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The Intention of Individual Investors to Invest in Green Bond in Indonesia

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Abstract
Purpose: This study explores why individual investors intend to invest in green bonds in Indonesia. The authors further inspect the moderation effect of financial literacy in the relationship between environmental concern and intention to invest toward green bonds.
Design/methodology/approach: This study analyses a quantitative approach with multiple linear regression for testing the hypothesis. The data were gathered through a structured questioner from 226 individual investors in Indonesia in 2021.
Findings: This study reveals a significant effect of risk perception and the moderating variable on investors' intention to invest in the green bond. But, the impact of environmental concern was found statistically insignificant. The multiple squared correlations (R^2) show that the model could explain 48% of the variance of individual investors' intention toward green bonds.
Research limitations/implications: This study draws that financial literacy is not always an independent variable that directly influences individual investors' intention but also could moderate the relationship between other variables on intention to invest.
Practical implications: This study finds that environmental concerns insignificantly influence investors' intention to invest in green bonds. So, the government could educate the investors that green bonds positively impact the environment and gives sustainable economic growth in the future.
Originality/value: This study extends the understanding of intention to invest toward green bonds because examination of intention in green bond investment has not been directed, particularly in developing countries such as Indonesia.

Keywords: *Financial Behavior, Green Bond, Intention to Invest, Financial Literacy, Environmental Concern, Risk Perception, Individual Investor.*

1. Introduction

Green bonds are fixed-income securities, both taxable and tax-exempt, that raise capital for use in projects or activities with specific climate or environmental sustainability purposes (IFC, 2016). Based on Financial Services Authority of Indonesia (OJK) Regulation No 60/POJK.04/2017 Chapter V article 8 (OJK, 2017), 70% of the funding raised through green bonds in Indonesia must be channeled to the projects or activities that positively impact environmental sustainability. The benefit that investors get from the green bond is fixed return investment and to be involved in the management of the company to realize the development that benefits the environment and the broader community in the long term. Meanwhile, the benefits obtained by green bond issuers are alignment with corporate social responsibility (CSR) through funding schemes, commitment, and contribution to environmental issues and climate change. A private company carried out the first green bond issuance in Indonesia in 2018. Furthermore, both private companies and the Indonesian government began to issue green bonds in Indonesia.

The international green bond market has been overgrowing in several countries in the past few years. However, the issuance of a green bond in Indonesia is still low. Until 2020, Indonesia's total number of green bond issuances only reached 5 billion USD or had less than 2% (CBI, 2020b, 2020a). On the other hand, the economy in Indonesia is still dependent on the mining, industry, and transportation sectors, where these sectors have contributed to the decline in environmental quality (BPS, 2021; Guo et al., 2021).

Further examination is expected to analyze the variables that could influence individual investors in Indonesia related to intention to invest in green bonds. Indonesia's population is very diverse because it consists of various ethnicities, cultures, and backgrounds; it makes the response for each individual to the intention to invest in the green bond vary. The purpose of this study is to explore why individual investors intend to invest in green bonds in Indonesia. Furthermore, we inspect the moderation effect of financial literacy in the relationship between environmental concern and intention to invest toward green bonds. So that in the future, the green bonds in Indonesia could overgrow

This research will be coordinated as follows: Section 2 will discuss the literature review and hypothesis development in section 3. In Section 4, we will discuss the method that will be employed in this research. Section 5 will show the findings of the study. In section 6, we will discuss and conclude the result.

2. Literature Review

2.1 Behavioral finance

Behavioral finance is related to a person's psychological factors in determining a financial product or financial analysis. Investors' decisions are not always rational, have limits on their self-control, and influence their biases. Behavioral finance is a descriptive theory about the selection of an investment product under conditions of uncertainty. So, the concept of behavioral finance includes a broader view of social science, including psychology and sociology (Statman & Caldwell, 1987).

2.2 Intention to Invest

Intention to invest is a behavioral intention that can be measured based on what we expect, want, and intend (Proudlove et al., 2020). An individual investor will tend to perform a specific behavior if he believes that the behavior will produce an output that is in accordance with the values he holds; the person has the resources, abilities, and opportunities to perform the

behavior; and also, the people he knows approve of his behavior (Lam & Hsu, 2006). The intention to invest individual investors in company shares is based on the individual investor's interest through that company (Gatti et al., 2021).

Several studies measure the intention to invest using a theory of reason action (TRA), which measures intention behavior from attitudes and subjective norms. The intention will affect how the person's behavior will be (Fishbein & Ajzen, 1975). The studies about the choice to invest towards social responsibility investment can be differentiated as financial and marketing studies. The focus for marketing is analyzing the attitude and behavior of individual investors towards the type of investment (Palacios-González & Chamorro-Mera, 2018). So that, the attitude and the subjective norms are not included as independent variables in this study. This study analyzes the intention behavior through the nature and knowledge of the individual investors.

