What determines private investors to choose ESG investments in their portfolios?

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ABSTRACT,
This thesis investigates the growing role of environmental, social, and governance issues (ESG) in investment decisions. The study's goal is to better understand the motivations and challenges of ESG investment, as well as how it affects financial performance. The research takes a mixed-methods approach, combining quantitative data from surveys with qualitative insights from interviews with industry professionals. The findings show that investors are becoming more aware of and integrating ESG criteria, which is being driven by legislative demands, market demand, and a trend toward sustainable corporate practices. However, various impediments, including perceived limitations and external pressures, prevent mainstream adoption of ESG investment. These challenges include a lack of consistent reporting, restricted access to ESG data, and skepticism about the financial benefits of ESG investing. The study concludes that targeted regulations and investor education are critical for overcoming these hurdles and encouraging the adoption of ESG standards. The mathematical research shows a positive relationship between ESG performance and financial returns, implying that ESG investments may be both ethical and profitable. The qualitative findings emphasize the importance of more openness, standardization, and regulatory assistance in order to boost investor trust and promote sustainable investing practices. This study adds to the current literature by conducting a thorough examination of ESG investing and making practical recommendations for policymakers and investors to improve the incorporation of ESG variables into investment choices. The report emphasizes the significance of a collaborative approach, encompassing regulators, industry stakeholders, and investors, in developing a strong framework for ESG investment. The findings have far-reaching consequences for the creation of sustainable financial markets and the accomplishment of long-term economic and environmental objectives.

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Keywords: ESG investing, Private investors, Sustainable investment, ESG, Investment barriers, Financial performance, Investor motivation

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1. INTRODUCTION

In recent years, the financial sector has begun to shift its priority towards sustainable investments. This trend is dominated by the growing importance of ESG criteria, symbolizing broad societal demands for ethical and responsible investment practices (Zaccone & Pedrini, 2020) (Matos, 2020). While much attention has been given to institutional investors, the role of private investors in driving this shift is equally crucial, and yet unexplored.

Before the push towards sustainable investments, traditional private investors focused more on traditional financial metrics and traditional investment strategies (Tudose & Avasilcai, 2020). Maximize the financial return, which includes strategies like growth investing, value investing, and income investing (Louis K.C.Chan & Lakonishok ,2004). Growth investors are interested in high-growth companies with big potential for capital appreciation, while value investors sought out undervalued companies with strong fundamentals (Louis K.C.Chan & Lakonishok ,2004). Income investors were looking for big blue-chip stocks, bonds, and REITs that generate consistent income through dividends and interest (Botunac et al., 2024). Further, it was important to use risk management, using diversification and asset allocation so that the investment could be dispersed into assets and sectors with a view to mitigate the risk (Bessler et al., 2021) (Koumou, 2020). In addition, the Efficient Market Hypothesis has been followed by most investors for a considerable time, which states that market prices reflect all available information, and hence, it is difficult to consistently outperform the market through active management of stocks selection and market timing (Naseer & Bin Tariq, 2016). So, it was usual to invest in passive investment vehicles like index funds (Easley et al., 2021) (Elton et al., 2019). In other words, ESG criteria are a set of standards by which an investor screens possible opportunities of investment because of their environmental impact, social responsibility, and good governance practices (de Souza Barbosa et al., 2023) (Meng & Shaikh, 2023). The aspect of such criteria is highly personal and ethical, and private investors might value them more than institutional investors would (Zaccone & Pedrini, 2020) (Alfonso-Ercan, 2020). In order to understand what type of motivations drive private investors to include ESG factors into their decision, there is a need to promote sustainable investment practices (Fu et al., 2023).

With the upward trend in ESG investing, a gap in research identifies motivations and challenges faced by the private investor (Che Hassan et al., 2023). Information asymmetry, where the majority of ESG-relevant data is not disclosed to the private investor and greenwashing by corporations, is indeed prevalent (Liu et al., 2023), this making it even more challenging for the private investors to make investment decisions (Bergh et al., 2018). These challenges require a better understanding of the decision-making process of private investors.

The aim of this study is to understand the main drivers that propel private investors to integrate ESG criteria in their investment portfolios (Strauß, 2021). In particular, the research explores the role of personal ethics, perceived financial viability, and social pressures in investment decision-making (Banks et al, 2022). Through the investigation of these factors, this study attempts to fill the gap in the existing literature and, therefore offers some inputs to encourage more sustainable investment practices among private investors.

Below is the central research question that will guide this dissertation: “What are the key determinants that drive private investors to incorporate ESG factors within their investment decisions?”. This overarching question can be answered though the following sub-questions:

How do personal ethical values influence private investors’ decisions regarding ESG investments?	Ethical Values
In what ways do adoption of ESG criteria affect financial viability and risk of private investors in their investment decisions?	Financial viability and risk
How do societal pressure and public opinion shape private investors’ ESG investment strategies?	Societal pressure and public opinion

Table 1: Sub-questions for reasearch

This study provides insights into the motivations of a private investor group (Amel-Zadeh et al., 2020), an area often left aside in the existing literature on sustainable investment theory (Sciarelli et al., 2021). The study hence fills a gap in literature on personal and societal influence toward ESG investment decisions (de Jong & Rocco, 2022). On the practical side, the research results that will be obtained from this study are of great importance for financial advisors, policymakers, and private investors themselves as they will serve in devising strategies for encouraging more sustainable investment practices on the part of the latter. (Sciarelli et al., 2021)

2. LITERATURE REVIEW / THEORETICAL FRAMEWORK

2.1 What is sustainable investment

In order to understand the motivations of private investors when incorporating ESG criteria into their investment portfolios, this section will set the stage through the review of available knowledge and describe the gap and set related significance of this study in the overall context of sustainable investments.

The sustainable investments may be effective in terms of positive societal impact while also providing good financial returns. By building the foundational understanding of sustainable investments and ESG criteria, we can look deeper into the relevance and importance of these considerations in the modern landscape of investments.

Sustainable investments are defined as financial decisions that integrate environmental, social, and governance (ESG) factors into the overall framework of investment analysis and decision-making. In particular, the Environmental factor shows environmental stewardship rather than merely minimizing negative effects. This is demonstrated by the significant shift away from or decrease reliance on fossil fuels as evidenced by the massive investment in renewable sources like solar and wind power (Scholtens,2017). Furthermore, companies are developing programs that would encourage biodiversity in terms of water consumption, strength, and sustainable agriculture methods. Therefore, in addition to being evaluated for their immediate effects, these environmental initiatives are also evaluated for their potential to reduce future environmental concerns associated with climate change (Friede et al, 2015). Accordingly, the viewpoint views the function of environmental criteria in protection as involving not only the preservation of natural resources, energy efficiency, waste and pollution reduction, and the environment, but also the human treatment of animals.

The Social criteria raise the ESG bar of investing above supplier relations and treatment of the workforce. It contains the role of the company in the community and impact in respect of broader society. This would include areas such as contributing to the economic development of underserved areas, working with philanthropy, and product safety and integrity (Porter & Kramer, 2018). A company's stance on social concerns, its regard for equality, and the kinds of procedures that might be developed to prevent harassment and discrimination have all become hot topics for investors. In addition to this, the COVID-19 pandemic's start highlighted how crucial it is for businesses to guarantee the health and welfare of their workforce by implementing strict safety and health policies (Emmett et al., 2020).

Last but not least, the Governance category provides the other end of ESG spectrum. It speaks to the morality of business practices, encompassing matters like fighting corruption, maintaining fairness in all facets of the firm, and encouraging honesty (Aguilera et al, 2007). Because of the transparency surrounding the political donations and lobbying actions of the firms, scrutiny has the potential to alter corporate governance and societal influence. Furthermore, the board's challenge and advice to the company's leadership highlight the board's crucial role in decision-making, which is where the roles of independence and diversity come in.

