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Do Training Programmes Improve Awareness of Sustainable Finance?

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ABSTRACT

Many initiatives worldwide aim to improve financial knowledge through training programmes at different levels of education. In this context, it is worth highlighting that sustainable finance knowledge should receive attention in line with the global challenges (climate change, social and economic inequalities, etc.) society is facing. Implementing (short) training programmes in educational curricula may be an effective way to improve students' knowledge and practical skills. The aim of this paper is to analyse the efficacy of short sustainable finance training programmes in fostering sustainable financial awareness and attitudes among university students. This research focuses on how these programmes influence participants' understanding of sustainability, interest in financial matters, and decision-making competencies. Our results, based on validated questionnaires carried out by students from different universities, reveal that short training programmes positively influence knowledge of and interest in sustainable financial matters.

1 | Introduction

Sustainable finance has become a key lever for the fulfilment of the sustainable development goals (SDGs) established according to the 2030 Agenda and the Paris Agreement. While sustainability is the broad concept of meeting the needs of the present without compromising the ability of future generations to meet their own needs, sustainable finance is a topic in finance that integrates the three dimensions sustainability touches on, i.e., environmental, social and governance (ESG) factors, into financial decision-making (such as investment, funding and risk management) (United Nations 2004). Global challenges such as climate change, environmental degradation, social and economic inequalities, and resource scarcity demand integrated and transformative approaches to finance and economics. These issues have made sustainable finance a critical component of the global agenda. Grounded in frameworks such as the Paris Agreement on Climate Change (2015) and the United Nations' 2030 Agenda for Sustainable Development, which introduced the 17 SDGs, sustainable finance aims to reconcile financial decision-making with ESG criteria (United Nations 2015, 2019). The European Union has spearheaded this effort through regulatory mechanisms (European Commission 2021), including the Sustainable Finance Action Plan (European Commission 2018) and the Sustainable Finance Disclosure Regulation (European Parliament, and Council of the European Union 2019), to align capital flows with sustainability goals and enforce ESG transparency in financial markets. Nevertheless, there are controversial points of view about the relevance of ESG issues and the existence of ESG costs for companies. In this sense, Edmans (2024) proposes the concept of 'Rational Sustainability' and the importance of investors being aware of this trade-off.

To meet the evolving demands of the financial landscape, education systems must equip future generations with the tools to integrate sustainability into financial decision-making. The inclusion of financial education programmes in the first years of academic training allows an entire generation of students to be reached, counteracting the low participation observed in voluntary financial education programmes in later stages of life (Bruhn et al. 2014). In addition, providing this training in the formative years is considered an effective and sustainable strategy to achieve lasting positive effects (Lührmann et al. 2015, 2018; Lusardi et al. 2010). Financial literacy, defined as the ability to understand and apply financial concepts, has proven instrumental in fostering individual well-being and economic stability (Lusardi and Mitchell 2014). The importance of financial literacy has been extensively documented across various socio-demographic groups and contexts. For example, studies have shown that individuals with higher financial literacy make better retirement planning decisions (van Rooij et al. 2012), accumulate more wealth (Behrman et al. 2012), and are better equipped to overcome macroeconomic shocks (Klapper et al. 2013).

Research consistently demonstrates that financial *education* plays a crucial role in developing financial literacy. Meta-analyses have shown significant positive effects of financial education on both financial knowledge and subsequent behaviours (Kaiser and Menkhoff 2020). Especially early interventions appear to be effective, with studies indicating that financial education during formative years can lead to improved financial outcomes in adulthood (Brown et al. 2016). University students represent a critical target group for financial education, as they are often making their first independent financial decisions while developing habits that will influence their long-term financial behaviour (Gerrans and Heaney 2019). The effectiveness of financial education programmes varies considerably based on their design and implementation. Fernandes et al. (2014) found that the effects of financial education decay over time, suggesting the need for interventions that focus on immediately actionable knowledge and skills. Additionally, research by Willis (2011) and Arthur (2012) highlights the importance of considering psychological and behavioural factors in financial education, moving beyond purely cognitive approaches to address attitudes and decision-making processes.

However, traditional financial education programmes often overlook the pressing need to integrate *sustainability*, leaving a critical gap in preparing individuals to address the economic and financial dimensions of global sustainability challenges. Fatemi and Fooladi (2013) highlight the responsibility of financial education and academia in promoting a short-term perspective, which can be detrimental to (long-term) value creation. They emphasise the urgent need for education to become a catalyst for change, fostering a more sustainable and long-term approach to finance. These authors propose a sustainable value creation framework, within which all social and environmental costs and benefits must be explicitly considered. This shift in the finance paradigm can be a suitable framework for understanding the increasing interest of investors, companies, regulators, and policymakers in sustainable finance. This is particularly relevant due to the growing importance of sustainable investment options and the increasing regulatory focus on ESG factors in financial markets (Eccles and Klimenko 2019).

In this context, (short) sustainable finance training programmes emerge as a promising solution. These programmes aim to enhance participants' knowledge, skills, and attitudes towards financial sustainability by embedding ESG criteria into financial education. Evidence suggests that such interventions could not only improve financial literacy but also foster a shift in values and decision-making processes towards responsible investment and consumption (Kaiser and Menkhoff 2020; Amagir et al. 2020). Recent studies have demonstrated that incorporating sustainability concepts into financial education can lead to increased interest in sustainable investment products and greater consideration of long-term environmental impacts in financial decision-making (Rossi et al. 2021). This paper investigates *the efficacy of short sustainable finance training programmes in fostering sustainable financial awareness and attitudes among university students*. Our research focuses on how these programmes influence participants' understanding of financial sustainability, interest in financial matters, and decision-making competencies that consider ESG factors. The study addresses a significant gap in the literature by examining the intersection of financial literacy and sustainable finance education.

The empirical analysis was based on a quasi-experimental, pretest–posttest design without control groups, using both parametric and non-parametric statistical techniques to evaluate the effectiveness of a short training programme aimed at enhancing students' awareness of sustainable finance and potentially affecting their preference for sustainable investment options. The training programme was implemented across 15 courses, and the results were aggregated for analysis with different but comparable subgroups, including gender (male and female students), educational level (undergraduate and postgraduate students), and institutional context (students from different geographical areas).

The main findings indicate that short-term sustainable finance training programmes positively influence students' knowledge and interest in sustainable finance topics. The impact was greater among female and undergraduate students, suggesting that these groups may benefit more from such interventions. Additionally, the results provide evidence of increased student preference for sustainable investment options following the training. However, practical differences across institutional contexts were minimal.

