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Responsible management education: The leadership role of PRME business schools

João Henrique Paulino Pires Eustachio [a,*], Walter Leal Filho [a,b], Amanda Lange Salvia [c], Marina Lourenção [d], Yana Medeiros Guimarães [e], Laís Viera Trevisan [f], Jelena Barbir [g], Adriana Cristina Ferreira Caldana [e]

[a] European School of Sustainability Science and Research (ESSSR), Hamburg University of Applied Sciences, Germany
[b] Department of Natural Sciences, Manchester Metropolitan University, Chester Street, Manchester, M1 5GD, UK
[c] Graduate Program in Civil and Environmental Engineering, University of Passo Fundo, Passo Fundo, RS, Brazil
[d] University of São Paulo, School of Economics, Business Administration and Accounting at Ribeirão Preto, Av. Bandeirantes, 3900 Ribeirão Preto, São Paulo, BR, 14040-905, Brazil
[e] School of Economics, Business Administration and Accounting at Ribeirão Preto, University of São Paulo (USP), Avenida dos Bandeirantes 3900, 14040-905, Ribeirão Preto, SP, Brazil
[f] School of Administration, Federal University of Rio Grande do Sul (UFRGS), 855 Washington Luiz St, 90010460, Porto Alegre, RS, Brazil
[g] Hamburg University of Applied Sciences, Faculty of Life Sciences, Research and Transfer Centre Sustainability & Climate Change Management (FTZ-NK), Ulmenliet 20, 21033, Hamburg, Germany

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ABSTRACT

The literature largely agrees about the relevance of higher education institutions in assembling their internal systems to contribute to sustainability challenges. Business schools are also expected to commit to the Sustainable Development Goals and become aligned with the Principles for Responsible Management Education (PRME). Moreover, it is suggested that if a business school is a PRME signatory, the students will likely be educated as responsible leaders. The literature on responsible management education successfully invested in literature reviews, framework development and analyses of the university reports available; however, it lacks solid studies conducted worldwide that aim to understand the extent to which professors are implementing sustainability-related concepts and the PRME principles into teaching as well as assessing if they have support from the top-management administration of their courses. Based on this gap, a world survey was conducted, receiving 969 valid answers from teaching staff in PRME signatory and non-signatory business schools from 104 different countries. Hypothesis testing, descriptive statistics, and frequency analysis were deployed to understand the differences between PRME signatory and non-signatory institutions. The results indicate that PRME signatory business schools' professors significantly tend to include sustainability-related topics in their teaching and receive more support from their institution and superiors.

* Corresponding author.
E-mail addresses: joao.eustachio@haw-hamburg.de, jh.eustachio@gmail.com (J.H.P.P. Eustachio), walter.leal2@haw-hamburg.de (W. Leal Filho), amandasalvia@gmail.com (A.L. Salvia), mtalourencao@usp.br (M. Lourenção), yanamguimaraes@gmail.com (Y.M. Guimarães), laisvtrevisan@gmail.com (L.V. Trevisan), jelena.barbir@haw-hamburg.de (J. Barbir), caldana@usp.br (A.C.F. Caldana).

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1. Introduction

Considerable research attention has been paid to the importance of enterprises contributing to the sustainable development goals (SDGs) either by fostering their positive externalities or mitigating the negative ones (Montiel, Cuervo-Cazurra, Park, Antolín-López, & Husted, 2021) in order to create sustainable value for several stakeholders (Hart & Milstein, 2003) as well as guaranteeing corporate social responsibility (CSR) (Bansal & Song, 2017; Montiel, 2008). Recent studies have explored several ways in which organisations can promote organisational change towards achieving higher levels of sustainability and implementing CSR (Fatima & Elbanna, 2022; Kump, 2021; Sroufe, 2017) where one of the dimensions of success is through sustainability leadership (Eustachio, Caldana, & Leal Filho, 2023; Galpin & Lee Whittington, 2012; Saha, Shashi, Cerchione, Singh, & Dahiya, 2020). This perspective aligns with what John Kotter (2012, p. 60) suggested: "Change, by definition, requires creating a new system, which in turn always demands leadership."

