

## Mainstreaming Green Investment in Sharia Securities in Indonesia (Case Study of North Sumatra Province)

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### ABSTRACT

**Purpose:** The purpose of this study is to explore the mainstreaming of green investment in Islamic securities in North Sumatra. This research focuses on identifying key aspects, challenges, solutions, and priority strategies to promote green investment, particularly in sharia-compliant stocks. Given the global trend of increasing green investment, which reached 2.5 trillion USD by 2021, this study aims to analyze the role of green investment in supporting sustainable economic development, especially in North Sumatra, where no issuers are currently included in the ESG index despite having 12 IPO issuers, 9 of which are sharia stocks.

**Design/methodology:** This research utilizes the Analytical Network Process (ANP) method to systematically identify the factors influencing green investment in Islamic securities. The study examines aspects such as profit and risk, the primary challenges investors face, and possible solutions to mitigate financial risks.

**Findings:** The findings reveal that profit and risk considerations are key factors influencing green investment in Islamic securities. The main challenge identified is the uncertainty of financial risk, which deters potential investors. The priority solution to address this issue is implementing effective risk management strategies to reduce investment uncertainty. Additionally, increasing awareness and education on green investment can help improve investor confidence and participation.

**Practical implications:** The implications of this research emphasize the importance of various efforts to provide an understanding of the importance of green investment in Islamic stocks to various parties so that the mainstreaming of green investment in North Sumatra can be achieved.

**Originality/Value:** The originality of this study lies in its focus on an under-researched area, offering practical recommendations for integrating sustainability principles into Islamic financial markets.

**Keywords:** Green Investment, Sharia Securities, North Sumatra, Sustainable Development, ANP

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### A. INTRODUCTION

The current trend of green investment is on the rise, reflecting the shift towards sustainable development and environmental awareness. Analysis of green investment in countries such as the United States, China, Japan and others shows a significant increase from 2011 to 2021, with investment reaching 2.5 trillion USD by 2021 (Stoliarchuk & Ilnytsky, 2023). In line with the green investment trend and amidst the dynamics of globalization and the complexity of the modern economy, Islamic economics emerged as an alternative economic paradigm that accommodates sharia principles. This paradigm views economics as a more comprehensive tool in achieving community welfare while upholding Islamic moral and ethical values (Suardi, 2021). One of the investment instruments that is currently developing and in line with Islamic principles is Islamic securities. Sharia securities are transaction objects (*mabi'*) that are one of the efforts to support green investment by integrating Islamic financial principles that encourage sustainability and social responsibility (Nasution M. P., 2024).

In order to support green investment, Indonesia has the first green index in Asia, the SRI-Kehati Index. The presence of this index is expected to provide investment guidelines in the capital market that includes issuers with good performance and awareness of environmental and social preservation (Hendra, 2018). Through the SRI-KEHATI Index, Kehati seeks to promote mutualism between the conservation world and the business sector (KEHATI, n.d.). The SRI-Kehati Index evaluates the performance of 25 stocks of companies that have demonstrated good performance in promoting sustainable business practices, and have an awareness of environmental, social, and corporate governance issues, known as Sustainable and Responsible Investment (SRI). In addition to the SRI-KEHATI Index, the Indonesian Capital Market currently has four other indices that focus on ESG, including: IDX ESG Leaders, IDX LQ45 Low Carbon Leaders, ESG Sector Leaders IDX KEHATI and ESG Quality 45 IDX KEHATI. So that the total green indexation owned by Indonesia to date amounts to five indexations.

In fact, of the five ESG-related indices currently available in Indonesia, not a single Issuer from North Sumatra Province is included. Whereas currently North Sumatra Province has 12 Issuers that have IPO (Initial Public Offering), where these 12 Issuers consist of 1 bond (non-sharia), 2 non-sharia stocks and 9 sharia stocks (Nasution M. P., 2024). This data is certainly a basis for research where the concept of sharia should be in line with the concept of ESG, but in practice the stocks that have been sharia, are not included in the green indexation in the green index in Indonesia.

Islamic stock investment can have a positive impact on a province by encouraging sustainable and inclusive economic growth. With sharia-based investment, local companies that adhere to Islamic financial principles, such as transparency, fairness and the prohibition of usury, can obtain greater funding for expansion and innovation (Sofyan, 2022).

