraversion) and investment decision [10]. The results of this research supported the findings who found that personality traits are closely related to investment decision [21]. Personality traits affect investment decision [22]. Investment decision are based on the personality and indications of both (investment decision with personality) having a relationship [23].

The results of this research also supported the framing effect theory. The framing effect phenomenon through prospect theory stated that the framing adopted by investors can influence the decisions taken [24]. Investors process the information received into a decision based on the framing adopted. The framing effect can occur due to information selection processes that only pay attention to certain parts [25]. The framing effect in manipulating the tendency of decision making risk [26].

The results of this research also showed that empirically demographic informations affect investment decision. The direction of influence of demographic informations on decision is positive, meaning the stronger the demographic

informations, the investment decision will be stronger. The results of this research supported the findings investor demographic informations affect investment decision in the capital market[3][13][22].

The results of this research also supported the theory of bounded rationality which explains that in making decisions, human rationality is limited by information resources formed from human demographic conditions. The limitations of human rationality in obtaining and processing information make people make decisions according to the information that they have. Demographic informations such as religion, culture and education as well as social values that become human background in thinking will greatly influence the decisions taken [27]. The results of this research also supported studied further bounded rationality and concluded that human rational is limited because it is limited by the belief, faith and choices that humans have [28].

CONCLUSION

The conclusions that can be taken from this research are:

1) Demographic informations (gender, age, marital status, last education level, investment experience) have an effect on personality (big five factors) of investors. The meaning of this finding shows that empirically demographic informations are determining factors of personality. The structural model for endogenous variable of personality is Personality = 0.548 of demographic informations.

2) Fundamental factors (economic and market factors, industry factors and company factors), demographic informations and personality have an effect on investment decision. This finding shows that empirically fundamental factors, demographic informations, and personality are determinants of investment decision. Structural model for investment decision, namely endogenous variable of investment decision = 0.444 of fundamental factors + 0.622 of personality + 0.342 of demographic informations.

REFERENCES

[1] Gumati (2009) Gumanti, Tatang Ari. 2009. Behavior Finance: Suatu Telaah. Usahawan. 1(XXXVII): 5 – 15.

[2] Shefrin, Hersh. 2000. Beyond Greed and Fear: Understanding Behavioral Finance and Psychology of Investing. Harvard Business School Press.

[3] Ahmed, Nesma Heshmat. 2012. Non-profesional Investors' behavior: An Empirical Study of Female Saudi Investors. International Journal of Commerce and Management Vol 22 no. 1. 2012: 75 – 90

[4] Ricciardi, Victor. Simon Helen K. 2000. What is Behavioral Finance? Business, Education and Technology Journal Fall.P.1-9.

[5] Graham dan Dodd. 1934. Security Analysis. McGraw-Hill Companies, Inc. New York.

[6] Daveri, M. Abzari, M. Mahdaviniya, M. 2011. Survey of Effective Factors on Stock'sFundamental Analysis Isfahan Stock Exchange.Journal of Economic Studies: 7-30

[7] Suvitsakdanont, Pranee. 2000. Factors Related To Individual Investor's Stock Investment Decision" A Cross-Cultural Comparative Study of AmerikaAnd Thai Investors. diserrtasionGraduate Faculty of The Colledge of Business Administration. United States International University.

[8] Baker, H. Kent,. Ricciardi Victor. 2010. Investor Behavior: An Overview. In Investor Behavior: The Psychology of Financial Planning and Investing. Editor H. Kent Baker and Victor Ricciardi. John Willey & Sons, Inc. Hoboken, New Jersey.P. 3 – 23

[9] Robbins, S.P dan Judge. A. Timothy 2008. Essential of Organizational Behavior. Prentice Hall inc. San Diego.

[10] Durand, R. B. Newby, R. Sanghani, J. 2008. An Intimate Portrait of the Individual Investor.The Journal of Behavioral Finance, 9, 193–208.

[11] Lovric, Milan. Uzay Kaymak. Jaap Spronk. 2008. A Conceptual Model of Investor Behavior. Eramus School of Economics.Eramus University. Rotterdam

[12] Zubair, Muhammad, Tauni. Fang,Hong Xing. Rehman Zia-ur Rao. Yousaf, Salman. 2015. The Influence of Investor Personaliy Traits on Information Acquisition and Trading Behavior: Evidence From Chinese Futures Exchange. Personality and Individual Differences 87. 248 – 255.

[13] Rahadjeng (2011) Rahadjeng, Erna R. 2011. Analisis Perilaku Investor Perspektif Gender Dalam Pengambilan Keputusan Investasi Di Pasar Modal. Humanity, Vol. 6, No. 2, hal. 90-97.

[14] Abbas and Ahmad (2013) Abass, MohdBhat. Ahmad, Fayaz Dar. 2013.The Role of Demographic Factors in Relationship Between Emotional Influences and Investment Decisions. An Empirical Study. International Journal of Current Research.Vol. 5, Issue, 01, pp. 232-238.

[15] Joseph, Nelson Nabianga. Abdullah Ibrahim Ali. 2015. Determinants Of Investment Decision Making Among Kenya Ferry Services Employees. International Journal of scientific research and management (IJSRM).Vol.3(8) p. 3477-3484.

[16] Oberlechner, Thomas. Thomas Slunecho. Nicole Kronberger. 2004. Understanding the Foreign Exchange Market Through Metaphors. British Journal of Social Psychology 43: 1 p. 133-156.

[17] Sugiyono. 2004. Metode Penelitian Administrasi. Alfabeta. Bandung.

[18] Kuncoro, Mudrajad. 2003. Metode Riset Untuk Bisnis & Ekonomi. Erlangga. Jakarta.

[19] Bistrova and Lace. 2011. Created Value of Fundamental Analysis During Pre and Post Crisis Period on the Baltic Equity Market. Riga Technical University.

[20] Palikala,Vinod. 2009. Notes to Ben Graham's Security Analysis2nd and 3rd editions. vpalika@hotmail.com.

[21] Durand, R. B. Newby, R., Peggs, L., & Siekierka, M. 2013. Personality.The Journal Of Behavioral Finance, 14, 116 - 133.

[22] Zhuan, Ang Shiao. Ying, Chuah Chea. Boon, Kui Siew. Hui, Soo Li. Hong, Wong Chin. 2016. The Effect of Personality Traits and Demographic Characteristics Towards Risk Tolerance and Investment Decision Making. Faculty of Business and Finance, Departement of Finance. Universiti Tunku Abdur Rahman. Kampar.

[23] Sadi, R., Asl, H. G., Rostami, M. R.,Gholipour, A., &Gholipour, F. 2011. Behavioral Finance: The Explaination of Investors" Personality and Perceptual Biases Effects on Financial Decisions. International Journal of Economics and Finance, 3(5), 234-241.

[24] Kahneman, D. and A. Tversky, 1979, Prospect Theory: An Analysis of Decision Under Risk, Econometrica, March, pp.263-291.

[25] Kuhberger. 1998. The Influence of Framing on Risky DecisionL A Meta – Analysis. Organ Behav Hum Decis Process, Jul;(1): 23 – 55.

[26] Susanto, Azhar. 2008. Sistem Informasi Akuntansi, Struktur Pengendalian Risiko

Pengembangan. Edisi Perdana. Lingga Jaya. Bandung.

[27] Simon, Herbert A. 1972. Theories of Bounded Rasionality. In Decision and Organization. Edited by McGuire, Roy Radncr. North Holland Publishing Company.

[28] Ballester, Coralio. Penélope Hernandez. 2011. Bounded Rationality. Discussion Papers in Economic Behavior DPEB 1/11www.erices.es.