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# Classroom Learning and the Perception of Social Responsibility Amongst Graduate Students of Management Accounting

Francisca Castilla-Polo \*<sup>D</sup>, María Consuelo Ruiz-Rodríguez, Alonso Moreno<sup>D</sup>, Ana Licerán-Gutiérrez<sup>D</sup>, Macario Cámara de la Fuente, Eva Chamorro Rufián and Manuel Cano-Rodríguez<sup>D</sup>

Financial Economy and Accounting Department, School of Social and Juridical Sciences, University of Jaén, Campus Las Lagunillas, s/n, D-3, 23071 Jaén, Spain; mcruiz@ujaen.es (M.C.R.-R.); alonso.moreno@ujaen.es (A.M.); aliceran@ujaen.es (A.L.-G.); mcamara@ujaen.es (M.C.d.l.F.); echamo@ujaen.es (E.C.R.); mcano@ujaen.es (M.C.-R.)

\* Correspondence: fpolo@ujaen.es; Tel.: +34-953-212-496

Received: 22 July 2020; Accepted: 28 August 2020; Published: 31 August 2020



**Abstract:** This study analyzes how learning about social responsibility (SR) can modify the perceptions of university students about the importance of responsible behavior on the part of companies. To this end, a questionnaire was designed and administered to Management Accounting students before (n = 128) and after (n = 71) receiving two training activities on SR. The descriptive results obtained testify to the importance of SR in the views of the sampled students, both before and after receiving the specific learning in SR. In this latter moment, students demonstrated a vision highly committed to the need for SR to be part of the economic agenda. The results also show that there was a significant change in the perception of SR and its implications in terms of benefits and costs before and after receiving the training. All of this suggests that SR training has partially modified students' perceptions of SR. This paper provides important insights that could be leveraged by university and business school managers for the purpose of designing or modifying curricula related to SR. At the same time, it evaluates the potential of SR learning as a tool for modifying attitudes.

**Keywords:** social responsibility; higher education; learning; management accounting; sustainable development goals (SDGs)

## 1. Introduction

There is a growing demand for social responsibility (SR) to occupy a prominent place within university studies [1] and, especially, within business qualifications. Thus, the training of future executives, managers, and heads of companies/organizations should take into account the incorporation of such content, so that students understand that along with economic objectives, social and environmental objectives should also be considered. The students of today will be the managers and politicians of tomorrow [2] and a new generation of leaders concerned with business and society at the same time [3]. How SR is dealt with in the business sphere will not only affect companies but also society as a whole [4]. All of the above is affected by a context where financial scandals and unethical management practices in business have drawn attention to the role of university institutions with regard to the ethical and sustainable behavior of the professionals they are training.

Given its voluntary nature, it is prudent to consider the possible benefits and costs of incorporating SR in company decisions. Indeed, cost–benefit analysis can be applied to any type of decision, including investment in SR [5]. The accounting discipline plays a decisive role in helping to understand, analyze,



and interpret the role of companies as economic, social, and environmental actors [6]. Soderstrom et al. [7] conclude that there are many opportunities to leverage management accounting within the area of sustainability pursuant of managing businesses in ways which recognize the importance of objectives beyond profit maximization.

The Principles for Responsible Management Education (PRME), developed in 2007 under the coordination of the United Nations Global Compact in conjunction with different academic institutions, are valuable evidence of the recent interest in the education–SR binomial. In Spain, 26 universities and business schools have already signed up to these six principles. In fact, the report *Corporate Social Responsibility, Sustainable Development, and the Education and Training System* [8] (p. 39) offered a conclusion some time ago about the value of the PRME in "making possible a type of teaching and research congruent with the new requirements of corporate social responsibility and the principles and values of sustainable development". However, Parkes [9] considers that the panorama of their integration is heterogeneous, finding institutions actively committed against others that have not yet joined this "journey".

Based on the conviction that university business students should be familiar with the SR concept and apply it to their future professional projects, we questioned their perceptions of this concept. To date, studies have shown a generalized lack of knowledge about SR [10–12], which is why Lämsä et al. [13] demanded more empirical research on this subject. For Alonso-Almeida et al. [14] little progress has been made since then (referring to the previous work), and research on attitudes to SR within the field of education is still in its infancy.

According to McDonald [15] there are three main lines of SR-education research: descriptive, prescriptive, and analytical. The first includes fundamental research that values the formative offer in SR, the second concerns how to approach this type of teaching from a methodological point of view. Finally, the analytical perspective focuses on if, and the extent to which, SR training changes the attitudes and perceptions of students. Following Deer and Zarestky [16], business education would benefit from better, more effective methods to address SR education, although they must achieve a change in attitudes, which is why we combine prescriptive and analytical lines in what follows.

Our work involves questioning how SR is understood by university students and their perceptions, but also analyzing its potential modification after learning through two different methods: a generic video conference on the concept and a specific training day focused on the United Nations Sustainable Development Goals (SDGs). Specifically, we propose to analyze how, and in what sense, basic training received on the concepts, dimensions, and tools for SR management alters students' opinions. There are somewhat equivocal results concerning the effects produced by SR training. There are positive results in this respect [11,17–19], but there is also neutral evidence suggesting that SR training may not alter students' perceptions [20] or may depend on the country of origin in the case of Peppas [21].

From a methodological point of view, two ad hoc questionnaires have been designed to reveal the perceptions of university students both prior to and after receiving specific training. Both will be analyzed to find out the possible changes experienced when presented with SR and the SDGs, as well as to obtain conclusions on the suitability of their learning within the university classroom. The sample is constituted by 128 and 71 students in each of the questionnaires, respectively, from the University of Jaén, pursuing different Management Accounting subjects taught within the business degrees of the Faculty of Social and Legal Sciences.

The remainder of the paper is structured as follows. Section 2 provides a review of the literature on SR and its implications for university business students. In Section 3, we define the methodology, followed by presenting and discussing the results in Section 4. Finally, Section 5 concludes and provides suggestions for future research in this domain.

#### 2. Social Responsibility in University Classrooms

The perception of SR by university students is a topic that has been recently explored to fundamentally investigate the potential and plausible behaviors of tomorrow's decision-makers

and change-makers. Reviewing the salient literature (Appendix A) suggests that extant knowledge regarding university students' attitudes towards SR is still in a developmental phase [14,19,22,23]. Indeed, a generalized lack of knowledge and training in SR among university students can be deduced [11–13,24,25]. There is also evidence to suggest that students and other groups perceive a need for learning about SR [26,27].

It is common to study students' perceptions of SR and to characterize the variables that determine these perceptions, rather than to go into detail on tools that may facilitate the modification of perceptions. Thus, studies that have analyzed the existence of differences in SR perceptions according to gender, course, and field of study are recurrent. Studies suggest that women tend to show more interest in and/or engage more frequently in SR activities [28–31]. Similarly, the awareness of senior students is often higher than that of those who are starting their studies [29,30]. Additionally, it is often found that the awareness of university students on aspects connected with SR depends on the degree they are taking. Thus, in Spain it has been revealed that degrees related to economics and business sciences create the most awareness of social aspects such as SR [29,32,33]. At an international level, although there is evidence of divergence, degrees in economics, finance, and information management also stand out as creating the most awareness of social aspects such as SR in some universities [26].