In the midst of various facts of green investment in Islamic securities in North Sumatra Province, mainstreaming green investment in Islamic securities in North Sumatra Province is a necessity. Especially in the midst of the world's efforts to go green and the SDGs declaration which was also agreed upon by Indonesia. This step certainly faces various aspects of challenges such as the problem of profit and risk which is still a motive for various parties to invest (Gutkevych & Vikhliaiev, 2021; Merková, Drábek, & Jelačić, 2013; Bashir, Darrat, & Suliman, 1993), limited regulations and supporting policies that also do not provide clear rules also affect investor interest and confidence in green investment in Islamic securities (D'Orazio & Popoyan, 2019; Gao & Zheng, 2017). At the same time, public education and awareness on the importance of green investment still needs to be addressed (Aggarwal, 2023; Pimonenko, Lyulyov, Makarenko, Us, & Haag, 2023; Bubik & Kolar, 2019). Partnerships and collaboration between the government, private sector, and local communities also require more attention (Almarri & Blackwell, 2014; Eitan, Herman, Fischhendler, & Rosen, 2019; Morgado & Lasfargues, 2017; Lehmann, 2006) to ensure the successful implementation of green investment in Islamic securities. Meanwhile, performance measurement and sustainability reporting are other important elements that must be considered to ensure transparency and accountability in green investment in Islamic securities (Allevi, Basso, Bonenti, Oggioni, & Riccardi, 2019; Popescu, Hitaj, & Benetto, 2021; Staszkievicz & Werner, 2021; Chvatalová, Kocmanová, & Dočekalová, 2011).

Based on the description and data findings that have been presented above, a comprehensive study is needed to find aspects, problems, solutions and priority strategy models

in overcoming existing challenges. For this reason, this research aim to green investment in Islamic securities can be the main driving force in sustainable economic development in Indonesia, especially in North Sumatra Province. This research will be useful in boosting green investment, increasing investor interest and contributing to various parties in providing solutions and the right model in mainstreaming green investment in Islamic securities in North Sumatra.

## B. LITERATURE REVIEW

To complete this research, researchers will use three types of theoretical foundations that will facilitate and unravel existing problems. In general, the theoretical basis is described in Figure 3 below:

### 1. Grand Theory

The grand theory used in this study is signaling theory. Signaling theory, first introduced by Michael Spence in the context of the labor market, has become an important foundation in understanding the dynamics of asymmetric information in various economic fields, including the capital market. In the context of green investment in Islamic securities, signaling theory can be used to explain how various signals from issuers, governments and other stakeholders influence investment decisions and market perceptions. By understanding and managing these signals effectively, it is expected to mainstream green investment in Islamic securities in Indonesia, especially in North Sumatra Province.

Signaling theory was proposed by Michael Spence in 1973. This theory emerged in the context of information economics and labor markets (Spence, 1974). Spence developed this theory to explain how individuals (or firms) can use signals to overcome asymmetric information problems, where one party has more information than the other party in a transaction (Spence M. , 1978). Signals in this case are actions or attributes used by the party with more information (the signal sender) to communicate that information to the party with less information (the signal receiver). For example, educational degrees, certificates or work experience are signals used by workers to demonstrate their skills and competencies to employers (Spence A. M., 1974).

Michael Spence's Signaling Theory plays an important role in understanding the relationship between green investments in Islamic securities and the motives of various stakeholders. The theory would send signals such as profits, sustainability reporting strategies and the quality of sustainability reporting can influence stakeholders' perceptions and trust in a company, ultimately minimizing the risk of falling share prices (Wang C. H., 2023). In addition, this theory also highlights how green investment products in Islamic securities can act as a signal, thus encouraging investors to pay more for green products, known as the green signaling hypothesis (Harmadji, Subroto, Saraswati, & Prihatiningtias, 2018). This theory also emphasizes the importance of companies aligning their actions with societal changes towards environmental awareness to gain legitimacy and consumer trust (Berger, 2019). In the context of green investment in sharia stocks in North Sumatra, this signal theory can be seen from the reports issued by the five green indexes in Indonesia per period. This report contains stocks that fall into the green criteria that can be used as a reference for investors to buy stocks and give preferences whether the stocks are worth buying or not. By utilizing signal theory, companies

can effectively communicate their commitment to sustainability, attract environmentally conscious consumers, and mitigate risks (Schena, Netti, & Russo, 2015).

## **2. Middle Theory**

The middle theory used in this research is the theory of investment motives in relation to sustainable investment. Investing motive theory and signaling theory can be interrelated in the context of this study, especially in mainstreaming green investment in sharia securities in Indonesia. This research can show how signals provided by issuers and companies about their commitment to green and sharia investments can influence investment decisions driven by various motives. This can help explain the importance of transparency, sharia compliance and environmental responsibility in attracting investors focused on green and sharia investments. Therefore, signaling theory and investing motive theory complement each other in mainstreaming green investment in Islamic securities in Indonesia. Reports published by the Indonesia Stock Exchange in existing indices can be an important reference and provide signals to investors whether the shares to be purchased are included in the green index or not. These signals will ultimately become a motive for investors to invest or not.