Our study makes a novel contribution by employing validated tools to assess both knowledge and behavioural outcomes in sustainable finance in several European countries. Moreover, it provides actionable insights for designing effective educational interventions that align with public policy objectives, thereby promoting a culture of financial sustainability within academic and broader societal contexts.

The rest of the paper is structured as follows: Section 2 reviews the relevant literature and develops the research hypotheses, Section 3 describes the methodology, Section 4 presents the

empirical findings, and Section 5 concludes with recommendations and implications.

2 | Literature Review and Hypotheses

2.1 | Financial Literacy and Sustainable Finance Education

The increasing integration of sustainability factors into finance has reshaped the priorities and skills required of financial market participants. Sustainable finance evolves around three interconnected concepts: sustainability, efficiency and risk. Sustainability relates to the role of finance in closing the financing gap, thereby enabling the transition towards a more sustainable future. Efficiency relates to the transparency of information necessary to make informed decisions. Sustainability risk can be defined as 'an ESG event or condition that, if it occurs, could cause an actual or potential material negative impact on the value of an investment' (KPMG 2020). Different types of risk exist: physical risks (e.g., property damage), transition risks (e.g., economic costs related to the transition phase), reputational risks and liability risks (e.g., responsibility for environmental damage).

Corporate actors, because of corporate actions or regulatory initiatives at different levels, cannot remain ignorant about sustainable finance; individuals could, especially in the short run.[1] As the financial system is highly interconnected, it is, however, crucial to involve all actors in the process of (evolving towards) sustainability in finance. This includes individuals, who, with the right training, can play a crucial role in making informed decisions that align with ESG principles. Current financial education efforts predominantly focus on basic financial literacy and ignore the specifics of the sustainable finance approach/framework, leaving a critical gap in preparing individuals to address the intersection of finance and sustainability.

Financial literacy has long been recognised as a crucial determinant of individual financial well-being and economic decision-making. Lusardi and Mitchell (2014, 2023) establish a strong link between financial literacy and sound financial behaviours, including saving, investing, and planning for the future. However, traditional financial literacy often does not address the principles and specifics of sustainable finance aforementioned. Incorporating sustainable finance into educational curricula is not just a logical extension of current financial literacy initiatives, but a necessary step to ensure individuals are equipped to make informed decisions in a rapidly changing financial landscape. The inclusion of financial sustainability-focused content in short-term training programmes offers the potential to extend the benefits of financial literacy by emphasising the ESG consequences of financial decisions. Evidence suggests that such targeted education can significantly influence participants' knowledge, skills, and attitudes, as well as their subsequent financial behaviours (Kaiser and Menkhoff 2020; Amagir et al. 2020). These outcomes are particularly relevant in the context of sustainable finance, where informed decision-making requires a nuanced understanding of ESG factors and their implications.

2.2 | Enhancing Sustainable Finance Awareness

Education, a powerful tool, has consistently enhanced knowledge acquisition and retention, particularly when it targets specific and applicable topics such as finance (Kaiser and Menkhoff 2020; Kaiser et al. 2022). Sustainable finance training programmes, designed to familiarise participants with ESG principles, sustainable investment strategies, and the risks and opportunities associated with sustainability, enable individuals to engage in the increasingly complex demands of financial markets. As stated above, the successful transition towards financial sustainability will require the involvement and commitment of all actors in the finance value chain.

Hypothesis 1. *Participation in (short) sustainable finance programmes will significantly enhance students' awareness of sustainable finance.*

2.3 | Shaping Investment Preferences and Decision-Making

An important impact of sustainable finance education is its potential to influence investment preferences. Research indicates that education shapes financial attitudes and downstream behaviour, promoting more rational and informed decision-making (Kaiser et al. 2022). Sustainable finance education emphasises the integration of ESG factors into investment analysis, funding decisions, and risk management, enabling participants to consider the long-term implications of their financial decisions, both at an individual and society level. A training programme could, for example, present the EU taxonomy and underline its contribution and value in helping investors make more informed decisions (European Commission 2022). This approach has the potential not only to foster a preference for sustainable investments but also to promote responsible financial behaviour, aligning with environmental and social responsibility.

Hypothesis 2. *Participation in short-term sustainable finance programmes will increase students' preference for sustainable investment options.*

2.4 | The Role of Gender in Financial Education Outcomes

Gender differences in financial literacy, behaviour and learning outcomes are well-documented. Richardson and Woodley (2003), for example, point towards females' higher persistence and commitment to explain their relatively higher learning outcomes than males. Lusardi and Mitchell (2014) show that females, on average, demonstrate lower levels of financial literacy than males. According to the latter study, however, females tend to exhibit more cautious and responsible financial behaviours compared to male counterparts. Bao et al. (2024) propose that teachers' emotional status may explain the evolution of the gender performance gap. They study the effect of Artificial Intelligence (AI) teachers compared to human teachers on learning results and observe that girls' knowledge improves faster and that the gender gap is

reduced when students are instructed by AI instead of human teachers. This effect is associated with emotional aspects that affect girls' results negatively because boys tend to achieve better learning outcomes in male-dominant fields. In addition to this, Bao and Huang (2020) observe that females are more responsive to social pressure, while males are more sensitive to financial incentives. Therefore, the gender differences may extend to (the impact of) sustainable finance education depending on the predominance of emotion-related aspects. Evidence suggests that females, potentially more influenced by emotional aspects and/or potentially more sensitive to social and environmental issues, are more likely to prioritise ESG criteria in their financial decisions. This may affect the impact of sustainable finance training programmes on their knowledge and behaviour.

Hypothesis 3. *The impact of sustainable finance training programmes on sustainable finance awareness and investment preferences will differ by gender.*

2.5 | Educational Level and Cognitive Maturity

Cognitive development and exposure to academic content significantly influence the effectiveness of educational interventions. The study of Yu (2021), for example, concludes that postgraduates outperform undergraduates in online learning experiments. The authors point to graduate students' stronger self-regulation as a possible driver of this result. With respect to sustainable finance training programmes, undergraduate students, often at the early stages of their financial education, may benefit from the foundational aspects of this type of training. Postgraduate students, by contrast, bring a higher level of academic maturity and prior knowledge to the learning process, which may enable them to engage more deeply with the complex concepts of sustainable finance. Lusardi and Mitchell (2014) highlight the educational level as a key factor influencing financial literacy. Although the study does not directly compare postgraduate and undergraduate students, it emphasises that individuals with higher education tend to have better financial knowledge and skills. Given that graduate students have a higher level of education, it is reasonable to infer that they possess a stronger understanding of financial concepts, allowing them to benefit more from sustainable finance training programmes.