One specific type of organisation that has been gaining attention over the last few years are the higher education institutions (HEIs), and the study of how they are adapting their several internal systems in order to promote organisational change (Hoover & Harder, 2015; Levesque & Wake, 2021) has become key aspect since this allows universities to contribute to the overall Agenda 2030 of sustainable development (SD) (United Nations (UN), 2015) through governance, campus operations, research, outreach and teaching activities (Leal Filho, Amaro, et al., 2021; Sanches, Campos, Gaio, & Belli, 2021).

Furthermore, the same leadership perspective discussed for enterprises also applies in the context of universities, but in a more complex view because of three main aspects. The first is related to universities' need for sustainability leaders (heads of department, deans, vice-rectors and rectors) with specific knowledge, skills, traits and styles to deal with the sustainability challenges and conduct their activities (Leal Filho et al., 2020). Secondly, HEIs, especially business schools, play an essential role in educating students who will eventually become managers and leaders holding important positions at their companies and, therefore, conduct their companies towards a more sustainability-oriented state (Caldana et al., 2021). Third, professors are particular stakeholders capable of assuming several leadership roles at universities, such as teaching (Evans, Homer, & Rayner, 2013; Tian & Huber, 2019); therefore, their role as sustainability leaders should be considered and further explored.

Most recently, a significant focus has been devoted to business schools and the extent to which they are implementing the SDGs and other specific sustainability-related terms (i.e., ESG, CSR, PRME) into and across their strategies and practices (Adhikariparajuli, Hassan, & Siboni, 2021; Haski-Leventhal, Pournader, & Leigh, 2022; Setó-Pamies & Papaoikonomou, 2020). This is evidenced by the growing number of business schools becoming a signatory of the Principles for Responsible Management Education (PRME) - a United Nations initiative aiming to "raise the profile of sustainability in schools around the world". This initiative encourages a change in business schools through six principles (purpose, values, method, partnership and dialogue) for implementing responsible management education (RME) aligned with the SDGs and the UN's Global Compact, influencing the implementation of these goals (UN PRME, 2022a).

Since the launching of the initiative in 2007, the PRME has grown in importance and number of members. The initiative embraces over 800 signatories' business schools around the world, which are expected to proactively work and report their progress towards the education of future responsible leaders to balance companies' economic goals with social and environmental dimensions, also covered by the PRME's six principles (UN PRME, 2022a; 2022b). After the business school becomes a PRME signatory, they are required to provide the sharing information on progress (SIP) report every two years, which can be used either to track its sustainability practices or to report the extent to which they are implementing the SDGs and the PRME principles (UN PRME, 2022b).

Another sign of the initiative's success relies on researchers' engagement in embracing the RME field in several ways. For example, there is a growing interest in exploring the relevance of formal, non-formal and informal education strategies (Blasco, 2012; Caldana et al., 2021; Leal Filho, 2021) and development of theoretical frameworks to support universities in implementing sustainability in management education (Setó-Pamies & Papaoikonomou, 2020). There are also studies on the identification of the most common practices and how business schools are implementing the SDGs and the PRME's six principles (Abdelgaffar, 2021; Assumpção & Neto, 2020). Moreover, studies are also analysing the importance of becoming a PRME to responsible management education, research and outreach (Avelar, Silva-Oliveira, Farina, & Pereira, 2021) and fostering partnerships for the goals with the HEI's external stakeholders (Hauser & Ryan, 2021), assessing the outcomes (Parkes, Buono, & Howaidy, 2017), even studying specific PRME signatory members as case studies.

