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The Perception Reality of Sustainable Investment in Millennial and Generation Z

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ABSTRACT

Extensive research on human behavior and decision-making has been conducted because sustainable practices are among the elements that help improve the quality of human life today. Members of various generations act differently from others in terms of consumer references, ideas, habits, and how they approach societal issues when making judgments. In addition to determining whether or not they are persuaded to adopt specific investing niches, like sustainable investments, based on their personal perspectives, the research aims to ascertain the level of awareness of sustainability issues in finance among Millennials and Generation Z in Indonesia. The research is presented as quantitative research, with 240 individual investor samples. Data were examined using structural equation modeling (SEM). The results indicate that influencers do not impact sustainable investment, while impact on return, risk-averseness, and positive performance positively influence sustainable investments. Finally, this paper discusses the implications for investors and the government.

Kata Kunci:
Investasi Berkelanjutan,
Perilaku Investasi, Milenial,
Generasi Z,
Indonesia

SARI PATI

Banyak penelitian tentang perilaku manusia dan pengambilan keputusan telah dilakukan karena praktik berkelanjutan kini menjadi salah satu hal yang membantu meningkatkan kualitas hidup manusia saat ini. Selain itu, beberapa generasi bertindak berbeda dari yang lain dalam hal referensi konsumen, ide, kebiasaan, dan cara mereka mendekati masalah sosial sambil membuat penilaian. Selain untuk menentukan apakah mereka terbujuk tentang ceruk investasi tertentu, seperti investasi berkelanjutan, berdasarkan perspektif pribadi mereka, penelitian ini bertujuan untuk mengetahui tingkat kesadaran isu keberlanjutan di bidang keuangan di kalangan Milenial dan Generasi Z di Indonesia. Penelitian ini disajikan sebagai penelitian kuantitatif dengan 240 sampel investor individu. Data diperiksa menggunakan model persamaan struktural (SEM). Hasil penelitian menunjukkan bahwa pengaruh influencer tidak berdampak pada investasi berkelanjutan ketika dampak return, risk-averse dan kinerja positif berpengaruh positif terhadap investasi berkelanjutan. Terakhir, implikasi bagi investor dan pemerintah dibahas didalam penelitian.

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INTRODUCTION

Sustainable practices can elevate the quality of human life today and into the future. Since the pattern of human behavior is so engaging, continuous research is necessary as an intermediary to solve the problems and understand how humans think. Each generation has differentiating personality traits and ways of living. Millennials represent the first generation to fully experience and appreciate the convenience of modern technology, including the internet and social media (Rosdiana, 2020). Other generations behave differently, such as Generation Z, which exhibits diverse consumer preferences, ways of thinking and behaving, and decision-making processes regarding societal issues (M. Chen et al., 2019). The observation and development of social responsibility and sustainable finance have increased during these two generations.

The literature has underlined the need for households and individuals to support more sustainable behavior since the Paris Agreement and the Sustainable Development Goals (SDGs) were created in 2015. Such behavior includes financial choices like saving and investing. Numerous academic works claim that Generation Z and Millennials are more aware of their social responsibility activities (Formánková et al., 2019). However, Generation Z and Millennials struggle more than previous generations to address upcoming global concerns relating to sustainability. Due to the tendency toward growing individual responsibility for saving and investing, an increasing number of people are forced to make significant, difficult financial decisions, such as saving for retirement, investing in education, and environmental issues.

According to Myles (2017), Millennial cohorts would be charged with covering the costs associated with the economic post-industrial investment plan and environmental problems like global warming and climate change. Because of their global viewpoint and in-depth understanding of economic and social concerns due to their digital capabilities and education, Generation Z is becoming more interested in advocating revolutionary ideas like corporate social responsibility and sustainable development (Dobrowolski et al., 2022). Generation Z's behaviors as ethical investors have thus improved as a result of their improved awareness of the critical role firms play in advancing the principles of sustainable development and their potential environmental impact in Indonesia.

Although this assumption about specific generational cohorts may not always be accurate, it is clear that different age groups have diverse attitudes regarding sustainable investing. According to a JP Morgan article titled "How Each Generation Approaches Sustainable Investment", 36% of younger investors are interested in incorporating sustainable investing approaches into their portfolios, compared to 11% of baby boomers who are familiar with the concept. The elders from the baby boomers instead focused on returns as they entered their retirement years, in contrast to the next generation, known as Generation X, of whom 39% have included sustainability into their portfolios. The younger generations could have served as ambassadors to the elders to promote and advocate for sustainable investment (Mason, 2022).

Many questions about how younger investors view sustainable investment arise as many wonder what the future brings. Do patterns in Millennials and Generation Z investing behaviors indicate that they will continue to make sustainable investments? One of the most crucial aspects of learning more about sustainable investment is financial well-being. Millennials today struggle with this additional responsibility and achieving financial security, thus they have a reputation for value-based investing practices. Financially literate Millennials are more likely to exhibit greater financial well-being (Lusardi et al., 2010). This implies that financial knowledge initiatives also improve economic security and have the potential to develop sustainable investing with some challenges related to the understanding

and abilities that ease the sustainable investment practices of Millennials.