It seems logical to think that the training that university students receive on SR can produce changes in their perceptions, but to date the results obtained in the small number of studies that have been undertaken on this issue are not fully conclusive [11,20,31]. There are positive results [11,17–19] as well as some evidence that suggests no significant relationship [20]. If we focus on the type of SR training, the extant literature does not always analyze formal training, it may be informal training [11,34–36], which may also result in numerous benefits for students such as increased commitment to social issues to the detriment of economic issues [37] and improved socially responsible decision-making.

In general, we appreciate that the university environment is concerned about social and environmental issues [10,26,29,38,39], which justifies our interest in this field of research. It can even be appreciated that the way the university is managed internally will affect its concept of SR [25].

In the Spanish case, there are some studies based on the impact that SR training produces on women; their results show that the effect of these variables is greater and will positively influence decision-making [11,14,20,40]. In fact, together with gender, grade, and course, these are two different variables that will influence the perceptions of students at the Spanish level, highlighting the business and accounting degree as the most aware of social aspects [29]. Finally, another variable that has been studied in a general way due to its influence on the perception of SR is the student age, as there is a generalized idea that it has a positive influence on SR perception [20,30,31,41].

The SDGs occupy a prominent place in the field of SR; in fact, they cover general SR principles in all areas: business, family, and government, among others. The effort made by the United Nations to achieve sustainable education based on the implementation of the SDGs and their promotion is evident from the World Conference on Education for All (EFA) in Jomtien in 1990, the World Education Forum in Dakar in 2000, the United Nations Decade of Education for Sustainable Development in Johannesburg in 2002, Agenda 2030 in 2015 in New York, and the successive High Level Political Forums in 2016, 2017, 2018, and 2019 at the United Nations headquarters in New York, among other events. In Spain, the Conference of Spanish University Rectors (CRUE) created a working group in 2002 with the purpose of ensuring that the concept of sustainable development and the achievement of the SDGs should guide curricula. Additionally, the Spanish Network for Sustainable Development (REDS), created in 2015 with the objective of raising awareness of the SDGs in Spanish society, public institutions, and the corporate world, prepared a specific report *Towards Education for Sustainability* (2019).

The importance of universities' commitment to the SDGs is the main focus of the SDSN Australia/Pacific report [42], with a reciprocal relationship established between the need for universities to implement SDGs and why the SDGs need universities. In fact, we highlight the work of the university as a trainer and facilitator of good management practices, providing knowledge that contributes to sustainable development and compliance with the SDGs [43,44]. In this sense, several authors highlight

the importance of higher education in the training of business leaders who are aware of the importance of achieving the SDGs, such as Avelar et al. [45], Crespo et al. [37], Kolb et al. [46], and Weybrecht [47]. Avelar et al. [45] believe that implementing the SDGs requires that education is at the center of the strategy. There is a demand to improve aspects related to the training of university professors in SDG domains, the dissemination of information about these SDGs [48], the awareness of educators and business leaders about the dissemination of SDG information [45], and a need for a transversal approach for the development of the necessary competencies [49]. According to the latter authors, the development of competencies related to SDGs is a challenge for universities today given the low level of knowledge about them among their students.

Among the advantages of a university implementing the SDGs in its education, the SDSN Australia/Pacific report [42] highlights the possibility of defining itself as a responsible and globally committed institution, setting an example in society, and training students concerned about sustainability. Furthermore, it points out that the SDGs need universities, considering them as institutions that provide knowledge to implement and manage them and to raise awareness of their importance among future professionals. Interdisciplinarity in university education, within which disciplines focused on sustainability and SR are combined with other disciplines, may facilitate the achievement of SDGs [50].

Several studies (Appendix B) have focused on highlighting the fact that universities' actions are aimed at complying with SDG 4 "Guaranteeing equitable and quality education and promoting learning opportunities" [51,52]. In our case, the SDGs have been understood in their relationship with SR, justifying their presence in one of the two training activities. Materials and Methods should be described with sufficient details to allow others to replicate and build on published results.

## 3. Materials and Methods

#### 3.1. Sample and Data Collection

As per the foregoing, business degree students have the ability to influence responsible and sustainable business practices, as they are likely to find themselves in management and decision-making positions in a few years' time. Specifically, the subjects related to Management Accounting are fundamental for developing the ability to make business decisions, as well as to evaluate the advantages and disadvantages of using SR within them. It is for this reason that our target population is students at the University of Jaén (Spain) who were studying the degrees and subjects shown in Table 1.

Degree	Subject	Year
Business Administration and Management (BAM)	Management Accounting	2
Statistics and Business (S&B)	Management Control	2
Business Administration and Law: joint degree (BAM + Law)	Management Accounting	3
Master of Business Administration (MBA)	Social Responsibility & Corporate Governance	1

Table 1. Degrees and	participating subjects.
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In line with previous studies, a questionnaire was used to ascertain the perceptions of university students regarding SR [11,24,35,38,53]. Our study population was asked to collaborate by completing both an initial and final questionnaire.

The initial questionnaire was completed at the beginning of the second term of the 2018/2019 academic year in a face-to-face and anonymous way during one of the sessions of each degree program. Its objective was to obtain information on the pre-existing knowledge that university students had about SR, differentiating between those who claimed to be familiar with this concept and those who were not. The first group was asked for information on the ways in which they had gained knowledge, the importance of different generic SR initiatives in companies, and the cost–benefit ratio of SR business

behavior. The questionnaire consists of a total of 16 questions, of which 4 are general personal data questions (academic degree, date of birth, gender, and range of monthly incomes perceived by the participants) to locate the research and a fifth question to discriminate whether or not the concept of SR is known. In the case of knowing the concept of SR, 6 additional questions had to be answered, and otherwise, 5 more questions were answered. For the group of students who stated that they were not familiar with SR, a question was posed indirectly raising this concept (SR) and, in a hypothetical way, the importance of SR business initiatives and the cost–benefit relationship. Therefore, the initial questionnaire was carried out by 128 students, of which 67 were men, compared to 61 women.

Table 2 shows the profile of the students who responded to the initial questionnaire. That is, 128 students (52% men and 48% women) on four degree programs (54% BAM, 17% S&B, 16% MBA, and 13% BAM + Law).

Degree	Ν	len	Wo	omen	То	otal
BAM	40	(31%)	29	(23%)	69	(54%)
S&B	8	(6%)	14	(11%)	22	(17%)
MBA	8	(6%)	12	(9%)	20	(16%)
BAM + Law	11	(9%)	6	(5%)	17	(13%)
Total	67	(52%)	61	(48%)	128	(100%)

Table 2. Profile of respondents to the initial questionnaire.