2.2 Motivation of private investors

An important understanding in this regard is associated with the motivations and behaviors of private investors regarding sustainable investment to understand larger impacts on the investment strategies that ESG criteria might have. For example, while institutional investors are focused on their investment and do not consider their personal values, social impact, or ethical considerations, private investors may regard such matters even more highly than their institutional counterparts (Clark et al., 2014). These investors are predominantly guided to let their investments reflect personal ethics and result in socially positive outcomes, such as combating climate change, promoting social justice, and good corporate governance (Martini, 2021). On the other hand, institutional investors are focused on maintaining a deep-seated relationship between their investment strategies and financial performance and regulatory compliance using the following key performance indicators (Schwarte & He, 2024). The first one is the percentage of ESG-compliant investments, which identifies the proportion of the level of commitment in the portfolio that is attributed to ESG-compliance investments and, therefore, shows the commitment to responsible investing (de Jong & Rocco, 2022). It is also used in tracking returns on ESG investments and the risk-adjusted return on ESG investments, so investment performance can be compared with typical investments to ensure that ESG strategies do not in any way erode the potential for financial returns (Hübel & Scholz, 2019). The ESG score is an average rating of the extent to which portfolio meets ESG compliance according to third-party ratings, hence enabling transparency and accountability (Clément et al., 2023). Institutional investors observe the sector allocation to sustainable industries to ensure that they are diversified, particularly into such industries as renewable energy, that promises long-term growth and limit environmental risk (Kreinin & Aigner, 2021). The number of engagements with companies concerning ESG issues and the participation rate at proxy voting on ESG resolutions indicate how aggressive institutional investors are in influencing corporate behavior towards sustainability (Hoepner et al., 2023) (Bauer et al., 2023). ESG disclosure rate of metrics and frequency of ESG reports are used to indicate transparency and conformity to the requirements of law and standards (Liu, 2022). On the other hand, the expense ratio of ESG and transaction costs related to ESG investments are important in the management of costs to ensure that the implementation of ESG criteria does not become over costly. Lastly, governance focused KPIs related to ESG competence of the Board and Management and ESG policy implementation rate in portfolio companies ensure investment management by knowledgeable and responsible leaders (Schwarte & He, 2024). Consequently, their investment decision may be more driven by a particular ESG factor that resonated with their personal beliefs and values, even when at the cost of the financial return trade-off (Hebb, 2013).

2.3 Barriers to ESG investments

Furthermore, by looking at the background on private investors' preferences, we can see that the barriers to implementing an ESG investment strategy differ between institutional investors and private investors. Institutional investors often allude to issues like poor standardization and regulatory ambiguities, while on their part, private investors are usually accused in relation to the information asymmetry of problems like the complexity of ESG-related financial reports and greenwashing. Investors find it difficult to really understand these ESG metrics because companies, in order to make their firms look sustainable, are misstating them. They doubt them, so the doubt is making them become very skeptical and careful in their investment behavior. Private investors, furthermore, have poor access to whole ESG data and perceive that there is a paradox between an ethical investment and return on financial investment, partly due to misconceptions regarding the profitability of ESG initiatives. Such information asymmetry, however, has a very high level of ambiguity and therefore greatly prevents private investors from engaging with ESG. It therefore calls for the improved and better reporting standards as part of improvements to investor education towards closing this gap (Candelon et al., 2021; Wang et al., 2022).

2.4 Institutional vs Private investors strategies

The literature also demonstrates that, despite being essential to the advancement of sustainable investment, both types of investors have different strategies that work in concert to encourage businesses to adopt better ESG practices. The foundation for corporate ESG performance is established by these institutional investors' focus on risk management, diversification, and governance norms (Schueth, 2003). On the other hand, private investors' emphasis on aligning investments with moral or ethical principles may stimulate innovation and growth in specific ESG fields by directing businesses toward more advanced or specialized sustainability practices (Renneboog et al., 2008).

What makes this of such great importance is the huge influence that governmental policies and societal expectations wield over the framing of investment strategies in general and ESGs criteria in particular. The legislative framework may contain provisions that will enforce sustainability in investment practices by a change of attitude of companies and investors towards ESG considerations (BÉNABOU & TIROLE, 2009). The increasing awareness and concern for social and environmental issues have given rise to social pressure that drives companies and investors toward embracing strategies that are more sustainable and responsible (Dyck et al., 2019; Ioannou & Serafeim, 2022).

2.5 Financial performance of ESG investments

Accentuating the need for an investment practice with an ability to be financially viable in ESG, while research further suggests that ESG investments do offer competitive returns and, in many cases, may outperform traditional investments (Friede et al., 2015). Two prime benefits that could lead to better performance are: risk reduction and return enhancement through ESG investing (Scholtens, 2017). In better risk management and sustainable investment opportunities, ESG investment produces a compelling case for both financial viability and sustainability. These are the dimensions of maximum financial significance to the institution and private investors respectively. The institutional investors with the use of ESG criteria may be in a position to take the risk, diversify the portfolio, and meet standards of sustainability and governance. This gives them the opportunity to adopt long-term investment strategies that will enable them to financially assist businesses that not only exhibit strong ESG performance but also show signs of financial growth (Clark et al., 2014). On the other hand, private investors do have a higher degree of flexibility and agility in their investment decisions, allowing them to rapidly capitalize on emerging ESG opportunities and trends. In addition, private investors also have much to gain from the rise in ESG-specific financial products and services designed for them, such as ESG mutual funds, ETFs, and robo-advisors. These vehicles provide accessible, diversified opportunities for incorporating ESG criteria into their own portfolios. Alongside the enhancements in transparency and data availability, private investors are increasingly empowered to base their charters on more reasoned judgments. Consequently, private investors can stimulate the trend towards sustainability by supporting companies committed to environmental reflexibility and social accountability through more active corporate behavior. Besides this, while driving the market to achieve good results, private investors can further fortify the financial and moral rationale for ESG investing.

2.6 Methodological approaches

Literature explains that the exploration of sustainable investment benefits from the widest range of methodological approaches, more precisely the literature in the field is plenty with quantitative analyses of returns and risks, coupled with qualitative studies on the motivations of investors (RIEDL & SMEETS, 2017). However, the gaps in such long-term research to gauge long-term performance, on an investment basis and insight into an individual decision-making process, echo a need for further research (Hebb, 2013). This hybridization of approaches leads directly to their conclusion about how difficult it is to evaluate sustainable investments.

Nonetheless, societal expectations, governmental policies, and the legal framework that may compel sustainable practices all have a significant impact on investment strategies. Business and investors are under pressure to adopt more sustainable strategies due to the growing concern over social and environmental issues (Ioannou & Serafeim, 2022).

In terms of social investment prioritization for private investors who conduct responsible investing, the integration of ESG criteria has been growing in importance. Although ESG criteria are commonly treated separately, their deep-seated interdependence is one of the bases of sustainable investing. For example, social expenditure on a proper environment, such as supporting health and security, improve social relationships. Likewise, governance has a two-way impact on social and environmental results because good governance implies the culture of ethicality and responsibility. Therefore, companies' concern for social and environmental issues in the era of digital media increases the usage of ESG criteria in obtaining investment research.

The digital media environment both assesses and pressures companies' ESG criteria performance. As companies widely present their ESG scores through media, customers' and investors' perceptions, which determine social sector standing, are influenced. With media's vast empowerment of data, private investors are provided access to vast information dissemination possibilities, enabling rapid impacts in fighting against unethical or unsustainable corporate approaches. As a result of the ESG-based approach to attract investment and create brand loyalty, corporations are encouraged to act more ethically. Moreover, new digital solutions such as big data, AI, and blockchain facilitate assessment and monitoring through innovations.