This divergence suggests that the impact of sustainable finance education may vary according to the academic level of participants.

Hypothesis 4. *The impact of sustainable finance training programmes on sustainable finance awareness will differ by participants' educational level.*

2.6 | Cross-Cultural and Institutional Contexts

Broader cultural and institutional contexts also shape the effectiveness of sustainable finance education. Variations in regulatory environments, societal norms, and baseline levels of financial literacy create a diverse landscape for the implementation and outcomes of educational programmes (Klapper et al. 2015). Europe's strong political interest in sustainable finance and the overall financial policy in support of the European Green Deal, as well as its international commitments on climate change and sustainability objectives, may affect sustainable finance awareness. Because European countries may differ with respect to national ESG attention/regulation or cultural emphasis on sustainability, baseline awareness and responsiveness to sustainable finance education may differ across countries.

Hypothesis 5. *The impact of sustainable finance training programmes will vary across countries, reflecting differences in cultural and institutional contexts.*

3 | Study Design

3.1 | Research Approach

The primary aim of this study is to enhance the understanding of sustainable finance among university students. This understanding is crucial for the achievement of the SDGs outlined in the United Nations 2030 Agenda. The face-to-face training in sustainable finance aims to initiate students into the emerging field of sustainable finance, a topic that is largely absent from traditional finance curricula. It covers the framework of sustainable finance and its implications for sustainable economic growth, different ways of green funding (e.g., green bonds, green credits, among others) and green investment decision-making, as well as valuation considerations for firms depending on their orientation in sustainability matters.

The study was structured in four phases. In the first phase, university students were instructed: (i) to register as a user on the online platform developed by the lead university of this study[2] (students could use their mobile phone or computer) and (ii) how to access and complete the questionnaire. In the second phase, the students received a face-to-face training programme on sustainable finance followed by the instruction to study the slides and materials provided. In the third phase, the students completed the same questionnaire (after receiving the face-to-face training programme). Finally, in the fourth phase, the results were analysed and discussed.

The questionnaire is a validated instrument, made accessible through an online platform managed by the lead university. It consists of 26 items organised across three dimensions of sustainable finance awareness: financial education (items 6–10), utility (items 11–16, 18 and 19) and responsibility (items 17 and 20–26). In addition, items 1–5 collect socio demographic information to identify the respondents. All items (except socio demographic) are measured on a Likert scale with five levels: 0–1 (*very negative*), 1–2 (*negative*), 2–3 (*indifferent*), 3–4 (*positive*) and 4–5 (*very positive*). Each question is integral to the measurement of its respective dimensions. The overall awareness of sustainable finance is captured through a composite index derived from responses to 21 items (excluding sociodemographic information). From a pedagogical viewpoint, the training programme was structured in two parts (same structure for all the students in the sample). The first part

focused on sustainable finance (background and regulations, taxonomy and suitability tests) and the second on applications of sustainable finance (sustainable financing, sustainable investment, sustainable social welfare and sustainable risks). In addition, 16 real examples on these topics from financial and non-financial companies were included. The same material was made available to students on the online platforms of the four universities after the lecture to ensure continued access and reinforcement of the content. The completion rate (number of students filling out the questionnaire a second time over the number of students who filled out the questionnaire only once [first time]) is 98.8%.

3.2 | Data and Methodology

3.2.1 | Sample

The research was carried out during the 2024–2025 academic year (first semester). The programme was developed as an additional learning activity in finance courses covering the foundation finance topics at four universities in three countries (Spain, France and Belgium). The sample consists of 412 university students (registered in business or management programmes) following a finance course with the additional learning activity on sustainable finance (93% undergraduate and 7% postgraduate). It is a sample of gender parity (42% are men and 58% women), of different ages (5% under 18 years, 85% between 18 and 22 years and 10% with 23 years or more), with different levels of financial education (3% with no knowledge, 32% with a low level, 46% with a medium level, 17% with a high level and 2% with a very high level) and from different geographical areas (61% are from Spain, 36% from other countries in Europe, 2% from Latin America and 1% from the rest of the world) (Table 1).

The sample size is sufficient for empirical analysis (Cochran 1977). Considering a significant level of 95% and infinite populations, and estimating that 50% of the students support the hypotheses (conservative estimate) the minimum sample size can be calculated as follows:

$$n = \frac{p \times q \times Z^2}{e^2} = \frac{0.50 \times 0.50 \times 1.96^2}{0.05^2} = 384.16 \simeq 384 < 412 \text{ students}$$

where e is the desired level of precision or the margin of error. p is the fraction of the students or percentage that support the hypotheses. q is the fraction of the students or percentage that do not support the hypotheses. Z is the z-value for the considered level of significance.

3.2.2 | Data

The data analysed are the perception indices downloaded from the cited online platform (global perception index and partial perception indices corresponding to the dimensions financial education, utility and responsibility) and investment preference measures calculated from the average of the responses to items 22, 25 and 26 of the validated questionnaires completed by the students. The first questionnaire (pretest) is conducted by the students before receiving any training on sustainable finance,

TABLE 1 | Sample description of students.

	Frequency	Percent	Cumulative percent
Educational level			
Undergraduate students	382	92.72	92.72
Postgraduate students	30	7.28	100.0
Total	412	100.0	
Gender			
Male	171	41.50	41.50
Female	241	58.50	100.0
Total	412	100.0	
Age			
Under 18 years old	20	4.85	4.85
From 18 to 22 years old	350	84.95	89.81
23 years old or older	42	10.19	100.0
Total	412	100.0	
Level of financial education			
None	12	2.91	2.91
Low	133	32.28	35.19
Medium	189	45.87	81.07
High	69	16.75	97.82
Very high	9	2.18	100.0
Total	412	100.0	
Geographical area			
Spain	251	60.92	60.92
Other countries in Europe	148	35.92	96.84
Latin America	7	1.70	98.54
North America	1	0.24	98.79
Rest of the world	5	1.21	100.0
Total	412	100.0	

Source: Own elaboration.

and the second (posttest) once they have received training in sustainable finance (Table 2a).

All average indices are calculated based on the outcomes of the questionnaire, where answers are recorded based on a Likert scale (very negative, negative, indifferent, positive or very positive). Based on the first recording of answers, the average index is positive for global perception, negative for financial education and responsibility, and positive for utility and investment

TABLE 2a | Descriptive statistics of variables.