Generation Z's attitudes, values, beliefs, and risk tolerance help shape their investment strategies, according to the results from numerous studies. While Generation Z sought professional professions, finished school, and grew up in a society surrounded by environmental and social concerns, Millennials faced added costs like schooling and retirement savings. At the same time, access and availability can explain the asset allocation disparity between Generation Z and Millennials (Adamczyk, 2021). Millennials are more inclined to base their investment decisions on significant concerns because they believe responsible investing could improve sustainability outcomes. According to these findings, the two cohort generations may be the main force and the most apparent minds regarding sustainable investment.

Members of Generation Z and Millennial groups seek investment strategies that match their preferences. This study aims to understand how these two cohort generations will influence the expansion of sustainable investment in the future and investigates the factors influencing each generation's investment decisions concerning incorporating environmental, social, and governance (ESG) considerations. The study intends to ordain how aware Millennials and Generation Z in Indonesia are of the sustainability challenges in finance and whether they are persuaded toward a specific investment, such as sustainable investments, based on their viewpoints.

The following research inquiries apply to studies that focus on a single nation: (1) How well do Indonesian Millennial and Generation Z investors accept the idea of sustainability investment? (3) How much have individuals participated in sustainable investment already in Indonesia, and what factors underlie this development? We can draw generalizations about the situation by taking into consideration the difficulties Indonesians face, but we can also make informed assumptions about how Indonesia's condition may differ from that of other developing nations in Asia.

The study empirically analyzes data from a representative survey carried out in October and November 2022 using a purposive sampling method among individual investor Millennials (those born 1980–1995; Generation Z are those born 1997–2005) in Indonesia. The proposed hypothesis was analyzed using the SmartPLS software and the Structural Equation Modelling (SEM) approach based on Partial Least Square (PLS). The results are anticipated to guide determination of the best strategies for increasing sustainable investment awareness among Millennial and Generation Z cohorts. These younger generations are most likely to encourage and inform future generations about ESG issues, especially in the investment context. The study's multiple empirical findings support this expectation.

New insights into crucial research challenges are obtained by applying interpretations based on prior research. The study assumed that a variety of factors, including sociodemographic factors (e.g., gender, financial literacy, investment behavior), and personal characteristics, attitudes, and values (e.g., impacts on returns, risk perception, social and environmental awareness) may be crucial in determining how sustainable investment develops in Indonesia among Millennial and Generation Z investors. Additionally, the research primarily focuses on how investment behavior is impacted and the expansion of responsible investing knowledge in Indonesia, particularly within the cohort generations known as Millennials and Generation Z.

The remainder of the paper is ordered as follows. Section 2 summarizes the literature review and presents the background on how sustainability mandates can incorporate generations, specifically their behavior toward investment, and related factors. Section 3 explains the methodologies used

in the study. Section 4 examines the empirical results of the determinants of individual sustainable investment, level of awareness, and intentions to invest sustainably for a long time. Finally, Section 5 summarizes the findings and concludes with implications and possible future research.

Literature Review

Factors Affected Positive Performance

Although socially responsible investments incorporate non-financial factors into investment decisions, the average financial return of these investments is lower than that of investments chosen only based on financial criteria, according to the current debate on evaluating corporate performance related to sustainable investment (Sethi, 2005). The previous research on the long-term perspectives of sustainable investing also concluded that the performance of ESG-based investments does not yield different returns from conventional investments (Owadally et al., 2021).

Conversely, ESG aspects have been demonstrated to increase the competitive advantage that produces favorable performance for companies and also shows two forms of returns from the financial and social sides from stakeholders, such as investors, to engage in investment (Cakranegara & Sidjabat, 2021; Paulakarin et al., 2020).

Farooq and Sajid (2015) propose that several factors, such as rational people who reject risk and maximize wealth in the face of difficult choices, can be used to identify risk aversion. Members of Generation Z and Millennials tend to avoid risk and are only willing to invest if the projected return is larger than the risk, which has a beneficial impact on investment decisions (Sudana & Sallama, 2015; Rosdiana, 2020). Based on the empirical evidence from the past literature, the following hypothesis are proposed:

H1: Impact on return is positively associated with positive performance.

H2: Risk aversion is positively associated with positive performance.

Determinants and Linkage to Sustainable Investment

Determining practical actions for sustainable mobilization globally, particularly for investment practices, requires understanding of individual investors' preferences for sustainable investments. The success of social investments is correlated with individual investors' confidence that their actions will compel corporations to adopt and engage in responsible behavior. Therefore, socially responsible investors, such as those in sustainable investments, have very different convictions from those of conventional investors (Vyas et al., 2020). Investors' analyses will be significantly more thorough if they consider environmental and social considerations in addition to financial ones when making investment decisions (Cubas-Díaz & Martínez Sedano, 2018).