The final questionnaire was also completed in class (four months later, in May 2019) by those students who fulfilled two conditions: having completed the initial survey and having participated in the SR training. This questionnaire was the same for all participants as they had all received SR training. It began by asking about the importance attributed to SR, including its topicality, its relevance for certain types of companies, as well as some statements dealt with in the learning process. Then, the advantages and disadvantages of SR integration in business management were listed again to discern if and the extent to which students' views in this respect had been modified because of learning. Questions were also put forward to ask students how, in their opinion, SR content should be integrated in the university context. In the final questionnaire, the number of women was 36, compared to 35 men, which made a total of 71 participants. The final questionnaire consisted of a total of 18 questions, 9 of which were intended to discover the degree of importance attributed to the concept of SR, and 5 questions were directed to discover how SR can be methodologically integrated into the different subjects of the degrees that are part of our study.

Table 3 presents the profile of those individuals who answered the final questionnaire. As indicated, participation in this second questionnaire implies having completed the initial questionnaire, as well as having taken part in the training activities: the workshop and videoconference. The sample size was reduced compared to the first round: the MBA students were not included here because they were subjected to a different learning exercise (passive and active, through SR sessions given by different speakers). The final sample was constituted by 71 students (49% men and 51% women) undertaking 3 degrees (72% BAM, 15% S&B, and 13% BAM + Law).

Table 3. Profile of respondents to the final questionnaire.

Degree	Ν	ſen	Wo	omen	Т	otal
BAM	26	(37%)	25	(35%)	51	(72%)
S&B	4	(6%)	7	(10%)	11	(15%)
BAM + Law	5	(7%)	4	(6%)	9	(13%)
Total	35	(49%)	36	(51%)	71	(100%)

Regarding the scales used in both questionnaires, we highlight two types. On the one hand, the graduation scale, in which the degree of agreement with a statement is revealed and, on the other

hand, a yes-no response scale to select aspects, such as the advantages and disadvantages of SR for companies. In the case of the items selected in each question, they were deducted according to the proposed literature review that has been carried out.

## 3.2. SR Learning

As indicated, learning about SR forms the basis of the research in this study. Thus, it has been important not only to understand the perceptions of university students in this respect, but also how these perceptions are modified when they receive learning consisting of the following two activities.

The first activity was a training day on the SDGs in April 2019 by a member of the Agenda 2030 High Commission. The SDGs consist of 17 goals and 169 targets that are broader in scope and go beyond the Millennium Development Goals (MDGs), as they cover the three dimensions of sustainable development: economic growth, social inclusion, and environmental protection. Their ultimate goal is to achieve sustainable development, and they therefore target a wide range of recipients. The SDGs require action by all actors, governments, business, and civil society. The speaker covered the following: justification of the SDGs, description of the SDGs, and implications derived from their adoption. Finally, a question–answer session gave students the opportunity to resolve any doubts.

The second activity was of a more general nature and presented SR through a video conference given to students by an expert in the field. In it, all the questions related to the definition of SR and its management were presented in a more directed way. The concept, dimensions, management systems of SR, and social disclosure were contents that integrated this videoconference to form a complete vision of the involvement of SR within business management.

Figure 1 summarizes the methodological procedures.

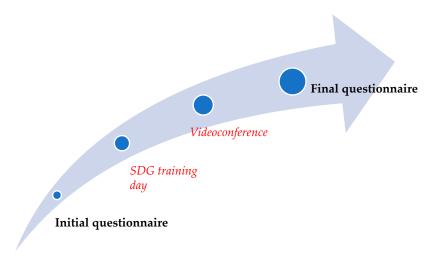


Figure 1. Methodological design.

As a fundamental issue from a methodological point of view, we emphasize that the six PRME (Figure 2) have been introduced as a framework within the design of this research. The PRME form the setting for our methodological design, offering a global integrative approach to the whole design process carried out in this research.

	<ul> <li>PRINCIPLE 1. PURPOSE: Develop capabilities of students to be future generators of sustainable value for business and society.</li> <li>As an Innovative Teaching Project, content on social responsibility and sustainability has been explicitly included in several Management Accounting subjects of different higher-education degrees.</li> </ul>
	<ul> <li>PRINCIPLE 2. VALUES: Incorporate values of global social responsibility from the United Nations Global Compact in the academic activities, curricula, and organizational practices</li> <li>This content is based on the Sustainable Development Goals (SDGs), following the initiative of the 2030 Agenda.</li> </ul>
	<ul> <li>PRINCIPLE 3. METHOD: Create educational frameworks, materials, processes, and environments that enable effective learning experiences for responsible leadership.</li> <li>Passive-learning methodology, consistent on an SDG training day, which was recorded to enable further visualization.</li> </ul>
O.	<ul> <li>PRINCIPLE 4. RESEARCH: Conceptual and empirical research that advances understanding about the impact of corporations in the creation of sustainable social, environmental, and economic value.</li> <li>The present research study conceptually analyzes the importance of the inclusion of SR material in those degrees related to business. Further, the questionnaires allow for an empirical study on students' perceptions of SR.</li> </ul>
	<ul> <li>PRINCIPLE 5: PARTNERSHIP: Interact with managers of business corporations to extend knowledge of challenges in meeting social and environmental responsibilities.</li> <li>Partnerships between 2030 Agenda and the University of Jaén have been established for future collaborative actions, in conjunction with public authorities, to develop practical and effective SR teaching methods.</li> </ul>
	<ul> <li>PRINCIPLE 6. DIALOGUE: Facilitate and support dialogue and debate among educators, students, business, civil society, etc., on critical issues related to global social responsibility and sustainability.</li> <li>The SDG training day was an opportunity for dialogue between students, sectoral stakeholders, and university faculty, thereby fomenting a debate on SR and its effects on society, focusing on the SDGs.</li> </ul>

**Figure 2.** The six principles for responsible management education (PRME). Source: Prepared by the authors on the basis of PRME [54].

#### 4. Results

#### 4.1. Initial Questionnaire: Descriptive Results

Table 2 shows the profile of the students who responded to the initial questionnaire. 62% of respondents said they were familiar with (38% were unfamiliar with) the concept of SR. This key question served to discriminate against the rest of the questionnaire. We show below the differentiated results for each group of students.

## 4.1.1. Students Familiar with SR

Of the 79 (62%) respondents who said they were familiar with the concept of SR, 47% said they had learned about it through the Internet, 36% through subjects in their curriculum, 30% through TV, radio, or print ads, 16% through lectures, 11% through training courses, and 5% through other channels (such as high school subjects, final degree projects, books, family, or friends). These results partially coincide with those found by Díaz and Facal [35], who highlight that students' knowledge of SR had been acquired in non-regulated training courses. Tormo-Carbó et al. [20] defend life experiences as alternatives for acquiring SR training, while Kolodinsky et al. [12] consider ideology to be the forerunner of SR training. Eweje and Brunton [40] hold work experience responsible as the best way to learn about SR. Ng and Burke [55], Lämsa et al. [13], and Luthar and Karri [17] consider that educational level is the most important determinant of SR perceptions.