Although the integration of ESG priorities could be relevant event without media use for this aim, in the digital era's context, the integration of environmental priorities is increasingly rapid and cutting edge. While this phenomenon can occur without media, the digital era facilitates such interaction by transforming private investors and customer influence into a strong channel. Companies that remember social and environmental concerns during the era of digital media are better prepared for risks from losing the social license to operate and the generation of long-term value. As a result, ESG investing becomes more mainstream, not due to losing attraction, but because of its growth. Hence, ESG and digital media unite financial success with broad sustainable development goals, guiding private investors toward a more ethical path.

2.7 Theoretical framework

Building further from the comprehensive insights that emerged from literature review, the paper proposes a nuanced theoretical framework to be adopted for use in the dissection of the multifaced dynamics playing within the ambit of sustainable investment practices. This framework is instrumental in casting light on the complex interrelations between sustainable investment practices, investors behaviors, and the general influence of outside forces including social pressure and legal frameworks (Smith, 2021). Central to this exploration is the intent to scrutinize the specific drivers that push forward the ESG investment behaviors among key financial actors, private investors (Awaysheh et al., 2020). Through this lens, the framework sets the stage for a detailed investigation into the various motivations, perceived benefits, and challenges that underscore the realm of sustainable investing (*Real assets* 2012; Maltais & Nykvist, 2020).

Against this background of sustainable investing, it will go into the world of complex investor incentives, interactions between the societal and legal environments, perceived rewards, and problems. The motivation framework distinguishes the motivation between institutional investors, who seek only to maximize financial returns and manage risk, from the private investors, where the motivation is derived from personal ethics or to better society (Clark et al., 2014). The criteria for ESG constitute the central of this search, through which sustainable investments are based. It comes while handling environmental stewardship and at the same time addressing social responsibility, integrating the mix of investment decisions (Scholtens, 2017). It goes on to show those impacts on societal pressures and legal mandates, how these external forces, in general, force investors, which looks pretty much to be forcing, in the direction of adopting more sustainable practices, shaping investments (Dyck et al., 2019). It, therefore, pinpoints the values of associated sustainable investments, including the mitigation of risks and potential enhancement of returns, but also recognizes a series of challenges many investors face: issues of standardization, the uncertainties in regulations, and the prevalence of information asymmetry (Candelon et al., 2021). It is in this broad framework that the following seeks to highlight the convoluted relations that constitute the sustainable investment strategies adopted by the private investors, drawing in the process their specific challenges and opportunities in between several dynamics of change toward a more sustainable and ethical investment paradigm.

Derived from this theoretical groundwork, several hypotheses can be formulated for empirical testing. These hypotheses, which represent precise statements regarding the correlations between the variables found under the umbrella of sustainable investments, are designed to be both detailed and testable (Schramade, 2016). They act as a link between this study project's theoretical and empirical domains (*Developing sustainable finance definitions and taxonomies* 2020).

Research question	Hypothesis	Focus
How do personal ethical values and goal settings for societal impacts drive private investors' ESG investment decision?	Private investors are driven by personal ethical values and goals settings for societal impacts, from their ESG investment priorities.	Motivational Divergence
How much of a factor do the additional non-financial benefits, like environmental, and social impact, become in affecting private investors' ESG investment decisions?	The sustainability of private investors as a source of competitive financial returns with benefits in the mitigation of risk is considered; the latter does so even more because the benefits attached are of high importance most especially to the non-financial ones that emanate from environmental and social impact.	Perceived Benefits
How do legislative frameworks and societal pressures act as determinants for ESG adoption among private investors? **To what extent does personal alignment with sustainability goals drive ESG adoption among private investors?**	Strong determinants, in this case, affecting the ESG adoption among private investors, include legislative frameworks of societal pressures. The strong determinants of this influence on ESG adoption in private investments include societal pressure and personal alignment with the sustainability goals.	External Influences
What are the central barriers to the adoption of ESG investments among private investors in attention to the two factors of information asymmetry and the perceived trade-off between financial and ethical objectives?	The main barriers to the adoption of ESG investment are different between private investors. While the institutional investors refer to poor standardization and regulatory certainty, private investors point at information asymmetry and perceived trade-off between the financial and ethical objectives.	Challenges and Barriers

Table 2: Research questions and hypotheses

3. METHODOLOGY / RESEARCH DESIGN

3.1 Research approach

To analyze the stated hypotheses, we will follow a quantitative research design, since the study will gain understanding of the factors affecting adoption of ESG investment criteria. The nature of the study will be survey in design, given its suitability for gathering and evaluating quantitative data. In the following table, the study variables, their scale of measurement and survey question will be presented:

Variables	Type	Scale of measurement	Survey question
Years of investment experience	Independent variable	Ordinal	1
Average portfolio size	Dependent variable	Ordinal	2
ESG factors prioritized	Independent variable	Nominal	3
Motivation for ESG investments	Dependent variable	Nominal	4
Importance of ESG criteria	Independent variable	Interval	5
Source of ESG information	Independent variable	Nominal	6
Perception of ESG performance	Independent variable	Interval	7
Barriers to ESG investments	Independent variable	Nominal	8
External influences	Independent variable	Interval	9-13
Risk perception of ESG investments	Independent variable	Interval	17

Investment risk tolerance	Independent variable	Ordinal	20

Table 3: Variables of analysis

In the analysis of the collected data, a number of statistical approaches will be used: Descriptive statistics will help describe and provide preliminary overview of the means, and standard deviations, and frequency distribution levels of ESG and factors that influence integration. Inferential statistics will include T-tests comparing the means of ESG integration by private investors, judging at what level the mean differences is statistically significant different from zero.

As for the differences, ANOVA will be applied, analyzing the variances between more than two groups. By using this technique of analysis, we can assess whether there is a statistically significant difference in ESG integration among various investor groups based on the independent variable that were presented in the table above. Linear regression will be used to identify the relation of the independent variables with the level of ESG integration and help in determining which factors will be predictive for the ESG investment practices. The general equation for the linear regression used in this model is:

$$\begin{aligned} ESG\ integration = \ & \beta_0 + \beta_1 \\ & * Year\ of\ Investment\ Experience + \beta_2 \\ & * Average\ Portfolio\ Size + \beta_3 \\ & * ESG\ factors\ prioritized + \beta_4 \\ & * Importance\ of\ ESG\ criteria + \beta_5 \\ & * Source\ of\ ESG\ information + \beta_6 \\ & * Perception\ of\ ESG\ performance \\ & + \beta_7 * Barriers\ to\ ESG\ investing + \beta_8 \\ & * External\ influences + \beta_9 \\ & * Risk\ perception\ of\ ESG\ investments \\ & + \beta_{10} * Investment\ risk\ tolerance + \epsilon \end{aligned}$$

In this equation, the intercept is the starting point of ESG integration when all the independent variables are zero. The rest of the betas are the quantification of each variables. A positive coefficient will result in a direct relation of the factor with the ESG integration factors by private investors. Lastly, the equation ends with the error term that shows the variability of ESG integration that cannot be explained by the variables used in the linear regression and shows that there are other external factors that can influence the equation.

Moreover, Lasso regression will be performed to identify more easily which factors are the most influential regarding the ESG integration. In order to test the validity, the survey data was divided into training and testing sets. After that a cross validation was done in order to analyze the model's accuracy.

In this instance, therefore, this analysis will use the correlation to detect and quantify the strength and direction of the relationships between ESG integration and different independent variables. The data will be analyzed using appropriate statistical software after initial cleaning, which involves the search for outliers, handling the issue of missing data, and ensuring that data normality is fit for appropriate statistical testing. These will be presented in tables and graphs for a clearer showing of the findings.

3.2 Quantitative Research

For private investors, relevant data from target groups are directly collected by using surveys. In this case, the intention is to quantify their attitudes, preferences, and the extent to which the ESG factors influence the investment decision process. The survey would use closed-ended questions designed for easy measurement using qualitative analysis. The questions would be premised on the importance of ESG criteria in investments decisions, benefits perception, and barriers of ESG investments. These would also be measuring the pressures of external forces such as legislative frameworks, and societal expectations on ESG investments.