Jain et al. (2019) prove that the degree of impact on sustainable returns in the case of stock indices is relatively higher than in the traditional stock market. In addition, sustainable investment in Indonesia is proven to exhibit better performance than shariah and liquid investment with consideration for the riskier choice, but it provides a higher level of profit (Gunawan et al., 2021). According to Jain et al. (2019), stock indexes have a substantially higher impact on returns from sustainable sources than the conventional stock market. Additionally, it has been demonstrated that sustainable investing in Indonesia outperforms shariah and liquid investment, which are both considered to be riskier but offer higher levels of profit (Gunawan et al., 2021).

The influencer's impact on investment decisions has not been extensively studied in the past, but the herding tendency of investors has been investigated. According to Susanto and Anastasia (2019), social influence leads to herding behavior, under which investors make decisions based on recommendations from influencers or celebrities or are persuaded by them on social media (Chairunnisa & Dalimunthe, 2021). People are more susceptible to the opinions of others

when they make up only 25% of the population. According to Shah et al. (2018), market share influences on stocks cause heuristic bias, since investors favor reduced risk in uncertain situations.

H3: Positive performance is positively associated related with sustainable investment.

H4: Influencers are positively associated with sustainable investment.

In particular, red flagging and risk management are recognized by ESG data (van Duuren et al., 2016). Senior investment experts and asset managers were surveyed, and the results show that ESG information it influences the company's reputation and brand and thus is financially significant (Amir & Serafeim, 2018). Additionally, prior research has shown that ESG data provides investors with a first step to review the company's business analysis and aids in establishing the perspective that should be included in valuation models and recommendations (Efimova, 2018). According to the study, companies with average ESG scores and growing momentum contributed the most to Sharpe ratios (NN Investment Partners, 2017; Efimova, 2018). Based on the empirical evidence from the extant literature, the following hypothesis is presented:

H5: ESG data is positively associated with sustainable investment.

METHODS

Data and Sample

The data for our analysis came from a representative online survey of Indonesian individual investors between the ages of 17 and 41. The primary information for this study was acquired using Google Forms to distribute the questionnaire online. A representative sample was made through purposeful sampling, with the following requirements of participants: (1) Are Indonesian citizens in Generation Z and Millennial categories and (2) Offer no less than one investment product. Only the respondents who claimed to meet the criteria were allowed to continue providing their responses. Following the guidelines stated by Chen et al. (2019; Perneger et al., 2015) for psychometric questionnaire pilot testing, a sample size of 30 was chosen for the study. 30 investors from the Millennial and Generation Z groups provided data to evaluate the questionnaire's reliability and validity. The questionnaire's final version was based on the pilot test's outcomes. The study gathered 240 samples of Millennial and Generation Z individual investors.

The survey method is suitable for this research because the aim is to examine the behavior pattern of an individual, including the behavior of retail investors with a broader range in the level of generations. For data analysis, the research applies partial least squares with structured equation modelling (PLS-SEM). PLS-SEM is a relevant data analytic approach since it is prediction-oriented, not constrained by a large number of strict and inflexible assumptions, and is particularly ideal for giving empirical evidence for explanatory study (Achjari, 2004; Streukens & Leroi-Werelds, 2016).

All of the constructs were measured on a Likert-type five-point scale from 1 (strongly disagree) to 5 (strongly agree). ESG information data was measured using three items adapted from Amir and Serafeim (2018). The Influencer item was measured using three items adapted from Chairunnisa and Dalimunthe (2021). Impact on returns was measured using four items adapted from Paris (2021). Risk aversion was measured using four items adapted from Díaz and Esparcia (2019). Sustainable investment was measured using six items adapted from Amir and Serafeim (2018), M. H. Chen et al. (2019), Hebb (2013), and Maiti (2021) Positive performance was measured using three items adapted from Cubas-Díaz and Martínez Sedano (2018), Gunawan et al. (2021) and Vyas et al. (2020).