Variable	Description	Obs	Min	Max	Mean	SD
PER1_Index	Global perception index from the first questionnaire	412	1.0	4.1	2.863	0.5423
PER2_Index	Global perception index from the second questionnaire	412	0.1	5.0	3.229	0.6887
EDU1_Index	Partial perception index according to financial education from the first questionnaire	412	0.0	4.8	1.983	0.8103
EDU2_Index	Partial perception index according to financial education from the second questionnaire	412	0.3	5.0	2.656	0.8233
UTI1_Index	Partial perception index according to utility from the first questionnaire	412	0.3	5.0	3.350	0.7894
UTI2_Index	Partial perception index according to utility from the second questionnaire	412	0.3	5.0	3.652	0.7976
RES1_Index	Partial perception index according to responsibility from the first questionnaire	412	0.5	4.8	2.944	0.7706
RES2_Index	Partial perception index according to responsibility from the second questionnaire	412	0.2	5.0	3.219	0.8372
PREF_1	Investment preferences measure from the first questionnaire	412	1.00	5.00	3.2387	0.76800
PREF_2	Investment preferences measure from the second questionnaire	412	1.00	5.00	3.4919	0.79379

preferences. All averages increase after the sustainable finance training. Indeed, based on the second recording of answers, the index of financial education improved from negative (1.98) to indifferent (2.66), the global perception index from indifferent (2.86) to positive, the responsibility index from indifferent (2.94) to positive (3.22) and the utility index and investment preferences remained at the positive level with higher outcomes. Therefore, on average, all perception indicators improved when students received training on sustainable finance (Table 2a). There was also an improvement in all average scores when considered by gender, educational level, and geographical area (Tables 2b–2d).

3.2.3 | Methodology

This research combines a methodology based on a theoretical framework derived from the review and analysis of literature to justify the selection of the hypotheses with an empirical analysis for which the statistical packages of SPSS and Stata are used.

We employed a quasi-experimental, pretest–posttest design without control groups to evaluate the effectiveness of a short training programme aimed at enhancing students' awareness of sustainable finance. The training programme was implemented across 15 courses, and the results were aggregated for analysis with different but comparable subgroups, including gender (male and female students), educational level (undergraduate and postgraduate students), and institutional context (students from different geographical areas).

In this design, university students were assessed at two time points: once before the short training programme (pretest) and once after (posttest). This allows researchers to

observe changes that may be attributed to the short training programme.

The empirical analysis employs both parametric and nonparametric techniques to evaluate whether participation in sustainable finance programmes enhances students' awareness of sustainable finance and influences their preferences for sustainable investment options.

First, the series of data differences about awareness of sustainable finance are examined to see if they conform to a normal distribution. For this, the Kolmogorov–Smirnov test (Kolmogorov 1933; Smirnov 1933) is applied to the series that have differences with more than 50 data points, and the Shapiro–Wilk test (Shapiro and Wilk 1965) is applied to those with less data. In both tests, the null hypothesis states that the series fits a normal distribution and the alternative hypothesis states the opposite. Therefore, the null hypothesis of normality is accepted when the probability is greater than 0.05 for a 95% confidence interval or 0.10 for a 90% confidence interval.

Once the normality of the series in differences has been contrasted, the hypotheses are tested using the parametric Student's t test (Student 1908) when the data are distributed normally and the nonparametric test of ranges with Wilcoxon signs (Wilcoxon 1945), Mann–Whitney U test (Mann and Whitney 1947), and Kruskal–Wallis test (Kruskal and Wallis 1952) when they are not distributed normally. In the test of ranges with Wilcoxon signs, the null hypothesis states that there are no significant differences between the medians of two paired samples (before and after receiving training programmes on sustainable finance), while the alternative hypothesis establishes the opposite. In the Mann–Whitney U test, the null hypothesis states that there are no significant differences between the medians of two independent samples

TABLE 2b | Descriptive statistics of variables by gender.

Gender	Variable	Obs	Min	Max	Mean	SD
Male	PER1_ Index	171	1.0	3.9	2.773	0.5501
	PER2_ Index	171	0.1	5.0	3.149	0.7050
	EDU1_ Index	171	0.0	4.8	2.289	0.8283
	EDU2_ Index	171	0.3	5.0	2.835	0.8292
	UTI1_ Index	171	0.3	5.0	3.181	0.7940
	UTI2_ Index	171	0.3	5.0	3.516	0.7988
	RES1_ Index	171	0.5	4.4	2.685	0.7657
	RES2_ Index	171	0.6	5.0	3.029	0.8453
	PREF_1	171	1.00	5.00	3.0156	0.78533
	PREF_2	171	1.00	5.00	3.3372	0.83470
Female	PER1_ Index	241	1.1	4.1	2.927	0.5286
	PER2_ Index	241	0.5	4.9	3.286	0.6726
	EDU1_ Index	241	0.0	4.3	1.765	0.7238
	EDU2_ Index	241	0.5	4.8	2.529	0.7968
	UTI1_ Index	241	0.6	5.0	3.469	0.7653
	UTI2_ Index	241	0.5	5.0	3.748	0.7843
	RES1_ Index	241	0.6	4.8	3.127	0.7212
	RES2_ Index	241	0.2	5.0	3.353	0.8065
	PREF_1	241	1.00	5.00	3.3970	0.71596
	PREF_2	241	1.00	5.00	3.6017	0.74593

by gender (males and females) or educational level (undergraduate and postgraduate students), while the alternative hypothesis establishes the opposite. In the Kruskal–Wallis test, the null hypothesis states that there are no significant differences between the average ranges of three or more independent samples by geographical area (Spain, other countries in Europe, Latin America, North America and rest of the world), while the alternative hypothesis establishes the opposite. In all these tests, when the probability is greater than 0.05 for a 95% confidence interval or 0.10 for a 90% confidence interval, the null hypothesis is supported, and when it is less than 0.05,

it is rejected, and the alternative hypothesis, which states that there are significant differences between the analysed samples, is supported.