The survey is supposed to access a representative sample of private investors. The applied method of sampling will be a convenience sampling in order to represent the larger targeted population in respect to key demographics and investment behavior. It will be sent electronically to the networks of professionals, and social media sites that deals with finance and sustainability. This would lead to a farther reach in as much as costs and time spent collecting data have been minimized.

3.3 Ethical considerations

Ethical considerations are very important due to the great reliance of the study on the use of human participants. Approval for the same will be sought from the Ethical Committee, considering participant privacy and confidentiality. All participants, therefore, will have the purpose of the study fully disclosed, be informed that participation is voluntary, and that they can discontinue involvement in the study at will without penalty.

4. ANALYSIS

In this part of the study, I will present to you the findings regarding the motivations, barriers, and factors influencing private investors' decisions to add ESG criteria into their investment portfolio. The analysis was made with the help of the collected data via the survey, with a number of 64 individual investors.

The data which was collected was first transformed into numerical values in order to facilitate statistical analysis. Then, the relevant columns for analysis were chosen for the analysis. The cleaned dataset was then used for statistical analyses in order to see what factors are influencing ESG selection of investments in private investor's portfolios.

4.1 Survey analysis

4.1.1 PCA analysis

In order to reduce the dimension of the data and find the principal variables that need to explain the variance, the principal component analysis was used. This method is useful in making the dataset more easily to read because it is converting the original variables into new set of independent variables that keep the majority of variance. PCA identifies the most important variables that are influencing the ESG investing decisions, giving a better understanding of the key characteristics influencing investor's behavior. To run this analysis, the data needed to be normalized to make sure that each variable has an equal weight for the analysis. The principal components were evaluated to see which are the important components that explain the variance, and what contribution had each factor to each principal component, in order to determine the most influential one. The findings are presented in the graphs … ….iIn the appendix.

4.1.2 Descriptive statistics

The descriptive statistics was used as an overview of the survey data. This step is important since it helps us understand the basic features of the data, like means, medians, standard deviations, and standard errors. This statistics provides information about survey's respondends profiles, such as years of investment experience, average portfolio size, and the importance of ESG factors.

Variables	N	Mean	Median	SD	SE

Years of investment experience	64	1.93	2	0.8	0.21
Average investment portfolio size	64	2.2	2	0.86	0.22
ESG factors prioritized	64	1.8	2	0.77	0.2
Motivation for ESG investments	64	2.8	2	1.08	0.28
Importance of ESG criteria	64	6.47	7	2	0.52
Source of ESG information	64	2.47	3	0.74	0.19
Perception of ESG performance	64	6.07	7	2.31	0.6
Barriers to ESG investments	64	2.6	3	0.74	0.19
External infleunces	64	5.81	6.2	1.17	0.3
Risk perception of ESG investments	64	5.6	5.5	1,72	0.45
Investment risk tolerance	64	3.07	3	1.03	0.27

Table 4: Descriptive statistics

4.1.3 Correlation matrix

The correlation analysis was used to determine and measure the level and trajectory of correlations between variables. This step is done to determine how multiple elements interact with each other regarding ESG investing. By doing this, it helps us understand which factors may impact others and can offer an overview of potential predictors for further regression analysis. In order to create the correlation matrix, the data was cleaned and the relevant columns were selected to assess the strength and direction of the correlation between variables. The graph of the correlation matrix can be found in appendix and it shows the significant connections and multicollinearities between the variables.

4.1.4 Regression model

To do the regression analysis, the dependent variables were regressed against the independent variables creating two different models. The equations are the following:

$$\begin{aligned} &Average\ investement\ portfolio \\ &\quad = \beta_0 + \beta_1 \\ &\quad * Year\ of\ Investment\ Experience + \beta_2 \\ &\quad * ESG\ factors\ prioritized + \beta_3 \\ &\quad * Importance\ of\ ESG\ criteria + \beta_4 \\ &\quad * Source\ of\ ESG\ information + \beta_5 \\ &\quad * Perception\ of\ ESG\ performance \\ &\quad + \beta_6 * Barriers\ to\ ESG\ investing + \beta_7 \\ &\quad * External\ influences + \beta_8 \\ &\quad * Risk\ perception\ of\ ESG\ investments \\ &\quad + \beta_9 * Investment\ risk\ tolerance + \epsilon \end{aligned}$$

$$\begin{aligned} &Importance\ of\ ESG\ criteria \\ &\quad = \beta_0 + \beta_1 \\ &\quad * Year\ of\ Investment\ Experience + \beta_2 \\ &\quad * Average\ Portfolio\ Size + \beta_3 \\ &\quad * ESG\ factors\ prioritized + \beta_4 \\ &\quad * Source\ of\ ESG\ information + \beta_5 \\ &\quad * Perception\ of\ ESG\ performance \\ &\quad + \beta_6 * Barriers\ to\ ESG\ investing + \beta_7 \\ &\quad * External\ influences + \beta_8 \\ &\quad * Risk\ perception\ of\ ESG\ investments \\ &\quad + \beta_9 * Investment\ risk\ tolerance + \epsilon \end{aligned}$$

These models were created to investigate different elements of ESG investment behavior among private investors. The first one is focusing on the average portfolio size, which is impacted by personal investing and a variety of ESG characteristics. The second one was created to explore the factors that influence the increasing importance of ESG criteria in investing decisions. Lastly, the first model that was introduced in Methodology section, studies the overall ESG integration, and incorporates components from the prior two models to provide a more comprehensive understanding of ESG adoption in investing processes.

The models were run to find predictors which are based on coefficients, standard errors, t-values, and p-value. This step in the analysis will enable the identification of elements that are significant drivers of ESG investment practices. By adding more variables in the model, we may examine the overall influence on the dependent variables. The regression analysis helps us to see what direct influence have each variable, while taking into account the impact of other variables in the model.

Additionally to normal regression, the Lasso regression was used in order to identify the most influential variables by applying a penalty to the less significant factors. By applying the penalty to other variables, the model will be further simplified and will focus more on the more essential variables. In this kind of regression the models are validated using training and testing sets, as well as performance measures such as Mean Squared Error and R-squared values, to confirm the prediction model's robustness and accuracy. In order to run this regression, after the data was cleaned, it had to be divided in testing (20%) and training sets (80%). After this, the analysis was carried out by creating a design matrix for predictors and response vector, running Lasso regression using cross validation to find the optimum penalty value, and to determine the parameters of the most suitable model woth smaller amount of penalty applied. Lastly, the models were plotted to show the coefficients of the regression, prediction against the actual values, and the residuals, to clarify the model performance.

ANOVA test

The ANOVA test was done to look into the variation between two or more groups, aiding the regression analysis. This approach helps in determining whether or not there is a substantial variance in the means of the groups inside the dataset. It gives insight into the variance of different groups regarding the ESG integration. This is important for confirming the regression's results and to ensure that the discoveries done has influence across different parts of the data.

5. DISCUSSION

5.1.1 PCA discussion

The principal component analysis presents what are the main factors that are influencing private investors' decisions regarding ESG investments. As can be seen in the first graph, the first principal component explains 29.1% of the variance, and the most important variables that influence it are ESG investments, ESG factors prioritized, external influences, and average investment portfolio size. This dimension incorporates the main factors related to ESG investment decisions, showing that ESG priorities and external influences such as societal pressures and legislative frameworks does play a significant role when it comes to ESG investments.

Additionally, the second principal component which explains 22.5% of the variance has as main drivers the following variables: years of investment experience, average investment portfolio size, investment risk tolerance,and perception of ESG performance. The focus of this dimension is the investors' personal characteristics such as experience, portfolio size, and risk tolerance. By focusing on these elements, this dimension is playing an important role in determining the perceptions and judgments of private investors' regarding ESG investing.