Table 1. Measurement items of each variable

Constructs		Measurement Variables	Sources
Influencer	IN1	Financial influencers help me gain knowledge about sustainable investing.	Chairunnisa & Dalimunthe (2021)
	IN2	In Indonesia, many financial influencers have introduced information about the sustainable investment.	
	IN3	In my opinion, influencers play an important role and provide information that is not available publicly.	
ESG Data Information	ESG1	I know where to find ESG information data for investment decision consideration.	Amir & Serafeim (2018)
	ESG2	So far, I have had no trouble getting ESG information for investment decision consideration.	
	ESG3	ESG's information is material to my investment decision.	
Risk Aversion	RA1	I don't want to invest in investment products that have high risk, even though the returns will be greater too.	Diaz and Esparcia (2019)
	RA2	I'm pretty wary of the more ambiguous return on investment, because I can't assign probabilities to the possible outcomes.	
	RA3	I avoid risks because the fluctuations that occur are quite large.	
	RA4	In my opinion, age and life goals determine the risk aversion that I will take.	
Impact On Return	IR1	In my opinion, returns are the most important aspect of investing.	Paris (2021)
	IR2	I invest by looking at investment products that provide maximum return expectations.	
	IR3	I doubt if I sacrifice the return that I will get for something that has a positive impact (for example, social and environmental issues).	
	IR4	I usually evaluate the performance of an investment opportunity based on the timeframe of financial return (short- or long-term).	
Sustainable Investment	SI1	I understand and choose investment strategies by taking into account environmental, social, and good governance aspects.	Hebb (2013), Mei Hua et al. (2019), Amel Zadeh and Serafeim (2018), Maiti (2020)
	SI2	Sustainable investment is an attractive investment option.	
	SI3	I am currently considering companies that are already implementing sustainable practices.	
	SI4	As an investor, I know that one shouldn't sacrifice returns for investment opportunities that match the value.	
	SI5	I have done negative screening or have not invested in companies whose business is detrimental to the environment and society. (e.g., tobacco companies, alcohol, pornography, weapons)	
	SI6	I prefer to only invest in companies with good ESG values.	
Positive Performance	PP1	As an investor, I believe that making sustainable investments will encourage companies to engage more in sustainable practices.	Gunawan et al. (2021), Vyas et al. (2020), Cubas-Diaz & Martinez Sedano (2018)
	PP2	I know that sustainable investment has better performance than sharia-based or liquid investments.	
	PP3	Good social, environmental, and governance performance provides positive value for both investors and the company.	

After pilot test results, there was a treatment for the validity and reliability items in the range of >0.7 using Cronbach alpha and <0.9 using heterotrait-monotrait ratio (HTMT). Items were deleted or adjusted if the score was below the minimum standard or had a negative score. In ESG data information variables, all items are used. In influencer and impact on return variables, 1 item is deleted each (IN1, IR3). In risk averse variables, 1 item is deleted (RA3) and adjusted (RA1). Sustainable investment variable has 2 items deleted (SI1 and SI5) and 1 item adjusted (SI6).

RESULTS AND DISCUSSION

Demographic Profile and Respondents' Investing Behavior

In Table 2, the demographic profile is represented. Males made up 108 (45%) of the respondents, while females totaled 132 (55%). When the respondents were grouped by generation, Generation Z (58%) outnumbered Millennials (42%) as the most influential group. According to domicile, Jawa accounts for the majority of respondents (88%), followed by Bali, NTT, NTB (5%), Kalimantan (4%), Sumatra (3%), Sulawesi (0.42%), Maluku, and Papua (0%), all of which had percentages below 10%. These findings lead us to conclude that bachelor's degrees are the most common educational background in Indonesia (72%), followed by master's degrees (19%), secondary school (5%), and associate degrees (4%). Table 3 presented the respondents' behavior in investing. When asked whether they often invest, the respondents indicated yes (70%) and no (30%) as their answers. They reported having heard of sustainable investment before with a percentage of 43%, not far from the assertion that they had not heard of sustainable investment (35%) or had possibly heard before (22%). They had invested most of the time (more than one year, or 66%). Most people own stocks and mutual funds out of the various investment alternatives available. Gold is a safe-haven product picked as an appropriate holding product, given the current situation. In addition, people have real estate and property, followed by bonds and exchange trade and other financial instruments like peer-to-peer lending, cryptocurrency, sovereign bonds, foreign exchange, land, and investments in specific sectors like the healthcare and catering industries. A few of them spent money above Rp10,000,000 (13%) and in the range of Rp5,000,000-Rp9,999,999 (11%), in addition to spending money on transactions for one-time investment products in the range of Rp1,000,000-Rp4,999,999 at 29% and not far from Rp 500,000-Rp999,999 at 24% and less than Rp500,000 (23%).

Table 2. Demographic profile of respondents

Category	Profile	N	%
Gender	Male	108	45%
	Female	132	55%
Age	17-25	140	58%
	26-41	100	42%
Domicile	Jawa	212	88%
	Sumatra	7	3%
	Kalimantan	9	4%
	Sulawesi	1	0.42%
	Maluku	0	0%
	Bali, NTT, NTB	11	5%
	Papua	0	0%
Education Background	Secondary School	11	5%
	Associate Degree	10	4%
	Bachelor	174	72%
	Master	45	19%
	Doctoral	0	0%
Total Respondent(s)		240	100

Table 3. Respondents' behavior with investing

Category	Profile	N	%
Routine for investing	Yes	169	70%
	No	71	30%
Investing period	< 1 Year	81	34%
	> 1 Year	159	66%
Heard of sustainable investment before	Yes	104	43%
	No	84	35%
	Maybe	52	22%
Types of investment product	Deposit	61	-
	Stocks	113	-
	Bonds	28	-
	Mutual funds	113	-
	Property, real estate	31	-
	Gold	110	-
	ETF	16	-
	Others	23	-
Funds for one transaction	<Rp500.000	56	23%
	Rp500.000 – Rp999.999	58	24%
	Rp1.000.000 – Rp4.999.999	70	29%
	Rp5.000.000 – Rp9.999.999	27	11%
	> Rp10.000.000	30	13%

Table 4 displays the descriptive statistics for the study's variables. Only the ESG data information and influencer factors have negative values, while the other components all have positive indicators for the same values (0%). The study's standard deviation is also shown in the table, indicating that all variables are constant. The authors arrive at the conclusion that Millennials and Generation Z in Indonesia indicate low to medium levels among all determinants of sustainable investment variables, since the maximum score on the Likert scale is below 2.5 or less than half of the highest score.