4 | Empirical Analysis and Results

First, the normality of the differences between the aggregate data series of perception indices and investment preferences measure is verified for the full sample, by educational level (graduate and postgraduate students) and by gender (male and female). For this, the Kolmogorov–Smirnov test is applied to the aggregated data and those referring to graduate students, and the Shapiro–Wilk test is applied to those corresponding to postgraduate students due to the small size of the sample. The aggregated data series of perception indices are non-normally distributed, and the null hypothesis of normality is rejected (Table 3a). With respect to the data series of undergraduate student perception, the same results are obtained as in the aggregated data. However, in the data series for postgraduate students, the data series for responsibility and investment preferences are distributed non-normally and the data for global perception index and partial indices for financial education and utility are normally distributed (Table 3b).

4.1 | Participation in (Short) Sustainable Finance Programmes and Students' Awareness of Sustainable Finance

After checking the normality of the data series, the mean difference test is applied to check if the perception indices of the students improve when they have received training programmes on sustainable finance. For this, the parametric student's t test is applied to related observations for normal variables and the nonparametric range test with Wilcoxon signs is applied to non-normal variables.

The perception indices improved with the second questionnaire conducted after the training programmes according to the results from Wilcoxon sign rank test and effect sizes r (Tables 4a and 4b). Specifically, the results show that short sustainable finance programmes had a significant and meaningful impact, with large effects on global perception ($r = -0.542$) and financial education ($r = -0.645$), and moderate effects on utility ($r = -0.361$) and responsibility ($r = -0.349$). These findings support Hypothesis 1 highlighting the programmes' effectiveness in enhancing students' awareness of sustainable finance.

Furthermore, Hypothesis 1 is also supported for undergraduate and postgraduate students, according to the results from Wilcoxon sign range test and Student's t test and effect size r (Tables 5a and 5b for undergraduate students and Tables 5c–5e for postgraduate students). Specifically, the results reveal significant differences between pretest and posttest scores in global and partial perception indexes for both undergraduate and postgraduate students. For undergraduates, the effect sizes indicate large effects on global perception ($r = -0.525$) and financial education ($r = -0.663$), with moderate effects on utility and responsibility ($r = -0.340$). For

TABLE 2c | Descriptive statistics of variables by educational level.

Educational level	Variable	Obs	Min	Max	Mean	SD
Undergraduate students	PER1_Index	382	1.0	4.0	2.849	0.5256
	PER2_Index	382	0.1	5.0	3.212	0.6627
	EDU1_Index	382	0.0	4.0	1.890	0.7195
	EDU2_Index	382	0.3	5.0	2.590	0.7868
	UTI1_Index	382	0.6	5.0	3.362	0.7737
	UTI2_Index	382	0.3	5.0	3.653	0.7599
	RES1_Index	382	0.6	4.8	2.952	0.7387
	RES2_Index	382	0.6	5.0	3.213	0.7974
	PREF_1	382	1.00	5.00	3.2452	0.74365
	PREF_2	382	1.00	5.00	3.4887	0.76124
Postgraduate students	PER1_Index	30	1.3	4.1	3.040	0.7098
	PER2_Index	30	1.2	4.9	3.450	0.9475
	EDU1_Index	30	0.5	4.8	3.160	0.9786
	EDU2_Index	30	1.0	4.8	3.497	0.8277
	UTI1_Index	30	0.3	5.0	3.193	0.9688
	UTI2_Index	30	0.3	5.0	3.637	1.1955
	RES1_Index	30	0.5	4.5	2.833	1.1109
	RES2_Index	30	0.2	5.0	3.287	1.2550
	PREF_1	30	1.00	5.00	3.1556	1.04215
	PREF_2	30	1.00	5.00	3.5333	1.14671

postgraduates, Cohen's d shows a moderate effect on global perception ($d = -0.465$) and small-to-moderate effects on financial education and utility ($d = -0.395$ and $d = -0.411$), while the effect size r suggests a moderate-to-large effect on responsibility ($r = -0.466$).

Therefore, Hypothesis 1 is supported since participation in short sustainable finance programmes significantly enhanced students' awareness of sustainable finance.

4.2 | Participation in (Short) Sustainable Finance Programmes and Students' Preference for Sustainable Investments Options

Hypothesis 2 is supported, as participation in short sustainable finance programmes significantly increased students' preference for sustainable investment options, as indicated by the Wilcoxon signed-rank test and effect sizes (r) presented in Tables 6a and 6b. Specifically, the results demonstrate a meaningful and significant impact, with moderate effects on sustainable investment preferences ($r = -0.318$) among university students. Additionally, the hypothesis is further supported for both undergraduate and postgraduate students, based on the Wilcoxon signed-rank test and effect size r (Tables 7a and 7b).

for undergraduates, and Tables 8a and 8b for postgraduates). The findings reveal significant differences between pretest and posttest scores in both global and partial perception indices for both student groups. For undergraduates, the effect size was moderate ($r = -0.309$), while for postgraduates, it was moderate-to-large ($r = -0.414$). These results underscore the effectiveness of short sustainable finance programmes in enhancing students' preferences for sustainable investment options.

4.3 | Impact of Sustainable Finance Training Programmes on Sustainable Finance Awareness and Investment Preferences by Gender

Gender-based analysis of the results reveals statistically significant differences with moderate-to-large effect sizes ($r = -0.472$) regarding the impact of sustainable finance training programmes on the financial education index. Specifically, females showed a significantly greater improvement in financial education compared to males following the training programme. However, the Mann–Whitney U test indicates no significant gender differences in investment preferences, with the effect size being small to moderate ($r = -0.287$), suggesting further exploration (Tables 9a and 9b). Consequently, Hypothesis 3 is

TABLE 2d | Descriptive statistics of variables by geographical area.