The plot of individual observations (investors) on the first two principal components demonstrates how various investors are spread out depending on their ESG investment practices and impacting variables. Those with have a high value on the first dimension prioritize the sustainability issues and are greatly affected by external factors. Furthermore, investors with high score on the second dimension are likely to have more years of experience, larger portfolios, and a higher acceptance of risk. By doing an individual clustering it is revealed that there are similar patterns among private investors, thereby enabling for more initiatives that are focused in promoting ESG investing, based on investor profiles.

Now, taking into consideration the variable contribution to the first dimension, the ESG investments looks like contribute the most, indicating their importance in the analysis. The selected ESG elements are considerably influencing the first dimension, showing that investors' priorities are critical in shaping their overall investing strategy. For example, the external influences, in special the regulatory frameworks and public opinions are important external factors that influence the ESG integration. Lastly, the average portfolio size and the relevance of ESG criteria play important roles, indicating that as larger a portfolio is and the more important the ESG criterias are, the more important the ESG investing decisions are.

In dimension two, the most important factor is the year of investment experience. This indicates that investors with more experience are more likely to engage in different ESG investment practices. More than that, the average portfolio size and risk tolerance of each investor are also important factors, showing that individuals with bigger portfolios and with higher risk appetite are crucial participants in ESG investing.

5.1.2 Descriptive statistics

This step gives us a basic understanding of the data obtained fomr private investors with regards to the inclusion of ESG factors in their investment portfolio. As can be seen, the average yars of experience is 1.93 with a median of 2, suggesting that the sample analyzed was primarly consisting of investors with low expertise. This aligns with our previous statement that younger and less experienced investors are more likely to search for sustainable investments. According to Strauß(2021), investors which are new to the market and practice frequently have a higher commitment to ethical and sustainable investing, which is driven by the current trends and education, emphasizing the relevance of ESG factors.

Because the sample was formed out of investors with low experience, consequently the average portfolio size is small. This may result in prefferences for more safer and diversified investing methods, which often involves incorporation of ESG criteria as a risk. As noted by Riedl and Smeets(2017), the investors with small portfolios are more likely to point out ESG criteria, which are motivated by personal ethics and desires to create a good social effect, rather than financial reasons.

Further looking at the average number of ESG factors prioritized we can see that the majority of sample's investors focuses only on two factors out of three. This may indicate that even ESG factors are taking into account, they may not be an important focus for most investors. It can be interpreted as a transitional period in which investors comes in terms with the relevance of ESG considerations but continue to prioritise traditional financial indicators. Lookin at the literature, it is said that while ESG components are more widely recognized, full absorption into investment strategies usually takes more time and sufficient evidence to convince investors of the long term benefits of them (Friede et al., 2015).

On the contrary, the importance of ESG criteria with a mean of 6.47, indicates that there is a recognition regarding the ESG criterion when comes to investing among the respondents of the survey. The gap between the prioritization and perceived relevance of ESG factors might imply an imbalance between consciousness and action. Individuals may understand and embrace ESG concepts, but they can be put in face of obstacles such as a lack of clear ESG performance measures, fear about greenwashing, or possible trade-offs between financial returns and ethical values (Liu et al., 2023).

The variation in motivation regarding ESG investments may show how personal beliefs, financial compensations, and the understanding of ESG advantages plays a role in shaping the investors drivers in including ESG criterias in their portfolio. Some of them may be motivated by ethical concerns and playing a role in the society's well-being, while others may be influenced by the perceived financial benefits or external influences such as social standards and legislative frameworks (Amel-Zaded et al., 2020).

The questioned investors had a mean perception of ESG performance of 6.07, showing that they generally see ESG investments positively in terms of performance. This can be confirmed by other researches that shows that ESG investments may provide competitive returns and even outperform the traditional investments in some situations (Friede et al., 2015). On the other hand, because the value of standard deviation is 2.31, it shows that still some investors are skeptical about the financial performance of ESG investments compared to the conventional ones.

When it comes to barriers regarding ESG investments, the mean is 2.6 with a low standard deviation, signaling that investors face significant obstacles when it comes to ESG criteria adoption. Common challenges include information asymmetry, doubts regarding the truthfulness of company ESG statement, and the complexity of ESG financial data (Bergh et al., 2018). For a wider adopotion of ESG criterion in investments, these barriers need to be solved, or private investors will need guidance in order to adopt more ESG investments.

Furthermore, the external influences have a mean of 5.81, resulting that social influences and legislative frameworks plays an important role in affecting investors investment decisions. This result fits in with the increasing significance of societal norms and legislative measures in supporting environmentally responsible companies operations. Individuals are becoming more knowledgeable regarding the reputation hazards and potential regulatory fines associated with ignorance regarding the ESG considerations (Dyck et al., 2019).

Finally, the risk associated with ESG investments has a mean of 5.6 sahowing that survey participants view ESG investments as having a moderate level of risk. It implies that although investors value the potential benefits of ESG investing, they are also aware of the dangers, which include market volatility, legislative changes, and probability of greenwashing. This perspective can be influenced by ESG funds' performance history as well as the emerging nature of ESG criteria and reports requirements, which can conclude in uncertainty over later returns. Additionally, the risk tolerance of surveyed investors shows that the sample has a balanced attitude towards risk. This suggests that these investors are very careful when consider the risk and advantages of ESG investments before incorporating them into their portfolios. The moderate risk does also indicates that investors are willing to be exposed to some risk in exchange to some benefits, such as long term sustainability and ethical alignment, but on the other hand they are unwilling to sacrifice their financial stability to obtain the other benefits.

5.1.3 Regression analysis

The regression shows how various variables are predicting ESG integration. Some of this variables are: years of investment experience, average portfolio size, and ESG factors prioritized. These findings implies that if an investor has more years of experience then it is more likely to include ESG factors in its portfolio. So an additional year of experience is associated with a 5% increase in the average size of the portfolio. Moreover, experienced investors might be more aware to the long-term perceived benefits of ESG investments, such as risk-reward ratio to adopt these criterias.

Similarly, by looking at the positive correlation between average portfolio size and ESG integration, we can conclude that investors who owns bigger portfolios are more likely to put attention into ESG concerns. By priorityzing one additional ESG factor an increase of 3% will appear in the average size of the portfolio. These investors may also be willing to tolerate possible short-term costs associated with ESG investments, since they expect significantlong-term profits.

Another important predictor is the ESG factors prioritized, because it's implying that specific ESG elements that investors are focused on are critical in their decision making process. For example, higher motivation for ESG investments results in a 32.5% increase in the average investment portfolio size. This shows an intentional and a value-driven approach to investing, in which investors choose to align their portfolios with their personal values and ethical norms.

These data provide support to the premise that personal characteristics and investment practices play a significant role in assessing the level to which private investors incorporate ESG criteria. Looking at the findings, we can say that using an additional source of ESG information leads to a 39.2% increase in portfolio soze, showing the importance of diverse information sources. Investors with more experience and with bigger portfolios that have a focus on ESG elements, are more likely to observe the strategic benefits that underly ESG investments, such as improved reputation, regulatory compliance, and alignment with the SDGs. A positive opinion of ESG performance raise the average investment portfolio by 16.7% proving that investors who believe in ESG's effectiveness are more likely to invest more. As a result, they are more likely to include ESG criteras in their investments plan. On the other hand, each additional perceived obstacle is associated with a 20.7% increase in the portfolio's size, indicating that despite the existence of obstacles, investors continue to see value in ESG investing. But, looking at the external factors, a decrease by 15.2% is caused by them in the average portfolio, possibly because of skepticism regarding them.