All the studies indicate the importance of business schools in conducting their activities and assembling their systems in order to adhere to the PRME principles and implement the SDGs. However, the majority represent theoretical assessments, framework development, using PRME signatory business schools as case studies or assessing the SIP of PRME signatories to unveil what has been done in implementing the SDGs and the principles.

In this perspective, despite the value of the research done so far, it also indicates a lack of understanding of the current landscape of PRME signatory business schools compared to the non-signatory ones. Moreover, a significant amount of studies have relied on literature reviews (Ahmad & Bibi, 2022; Avelar, Farina, & da Silva Pereira, 2022), documental analysis of SIP reports (Assumpção & Neto, 2020; Goumaa, Hay, & El Ayouby, 2023; Weybrecht, 2021, 2022), or interviews (Mousa, Massoud, Ayoubi, & Abdelgaffar, 2020; Snelson-Powell, Grosvold, & Millington, 2020), while world surveys with specific stakeholders, such as teaching staff, have not been found.

Therefore, this paper builds on previous studies that suggest that more information is needed from, for example, interviews and surveys conducted with different stakeholders (Assumpção & Neto, 2020) and others that indicate the need to compare PRME signatory schools versus non-signatory (Caldana et al., 2021). In this sense, this paper aims to fill this gap by understanding the perspective of teaching staff holistically in several aspects through the comparison of two groups: the PRME signatory business schools versus PRME-non-signatory business schools.

Precisely, this study's goal is to understand the extent to which there are differences between PRME signatory and non-signatory business school professors in adopting sustainable development aspects in their teaching and the support they receive from the university and their superiors in implementing RME. To obtain data, a world survey was conducted with 969 business school professors from 104 developed, developing and transition countries. Hypotheses testing combined with descriptive statistics and frequency analysis were deployed to understand the differences between the two groups analysed.

To the best of the authors' knowledge, no other study has deployed a world survey to understand quantitatively the importance for a business school of becoming a PRME signatory, especially from the perspective of professors who are key stakeholders in PRME schools and are in a position that allows interaction with the administrative staff, students and potentially with the community that the university is connected. Therefore, this study contributes to the literature and practice in multiple ways. Firstly, it can foster what Assumpção and Neto (2020) explicitly urge about the importance of collecting data in different ways than only exploring the SIPs, such as deploying a world survey to gather the opinions and perspectives of specific stakeholders. Secondly, this research evidences the importance of becoming a PRME signatory business school (Haertle, Parkes, Murray, & Hayes, 2017; UN PRME, 2022b) since it is the first to gather opinions of professors from developed, developing and in transition countries, providing plenty of evidence of the importance of becoming a PRME member for responsible management education (contributing to the UN SDGs) and support provided by the HEI and their superiors. Third, it unveils the little-discussed role of professors as sustainability leaders (Eustachio et al., 2023; Evans et al., 2013; Tian & Huber, 2019) as well as the PRME membership as a university context/institutional environment (Wersun, 2017), which might be capable of influencing the dyads management-professors and professors-students towards sustainability at their HEIs.

Finally, from the practical perspective, the authors see that the results of this research can open the eyes of PRME non-signatory business schools and reflect on the evident advantages of becoming a member.

2. Observing responsible management education through leadership lens

The transformational ability of HEIs in dealing with sustainable development challenges led some authors to argue that universities are 'the green engines of sustainable communities' (Biancardi, Colasante, & D'Adamo, 2023). This statement also stands true for business schools, which are a relevant type of HEI that should be aware of relatively new sustainability-related concepts such as Environmental, Social and Corporate Governance (ESG), Corporate Social Sustainability (CSR) and Principles for Responsible Management Education (PRME) (Haski-Leventhal et al., 2022; Setó-Pamies & Papaoikonomou, 2020).

This general recognition that business schools should be more sustainability-oriented is evidenced by the continuous-growing number of these institutions in becoming PRME signatories, which is an initiative aiming at business schools to become aligned with the SDGs and the UN's Global Compact (UN PRME, 2022a). Since the start of the initiative in 2007, it accounts in 2003 with over 800 signatory business schools around the world.