Continuing with the group of students who claim to be familiar with SR, Table 4 shows the relevance that respondents ascribed to different SR initiatives. Sixty-five percent believed that the participation of companies in environmental recovery/support programs (waste collection, reforestation, recycling) is very relevant, an aspect also highlighted by Asrar-ul-Hap et al. [56], Vázquez et al. [19], and Yuan et al. (2013). Participation in programs for labor equality was also considered very relevant

(56%) [56]. The least relevant initiative among those consulted was the participation of companies in community development programs (such as event sponsorship) (25%) [10,36]. It is noteworthy that environmental and employee domains of SR dominate in terms of perceived relevance, even though community initiatives may be most associated with the birth of this concept. Larrán et al. [29] found a greater interest in the social and environmental dimensions, including actions to favor and improve the community in the former.

<i>n</i> = 79	NR	NVR	Ι	R	VR	DU
Participation of companies in solidarity programs, understood in a broad sense (e.g., aid to the most in need and to groups at risk of exclusion)	1	4	5	53	37	0
Participation of companies in environmental recovery/support programs (e.g., waste collection, reforestation, and recycling)	0	1	4	30	65	0
Participation of companies in equality programs (e.g., gender non-discrimination and conciliation initiatives)	0	1	8	33	56	3
Involvement of businesses in community development programs (e.g., event sponsorship)	1	8	14	51	25	1

Table 4.	Relevance	of different SR	initiatives	(%).
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NR: Not at all relevant; NVR: Not very relevant; I: Indifferent; R: Relevant; VR: Very relevant; DU: Does not understand.

Going deeper into the implications of SR for the group that claimed to be familiar with SR, Table 5 summarizes opinions about the main advantages for companies that pursue SR objectives. Fifty-four percent believe that the achievement of a better society and a cleaner environment is highly relevant in line with the assessment of SR initiatives in the environmental sphere in the previous question [56,57]. The least relevant advantage among those consulted is the return to society of part of what is received from it (27%), also corroborating the lower interest in SR actions in the community [58]. The achievement of various economic benefits, including reputation improvement, was considered relevant by 47% of respondents [29], but very relevant to only 37%, which places it in second place.

Table 5. Main advantages for	r companies that pursu	ue SR objectives (%).
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<i>n</i> = 79	NR	NVR	Ι	R	VR	DU
Achieving a better society and a cleaner environment	1	0	8	37	54	0
Achieving different economic benefits, among which it stands out to get a better reputation	6	0	10	47	37	0
Return to society part of what has been received from it	3	6	9	54	27	1

NR: Not at all relevant; NVR: Not very relevant; I: Indifferent; R: Relevant; VR: Very relevant; DU: Does not understand.

Table 6 shows what the main disadvantages would be for companies pursuing SR objectives. Twenty-nine percent estimated that the time and effort devoted to carrying out this type of responsible action is very important [34,59], followed by the need for training in 22% of cases [16,24,34,59] and the investment required to implement these actions in 10% of cases [34]. However, on this last issue, 54% of respondents considered it to be relevant.

Table 6. Main disadvantages for companies that pursue SR objectives (%).

<i>n</i> = 79	NR	NVR	Ι	R	VR	DU
The amount of money allocated to cover social responsibility actions	1	15	18	54	10	1
The time and effort dedicated to carrying out these types of responsible actions	4	0	13	42	29	13
The need for training in the field of social responsibility	0	18	15	42	22	4

NR: Not at all relevant; NVR: Not very relevant; I: Indifferent; R: Relevant; VR: Very relevant; DU: Does not understand.

We will now turn to the comments of those respondents (49) who stated that they were not familiar with the concept of SR (38%). They were asked about issues related to this concept in an indirect way. Firstly, they were asked whether they thought it was appropriate for companies to carry out voluntary actions to improve society and the environment (definition provided by the European Commission, 2011); 92% replied positively, 2% negatively, and 6% perhaps.

Table 7 below shows the relevance that this subset of the sample attributed to different SR initiatives. Eighty percent believed that business participation in equality programs is highly relevant, followed by participation in recovery/environmental support activities (78%) [19,53,56]. The least relevant initiative was the participation of companies in community development programs (such as event sponsorship) (22%) [10,36] and business solidarity programs (37%). These results are reasonably similar to those obtained from the group who were familiar with the concept of SR, although SR in the field of work occupies first place in this group. Surprisingly, in the results obtained by Alonso-Almeida et al. [14], students placed improvement of environmental conditions in the penultimate position of the list elaborated by those authors, something worrying in their opinion, which could be justified by lack of knowledge of the value of SR.

Table 7.	Relevance of	of different SR	initiatives (	(%)	).
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<i>n</i> = 49	NR	NVR	Ι	R	VR	DU
Participation of companies in solidarity programs, understood in a broad sense (e.g., aid to those most in need and to groups at risk of exclusion)	0	2	8	53	37	0
Participation of companies in environmental recovery/support programs (e.g., waste collection, reforestation, and recycling)	0	0	0	22	78	0
Participation of companies in equality programs (e.g., gender non-discrimination and conciliation initiatives)	0	0	2	16	80	2
Involvement of businesses in community development programs (e.g., event sponsorship)	2	2	24	49	22	0

NR: Not at all relevant; NVR: Not very relevant; I: Indifferent; R: Relevant; VR: Very relevant; DU: Does not understand.

As with the respondents who stated that they were familiar with the SR concept, potential advantages and disadvantages of this type of action for companies were raised with this group.

Table 8 shows the perceived advantages for companies pursuing SR objectives. Fifty-five percent believed that achieving a better society and a cleaner environment is very relevant [56,57], followed by giving back to society a part of what companies' receive from it (41%) [58]. The least relevant advantage among those consulted was the achievement of economic benefits (37%) [59]. Here we do see differences, as the economic profitability of SR was not considered as the least relevant advantage by those students who were familiar with SR.

Table 8. Main advantages for companies that pursue SR objectives (%).

<i>n</i> = 49	NR	NVR	Ι	R	VR	DU
Achieving a better society and a cleaner environment	0	0	4	41	55	0
Achievement of different economic benefits, among which it stands out to get a better reputation	4	4	12	43	37	0
Return to society part of what it receives from it	0	2	16	41	41	0

NR: Not at all relevant; NVR: Not very relevant; I: Indifferent; R: Relevant; VR: Very relevant; DU: Does not understand.

Table 9 shows the perceived disadvantages for companies pursuing SR objectives. Thirty-one percent considered that the need for training in the field of SR in the company itself was very relevant [16,24,34,59], followed by the time and effort required (24%) [34,59]. The least relevant

disadvantage was the money that such actions would cost (10%) [34]. Again, here we also see differences between students who knew about SR and those who did not; although they surprisingly agreed that the economic cost of SR actions was the least relevant disadvantage.

<i>n</i> = 49	NR	NVR	I	R	VR	DU
The amount allocated to cover social responsibility actions	2	2	14	67	10	4
The time and effort dedicated to carrying out these types of responsible actions	0	10	14	51	24	0
The need for training in the field of social responsibility	2	8	16	41	31	2

Table 9. Main disadvantages for companies that pursue SR objectives (%).