2.3 Environmental Concern

Environmental concern is an awareness of the consequences of modern industrial activities in the community, views on the importance of dealing with environmental problems and the efforts made to solve existing environmental problems, and willingness to make personal sacrifices in various ways (money and time) for the environment (Marquart-pyatt, 2012). Someone who cares about environmental issues will tend to pay more for a product that is considered friendly to the environment (Laroche et al., 2001). Furthermore, environmental concern is the most decisive factor in household intention to behave environmentally friendly, such as processing household waste (Triono, 2020).

2.4 Risk Perception

Financial return and risk are important in any investment decision. Risk perception is the interpretation of investors, how risky the investment products are in the future. In the long horizon, risk perception through the investment products will tend to be stable over time. During a financial crisis, the risk perception of the investor will significantly fluctuate (Hoffmann et al., 2013).

2.5 Financial literacy

Financial literacy can be defined as the extent to which a person can process information related to the economy and use it to make decisions in financial planning, accumulate wealth, manage debt, and manage pension funds. Financial literacy is closely related to knowledge of financial science, which is part of investing in human resources (Lusardi & Mitchell, 2014). Financial literacy has an important role in a person's participation in the stock market and intention to invest toward SRI (van Rooij et al., 2011).

3. Hypothesis Development

3.1 Environmental concern and intention towards green bond

The studies about individual investors in Swedish through their preferences on sustainable and responsibility equity funds found that 52.2% of respondents do not consider financial return is essential. They preferer to choose the social responsibility investment (SRI), which focuses on the environmental conditions as their investment product (Lagerkvist et al., 2020). The green bond market is overgrowing to meet the demand for climate and sustainability investment. Green bond issuance itself can increase the green investment capacity of a company and attract socially responsible investors (Tolliver et al., 2020). Therefore, we can generalize that environmental concerns have a role through investment decision-making.

H1. Environmental concern significantly and positively influences investor's intention in green bond

3.2 Risk perception and intention towards green bond

Some individual investors change over SRI to exploit the new financial opportunities or avoid current environmental and social sustainability conditions (Chatzitheodorou et al., 2019). Liquidity risk in green bonds will affect the yield spread, which causes liquidity risk in green bonds to be ignored from the perspective of issuers and investors (Wulandari et al., 2018). An Investor who has a long investment horizon prefers ESG (environmental, social, corporate governance) firms and will behave patiently when experiencing losses (Starks et al., 2017). Therefore, risk perception has an important factor for any investment decision.

H2. Risk perception significantly and positively influences investor's intention in green bond

3.3 Financial literacy, environmental concern, and intention towards green bond

The study about green bond issuance in China related to credit rating, corporate social responsibility (CRS), and green certificates on the yield spread; shows that these factors impact interest costs. Therefore, green bonds with a green certificate have a lower interest cost than those without a green certificate (Li et al., 2020). Individuals with high financial literacy have a greater probability of investing than individuals with low financial literacy (Arifah & Dalimunthe, 2020). However, individual investors who have good financial literacy prefer to allocate a small investment portfolio to the SRI. This phenomenon is related to the low-interest rate offered by SRI (Rossi et al., 2019). Because the green bond is a confluence of both financial and non-financial motivate, thus both financial literacy and environmental concern significantly influence individual investor behavior. Therefore, we propose that:

H3. Financial literacy moderates an environmental concern with the intention to invest in green bond.

A conceptual model (Figure 1) has been created by using environmental concern, risk perception, financial literacy to explore the reasons behind the intention to invest in green bonds among Indonesian individual investors.

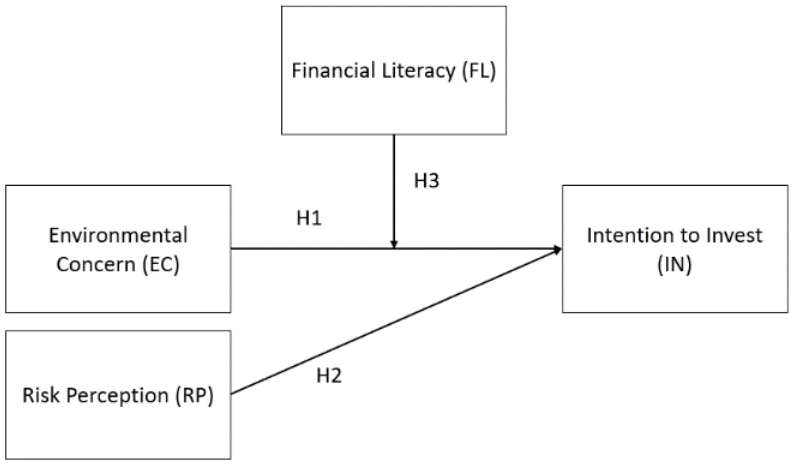

Figure 1 Conceptual model

4. Methods

4.1 Research Design and Survey Procedure

The data measured in this study is a person's level of financial literacy, environmental concern, risk perception, and intention to invest in green bonds. This study uses primary data collected through questionnaires because primary data more imitate investors' behavioral aspects towards investment decisions than secondary data (Adil et al., 2021). The questionnaire was delivered to the individual investor in Indonesia directly one by one through internet-based in 2021. For the total result, this study has 226 individual investors as respondents