By looking at the findings and comparing them with the research questions which aims to understand the variables driving private investors' motivations to include ESG criteria, we may have some key findings. First thing first, the level of investment experience is consistent with the belief that experienced investors have a better awareness regarding long-term advantages and strategic implications of ESG investments. This results is aligned with prior researches which showed that more experienced investors are better at recognizing potential sustainable investments in order to reduce the risk and increase returns. Secondly, the predictor average portfolio size shows the importance of financial capability in ESG investing decisions. Investors which have bigger portfolios are more likely to have more resources and a broader view on the impact has their investments, allowing them to a better understanding of ESG factors. These findings are aligned and backed up by other researches that shows that richer investors are better positioned to withstand short-term expenses while anticipating the long-term advantages such as improved business reputation and compliance with regulatory frameworks. Lastly, the risk tolerance is the third important predictor, showing that investors with high risk tolerance are more likely to engage in ESG investing. These findings implies that these kind of investors are more prepared to accept the perceived risk of ESG investments, motivated by the assumption that such investments might provide significant financial returns and social effects. Higher risk perception is associated with a 24.8% drop in the average investment portfolio, revealing that perceived hazards are considerably discouraging investments. In contrast, increasing risk is associated with a decline of 31.7% in the investment portfolio, proving that an investor who is risk tolerant may favor non-ESG products. This is in line with prior studies which stress out the role of risk tolerance in driving investment behavior, more accentuated in the context of sustainable and responsible investing.

The implication of these discoveries might help policymakers and financial adivesrs to develop tailored initiatives to encourage investing in sustainable assets, by understanding the experience level, portfolio size, and risk tolerance of investors. One example can be training campaigns in which long-term advantages of ESG investments may be directed to investors with a lower experience and understanding of ESG criteria, while incentives and support systems could be created to help smaller investors.

5.1.4 ANOVA results

From the ANOVA results we can observe large variations between groups depending on investing experience indicate that more experienced investors are better at recognizing and identifying the long-term benefits of ESG investing. This finding is backing up the premise that experienced investors have a better knowledge of how sustainable practices might increase investment returns while simultaneously reducing the risk.

Similarly,the variation between groups with various portfolio sizes underlines the relevance of financial capability in ESG decision-making.

5.1.5 Limitations

Even though the results of this study offer useful insights, it is not free of limitations. These limitations shows areas where the results of the study may be constrained and provide possibilities of future research that will build on these preliminary findings.

First thing first, the main weakness is the small sample size (n=64). The findings' generalizability might not be relevant since only 64 respondents can't be an indicative for the larger population of private investors. Additional research should look for a bigger and more diversified sample to increase the robustness and usefulness of the findings. Secondly, the data in this study was gathered via survey which can introduce a variety of biases. One of them might be the overestimates of adherence to ESG criteria owing to social responsibility bias, in which people show themselves in a positive way. Beside the overestimate bias, memory bias might as well have an impact on answer accuracy, especially when it comes to previous investing habits or experiences. Later researchears can add objective measures of investing activity, such as real portfolio data, to supplement the self-reported data and decrease the prossibility of bias. Additionally, the model created does not account for changes in investing behavior or views over time. ESG investments area is constantly evolving, and it's impacted by changes in legislative frameworks, market situations, and societal values. Studies which covers a longer period of time would give further insight into how these characteristics change and influence investing decisions. In the literature part it is mentioned about the information asymmetry and the complexity of ESG related financial reports, but the survey does not go into detail on the precise parts of ESG reporting that investors find difficult. Further studies should focus on identifying the specific areas of information gap and complexity that make an impediment for investors, as well as viable ways to improve clarity and accessibility of ESG data. Lastly, the study focuses on quantitative components of ESG investing, and does not go further into the larger contextual elements that might impact ESG investing such as cultural, economic, and institutional settings. These variables are exsposed to change among locations and investor groups, thus impacting the generalization of results. Further research should include contextual elements to have a more complete picture of ESG investment practices.

6. CONCLUSION

Ths study offered additional information about the factors that influence private investors' decisions to include ESG factors into their investment portfolio. The findings highlights the complexity and the varied nature of these decisions, which was found to be influenced by a mix of personalce qualities, experience with investing, and financial resources.

First thing first, this study found that investors with more experience are more likely to include ESG factors into their investing strategy. This is in alignment with prior studies, which found that experienced investors have a better knowledge and understanding of the long-term benefits of ESG investing, such as better risk management and possibility of higher returns. In addition, investors that have big portfolios are prioritizing more ESG factors, implying that financial competences play an important role in ESG decision making investing. This kind of investors are able to endure short-term expenses in exchange for long-term benefits, demonstrating a strategic approach to sustainable investment.

Secondly, this research underlined the significance of many sources of ESG information. Investors who are using different and a more varied range of information sources are more likely to grow their portfolios. This implies that access to full ESG data enable more informed decisions regarding investment decisions. The finding underscores the need for more transparency and availability of ESG-related informations in order to assist private investors.

Furthermore, the results show that personal values and ethical norms have a significant effect on investment habits. Individuals who believe in the success of ESG criteria are more likely to match their portfolios with these norms, reflecting a deliberate and a more value-driven approach to investing. This provides evidence to the idea of non-monetary motivations, such as compassion and ethical concerns, play an important role in ESG investing decisions.

On the other hand, despite the encouraging trends, this study also highlights various barriers regarding ESG investing, such as challenges and external pressures that have an influence on investment decisions. Additionally, the information asymmentry, in which the lack of clear and standardized ESG data makes it difficult to analyze the real impact and performance of sustainable assets. More on this, the greenwashing risks weaken confidence even more, as corporations may exaggerate their sustainability efforts in order to look more ESG aligned than they actually are. Furthermore, the ESG measurements can be rather complex and intimidating at first sight, especially for investors who are new or unfamiliar with the principles, and others might see a trade-off between ethical considerations and financial performance, discouraging them from making ESG investments. External influences which can be looked at as regulatory ambiguity and shifting cultural pressures which add to investors reticience, since inconsistent legislation and unpredictability in public opinos can create unstability in the environment of ESG investing. In order to overcome these impediments, a tailored legislation and increase in investors education are essential. By standardizing the ESG reporting and implementing verification mechanisms, it can help to diminish the information asymmetry and increase confidence. Clear and consistent regulations may help to create a stable investment environment, while working with stakeholders to reach an agreement on the relevance of ESG criteria can match social demands with investeors' real motives. If these difficulties are addressed through comprehensive regulations and dedicated education the adoption of ESG standards can considerably increase, resulting in more sustainable investments practices.

Finally, this research contributes to further our understanding of the factors that influence private investors' ESG investments practices. Additional research should have a bigger sample size and diversity of respondents, to confirm these findings and analyze additional factors that can influence ESG investing decisions. Furthermore, long-term studies can discover how changes in legal frameworks, market conditions, and social norms affect ESG investment over time. By addressing these issues, researchers and policymakers can help to promotoe the expansion of sustainable investment practices and contribute to a larger objective of attainaing sustainable development.