NR: Not at all relevant; NVR: Not very relevant; I: Indifferent; R: Relevant; VR: Very relevant; DU: Does not understand.

## 4.2. Final Questionnaire: Descriptive Results

Table 3 presents the profile of those individuals who answered the final questionnaire. Respondents were asked about the relevance they attributed to SR after taking part in the activities designed to provide training in this concept. This first question elicited importance on a Likert scale from 1 to 7, where 1 denoted that SR is not at all relevant and 7 denoted that SR is very relevant; 44% assigned it a score of 5, 31% a score of 6, 20% a score of 7, and 6% a score of 4.

Table 10 shows the importance respondents attributed to various SR-related issues that had been addressed in the training activities. Ninety-one percent believed that it is important or very important for companies to integrate SR on a daily basis. Eighty-three percent thought that problems are important or very important to achieve sustainable development in the world. Seventy-nine percent believed that the interest of the Spanish government in SR is important or very important. Ninety-five percent thought that Agenda 2030 is important or very important for companies to be socially responsible in line with other studies [44,48,51]. These results support prevailing tendencies vis-à-vis the place and position of SR in the business world and politics.

Table 10.	Importance of different SR issues	(%).
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<i>n</i> = 71	NI	SI	IN	Ι	VI
The importance for companies to integrate social responsibility in their day-to-day business	0	7	1	56	35
The existence of major challenges to achieving sustainable development in the world	0	4	13	51	32
The government's interest, in this case Spain, in social responsibility	1	6	14	42	37
The role of sustainable development objectives (Agenda 2030) in making companies socially responsible	0	0	6	58	37

NI: Not at all important; SI: Slightly important; IN: Indifferent; I: Important; VI: Very important.

Respondents were also questioned about the current state of affairs in terms of SR. Fifty-nine percent stated that it was a topical issue for everyone (business and society in general). Only 1% stated that SR was not a current issue. These results allow us to conclude on the opportunity of SR in a broad sense for the society–business binomial.

Looking in depth at the implications for management of SR in business contexts, respondents were asked whether they considered SR to be particularly relevant for certain types of businesses. Eighty-three percent stated that it should be a concern for all companies, endorsing the need for university–business relations to be based on the transmission of knowledge about SR [23] as well as the relevance of SR for university business students.

With regard to the specific advantages of SR for companies, 85% considered that it increases environmentally responsible behaviors [57]; 70% considered that it improves behavior in the society in which it is integrated; 61% considered that it improves relations with their employees [56]; 48% considered that it benefits image and corporate reputation [59]; 41% considered that it improves behavior with suppliers and customers, among other groups; and none of those surveyed believed that SR does not represent an advantage.

In terms of the disadvantages that SR can entail for companies, 72% considered the financial outlay of SR measures; 32% considered internal organizational problems involved in implementing SR measures to be a disadvantage; and 20% considered competitive problems to be a disadvantage, for example, disadvantages in comparison with companies that are socially responsible. Only 8% considered that SR only brings benefits.

In addition to questions relating to SR in companies, this second questionnaire was used to ask students about the most appropriate ways of incorporating SR into their university training. At first, respondents were asked to assess the extent to which their degree program had facilitated achievement of the competence "Knowing and understanding SR derived from business actions". On a scale of 1 to 7, where 1 means no achievement and 7 means total achievement, 32% assigned a score of 6, another 32% assigned a score of 5, 23% a score of 4, and only 6% a score of 7.

Another topic discussed was how to introduce SR into the university environment. Eighty-seven percent believed that this is a topic that should be addressed in formal degree training. Only 4% believed that it should not be treated in a regulated manner. With regard to what type of courses SR should be included within, 58% believed that it should be included in a specific optional subject, while 27% defended a specific obligatory subject. Only 12% did not believe that it should be integrated in any way. These findings could be leveraged by program and course conveners in universities when they consider future training actions in SR.

Finally, respondents were asked about the extent to which they felt that SR would affect their future as academics in the field of business. On a scale of 1 to 7, where 1 means that SR will have no impact and 7 means a high impact, 39% assigned a score of 6, 27% a score of 5, and 17% a score of 7.

## 4.3. Cost-Benefit Analysis of SR after Classroom Learning

Given the importance of cost–benefit analysis for Management Accounting students that constitute our study population, we address how benefits and costs have been impacted by the SR training.

We used McNemar's test to gauge whether the change in response in categorical variables after exposure of the sample to a treatment is significant (in this case, after learning about SR). In Table 11, the rows correspond to the initial responses, and the columns to the final responses (Exposed corresponds to dummy = 1 (favorable), while Unexposed corresponds to dummy = 0 (unfavorable)). The null hypothesis is that there are no differences in the behavior of individuals, the alternative being that there are differences.

	Cases\Controls	Exposed	Unexposed	Total	McNemar's Chi2 (Prob > Chi2)
	Exposed	43	8	51	5.44 **
Benefit of improving society	Unexposed	1	1	2	(0.0196)
	Total	44	9	53	
		Exposed	Unexposed	Total	
Benefit of improving	Exposed	22	23	45	8.53 ***
reputation	Unexposed	7	1	8	(0.0035)
1	Total	29	24	53	
		Exposed	Unexposed	Total	
Cost of inconvenient	Exposed	17	23	40	15.38 ***
organizational complexity	Unexposed	3	10	13	(0.0001)
	Total	20	33	53	

Table 11. McNemar's test (initial questionnaire vs. final questionnaire).

\*\*\* indicates *p*-value below 0.01; \*\* indicates *p*-value below 0.05.

Analyzing the different costs and benefits proposed to the participating students, the results show that there are significant differences in the assessment of the benefits of improving society and improving reputation. The opinion of the students about the other advantage of SR that was included in

the questionnaire, the fact that taking SR actions the entities could somewhat rewarding the society for the benefits they receive from the society, has not been found to be significantly affected. To elaborate, after receiving SR training, significantly more students believed that these two benefits arose.

With regard to the cost of inconvenient organizational complexity, as can be seen in Table 11, this change of opinion is also statistically significant; i.e., after students had undertaken learning in SR, they became more aware of the implications that it triggers for companies.

## 5. Discussion and Conclusions

Considering the importance for future business professionals to maintain a social and ethical commitment, SR emerges as an important subject in the university environment. The PRME [54] promote a global network based on six principles to promote sustainability and the commitment of institutions vis-à-vis management training, which incorporates universal values within the respective training programs and/or research activities. In this context, the PRME have been implemented in this study within a methodological design aimed at understanding the importance attributed to SR by university business students. Two SR training activities were designed and an assessment was undertaken concerning how perceived importance of SR changed after students were exposed to learning about SR. The implications for management and university training were also elicited from respondents.

Our results show that SR was considered relevant by university students based on their pre-existing knowledge and values, both directly and indirectly (for those who were not initially familiar with the concept). This is particularly the case with respect to environmental and labor dimensions and, to a lesser extent, social and community dimensions. The advantages of SR perceived by students are associated with the environment, society in general, and to a lesser extent, with various economic benefits, such as corporate reputation. As for the disadvantages, the economic outlay required for SR is the least important, but there are organizational problems of time, effort, and necessary training. In view of these results, we can conclude that the vision of SR implementation held by students who did not receive training in SR is not very focused on its business effects but rather on its benefits for society or "as a whole".