Once a business school becomes a PRME signatory, it should put effort and change its systems according to the six principles (purpose, values, method, research, partnership and dialogue) to integrate sustainability, responsibility and ethical values into the HEI's several systems such as research, campus operations, outreach and teaching (UN PRME, 2022a).

In this sense, education for sustainable development stands as a strong pillar in the PRME initiative. This pillar aims to guide business schools in adjusting their teaching practices on how to educate future leaders who will eventually become leaders in several types of organisations. From this perspective, for example, how programme coordinators and teaching staff are implementing concepts, practices and strategies related to the SDGs, CSR, and ESG in their teaching practices and embedding the SDGs in the curriculum is gaining attention (Arruda Filho, Hino, & Przybylowicz Beuter, 2019; MacDonald & Shriberg, 2016; Ordaz, Tan, Skett, & Herremans, 2021; Zguir, Dubis, & Koç, 2021).

In this context, there is a recent discussion related to the pedagogies and classroom strategies linked to ESD, where special attention has been given to how the formal, informal, and non-formal approaches are capable of educating students well-versed in sustainability challenges and developing SD competencies (Caldana et al., 2021; Leal Filho, 2021; Ploum, Blok, Lans, & Omta, 2018).

Another example that evidences the importance of how to educate future responsible leaders is the recent initiative called The Impactful Five (i5) - the newest approach to explore how business schools can educate future leaders, providing them with a toolbox with relevant skills and knowledge, much required to overcome sustainability challenges faced by society (UN PRME, 2023). The i5 initiative, therefore, could be considered innovative since it tackles aspects not previously addressed in the literature, especially exploring what would be the pedagogical approaches that could be deployed to educate sustainability-oriented leaders. The initiative is implemented by a global network of business schools that belong to the PRME network, and their activities are conducted in order to: 1) make learning meaningful, 2) facilitate active engagement, 3) design for iteration, 4) develop supportive social interaction and 5) foster joy and well-being (UN PRME, 2023).

Apart from considering PRME as institutional leaders that could serve as an example to other non-signatories and their potential to educate the future generation of responsible leaders, the literature on sustainability in HEIs or education for sustainable development (ESD) explores sustainability leadership in several other strands, yet not in a well-organised way. This perspective is argued by Eustachio et al. (2023), suggesting that literature reviews on sustainability leadership and responsible leadership either are not fully embracing the role of business schools in educating responsible leaders or reporting on the importance of professors and the management staff as leaders, in the process of implementing sustainability-related aspects in universities, such as in education (Eustachio et al., 2023).

In addition to the previously discussed elements, the administrative staff should be considered as an important element in order to promote change in the educational systems of business schools. This entails, for example, understanding the extent to which the

administrative staff occupying top management positions at HEIs are acting as sustainability leaders, adopt sustainability-related leadership styles and have the essential traits, skills and other aspects that could foster the implementation of the SDGs into the HEIs several systems (Alkaher & Avissar, 2018; Leal Filho, Salvia, & Eustachio, 2023).

Finally, it is worth considering the importance of context in which the interaction dyads such as professors-students and administrative staff-professors take place might influence the success of ESD in business schools. In this sense, to the best of the authors' knowledge, no previous studies tried to measure the impact of this dimension, which could be, for example, if the HEI is a PRME signatory of United Nations principles for responsible management education (United Nations, PRME, 2022a).

Fig. 1 brings all previously discussed elements into a holistic leadership framework for RME. The authors believe that being a PRME signatory or non-signatory business school serves as the HEIs' internal context, which could hinder or foster the bidirectional participation of internal stakeholders (administrative staff, professors, and students) (Yáñez, Uruburu, Moreno, & Lumbreras, 2019) in a so-called education for sustainable development triad.