Geographical area	Variable	Obs	Min	Max	Mean	SD
Spain	PER1_Index	251	1.0	4.0	2.909	0.5477
	PER2_Index	251	1.0	5.0	3.333	0.6772
	EDU1_Index	251	0.3	4.8	2.054	0.7503
	EDU2_Index	251	1.0	5.0	2.813	0.7099
	UTI1_Index	251	0.3	5.0	3.433	0.8041
	UTI2_Index	251	0.3	5.0	3.731	0.8445
	RES1_Index	251	0.5	4.8	2.941	0.8057
	RES2_Index	251	0.2	5.0	3.283	0.8841
	PREF_1	251	1.00	5.00	3.1673	0.77653
	PREF_2	251	1.00	5.00	3.5339	0.83057
Other countries in Europe	PER1_Index	148	1.1	4.0	2.770	0.5101
	PER2_Index	148	0.1	4.8	3.027	0.6497
	EDU1_Index	148	0.0	4.3	1.877	0.8994
	EDU2_Index	148	0.3	4.8	2.372	0.9101
	UTI1_Index	148	0.6	5.0	3.186	0.7338
	UTI2_Index	148	1.7	5.0	3.491	0.6580
	RES1_Index	148	0.6	4.5	2.922	0.6877
	RES2_Index	148	1.3	4.8	3.079	0.7148
	PREF_1	148	1.00	5.00	3.3333	0.72322
	PREF_2	148	1.00	5.00	3.3941	0.71274
Latin America	PER1_Index	7	2.7	4.1	3.300	0.5888
	PER2_Index	7	2.8	4.9	3.871	0.6775
	EDU1_Index	7	0.8	2.8	1.957	0.7413
	EDU2_Index	7	2.5	4.8	3.357	0.7807
	UTI1_Index	7	3.0	5.0	4.057	0.7502
	UTI2_Index	7	3.0	5.0	4.286	0.6568
	RES1_Index	7	2.3	4.8	3.386	0.8707
	RES2_Index	7	2.8	5.0	3.843	0.7934
	PREF_1	7	3.00	5.00	3.7619	0.73822
	PREF_2	7	3.33	5.00	4.0000	0.66667
North America	PER1_Index	1	3.2	3.2	3.200	
	PER2_Index	1	3.9	3.9	3.900	
	EDU1_Index	1	1.5	1.5	1.500	
	EDU2_Index	1	1.5	1.5	1.500	
	UTI1_Index	1	3.3	3.3	3.300	
	UTI2_Index	1	4.4	4.4	4.400	
	RES1_Index	1	4.1	4.1	4.100	
	RES2_Index	1	5.0	5.0	5.000	
	PREF_1	1	4.33	4.33	4.3333	
	PREF_2	1	5.00	5.00	5.0000	

(Continues)

TABLE 2d | (Continued)

Geographical area	Variable	Obs	Min	Max	Mean	SD
Rest of the world	PER1_Index	5	1.8	3.5	2.620	0.7085
	PER2_Index	5	2.0	4.3	2.980	0.8786
	EDU1_Index	5	0.3	2.8	1.680	0.9094
	EDU2_Index	5	1.0	3.5	2.460	1.0164
	UTI1_Index	5	1.9	3.8	3.000	0.7280
	UTI2_Index	5	1.7	5.0	3.400	1.4018
	RES1_Index	5	1.6	4.2	2.880	1.1077
	RES2_Index	5	2.0	4.4	2.900	0.9274
	PREF_1	5	1.67	4.33	3.0667	1.18790
	PREF_2	5	2.33	4.67	3.2667	0.86281

TABLE 3a | Normality test (full sample).

	Kolmogorov–Smirnov test[a]		Shapiro–Wilk test	
Variable	Statistical	Sig.	Statistical	Sig.
PER2_PER1	0.071	< 0.001	0.969	0.00000
EDU2_EDU1	0.071	< 0.001	0.988	0.03708
UTI2_UTI1	0.064	< 0.001	0.982	0.00015
RES2_RES1	0.071	< 0.001	0.979	0.00002
PREF2_PREF1	0.114	< 0.001	0.963	0.00001

[a]Lilliefors significance correction.

partially supported: while a gender effect was observed in the impact of sustainable finance programmes on financial education, no gender effect was found in relation to investment preferences.

4.4 | Impact of Sustainable Finance Training Programmes on Sustainable Finance Awareness by Educational Level

Analysis of the results by educational level reveals patterns similar to those observed by gender, with moderate-to-large effect sizes ($r = -0.439$). Specifically, the financial education of undergraduate students showed a significantly greater improvement compared to that of postgraduate students after completing the training programme. However, the Mann–Whitney U test indicates no significant difference in the evolution of investment preferences based on educational level, with a small effect size ($r = -0.164$), suggesting that educational level had a minimal practical impact on investment preferences. Thus, Hypothesis 4 is partially supported: undergraduate students benefited more from sustainable finance training programmes in terms of financial education than postgraduate students. However, the programme's impact on investment preferences was not significantly influenced by educational level (undergraduate vs. postgraduate) (Tables 10a and 10b).

4.5 | Impact of Sustainable Finance Training Programmes by Cultural and Institutional Contexts

In terms of cultural and institutional contexts, significant geographical differences are observed in the impact of the sustainable finance training programme on financial education and investment preferences. The Kruskal–Wallis test reveals that students from Latin America benefited the most in terms of financial education perception, followed by students from Spain. In contrast, students from Spain exhibited the greatest improvements in investment preferences, while students from other European countries demonstrated the least. However, the small effect sizes on the financial education index and investment preferences ($r = 0.025$ and $r = 0.018$, respectively) suggest that the practical significance of these differences is limited. Consequently, further research is recommended to support Hypothesis 5, which posits that cultural and institutional factors influence the outcomes of sustainable finance training programmes (Tables 11a and 11b).

5 | Discussion and Conclusion

Sustainable finance tries to reconcile finance with environmental and social challenges. The transition towards a sustainable economy is likely to change firms' risk profiles, which, in turn, may affect financial returns. Regulatory initiatives at diverse levels accompany the transition towards sustainability. Europe exhibits a strong political interest in sustainable finance to provide financial support to corporations in the transition phase and enhance transparency in these matters to benefit all financial market participants. The EU taxonomy, for example, presents a classification system designed to guide investments towards sustainable activities (European Commission 2022).

Because the financial system is highly interconnected, a successful transition towards sustainability will require the involvement and commitment of all actors in the finance value chain. Corporate actors should be well-informed about ESG matters due to the numerous (regulatory) initiatives specifically

TABLE 3b | Normality test by educational level.

Education level	Variable	Kolmogorov–Smirnov test[b]		Shapiro–Wilk test	
		Statistical	Sig.	Statistical	Sig.
Graduate students	PER2_PER1	0.067	< 0.001	0.972	< 0.001
	EDU2_EDU1	0.077	< 0.001	0.986	0.001
	UTI2_UTI1	0.067	< 0.001	0.981	< 0.001
	RES2_RES1	0.065	< 0.001	0.990	0.001
	PREF2_PREF1	0.111	< 0.001	0.969	< 0.001
Postgraduate students	PER2_PER1	0.150	0.082	0.944	0.119
	EDU2_EDU1	0.157	0.056	0.952	0.197
	UTI2_UTI1	0.107	0.200[a]	0.952	0.188
	RES2_RES1	0.166	0.034	0.919	0.026
	PREF2_PREF1	0.175	0.020	0.909	0.014

[a]This is a lower limit of true significance.
[b]Lilliefors significance correction.