The theory of investment motives plays an important role in understanding green investing, as it encompasses a range of factors that influence an individual's decision to invest in environmentally friendly projects (Stoliarchuk & Ilnytsky, 2023). In addition, collective pro-environmental motivations, including pro-environmental group norms and climate success beliefs, significantly impact green investment policy acceptance and green investment decisions (Marder, et al., 2023). Green investment is seen as a mechanism for sustainable economic development, with a focus on improving energy efficiency, developing renewable energy sources, and improving the environment (Joachim, Kamarudin, Aliagha, & Ufere, 2023; Mikryukov, Chilimova, & Serebrennikova, 2021). Understanding these theories and motivations is critical to promoting and expanding green investment to achieve global sustainable development goals.

## **3. Applied Theory**

Applied theory used to support this research is the socially responsible investment theory associated with the Triple Bottom Line (TBL) concept. Both of these have significant links to this research, especially in the context of green investment in Islamic securities in Indonesia. The Triple Bottom Line (TBL), proposed by John Elkington in 1994, is a concept that expands the traditional focus of corporate performance centered solely on financial profit (bottom line) to also include two other dimensions: social and environmental (Elkington, 1994; Elkington, 1997). TBL suggests that companies should measure their performance not only in terms of profit, but also in terms of social impact (people) and environmental impact (planet).

In the context of this study, which aims to mainstream green investment in Islamic securities in Indonesia, the TBL concept can be applied to analyze and develop investment strategies that are not only financially profitable but also socially and environmentally sustainable.

The Triple Bottom Line concept, which encompasses economic, environmental, and social values, is critical in evaluating green investments (Ramadhani & Ekaviana, 2020). TBL theory is a concept that promotes how profit, people and planet can live together in balance. This means that in the course of an investment, this concept promotes not only profit, but also thinking about the sustainability of the planet, so that it can run together with people. Especially when compared to incorporating culture and ethics for comprehensive sustainability

implementation, which leads to the proposed Quintuple Bottom Line (Boubaker, Cumming, & Nguyen, 2018). In addition, the integration of Islamic principles, such as those from Islamic Eco-Theology, can refine this concept into the Circle Bottom Line, which incorporates spirituality into the dimensions of people, planet, and profit (Avi, 2022). This evolution not only enhances the evaluation of green investment but also aligns it with Islamic securities that emphasize principles such as unity, honesty, and responsibility in financial decision-making.

By integrating the Triple Bottom Line concept in this research, a comprehensive approach can be developed to mainstream green investments in Islamic securities. This approach will ensure that the proposed investment strategy is not only financially beneficial, but also provides social benefits and protects the environment. This will help realize sustainable development in Indonesia, particularly in North Sumatra Province, and support green investment goals and sharia principles in the capital market

### C. METHOD

To solve the problems in this study, researchers used Saaty's Analytic Network Process (ANP) method which is a form of mixed methods research, as it integrates qualitative and quantitative elements. This approach is in line with the principles of mixed methods research, which aims to integrate qualitative and quantitative approaches to generate richer insights (Gelo, Braakmann, & Benetka, 2008; Kaplan, 2014; Meade & Presley, 2002). ANP can handle limited data and qualitative variables with individual or collective judgment, as well as measure intangible things based on experience, logical understanding, and information from experts, both quantitative and qualitative.

This is also emphasized in the book “Decision Making with the Analytic Network Process: Economic, Political, Social and Technological Applications with Benefits, Opportunities, Costs and Risks,” by Thomas L. Saaty and Vargas who concluded that ANP research is a mixed method. ANP combines qualitative and quantitative elements, allowing qualitative judgment based on experience and understanding and combining it with quantitative data to make accurate predictions and better decisions (Saaty & Vargas, 2006).

Mixed methods research offers several advantages, including the ability to probe deeper into a research problem by integrating quantitative and qualitative data, leading to a more comprehensive understanding of complex phenomena (Meade & Presley, 2002; Smajić, Avdić, Pašić, Prcić, & Stancić, 2022). This approach allows researchers to triangulate data from various sources, resulting in a stronger analysis (Vebrianto, Thahir, Putriani, Mahartika, & Ilhami, 2020; Harvey, Michaud, & Wilkinson, 2020). In addition, ANP-type research can assist in making prioritization decisions, especially when facing time and budget constraints, by combining the strengths of quantitative and qualitative methodologies (Nicolau, et al., 2023).