Individual investors in Indonesia are considered respondents because the Indonesian population, which is large and diverse in terms of ethnicity, culture, and background, makes responses regarding the intention to invest in green bonds vary. Furthermore, the capital city of Indonesia, Jakarta, is one of the cities with the worst air pollution, where 75% comes from land transportation, 8% from industry, 9% from generators, and 8% from combustion (CISDI, 2021). So that research related to the intention to invest in green bonds is interesting to do.

4.2 Respondent Profile

The variable of demographics like gender, age, education, and investment experience is conducted in this study in influencing financial literacy and environmental concern based on several studies (Adil et al., 2021; Raut et al., 2020). Table 1 gives the segment synthesis of the sample.

Table 1. Respondent's profile (n =226)

Variable	Category	Frequency	Percentage (%)
Gender	Male	118	52.2
	Female	108	47.8
Education	High School	39	17.26
	Diploma / Bachelor's degree	155	68.58
	Post Graduate / Doctorate	32	14.1
Investment Experience	< 1 year	49	21.7
	1-3 years	94	41.6
	3-5 years	39	17.3
	> 5 years	44	19.5

4.3 Survey Instrument

Before delivering the real survey, a pilot testing of the survey was directed with a small sample comprising 30 respondents of individual investors in Indonesia to minimize the error by testing the validity and reliability of the survey instrument. According to discoveries and ideas from the pilot test, few alterations were made in the questionnaires. The questionnaires comprise 24 questions about the environmental concern, financial literacy, risk perception, intention to invest, and demographic questions.

The first segment is an environmental concern. It contains five questions about environmental threat awareness, environmental efficacy, and willingness to pay (5-point Likert-type scale), adopted from Marquart-pyatt (2021). The next portion comprises of 9 inquiries (dichotomous scale) for analyzing basic and advanced financial knowledge, which is adopted from Kawamura et al., (2021) and van Rooij et al., (2011). Each correct answer was scored as 1, while false or "do not know" answers scored 0. The score that respondents get will indicate the financial literacy level of each respondent, which is high financial literacy or low financial literacy (Arifah & Dalimunthe, 2020). The scale for risk perception consisting of 5 questions was based on the measurement provided by Hoffmann et al., (2013) and Pasewark & Riley (2010). The 5 questions of intention to invest was based on the measurement provided by Proudlove et al., (2020) and Raut et al., (2020).

4.4 Data Analysis

In this study, multiple linear regression analysis is used as a statistical technique using SPSS software to examine hypothesis tests. First, environmental concern and risk perception variables were reached into the regression to predict intention to invest towards the green bond. The next step is to enter financial literacy as an independent variable. In the final stage, enter the interaction between environmental concern and financial literacy into the equation as a moderation variable. We could see the effect of the moderation variable if it shows a significant effect of the moderation variable, which is an interaction between environmental concern and financial literacy through the dependent variable.

5. Findings

The following tables provide the descriptive analysis and matrix correlations between the considered variable in the study.

Table 2. Matrix correlation

Variable	EC	RP	FL	INT
EC	1			
RP	0.36*	1		
FL	0.23*	0.04	1	
INT	0.27*	0.68*	0.04	1

Notes: EC: environmental concern; RP: risk perception; FL: financial literacy; INT: intention to invest. *Sig at the 0,01 level

Table 3. Descriptive analysis

Variable	Cronbach's alpha	Min	Max	Mean	St Dev
EC	0.75	14	25	20.7	2.63
RP	0.72	12	25	18.89	2.63
FL	0.56	0	1	0.76	0.42
INT	0.87	5	25	18.06	3.37

Table 2 shows there is no issue of multicollinearity because the correlation absolute value is lower than 0.8 for each variable (Hair et al., 2006). In Table 3, we can see the result of Cronbach's alpha. Cronbach's alpha test is considered to quantify the unwavering quality of the construct of each variable. The instrument should convey the dependability coefficient going from 0.5 to 0.8 (Pedhazur, 1982). Survey results show that 76.21% of respondents have

high financial literacy and 23.79% have low financial literacy. The mean value of the environmental concern variable is 20.7, which means that the average respondents in this study have an excellent environmental level.