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8. APPENDIX

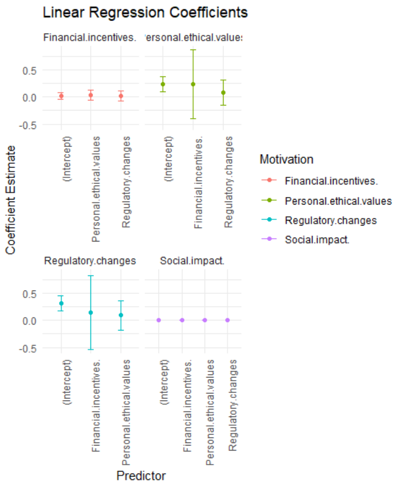


Figure 1: Linear regression for ethical values and societal impact

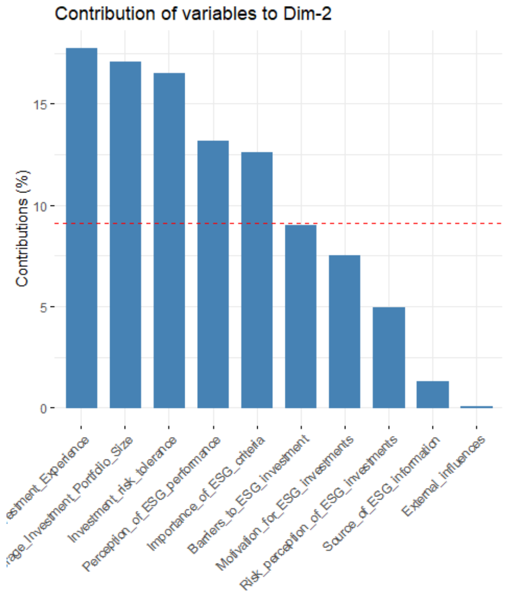


Figure 4: PCA analysis dimension 2

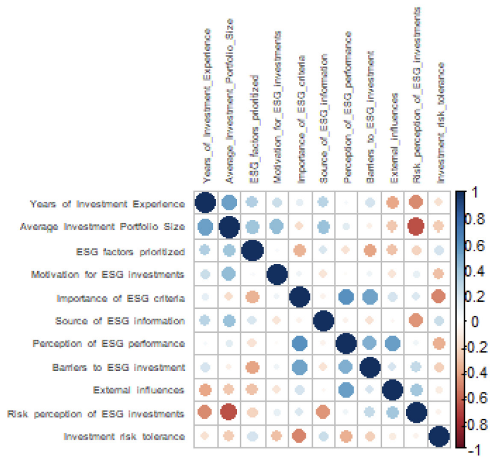


Figure 2: Correlation matrix graph

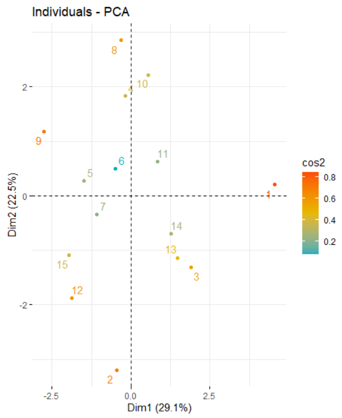


Figure 5: Individual PCA analysis

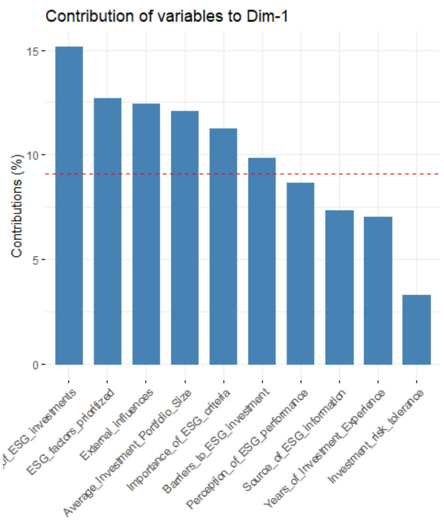


Figure 3: PCA analysis dimension 1

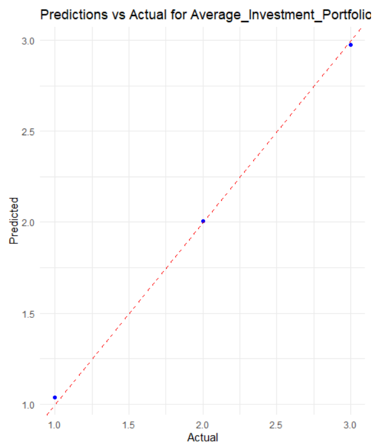


Figure 6: Lasso regression of average inevestment portfolio

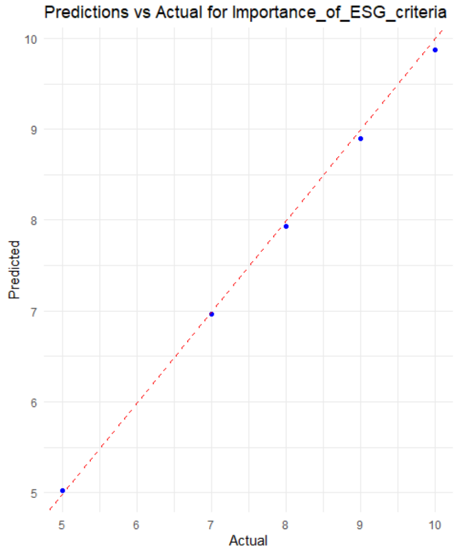


Figure 7: Lasso regression of importance of ESG criteria

	YIE	AIPS	ESGFP	MES GI	IESGC	SESGI	PESGP	BESGI	EI	RPES GI	IRT
YIE	1	0.539	0.323	0.231	0.111	0.297	0.041	0.194	-0.397	-0.488	-0.167
AIPS	0.539	1	0.385	0.429	-.183	0.401	0.136	-0.090	-0.273	-0.663	-0.257
ESGFP	0.323	0.385	1	0.034	-.351	0.174	-0.151	-0.401	-0.297	-0.225	0.196
MESGI	0.231	0.429	0.034	1	0.079	-.142	-0.023	0.072	-0.145	0.107	-0.307
IESGC	0.111	-0.183	-.351	0.079	1	-.061	0.596	0.525	0.200	0.162	-0.501
SESGI	0.297	0.401	0.174	-0.142	-.061	1	-0.061	-0.157	-0.041	-0.457	0.236
PESGP	0.041	0.136	-.151	-0.023	0.596	-.061	1	0.478	0.550	0.061	-0.361
BESGI	0.194	-0.090	-.401	0.072	0.525	-.157	0.478	1	0.189	0.259	-0.244
EI	-.397	-0.273	-.297	-0.145	0.200	-.041	0.550	0.189	1	0.372	-0.107
RPESGI	-.488	-0.663	-.225	0.107	0.162	-.457	0.061	0.259	0.372	1	-0.064
IRT	-.167	-0.257	0.196	-0.307	-.501	0.236	-0.361	-0.244	-0.107	-0.064	1

Table 5: Correlation matrix

Dependent variable	Predictor	Beta	T-value	P-value	Significance
IESGC	YIE	-0.357	-0.630	0.563	Not statistically significant
IESGC	AIPS	-3.422	-4.099	0.015	**

IESGC	ESGFP	0.611	1.081	0.341	Not statistically significant
IESGC	MESGI	1.186	2.772	0.050	**
IESGC	SESGI	1.433	2.799	0.049	**
IESGC	PESGP	0.668	3.484	0.025	**
IESGC	BESGI	0.751	1.272	0.272	Not statistically significant
IESGC	EI	-0.625	-1.728	0.159	Not statistically significant
IESGC	RPESGI	-0.790	-2.193	0.093	**
IESGC	IRT	-1.191	-3.281	0.031	**
AIPS	YIE	-0.115	-0.790	0.474	Not statistically significant
AIPS	ESGFP	0.216	1.668	0.171	Not statistically significant
AIPS	MESGI	0.352	4.631	0.010	***
AIPS	IESGC	-0.236	-4.099	0.015	**
AIPS	SESGI	0.392	3.181	0.034	**
AIPS	PESGP	0.167	2.941	0.042	**
AIPS	BESGI	0.207	1.361	0.245	Not statistically significant
AIPS	EI	-0.152	-1.530	0.201	Not statistically significant
AIPS	RPESGI	-0.248	-3.796	0.019	**
AIPS	IRT	-0.317	-3.449	0.026	**

Table 6: Preditcors and significance levels

Abreviation	Variable
YIE	years of investment experience
AIPS	Average Investment Portfolio Size
ESGFP	ESG factors prioritized
MESGI	Motivation for ESG investments