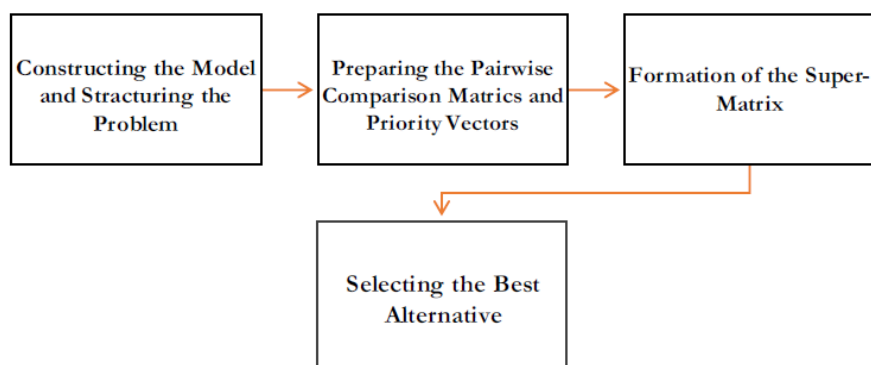
The Analytic Network Process (ANP) method, as developed by Saaty, serves several pivotal roles in research. Initially conceived to simplify the handling of complex issues accessible to non-specialists, ANP structures complexity by hierarchically organizing diverse factors into cohesive, homogeneous groups. Unlike traditional methods that rely on less precise ordinal or interval measurements, ANP employs ratio scale measurements to accurately quantify factors within the hierarchy, ensuring mathematical precision in prioritization. Moreover, ANP excels in synthesis, integrating diverse elements into a unified framework, a capability that sets it apart from mere analytical approaches. This unique synthesis capability

enhances not only analysis but also the comprehensive understanding and management of complex hierarchical networks (Ascarya, 2005).

The research process consists of several structured stages. It begins with problem identification and formulation, where the researcher determines the main issue to be analyzed, clearly defines research objectives, and identifies relevant criteria and sub-criteria for decision-making. Following this, initial data collection is conducted by gathering primary data through in-depth interviews and secondary data from literature and previous studies. In this study, the researcher validated initial findings through an interview with Mr. M. Pintor Nasution, Head of the Indonesia Stock Exchange of North Sumatra Province. His extensive experience as an academic and an active participant in sharia securities investment makes him a credible expert in this field. Additionally, key elements from the initial data were identified for inclusion in the ANP model.

The next stage involves the development of the ANP model, beginning with decomposition, where the problem is structured into a hierarchy or network and grouped into homogeneous clusters. This is followed by relationship identification, where interdependencies and feedback connections are determined both within and between clusters. These steps ensure a comprehensive framework for analyzing the research problem systematically, allowing for more accurate decision-making and a clearer understanding of the factors influencing the study

**Figure 1. Main Stages of ANP Method**



*Source: Taherdoost & Madanchian, 2023*

## D. RESULT AND DISCUSSION

In this study, the profit and risk aspects are the main priorities in efforts to mainstream green investment in sharia securities in Indonesia, with a case study in North Sumatra Province. The results of the study indicate that the priority problem in this aspect is the uncertainty of financial risk with a Limiting value of 0.017104. Other significant problems include limited understanding of risk, environmental and social risks, uncertainty of sharia compliance, and challenges in performance measurement and reporting. To overcome these problems, the priority solution identified is risk management with a Limiting value of 0.013781. Other solutions include education and training, portfolio diversification, financial product innovation, and market monitoring. This approach emphasizes the importance of effective risk management strategies and increasing risk understanding among investors and issuers to ensure sustainable and profitable green investment in accordance with sharia principles.

The Profit and Risk aspects are the main priorities and are considered the most important in mainstreaming green investment in sharia securities because profit and risk greatly influence investor decisions in investing. This is also in line with what was stated by the Head of the Indonesian Stock Exchange for North Sumatra Province, that in general, stakeholders are still profit-oriented, and have not yet focused on other aspects, including green investment in sharia securities (Nasution, 2024). More extreme, Pintor even revealed that in North Sumatra, investors are still not moving towards sharia stock investment. This can also be seen from the latest BEI report that the opening of sharia stock accounts is still very small (9.3%), and North Sumatra Province is not included in the category of the 10 Largest Sharia Stock Investors in Indonesia.