Table 5 lists the correlation between the variables. There are no relationships between all of the variables and the influences. According to the findings of previous studies, we can infer a connection between the influence on return and risk aversion. For instance, the relationship between risk-averseness and sustainable investment may be altered if the effects on return are linked to ESG data information; however, this relationship was found not to be substantial. These results are consistent with those of Jeyachitra et al. (2010), who discovered a strong positive association between portfolio risk and

Table 4. Descriptive statistics

Variables	Mean	Median	Min	Max	St.Dev	Number of observations	t Statistics	ρ Value
ESG	-0.000	-0.013	-2.799	2.073	1.000	240	0.172	0.012
IN	-0.000	0.399	-3.840	1.812	1.000	240	0.927	0.000
IR	0.000	-0.017	-4.412	1.448	1.000	240	0.474	0.000
PP	0.000	0.049	-3.105	1.801	1.000	240	0.703	0.000
RA	0.000	-0.137	-5.104	1.519	1.000	240	0.829	0.000
SI	0.000	0.194	-2.420	1.943	1.000	240	0.239	0.002

Abbreviations: ESG = ESG Data Information, IN = Influence, IR = Impact on Return, PP = Positive Performance RA = Risk Averse, SI = Sustainable Investment

return. Positive performance, impact on return, ESG data, and risk aversion are the factors that have the strongest association with sustainable investment.

indicators for the one indicator whose loadings were below 0.6. Following the steps indicated by Benitez et al. (2020; Fornell and Larcker, 1981), we further assessed for discriminant validity by

Table 5. Correlations matrix

	ESG	IN	IR	PP	RA	SI
ESG	1.000					
IN	0.177	1.000				
IR	0.204	0.279	1.000			
PP	**0.292**	0.167	**0.417**	1.000		
RA	0.127	0.195	0.275	**0.327**	1.000	**0.255**
SI	**0.349**	0.246	**0.419**	**0.659**	**0.255**	1.000

Bold mark: $\rho < 0.001$

Measurement properties

Table 6 lists the survey instrument's (measurement model's) measurement characteristics. Most of the indicators have factor loadings that are more than 0.7. Nevertheless, some markers ranged from 0.6 to 0.7. (Up to an acceptable level). Since we used established criteria, we kept these

examining the HTMT ratio to evaluate discriminant validity. Except for the positive performance with sustainable investment, the value of HTMT variance-derived estimates for all variables in this study is good, since it is below the recommended standard of 0.9, as shown in Table 7.

Table 6. Factor outer loadings

Variable	Indicator	Validity	Reliability
ESG Data information (ESG)	ESG1	0.757	0.716
	ESG2	0.680	
	ESG3	0.881	
Influencer (IN)	IN2	0.761	0.186
	IN3	0.724	
Impact On Return (IR)	IR1	0.844	0.685
	IR2	0.869	
	IR4	0.634	
Positive Performance (PP)	PP1	0.878	0.652
	PP2	0.558	
	PP3	0.843	
Risk Averse (RA)	RA1	0.746	0.535
	RA2	0.757	
	RA4	0.655	
Sustainable Investment (SI)	SI2	0.797	0.717
	SI3	0.825	
	SI4	0.606	
	SI6	0.704	

Table 7. Discriminant validity – HTMT Ratio

	ESG	IN	IR	PP	RA	SI
ESG						
IN	0.564					
IR	0.314	0.789				
PP	0.385	0.478	0.618			
RA	0.193	0.618	0.461	0.545		
SI	0.408	0.639	0.582	0.939	0.400	

Each variable's validity and reliability are displayed in the construct reliability and validity table (Table 8). According to Bagozzi and Yi (1988), the composite reliability (CR) of each construct, which exceeds the score of 0.6 and is regarded as sufficient, was used to analyze the internal consistency of the constructs. The overall findings demonstrated the high reliability of all of the constructs and their dimensions. However, the diminishing reliability value with the variables' respective Cronbach's alphas is impacted by the low value of outer loadings on some items in the specific variables, such as influencer and risk averse. Additionally, the average variance extracted (AVE) validity in the total variables was considered good and close to the recommended value of 0.5. These statistics support these six variables' measurement qualities, discriminant validity, and reliability.

Mitigation against the detrimental impacts of multicollinearity can be achieved using solid explanatory power, reliable measures, and a large sample size (Grewal et al., 2004). We must examine multicollinearity to prevent unfavorable outcomes, and the recommended values for the Variance Inflation Factor (VIF) should be 5.0 or below (Hair et al., 2017). We checked Table 9's outer and inner VIF values, which were less than 5, indicating that the data did not exhibit multicollinearity.