If we compare these results with the final evaluation of the students, it can be seen that SR, both from a global point of view and from business and political points of view, is considered to be very relevant. Likewise, students understand that it is a concept applicable to all types of companies, and that it implies joint work by all agents, not just companies, pursuant of achieving sustainable development in accordance with the SDGs. With regard to the cost–benefit ratio, significant differences were detected between students' assessments in the initial and final questionnaires. For example, the perceived importance of reputation increases as one of the business benefits of SR. However, students' assessment of the benefits of responsible corporate behavior in society is also important. On the cost side, potential issues in terms of organizational problems involved in SR business management were recognized to a greater extent according to the responses to the final questionnaire.

Accordingly, the results show that SR training can change the perceptions of university business students, making them understand the cost–benefit ratio of SR in a different way and broadening the focus. In any case, the reinforcement achieved was always positive because training was not found to cause less interest in SR or in the implications of the cost–benefit analysis it entails.

The main limitation of our study is the small sample size. If future work employed a larger sample, it would allow generalization of results to broader university contexts. Further, a longitudinal approach would allow us to observe the evolution of SR perceptions over time. Finally, the relative merits and drawbacks of passive, compared to active, learning of SR warrant greater attention in the literature.

Author Contributions: Conceptualization: F.C.-P. and M.C.R.-R., methodology: F.C.-P. and A.L.-G.; formal analysis: A.M. and A.L.-G.; writing—original draft preparation and writing—review and editing: F.C.-P., M.C.R.-R., A.M., A.L.-G., M.C.d.I.F., E.C.R. and M.C.-R.; project administration: F.C.-P. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by Teaching Innovation Project entitled "Active learning of Social Responsibility within the Management Accounting subjects", funded by the I2D-UJA 2016–2018 Plan of the University of Jaén.

Conflicts of Interest: The authors declare no conflict of interest.

## Appendix A

Table A1. Studies on university students' perceptions of SR.

Authors	Sample/Scope	Methodology/ Approach	Objectives	Conclusions
Rodriguez et al. [10]	1318 students, 104 teachers, 118 administrative staff, and 29 academic managers from 4 universities in Rio Grande Norte (Brazil)	Questionnaire	To study perceptions of facets of SR held by students, teachers, administrative staff, and academic managers	All three stakeholder groups positively assess SR in the university environment, and are committed to improving the participation of these stakeholder groups in actions focused on achieving SR. For students, the main concern is the environment, followed by issues such as community development, consumer issues, and labor and legal practices
Galvao et al. [28]	317 students pursuing undergraduate degrees in Life Sciences, Engineering Sciences, and Economic and Business Sciences at the University of Tras-os-Montes and Alto Douro (Portugal)	Questionnaire	To study the factors that influence the orientation of students towards SR	Gender, religion, and volunteerism are the most influential variables that affect SR orientation. In fact, women, religious students, and student volunteers show a stronger ethical and SR orientation
Ruiz-Palomino et al. [11]	97 university students enrolled in a non-university SR course at a Spanish state university	Questionnaire	To analyze changes in students' SR perceptions once they have taken an SR course	They conclude that taking an SR training course improves students' ethical decision-making. Furthermore, the impact is greater on female students than on male students
Tormo-Carbó et al. [20]	307 management students at the University of Science and Technology of Krakow (Poland)	Questionnaire	To analyze ethical perceptions as part of SR, detecting differences in such perceptions according to gender, age, work experience, and ethics courses completed	They detected significant differences in the ethical perceptions of the students in the sample with respect to gender and age with women and older students being more inclined towards ethical issues. Completion of an ethics course and professional experience were not significant variables
Larrán et al. [29]	319 students at the University of Cadiz (Spain)	Questionnaire and hypothesis testing	To study the perceptions of business students towards SR and analyze the role of cultural, socio-economic, and legal factors in explaining the results	Gender, grade, and course are the variables most associated with students' perceptions of SR. There is a high level of concern for the social and environmental dimension of SR. Students in the business and accounting degree are the most aware of social and environmental aspects
Deer and Zarestky [16]	14 students enrolled in an undergraduate SR course at a top U.S. university	Thematic and narrative analysis	To study the evolution of students' perspectives when taking an SR course	SR concepts motivated students to solve SR-related problems and gave them confidence in their SR skills. Students need to strengthen their critical thinking on SR by increasing their social awareness. They highlight the gap in SR training
Martínez- Usarralde et al. [24]	206 students taking a degree in Social Education at the University of Valencia (Spain)	Questionnaire, qualitative study with students, data triangulation	To analyze the state of the art of SR and sustainable development at the University of Valencia	Students consider that the university provides them with tools to be socially responsible and is concerned about social problems although issues with value formation were identified
Pätäri et al. [30]	Students at Lappeenranta University of Technology, University of Turku and University of Helsinki in Finland in 2015, Deusto University in Spain during 2015–2016, and a public forum of university students in Kong	Online questionnaires and hypothesis testing	To analyze the perceptions of students in about SR and the future of the forest industry	They conclude that nationality, gender, age, and field of study positively influence students' perceptions of sustainability and social and environmental performance. Nationality and field of study are related to students' perceptions of SR

		Table A		
Authors	Sample/Scope	Methodology/ Approach	Objectives	Conclusions
Claver et al. [41]	288 students at the University of Alicante in 2012 and 2016 (Spain)	Exploratory factor analysis	To analyze the cost–benefit ratio of SR	Evolution of interest in ethical and SR issues (2012 vs. 2016). The strategic value of ethics and SR is confirmed
Costa et al. [31]	117 students in the first year of the undergraduate course in financial accounting, the third year of the undergraduate course in ethics and deontology, and the first year of the Master's degree in advanced accounting at the Higher Institute of Accounting and Administration (Portugal)	Questionnaire	To analyze whether gender, age, work experience, and the completion of an ethics course as part of SR influence the ethical perceptions of these students and study individual factors that may affect ethics in decision-making	Gender, age, work experience, and attendance at an ethics course influence students' ethical perceptions. Specifically, gender affects initiative/entrepreneurship, obedience and responsibility, age affects integrity, work experience affects obedience, and attendance at an ethics course affects independence, all treated as individual factors
Sánchez-Hernár and Mainardes [22]	dez 392 students from business management courses at a university in Brazil	Structural equation and interview modeling	To propose a reference model for SR management and its inclusion in the education and research programs of social science faculties	The proposed model considers that universities should strive to meet students' needs in the long term and highlights the responsible culture that should govern university education, because students' perceptions of the university influence their decision to enroll
Alonso-Almeida et al. [14]	535 business students at the Autonomous University of Madrid (Spain)	Questionnaire and factor analysis	To analyze the perceptions of students who are not familiar with SR	Gender influences the perception of SR. The role of Stakeholder Theory is assessed, i.e., a relation with stakeholders and a list of attributes for the responsible company is provided that differs from previous work. The first position for the need to attend to customers and the eleventh position for environmental management stand out
Vázquez et al. [23]	400 undergraduate students at the University of León (Spain)	Structural equation model	To analyze students' perceptions of SR and analyze their satisfaction with this SR service by building a model	Among the most important aspects of SR, the students consider the external projection of the university towards social actions, internal management, and research based on social actions, education in environmental values, social and human values, and university-business relations based on the transmission of knowledge on SR
Whitley and Yoder [ <mark>36</mark> ]	1240 students at Michigan State University (USA)	Survey	To measure the impact of curricular, extracurricular, civic engagement, and community participation on learning, attitudes, and behavior related to political engagement and SR	All three experiences are positively related to attitudes and behaviors of political commitment and SR. Extracurricular civic engagement has a greater impact on learning attitudes related to SR
Martí et al. [39]	860 students from public universities (Spain, Chile, Colombia, and Peru)	Structural equation model	To analyze how university education influences the acquisition of responsible behavior by studying the intentionality and frequency of such behavior	Students exhibit socially responsible behavior quite often. With respect to frequency, the variables that influence the self-attribution of socially responsible behavior are the value of conservation and openness to change and respect for empathy. Students' intentionality to be socially responsible is influenced by the value of conservation and by self-transcendence