TABLE 4a | Wilcoxon sign range test (ranges). Perception indices (full sample).

Variable	Ranges	N	Average range	Sum of ranges
PER2_PER1	Negative ranges	89[a]	151.02	13,440.50
	Positive ranges	299[b]	207.44	62,025.50
	Draws	24[c]		
	Total	412		
EDU2_EDU1	Negative ranges	63[d]	118.38	7458.00
	Positive ranges	308[e]	199.83	61,548.00
	Draws	41[f]		
	Total	412		
UTI2_UTI1	Negative ranges	124[g]	157.17	19,489.50
	Positive ranges	248[h]	201.16	49,888.50
	Draws	40[i]		
	Total	412		
RES2_RES1	Negative ranges	122[j]	173.50	21,167.50
	Positive ranges	259[k]	199.24	51,603.50
	Draws	31[l]		
	Total	412		

Note: [a]PER2 < PER1. [b]PER2 > PER1. [c]PER2 = PER1. [d]EDU2 < EDU1.
[e]EDU2 > EDU1. [f]EDU2 = EDU1. [g]UTI2 < UTI1. [h]UTI2 > UTI1. [i]UTI2 = UTI1.
[j]RES2 < RES. [k]RES2 > RES1. [l]RES2 = RES1.

TABLE 4b | Wilcoxon sign range test (statistical). Perception indices (full sample).

	PER2_PER1	EDU2_EDU1	UTI2_UTI1	RES2_RES1
With[a]	−11.001	−13.102	−7.330	−7.081
Asymptotic sig. (bilateral)	< 0.001	< 0.001	< 0.001	< 0.001
Effect size r	−0.542	−0.645	−0.361	−0.349

[a]It is based on negative ranges.

directed at the firms—initiatives that may not be widely known or understood by individuals. Therefore, it is essential to equip individuals with the concepts and tools to make informed financial decisions in an investment landscape reshaped by sustainability. However, traditional financial education programmes often overlook the need to integrate sustainability. Such programmes have been shown to enhance financial literacy which, in turn, has been shown to affect behaviour in financial matters and individual well-being (Lusardi and Mitchell 2014; Kaiser and Menkhoff 2020). Financing training programmes that integrate sustainability matters therefore emerge as a promising solution to effectively engage individuals in the transition. This study provides evidence that short sustainable finance training programmes effectively enhance students' awareness of sustainable finance. The results show that the impact is higher for women (compared to men) and for undergraduates (compared to postgraduates), suggesting that certain groups—such as undergraduate and female students—may benefit more from these programmes. The learning curve of undergraduates may be steeper because of their lower level of (academic) maturity and the early stage of their (financial) education compared to postgraduates. The differential impact of the educational intervention across gender suggests that women may exhibit a greater sensitivity to social and environmental issues, a heightened responsiveness to emotion-related aspects and/or a stronger persistence and

TABLE 5a | Wilcoxon sign range test (ranges). Perception indices (undergraduate students).

Variable	Ranges	N	Average range	Sum of ranges
PER2_PER1	Negative ranges	83[a]	138.01	11,455.00
	Positive ranges	277[b]	193.23	53,525.00
	Draws	22[c]		
	Total	382		
EDU2_EDU1	Negative ranges	56[d]	104.39	5846.00
	Positive ranges	289[e]	186.29	53,839.00
	Draws	37[f]		
	Total	382		
UTI2_UTI1	Negative ranges	117[g]	146.71	17,164.50
	Positive ranges	229[h]	187.19	42,866.50
	Draws	36[i]		
	Total	382		
RES2_RES1	Negative ranges	115[j]	159.87	18,385.50
	Positive ranges	237[k]	184.57	43,742.50
	Draws	30[l]		
	Total	382		

Note: [a]PER2 < PER1. [b]PER2 > PER1. [c]PER2 = PER1. [d]EDU2 < EDU1. [e]EDU2 > EDU1. [f]EDU2 = EDU1. [g]UTI2 < UTI1. [h]UTI2 > UTI1. [i]UTI2 = UTI1. [j]RES2 < RES. [k]RES2 > RES1. [l]RES2 = RES1.

TABLE 5b | Wilcoxon sign range test (statistical). Perception indices (undergraduate students).

	PER2_PER1	EDU2_EDU1	UTI2_UTI1	RES2_RES1
With[a]	−10.657	−12.962	−6.909	−6.642
Asymptotic sig. (bilateral)	< 0.001	< 0.001	< 0.001	< 0.001
Effect size r	−0.525	−0.663	−0.340	−0.340

[a]It is based on negative ranges.

commitment to mastering the material in sustainable finance. Furthermore, the results underscore the effectiveness of short sustainable finance programmes in enhancing students' preferences for sustainable investment options. However, differences across institutional contexts were minimal.

Overall, the results highlight the value of integrating sustainable finance education into university curricula and the importance

TABLE 5c | Student's t test for related samples. Global perception index and partial perception indices about financial education and utility (postgraduate students).

	Paired differences								
				95% confidence interval of difference					
Variable	Mean	SD	SD average error	Inferior	Superior	t	Gl	Sig. (bilateral)	Cohen's d
PER1_PER2	−0.4100	0.8814	0.1609	−0.7391	−0.0809	−2.548	29	0.008	−0.465
EDU1_EDU2	−0.3367	0.8512	0.1554	−0.6545	−0.0188	−2.166	29	0.019	−0.395
UTI1_UTI2	−0.4433	1.0766	0.1966	−0.8453	−0.0413	−2.255	29	0.016	−0.411

TABLE 5d | Wilcoxon sign range test (ranges). Partial perception index about responsibility (postgraduate students).

	N	**Average range**	**Sum of ranges**
RES2_RES1			
Negative ranges	7[a]	14.21	99.50
Positive ranges	22[b]	15.25	335.50
Draws	1[c]		
Total	30		

Note: [a]RES2 < RES. [b]RES2 > RES1, [c]RES2 = RES1.

TABLE 5e | Wilcoxon sign range test (statistical). Partial perception index about responsibility (postgraduate students).

	RES2_RES1
With[a]	−2.554
Asymptotic sig. (bilateral)	0.011
Effect size *r*	−0.466

[a]It is based on negative ranges.

TABLE 6a | Wilcoxon sign range test (ranges). Students' preferences for sustainable investment options (full sample).