Table 4 shows the result of multiple linear regression about the interaction of the independent variable through the dependent variable. In step 1, we use environmental concern and risk perception as the main predictors for an intention to invest in a green bond. The environmental concern has a significant and constructive outcome on the intention to invest in green bonds ($\beta = 0.04$, $p > 0.05$) but is statically insignificant. However, the risk perception has a significant and constructive outcome on intention to invest towards green bond ($\beta = 0.85$, $p < 0.05$). So, the results do not support hypothesis H1 and support hypothesis H2.

Table 4. Multiple linear regression analysis

Model	β	t	Sig.	R Square
Step 1				
EC	0.04	0.68	0.49	0.47
RP	0.85	12.83	0.00	
Step 2				
EC	0.04	0.61	0.53	0.47
RP	0.86	12.8	0.00	
FL	0.07	0.18	0.85	
Step 3				
EC	0.30	2.16	0.03	
RP	0.85	12.79	0.00	0.48
FL	6.67	2.12	0.03	
(EC*FL)	-0.33	-2.12	0.03	

In step 3, we use environmental concern, risk perception, financial literacy, and moderating variable (EC*FL) as the main predictors for an intention to invest in a green bond. We look at the moderating effect of financial literacy. It has been observed that the interaction of financial literacy with environmental concern negatively affects intention to invest in a green bond ($\beta = -0.33$, $p < 0.05$), and it was found statically significant. R squared, an indicator to show the general impact of the independent variable to the dependent variable, resulted in 0.47 (47 %) in step 1. Furthermore, the value of R squared has increased in step 3 to 0,48 (48 %). So, the results support hypothesis H3.

6. Discussion and Conclusion

This study aims to explore why individual investors intend to invest in green bonds in Indonesia. Furthermore, we look at the moderation effect of financial literacy in the relationship between environmental concern and intention to invest in green bonds. Based on the discoveries of the past studies, the risk perception (Pasewark & Riley, 2010) and environmental concern (Borgers & Pownall, 2014) affect individual investors' intention to invest. So, this study uses environmental concern, risk perception, and financial to summarize the comprehension of individual investors' intentions in green bonds. Financial literacy has also been included as an independent variable. Based on previous studies, financial literacy became a determinant of the value of intention to invest (Raut et al., 2020; van Rooij et al., 2011).

The first hypothesis looks at the impact of environmental concern on the intention to invest of individual investors in green bonds. The result showed that environmental concern had a positive and insignificant relationship with the intention to invest in green bonds. And hence can be said that individual investors who care about the environmental condition were not willing to make a special effort to support their environmental well-being by investing in green bonds. This outcome follows past research discoveries by Raut et al., 2020.

The second hypothesis examines the influence of risk perception on the intention of individual investors in green bonds. It found that risk perception had a positive and significant effect with the intention to invest in green bonds. It can be said that individual investors who think that green bonds are low-risk investing instruments will more intent to invest in them. This result is in line with the previous research finding that some individual investors change over SRI to take advantage of the new monetary chances or keep away from the potential dangers of current ecological and social supportability conditions (Chatzitheodorou et al., 2019).

The last hypothesis examines the moderation effect of financial literacy in the relationship between environmental concern and intention to invest in green bonds. This study found that moderating variables had a negative and significant relationship with the intention to invest in green bonds. This result aligns with the previous research finding, which is respondents who have good financial literacy prefer to allocate a small amount of their investment portfolio to the SRI. This phenomenon is related to the low-interest rate offered by SRI (Rossi et al., 2019).

6.1 Implication of the study

6.1.1 Theoretical Implications

This study utilized environmental concern, risk perception, financial literacy, and moderating variables to examine individual investors' investment decisions related to green bonds. This study draws that financial literacy is not always an independent variable that directly influences individual investors' intention but could also moderate the relationship between other variables and intention to invest. The role of financial literacy as moderating variable can be inspected further with the various arrangement of factors in the comparable setting in other developing countries such as – India, Malaysia, Philippines, Thailand, etc.

6.1.2 Practical and Social Implications

This study will help to work on the comprehension of the dynamic conduct of individual investors if there should be an occurrence of the green bond, which would be useful not only for to regulator but also for the green bond issuer. This study finds that environmental concerns insignificantly influence investors' intention to invest in green bonds. It could be a strategic theme for the government or regulators to give education or promotion to the investors that green bond has a good impact on the environment and gives sustainable economic growth in the future.

6.2 Limitations and Suggestions for Future Research

Like any other study, this study has a certain limitation. This study uses multiple linear regression for examining the data and analyzing the result and the hypothesis. Using another technique, such as Partial Least Square Structural Equation Modelling (PLS-SEM), can analyze the data. Furthermore, a greater sample size would engage us to accomplish more generalizable results. We suggest that future studies use additional independent variables such as attitude, norm, perceived behavior, and subjective norm.

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