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Authors	Sample/Scope	Methodology/ Approach	Objectives	Conclusions
Rus et al. [27]	536 members from 2 public universities (Romania)	Regression analysis	To study the relationship between university members' perceptions of the learning organization and SR, distinguishing three groups: students, internal staff, and leadership staff	The seven dimensions of the learning organization are related to SR. The perceptions of internal groups and students about the learning organization have a greater relationship with SR while leadership staff showed a weaker relationship between learning organization and SR
Vázquez et al. [25]	400 students at the University of León (Spain)	Questionnaire and structural equation models	To analyze the factors that define students' SR perceptions	Students consider that internal management affects their perception of SR. They highlight the need to improve participation in SR actions and university training in SR
González-Rodrí et al. [60]	. 1060 students of Social guez Sciences at the University of Seville (Spain)	Questionnaire	To analyze students' perceptions of SR and study the influence of personal values on these perceptions of SR	Female students and students with humanities degrees are more likely to be socially aware than male students with business and finance degrees. Neutral and liberal groups of students take a slightly negative stance towards SR, for evolutionists and conservatives the perception of SR is very positive
Vázquez et al. [19]	200 final year students of Economics and Business at the Catholic University of Uruguay	Questionnaire	To analyze students' perception of SR and their expectations of current SR education and future demands for SR education	Great demand for education in SR, especially content referring to relations with employees, consumers, and respect for the environment. They conclude that higher education influences students' concept of SR
Yuan et al. [53]	1049 individuals consisting of professors, alumni, and students of Shandong University (China)	Questionnaires	To study the knowledge that teachers, alumni, and students of Shandong University in China have about SR	The alumni attribute less importance to SR than the rest of the groups studied. High concern of the three groups for SR.
Brijlal [58]	1041 students from six faculties (Community and Health Science, Economics and Management, Arts and Education, Dentistry, and Natural Sciences) at the University of Cano Occidental (South Africa)	Questionnaire	To study the perceptions and knowledge acquired by senior university students about entrepreneurship, within which they analyze SR	Seventy percent of the analyzed sample considers that businessmen should be aware of the importance of SR with the aim of giving back to the community what the community gave us. No differences were detected in the perception of the importance of SR in terms of the gender of the students, although nationality was important in this respect with African students standing out as the most socially aware. With respect to the faculties, students in the Arts and Education faculty are the most aware, while students in the Dental faculty are the least aware
Díaz and Facal [35]	95 students from the Business School at the Business University in Montevideo (Uruguay)	Questionnaire	To study the perceptions of third- and fourth-year students of BAM, Marketing, Foreign Trade, and Public Accounting degrees of the Business University on SR	Most of the students surveyed have knowledge about SR, although it has not been covered during their university studies, but in non-regulated courses
Fernández Chulián [18]	20 students studying for a degree in business administration and management at Pablo de Olavide University in Seville (Spain)	Questionnaire and analysis of students' discourse before and after the inclusion of the subject	To study the inclusion of a subject related to SR within the accounting field (sustainability accounting)	Students showed changes in discourse before and after taking the accounting for sustainability course. This will allow students to broaden their view of business accounting and relate it to sustainability issues

Authors	Sample/Scope	Methodology/ Approach	Objectives	Conclusions
López-Navarro et al. [33]	174 students of Business Administration and Management in the first and fourth year at Jaume I University (Spain)	Questionnaire	To analyze students' attitudes towards SR	Students prioritize their opinion on SR, highlight differences between current and desired ethical issues because they do not receive the desired SR training, and appreciate differences in terms of gender, with women placing more value on ethica issues. First-year students placed a higher value on ethical issues than final-year students, who placed a higher value on employee relations
Brunton and Eweje [61]	536 students from a business school (New Zealand)	Questionnaire	To analyze the influence of culture on ethical perceptions as part of SR	Cultural differences affect the ethical perceptions of the students in the sample, with European students standing out as the least aware of ethical and SR issues compared to Chinese students who were the most aware
Eweje and Brunton [40]	655 undergraduate and postgraduate business students (New Zealand)	Questionnaire	To analyze whether gender, age, and work experience influence the ethical perceptions of students, as part of SR	They conclude that gender influence ethical perceptions, highlighting women with greater awareness of ethics and SR. With regard to age, they consider that it is not a factor that significantly affects the ethical and SR perceptions of the students in the sample, while work experience does have a positive influence on this perception
Kolodinsky et al. [12]	298 undergraduate students at a university in the Southeast USA	Online questionnaires	To analyze factors that may influence students' attitudes to SR	Ideology centered on ethical values affects the responsible behavior of students in the sample. In particular, idealism and relativism affect behavior positively and negatively, respectively. They do not find a significant relationship between spirituality and responsible behavior Nationality and gender do not significantly affect the ethical behavior of the students
Ng and Burke [55]	248 business students at a western U.S. public university	Questionnaire	To analyze the influence of students' personal characteristics on sustainable development and SR	There are few differences in student behavior according to gender, although women appear to be slightl more aware of social values than men Psychosocial variables such as educational level and nationality are predictors of responsible behavior in the students in the sample. The values of an environmentally conscious leader can influence the pro-environmental behavior of followers
Wong et al. [62]	317 top-level business students from higher education institutions in the USA, China, and India	Questionnaire	To compare business students' perceptions of SR in American, Indian, and Chinese universities	American and Indian students attack greater importance to SR issues than do Chinese students. American students place more emphasis on economic issues while Indian students emphasize philanthropy. They find no significant differences in the perception of ethical issues between the three groups. Chinese respondents emphasize economic issues over SR issues. SR practices ar similar across the three cultures