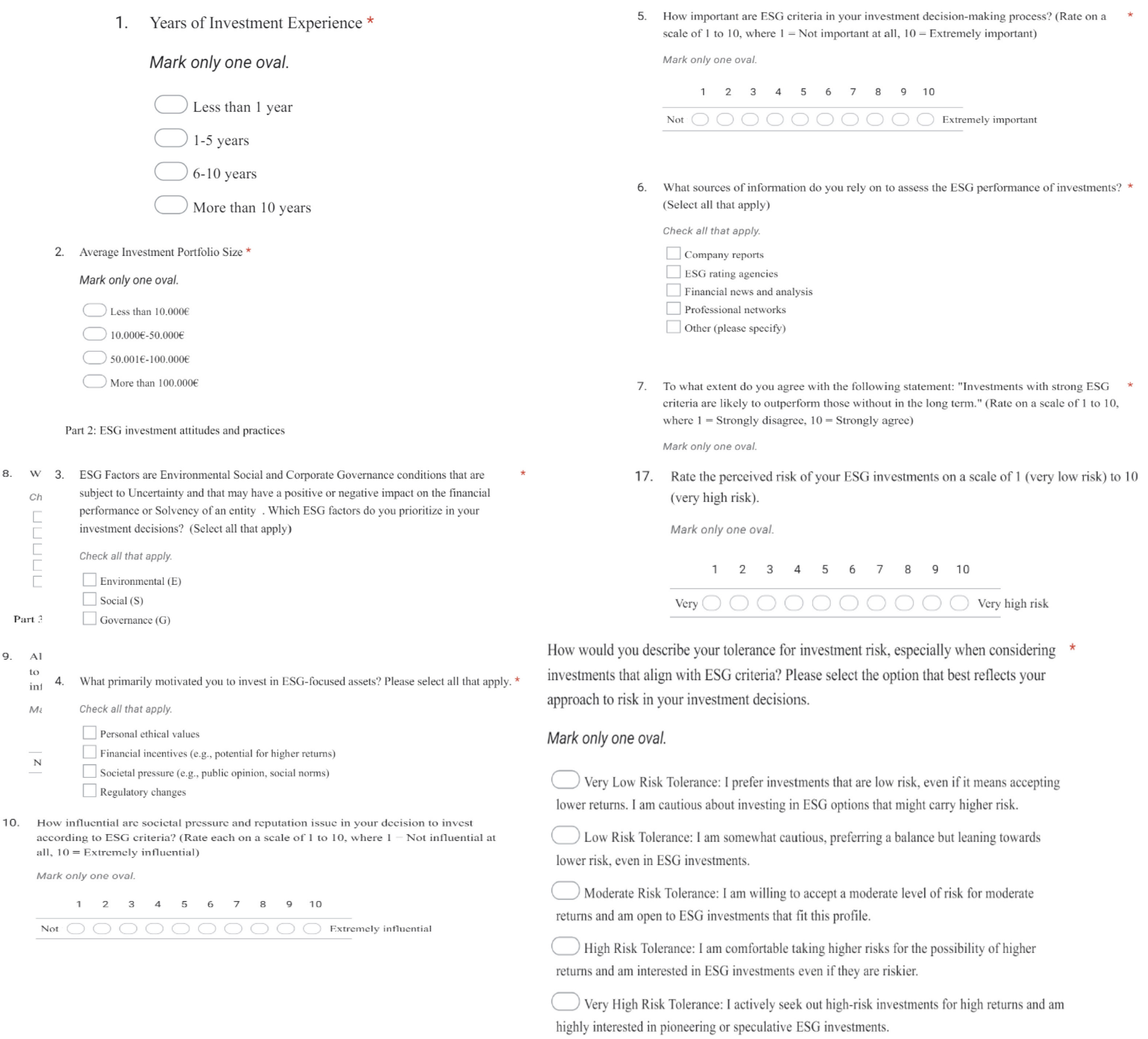
IESGC	Importance of ESG criteria
SESGI	Source of ESG information
PESGP	Perception of ESG performance
BESGI	Barriers to ESG investment
EI	External influences
RPESGI	Risk perception of_ESG investments
IRT	Investment risk tolerance
SDG	Sustainable development goals

Table 7: Explanation of abbreviations

Hypothesis	Predictor	B	T-value	p-value	Significance
Private investors are driven by personal ethical values and goals settings for societal impacts, from their ESG investment priorities.	MESGI	1.186	2.772	0.05	**
The sustainability of private investors as a source of competitive financial returns with benefits in the mitigation of risk is considered; the latter does so even more because the benefits attached are of high importance most especially to the non-financial ones that emanate from environmental and social impact.	PESGP	0.668	3.484	0.025	**
Strong determinants, in this case, affecting the ESG adoption among private investors, include legislative frameworks of societal pressures. The strong determinants of this influence on ESG adoption in private investments include societal pressure and personal alignment with the sustainability goals.	EI	-0.625	-1.728	0.159	Not statistically significant
The main barriers to the adoption of ESG investment are different between private investors. While the institutional investors refer to poor standardization	BEGSI	0.751	1.272	0.272	Not statistically significant

and regulatory certainty, private investors point at information asymmetry and perceived trade-off between the financial and ethical objectives.					

Table 8: Regression analysis


1. Years of Investment Experience *

Mark only one oval.

- Less than 1 year
- 1-5 years
- 6-10 years
- More than 10 years

2. Average Investment Portfolio Size *

Mark only one oval.

- Less than 10.000€
- 10.000€-50.000€
- 50.001€-100.000€
- More than 100.000€

Part 2: ESG investment attitudes and practices

3. ESG Factors are Environmental Social and Corporate Governance conditions that are subject to Uncertainty and that may have a positive or negative impact on the financial performance or Solvency of an entity . Which ESG factors do you prioritize in your investment decisions? (Select all that apply) *

Check all that apply.

- Environmental (E)
- Social (S)
- Governance (G)

4. What primarily motivated you to invest in ESG-focused assets? Please select all that apply. *

Check all that apply.

- Personal ethical values
- Financial incentives (e.g., potential for higher returns)
- Societal pressure (e.g., public opinion, social norms)
- Regulatory changes

10. How influential are societal pressure and reputation issue in your decision to invest according to ESG criteria? (Rate each on a scale of 1 to 10, where 1 = Not influential at all, 10 = Extremely influential)

Mark only one oval.

Not 1 2 3 4 5 6 7 8 9 10 Extremely influential

5. How important are ESG criteria in your investment decision-making process? (Rate on a scale of 1 to 10, where 1 = Not important at all, 10 = Extremely important) *

Mark only one oval.

Not 1 2 3 4 5 6 7 8 9 10 Extremely important

6. What sources of information do you rely on to assess the ESG performance of investments? (Select all that apply) *

Check all that apply.

- Company reports
- ESG rating agencies
- Financial news and analysis
- Professional networks
- Other (please specify)

7. To what extent do you agree with the following statement: "Investments with strong ESG criteria are likely to outperform those without in the long term." (Rate on a scale of 1 to 10, where 1 = Strongly disagree, 10 = Strongly agree) *

Mark only one oval.

17. Rate the perceived risk of your ESG investments on a scale of 1 (very low risk) to 10 (very high risk).

Mark only one oval.

Very 1 2 3 4 5 6 7 8 9 10 Very high risk

How would you describe your tolerance for investment risk, especially when considering investments that align with ESG criteria? Please select the option that best reflects your approach to risk in your investment decisions. *

Mark only one oval.

- Very Low Risk Tolerance: I prefer investments that are low risk, even if it means accepting lower returns. I am cautious about investing in ESG options that might carry higher risk.
- Low Risk Tolerance: I am somewhat cautious, preferring a balance but leaning towards lower risk, even in ESG investments.
- Moderate Risk Tolerance: I am willing to accept a moderate level of risk for moderate returns and am open to ESG investments that fit this profile.
- High Risk Tolerance: I am comfortable taking higher risks for the possibility of higher returns and am interested in ESG investments even if they are riskier.
- Very High Risk Tolerance: I actively seek out high-risk investments for high returns and am highly interested in pioneering or speculative ESG investments.

Photos 1-7: Survey questions