Structural Model and Hypothesis Testing

Figure 1 and Table 10 illustrate the results of the structural model and hypothesis testing using SmartPLS software. Based on the bootstrapping technique results, Hypothesis 1 supposes that impact on return is positively associated with positive performance, which is accepted because the path coefficient was positive and significant

Table 8. Construct reliability and validity

	Cronbach's Alpha	Composite reliability	AVE
ESG	0.716	0.819	0.604
IN	0.186	0.711	0.551
IR	0.685	0.829	0.623
PP	0.652	0.811	0.598
RA	0.535	0.764	0.520
SI	0.717	0.826	0.545

Table 9. Model VIF values per variable items

Variable	Indicator	VIF
ESG Data information (ESG)	FWB2	1.616
	FWB3	1.595
Influencer (IN)	IN2	1.011
	IN3	1.011
Impact on Return (IR)	IR1	1.870
	IR2	1.905
	IR4	1.114
Positive Performance (PP)	PP1	1.658
	PP2	1.111
	PP3	1.586
Risk Averse (RA)	RA1	1.294
	RA2	1.304
	RA4	1.047
Sustainable Investment (SI)	SI2	1.730
	SI3	1.876
	SI4	1.200
	SI6	1.257

(β= 0.354, p<0.000). This result is consistent and corroborates with the previous studies that investors will consider the stock returns they are willing to tolerate and corporate value before investing. Investors look forward to dividends and capital gain as the return types they are looking forward (Suhadak et al., 2019). A greater stock price equates to a higher corporate value for publicly traded companies, which defines their successful performance. A higher impact on return makes the stock price represent the corporate value of public corporations (Husnan, 2012). Hypothesis 2 assumes that risk averseness is positively associated with positive performance. This hypothesis is accepted, because the path coefficient was positive and significant (β = 0.229, p< 0.001). People are risk averse in the gain frame, seeking a definite gain rather than speculative gain, and a greater level of loss aversion is caused by a risky prospect in the gain frame or, in other words, good performance for short- rather than long-term targets (Zhang et al., 2017). As a result, risk-averse investors want a higher rate of return on positive company performance as a reward for purchasing riskier securities (Zahirović & Okičić, 2016). Hypothesis 3 believes that positive performance is positively related to sustainable investment, and it is accepted because the path coefficient was positive but not significant (β = 0.544, p< 0.000). This finding is consistent with previous research indicating that investors making sustainable investments are affected by a company's attractive financial performance in addition to using ESG data because it has a significant financial impact on investment performance (Amir & Serafeim, 2018; Khan et al., 2016). Hypothesis 4 believes that the proposed positive relation between influencer and sustainable investment is rejected, because the path coefficient was positive but not significant (β = 0.092, p> 0.059). The findings contradict previous studies that indicated that influencers substantially impact investment persuasion and promote herding behavior (Chairunnisa & Dalimunthe, 2021). Although the phenomenon of investment influencers was relatively new for about two years due to the rapid increase in investors in the pandemic situation, the influencer variable does not have an adequate impact on growing sustainable investment, because there are not many types of influencers specific to certain investments and are mainly stock influencers. To the best of our knowledge, limited study has identified influencers as aspects to evaluate the determinants of sustainable investment, and we may not be able to compare results side by side.

Hypothesis 5 assumes that ESG data information is positively associated with sustainable investment, and it is accepted because the path coefficient was positive and significant (β = 0.147, p< 0.007). This finding validates the results of Efimova (2018), which said that ESG information could provide many positive and negative repercussions that can be significant for investment decisions, such as the company's reputational risk, cost of capital, and corporate value disclosure.