Authors	Sample/Scope	Methodology/ Approach	Objectives	Conclusions
Lämsa et al. [13]	217 business students from two Finnish universities between 2003 and 2006	Questionnaire	To analyze the effect of entrepreneurship education on students' attitudes and behaviors on SR issues	Females are more aware of ethical, social, and environmental issues than males, at the beginning and end of their studies. The level and context of education also has a positive influence on the perceptions of aspects related to SR, so that the higher the socio-cultural level, the greater the awareness of SR
Ibrahim et al. [38]	272 accountants and 374 accounting students from 6 universities accredited by the Association to Advance Collegiate Schools of Business (USA)	Questionnaire	To study similarities and differences among students regarding their SR behaviors	There is greater concern about SR and ethical issues than about economic issues
Luthar and Karri [17]	817 students from an Association to Advance Collegiate Schools of Business (AACSB) accredited university (328 freshmen, 380 older students, and 109 managers enrolled in an MBA (USA)	Questionnaire	To examine the effects of individual characteristics and the ethical education received by students on ethical practices and business outcomes	They conclude that female students are more conscientious in following ethical behaviors than male students. More experienced and better educated students are more aware of ethical issues and SR. Students who had undertaken a course related to ethical values and SR were aware of the importance of SR
Elias [26]	324 undergraduate and graduate students in business studies at three universities in the Southwest, Southeast, and Mountain regions of the USA	Questionnaire	To analyze students' perceptions of the sample universities towards SR after university bankruptcies	They believe that SR is more important for the long-term profitability and success of universities and less relevant for their short-term success due to advertising scandals. Male, older, and more experienced students are less likely to change their perceptions of SR compared to younger and less experienced female students. Students of economics, finance, and information management are more aware of SR than students of accounting, administration, and marketing
Peppas [21]	309 students enrolled in the business school of a private university in the Southeast USA during the 1998–1999 academic year (Asian and American internationals)	Case Study	To study changes in students' behavior after taking courses with an ethical content	Asian international students showed no difference after taking this ethics-focused training. American students showed differences in their ethics-related behaviors
Kraft and Singhapakdi [63]	182 final year students of business degrees and MBAs from universities in the Midwest, Mid-Atlantic. and South (USA)	Questionnaire	To analyze the relative importance of SR criteria to determine the effectiveness of the sample universities	The SR criteria are the least important in determining the effectiveness of the universities studied. MBA students scored higher on SR criteria than undergraduates, and female students were more aware of SR issues. Work experience, nationality, and age of students are not significantly correlated with SR criteria.

## Appendix B

Authors	Sample/Scope	Methodology/ Approach	Objectives	Conclusions
Isenmann et al. [64]	State University of Science and Private University of Science of Munich (Germany)	Case study: Morphological box for education for sustainable development	To study the implementation of education for sustainable development at university level	The Morphological box is useful for analyzing the current state of implementation of education for sustainable development in faculties and departments, for adjusting its evolution throughout the course, and for obtaining a university-wide overview of education for sustainable development, which contributes to SDG implementation in universities. It includes the identification and development of new profiles of education for sustainable development as well as the communication and evaluation of existing profiles on sustainable development
Avelar et al. [45]	193 articles from the Social Sciences Citation Index (SSCI) and the Emerging Sources Citation Index (ESCI) available on Web of Science from 2015 to 2018	Bibliometric analysis	To conduct a systematic review of the literature on SDG-oriented education	SDGs are addressed at all levels of education, and implementing these SDGs will require education to be at the center of the strategy. The University of London has published the most articles on SDGs. Achieving quality education will involve raising the awareness of educators, business leaders, and governments in the dissemination of information about the SDGs. The increase in the number of published articles focused on the achievement of SDGs in higher education in the period and individual authorship are factors that recognize the importance of education in implementing the SDGs, with the UK and US being the most popular countries for disseminating information on the SDGs
De la Rosa et al. [51]	639 students from Francisco of Vitoria University (Spain)	Empirical study structured in 4 dimensions and 21 items	To analyze the impact of teaching SR and SDG information on university students	It is verified that SR content improves student commitment and contributes to the achievement of SDG 4.7
Fleacă, et al. [65]	-	Case study applying the SIPOC method (Supplier, Input, Process, Output, Customer)	To analyze the capacity of universities to integrate the principles and practices of sustainable development into university education	They detect a lack of capacity in the universities analyzed to integrate the principles of sustainable development into education and, consequently, the difficulty of acting as an entrepreneurial university. It will be necessary to design, implement, monitor, control, and report on the efforts that universities make towards the achievement of SDGs
Giler et al. [52]	Tsáchilas Higher Technological Institute of Santo Domingo de los Tsáchilas (Ecuador)	Case Study	To analyze SDG implementation	The inclusion of SDGs in the actions of this higher education center is marked by its relationship with stakeholders. The activities developed by this institute were designed to fulfill the objective of SDG 4
Albareda-Tiana, et al. [66]	23 students of the Degree in Primary Education of the Faculty of Education of the International University of Catalonia (Spain)	Case Study	To study the most appropriate methodologies for developing sustainability skills in higher education and to analyze whether the acquisition of sustainability skills is related to research	Project-based learning is a suitable methodology for developing sustainability skills. There is a positive correlation between sustainability skills and research

## Table A2. Studies on the SDGs and universities.

Authors	Sample/Scope	Methodology/ Approach	Objectives	Conclusions
Millán and Pérez [48]	University of Valencia and Polytechnic University of Valencia (Spain)	Case Study	To study the establishment of SDGs in the sample universities	The universities in the sample have adapted in a practical way to the new goals, policies, and plans of Agenda 2030, although there is a need to improve certain aspects such as teacher training and the dissemination of information about Agenda 2030 and the SDGs
Annan-Diab and Molinari [50]	200 final year MBA students (80 from UK and 120 from Russia)	Case Study	To analyze the importance of an interdisciplinary approach in education for sustainable development and SR	They believe that studying a module focused on sustainability and SR can help students combine all their knowledge and advance in sustainable development. Improved interdisciplinarity in education will help meet the SDGs
Crespo et al. [37]	Students in a subject of the Master of Thermal Engineering of the University of Vigo (Spain)	Case Study	To analyze the ability of students to include the principles of sustainability and SDGs in their individual work	It highlights the influence of higher education in training managers and executives who are aware of the importance of implementing the SDGs. Students attribute less importance to economic issues, as opposed to the environmental, technical, and social dimensions, which are the most important to these students in the sample
De Menezes and Minillo [44]	Federal University of Paraíba of Brazil	Case Study	To describe the importance of the university in the development of countries and in the implementation of the SDGs	Training, research, and extension activities cannot be separated, as they facilitate the university's contribution to sustainable development and compliance with the SDGs
Kolb et al. [46]	German Business School	Case Study	To study the relationship between SDGs and education in the business schools in the sample	The educational level of leaders influences the achievement of the SDGs. Educational models should educate leaders to promote the achievement of the SDGs.
Weybrecht [47]	-	Theoretical review	To discuss how to consider educating future managers to be socially responsible and follow the SDGs	Higher education of future business leaders influences the implementation of SDGs and the achievement of sustainable development in society and therefore higher education should be enhanced

#### Table A2. Cont.

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