Variable	**Ranges**	*N*	**Average range**	**Sum of ranges**
PREF2_PREF1	Negative ranges	111[a]	162.04	17,986.00
	Positive ranges	234[b]	178.20	41,699.00
	Draws	67[c]		
	Total	412		

Note: [a]PREF2 < PREF1. [b]PREF2 > PREF1. [c]PREF2 = PREF1.

TABLE 6b | Wilcoxon sign range test (statistical). Students' preferences for sustainable investment options (full sample).

	PREF2_PREF1
With[a]	−6.465
Asymptotic sig. (bilateral)	< 0.001
Effect size *r*	−0.318

[a]It is based on negative ranges.

TABLE 7a | Wilcoxon sign range test (ranges). Students' preferences for sustainable investment options (undergraduate students).

Variable	**Ranges**	*N*	**Average range**	**Sum of ranges**
PREF2_PREF1	Negative ranges	105[a]	152.46	16,008.00
	Positive ranges	217[b]	165.88	35.995.00
	Draws	60[c]		
	Total	382		

Note: [a]PREF2 < PREF1. [b]PREF2 > PREF1. [c]PREF2 = PREF1.

TABLE 7b | Wilcoxon sign range test (statistical). Students' preferences for sustainable investment options (undergraduate students).

	PREF2_PREF1
With[a]	−6.046
Asymptotic sig. (bilateral)	< 0.001
Effect size *r*	−0.309

[a]It is based on negative ranges.

TABLE 8a | Wilcoxon sign range test (ranges). Students' preferences for sustainable investment options (postgraduate students).

	N	**Average range**	**Sum of ranges**
PREF2_PREF1			
Negative ranges	6[a]	10.67	64.00
Positive ranges	17[b]	12.47	212.00
Draws	7[c]		
Total	30		

Note: [a]PREF2 < PREF1. [b]PREF2 > PREF1. [c]PREF2 = PREF1.

TABLE 8b | Wilcoxon sign range test (statistical). Perception indices about responsibility and investment preferences (postgraduate students).

	PREF2_PREF1
With[a]	−2.267
Asymptotic sig. (bilateral)	0.023
Effect size *r*	−0.414

[a]It is based on negative ranges.

TABLE 9a | Mann–Whitney *U* test (ranges). Partial perception index about financial education and investment preferences by gender.

Variable	Gender	N	Average range	Sum of ranges
EDU2_EDU1	Male	171	188.55	32,242.00
	Female	241	219.24	52.836.00
	Total	412		
PREF2_PREF1	Male	171	217.34	37,164.50
	Female	241	198.81	47,913.50
	Total	412		

TABLE 9b | Mann–Whitney *U* test (statistical). Partial perception index about financial education and investment preferences by gender.

	EDU2_EDU1	PREF2_PREF1
Mann–Whitney *U*	17,536.000	18,752.500
Z	−2.585	−1.572
Asymptotic sig. (bilateral)	0.010	0.116
Effect size *r*	−0.472	−0.287

TABLE 10a | Mann–Whitney *U* test (ranges). Partial perception index about financial education and investment preferences by educational level.

Variable	Educational level	N	Average range	Sum of ranges
EDU2_EDU1	Undergraduate students	382	210.44	80,389.50
	Postgraduate students	30	156.28	4688.50
	Total	412		
PREF2_PREF1	Undergraduate students	382	205.04	78,323.50
	Postgraduate students	30	225.15	6754.50
	Total	412		

TABLE 10b | Mann–Whitney *U* test (statistical). Partial perception index about financial education and investment preferences by educational level.

	EDU2_EDU1	PREF2_PREF1
Mann–Whitney *U*	4223.500	5170.500
Z	−2.406	−0.900
Asymptotic sig. (bilateral)	−0.016	−0.368
Effect size *r*	−0.439	−0164

TABLE 11a | Kruskal–Wallis test (ranges). Partial perception index about financial education and investment preferences by geographical area.

Variable	Geographical area	N	Average range
EDU2_EDU1	Spain	251	217.38
	Other countries in Europe	148	183.45
	Latin America	7	311.21
	North America	1	84.00
	Rest of the world	5	220.60
	Total	412	
PREF2_PREF1	Spain	251	221.37
	Other countries in Europe	148	181.42
	Latin America	7	195.79
	North America	1	296.00
	Rest of the world	5	199.40
	Total	412	

TABLE 11b | Kruskal–Wallis test (statistical). Partial perception index about financial education and investment preferences by geographical area.

	EDU2_EDU1	PREF2_PREF1
Kruskal–Wallis *H*	14.262	11.353
Gl	4	4
Asymptotic sig.	0.007	0.023
η^2	0.025	0.018

of adapting these programmes to diverse learner profiles and institutional contexts.

This study suggests that a successful transition towards sustainability—which necessitates the engagement and commitment of all stakeholders within the financial value chain—can be effectively supported by targeting younger populations through educational initiatives in sustainable finance. Notably, the results indicate that even short-term training programmes can significantly enhance university students' knowledge and awareness of sustainable finance. Moreover, the findings highlight that addressing gender disparities through targeted educational interventions may amplify the overall impact of such programmes, suggesting a potentially compounding effect on their effectiveness. These insights underscore the importance of integrating sustainability-focused content into finance curricula as a strategic lever for long-term systemic change.

While the findings of this study provide valuable insights into the effectiveness of short sustainable finance training programmes, it is important to acknowledge the limitations associated with the quasi-experimental design employed. Although the small number of postgraduate students was a limitation, this was addressed through effect size analysis. The absence of control groups limits causal inferences. Future research should overcome these limitations by incorporating control groups to enhance causal inference and explore the differences by institutional context using larger groups across different geographical areas. Moreover, when it comes to the curriculum of sustainable finance training, the distinction between financial and social returns of ESG investments should be explained in depth. In addition to this, not only the direct but also the indirect costs of ESG investment for companies should be highlighted, as well as the arguments made by critics and sceptics of ESG. Edmans (2024) pointed out that investors need to be aware of the trade-offs associated with these decisions. Training in these aspects is essential for achieving the goal of investors' awareness and provides more critical views. This paper provides informative and valuable results for future research and decision makers because the results show how students assimilate key concepts about sustainable finance after participating in a training programme. Therefore, educational institutions and policymakers should consider these aspects to design more effective educational interventions.

Acknowledgements

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Endnotes

[1] Investors may not be worried about the long-term costs associated with the transition because these may fall outside their investment timeline.

[2] This platform is registered: https://sustainable-finance.unileon.es/en/home-english/ (English version) and https://sustainable-finance.unileon.es/ (Spanish version).

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