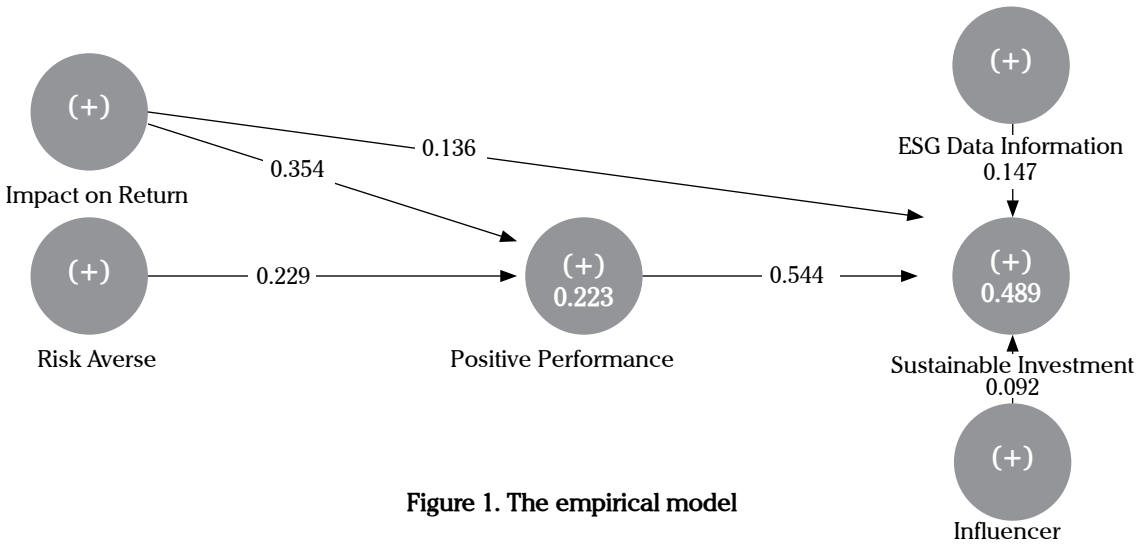

Figure 1. The empirical model

Table 10. Path coefficients

	Original Sample (O)	Sample mean (M)	St.Dev	T statistics (IO/ St.Dev)	ρ Value	Hypothesis
IR → PP	0.354	0.361	0.065	5.442	0.000	H1: Supported
RA → PP	0.229	0.240	0.071	3.221	0.001	H2: Supported
PP → SI	0.544	0.541	0.062	8.716	0.000	H3: Supported
IN → SI	0.092	0.095	0.059	1.549	0.122	H4: Rejected
ESG → SI	0.147	0.153	0.054	2.702	0.007	H5: Supported

Abbreviations: FL = Financial Literacy, FWB = Financial Well-Being, IB = Informational Behavior, IFB = Individual Financial Behavior, PP = Positive Performance, SI = Sustainable Investment

Table 11 reflects the structural model of the association in the indirect effect. The results are not significantly different from the previously reported path coefficients model. Both impacts on return and risk aversion have been demonstrated to have a clear connection towards sustainable investment with the moderation of positive performance with values that are not too high: 0.192 for impacts on returns and 0.122 for risk aversion.

Table 11. Specific indirect effects

	(O)	(M)	St.Dev	(IO/St.Dev)	ρ Value
IR → PP → SI	0.192	0.193	0.043	4.423	0.000
RA → PP → SI	0.122	0.124	0.037	3.289	0.001

Table 12. Total effects of variables and demographic factors

	(O)	(M)	St.Dev	(IO/St.Dev)	ρ Value
AGE → SI.	0.161	0.153	0.115	1.398	0.162
EDU → SI.	0.011	0.019	0.058	0.195	0.846
FUND → SI.	-0.030	-0.028	0.057	0.534	0.594
PERIOD → SI.	0.168	0.170	0.129	1.297	0.195
ROUTINE → SI.	-0.140	-0.102	0.132	1.061	0.289
AGE x RA. → SI.	-0.157	-0.110	0.139	1.129	0.259
EDU x RA. → SI.	-0.006	-0.020	0.074	0.081	0.936
FUND x RA. → SI.	-0.033	-0.044	0.060	0.552	0.581
PERIOD x RA. → SI.	**0.367**	**0.346**	**0.171**	**2.147**	**0.032**
ROUTINE x RA. → SI.	-0.152	-0.127	0.145	1.049	0.294
AGE x PP. → SI.	-0.035	-0.026	0.167	0.208	0.835
EDU x PP. → SI.	0.029	0.026	0.076	0.385	0.700
FUND x PP. → SI.	0.093	0.100	0.078	1.194	0.232
PERIOD x PP. → SI.	-0.148	-0.139	0.183	0.805	0.421
ROUTINE x PP. → SI.	0.157	0.126	0.156	1.003	0.316
AGE x IR. → SI.	0.306	0.317	0.159	1.920	0.055
EDU x IR. → SI.	0.054	0.032	0.086	0.631	0.528
FUND x IR. → SI.	-0.035	-0.029	0.070	0.509	0.611
PERIOD x IR. → SI.	-0.390	-0.340	0.191	2.044	0.041

ROUTINE x IR. → SI.	-0.182	-0.152	0.168	1.081	0.280
AGE x ESG. → SI.	-0.170	-0.187	0.121	1.404	0.160
EDU x ESG. → SI.	-0.017	-0.021	0.073	0.226	0.821
FUND x ESG. → SI.	0.122	0.107	0.063	1.939	0.053
PERIOD x ESG. → SI.	-0.070	-0.103	0.145	0.486	0.627
ROUTINE x ESG. → SI.	0.213	0.197	0.152	1.398	0.162
AGE x IN. → SI.	-0.112	-0.086	0.149	0.752	0.452
EDU x IN. → SI.	-0.000	-0.009	0.084	0.004	0.997
FUND x IN. → SI.	**0.138**	**0.127**	**0.067**	**2.072**	**0.038**
PERIOD x IN. → SI.	-0.050	-0.050	0.150	0.335	0.737
ROUTINE x IN. → SI.	0.149	0.137	0.158	0.938	0.348

Bold values= significant, p<0.005

With the results of the total effect of the combination of demographic variables and the existing measurement variables, we can conclude that there are only two combinations that produce significant value, which is the combination of the relationship between investment period and risk averseness associated with a sustainable investment with a quietly medium linkage value (b = 0.367) and the relationship between investment fund and impact on return associated with a sustainable investment with a relatively low linkage value (b = 0.138). Although some combination is nearly significant, such as age variable and impact on return associated with the sustainable investment, given the considerable linkage value also of investment fund and ESG data information related to sustainable investment, it doesn't have significant results.