The aspects of profit and risk are important considerations for investors and issuers in green investment, in line with research results showing that this aspect is the main priority in mainstreaming green investment in sharia securities (Migliorelli & Dessertine, 2019; Lacalle, 2020). Climate policy uncertainty poses investment risks that affect environmentally friendly investment behavior, requiring clear regulations and policies to minimize financial risks (Ngwakwe & Moyo, 2014). Monitoring the performance of ESG and SRI funds after a period of low interest rates and high liquidity to assess real economic returns and avoid dependence on subsidies is also important. In addition, understanding the factors that influence risk premiums, such as third-party green certification, debt credit ratings, and market interest rates, is critical for investors and issuers in the green finance market (Wang, Zhou, Luo, & Ji, 2019).

Financial risk uncertainty poses significant challenges to green investment, which impacts sustainable green economic development (Wen, Zhao, Fu, & Chang, 2023). Studies show that increased financial risk negatively impacts green innovation by limiting foreign direct investment and trade, particularly in democratic countries and countries with low political risk (Osipov, Krupnov, Semenova, & Tkacheva, 2022). To overcome this, an effective risk management strategy is essential.

Green investment presents unique challenges in risk management, where this investment on the one hand must focus on environmental standards on the other hand requires risk funding, so risk management is needed in this investment (Wu, Zhang, & Ge, 2019). Negulescu & Doval (2014) highlights the importance of manager involvement in risk management, while Clark (2019) discusses the allocation of risk and uncertainty in green investments. Criscuolo & Menon (2015) further underlined the influence of environmental policies on risk financing in the green investment sector. One of the risk management that exists today is modern risk management technology such as Kriging theory which provides tools to analyze comprehensive risk transmission in financial markets, helping in identifying and mitigating risks in green investment (Bi, 2022). Ultimately, the shift towards green financial assets can help mitigate financial risks associated with climate change and environmental factors, as well as encourage sustainable investment practices (Mähönen & Cullen, 2019).

This study identifies a strategy model for mainstreaming green investment in sharia securities in Indonesia, especially in North Sumatra Province. The results of the study indicate that the priority strategies needed include analysis of awareness levels, development of educational programs, and program evaluation with a Limiting value of 0.057595. This strategy model aims to address the main challenges faced in the aspects of profit and risk, such as the uncertainty of financial risk that greatly affects green investment. The implementation of this strategy model is expected to reduce uncertainty and improve the performance of green

investment, in line with sustainable sharia principles, especially in the context of North Sumatra Province.

On the other hand, the aspects of profit and risk in green investment in sharia are important factors that require a sufficient level of awareness and education to make effective priorities for investing. The development of programs that create green investment can increase awareness of environmental issues and Islamic concepts, leading to a shift in perspective and priority of green initiatives (Wilson, 1997). Ultimately, awareness and education will be able to encourage green investment, because this will eventually be able to influence the behavior of entrepreneurs, investors, and the community, which will ultimately encourage environmental and business performance (Weng, Chen, & Chen, 2015; Bulkani, 2016).

The relationship between returns and risks in green investments is crucial to understanding investor behavior. Studies emphasize that factors such as financial literacy positively influence investment decisions, while perceptions of green risks negatively impact such decision (Semenkova & Andrianova, 2020). Education and awareness are expected to be highlighted as key variables influencing individuals' willingness to invest in sharia securities (Halim, Matoati, Viana, & Suryawati, 2022). In addition, the role of awareness and education in encouraging personal investment also needs to be underlined, indicating that awareness alone is not enough to change behavior, but education is needed to shape investment decisions (Agrawal, 2022; Jacquet, 2009; Getzner & Grabner-Kräuter, 2004). Therefore, education and awareness are essential to encourage green investment and sustainable economic development.

## E. CONCLUSION

This study identified that the aspects of profit and risk are the main priorities in mainstreaming green investment in sharia securities in Indonesia, especially in North Sumatra Province. The priority issues in this aspect are financial risk uncertainty, followed by limited understanding of risk, environmental and social risks, sharia compliance uncertainty, and challenges in performance measurement and reporting. To address these issues, priority solutions include risk management, education and training, portfolio diversification, financial product innovation, and market monitoring. This strategy emphasizes the importance of effective risk management and increasing risk understanding among investors and issuers, with the aim of ensuring sustainable and profitable green investment in accordance with sharia principles. In addition, awareness level analysis, education program development, and program evaluation are identified as strategic models to address these key challenges, expected to reduce uncertainty and improve green investment performance. The limited number of key persons is one of the limitations of this study. Adding a larger number of key persons in further research is expected to further validate the research results.

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