We highlight interesting results: (1) Age associated with Millennial and Generation Z experience adverse effects when combined with all variables except impact on return; (2) Investor education has no significance for influencers. Thus, the b results are negative, indicating that, when an investor is well educated, they do not consider influencers to be investment decision factors; (3) Investing routine variables negatively influence the only combination between the variables of risk averseness and the direct effect toward sustainable investment.

Predictive Values and Effect Size

As indicated in Table 13, we used the blindfolding technique to test the predictive relevance of the sample by omitting a portion of the data matrix and utilizing the findings to forecast the missed amount. Higher Q^2 values indicate less variation between estimated and actual values. Predictive indices of 0.02 are recommended to have a minor influence, values of 0.15 to have a medium effect, and values greater than 0.35 to have a substantial effect (Hair et al., 2017). Both have Q^2 values in the medium effect size range, with positive performance (0.183) and sustainable investment (0.219).

Table 13. Blindfolding test

	Q^2 predict	RMSE	MAE
Positive Performance	0.183	0.912	0.688
Sustainable Investment	0.219	0.892	0.701

To validate the model's prediction power, R^2 must be calculated as displayed in Table 14. According to Hair et al. (2017), R2 values greater than 0.75 are considered good, 0.50 as average, and less than 0.25 as poor in terms of prediction accuracy. The positive performance adjusted R^2 value was 0.216, and the sustainable investment value was 0.480, indicating low and moderate predictive power, respectively.

Table 14. R^2 values

	R-square	R-square adj
Positive Performance	0.223	0.216
Sustainable Investment	0.489	0.480

Table 15 displays the F^2 values. The standard criteria are F^2 values of 0.02 (low impact size), 0.15 (mid-effect size), and 0.35 (high effect size) (Henseler et al., 2015). We begin with the high effect size of sustainable investment and positive performance (0.452), then move on to the almost mid-effect size of the linkage between the impact on return and positive performance (0.149), and finally the rest of them, such as the variables (ESG data information: 0.038; Influencer: 0.015; impact on return: 0.028) towards sustainable investment and the linkage between positive performance and risk aversion (0.062).

Table 15. F^2 values

	ESG	IN	IR	PP	RA	SI
ESG						0.038
IN						0.015
IR				0.149		0.028
PP						0.452
RA				0.062		
SI						

MANAGERIAL IMPLICATION

The study's research findings have various implications for organizations such as the government and financial services authority as well as individuals and fund managers seeking appropriate action to raise awareness of sustainable investment in Indonesia. The competitive returns of sustainable investment are also favorable when compared to traditional investment, and the government provides incentives for a variety of sustainable investment instrument products, making it more appealing to investors such as Millennials and Generation Z, who have a foundation of knowledge as well as financial behavior that leads to sustainable finance practices. Collaboration between financial services authorities and fund managers is urgently needed to ensure that sustainable investment products appeal to these generations' needs. Such leaders should deploy advanced literacy topics such as sustainability literacy, sustainable finance literacy, and financial literacy. Furthermore, emphasizing the security of sustainable investment products and the positive performance of sustainable investment to gain investor confidence is a determinant of deepening capital markets and strengthening the fundamentals economy and market independence to achieve Sustainable Development Goals (SDGs).

CONCLUSION

This research analyzes the awareness of sustainable investment by investigating the linkage between impact on return, risk averse, positive performance, influencer, and ESG data information towards sustainable investment in the case of Millennials and Generation Z in Indonesia. The evidence confirmed certain main conclusions, including the fact that positive performance is the variable with the most value when applying sustainable investment. We can see that Millennials and Generation Z in Indonesia are rather conscious of sustainability, even though sustainable investment development has not been fully implemented. The impact on return and risk aversion has given rise to the favorable performance of sustainable investment, which should be maintained to develop Indonesia's capital market.

Millennials and Generation Z in Indonesia require more education and knowledge of environmental, social, and governance (ESG) issues before engaging in financial activities such as investing, because, despite the potential, sustainable investment in Indonesia lags behind other rising Asian markets. Furthermore, half of the Millennial and Generation Z populations have never heard of sustainable investment, providing us with data for future research and policy. This study's limitations include the restrictions to the possible variable of the determinant for the development of sustainable investment rather than a specific investigation into the demographic characteristics. Such characteristics could include males and females' intention toward sustainable investment or an educational background with a significant impact on sustainable investment in Millennials and Generation Z in Indonesia.

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