Thus, while PRME signatory business schools might contribute to offering an environment that encourages business schools' internal stakeholders to embed SDGs, other elements also need to be considered. Given this, it is seen that the internal stakeholders should have ethics, responsibility and sustainability competencies to insert SDGs into the organisation (Laasch, Moosmayer, & Antonacopoulou, 2022). Besides, to deliver RME, the SDGs should be embedded through awareness building, institutionalisation, knowledge creation, and knowledge dissemination (Azmat, Jain, & Sridharan, 2023). Moreover, along with being concerned with educating sustainable leaders, business schools must reflect on their own impact on the environment and, more importantly, how to address them (Gill, 2021).

Nevertheless, it is essential to consider that this process is cyclic, and feedback channels from organisations are expected to exist so universities can constantly understand the challenges and adapt their internal educational systems to keep educating students capable of dealing with the myriad of sustainability challenges (Slager, Pouryousefi, Moon, & Schoolman, 2020).

3. Methods

3.1. Methodological background and sample description

This study was based on an international survey sent to the teaching staff (henceforth referred to as professors) of business schools worldwide, where the methodological decisions made by the authors were based on some relevant published papers that adopted similar data collection and data analysis techniques (see. Caldana et al., 2021; Leal Filho et al., 2023).

The survey was initially answered by 1155 professors, and after a screening process, the authors dropped 146 entries for two reasons: some of the respondents do not belong to business schools and 2) incomplete or data without good quality (ex., participants who provided the same answer in all the questions). Therefore, this study followed with 969 complete and valid answers from 104 different countries.

Fig. 2 describes the country of the participants. From the 969 valid answers received, 350 of them (36%) are professors in developed countries, and 619 of them (64%) belong to developing or transition countries, according to the United Nations' current classification criteria (United Nations, 2022). The figure also shows the frequency of answers for each one of the 104 countries.

It is worth considering that because the participation in the survey was voluntary, it generated a variety of respondent's origins, which becomes unavoidable that some countries are better represented than others. The different numbers, however, do not necessarily negatively impact since groups of respondents belonging to PRME and non-PRME business schools as well as from HEIs located

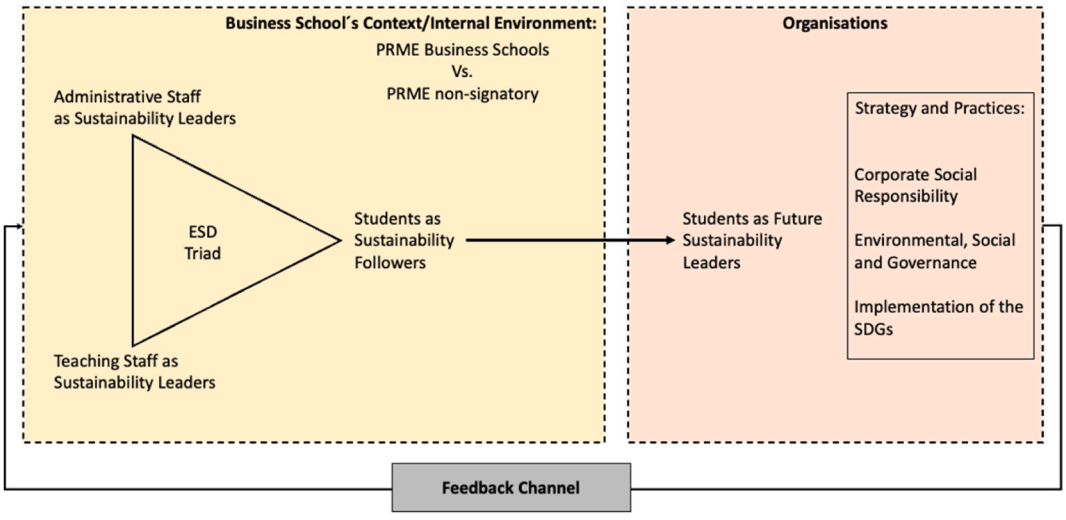
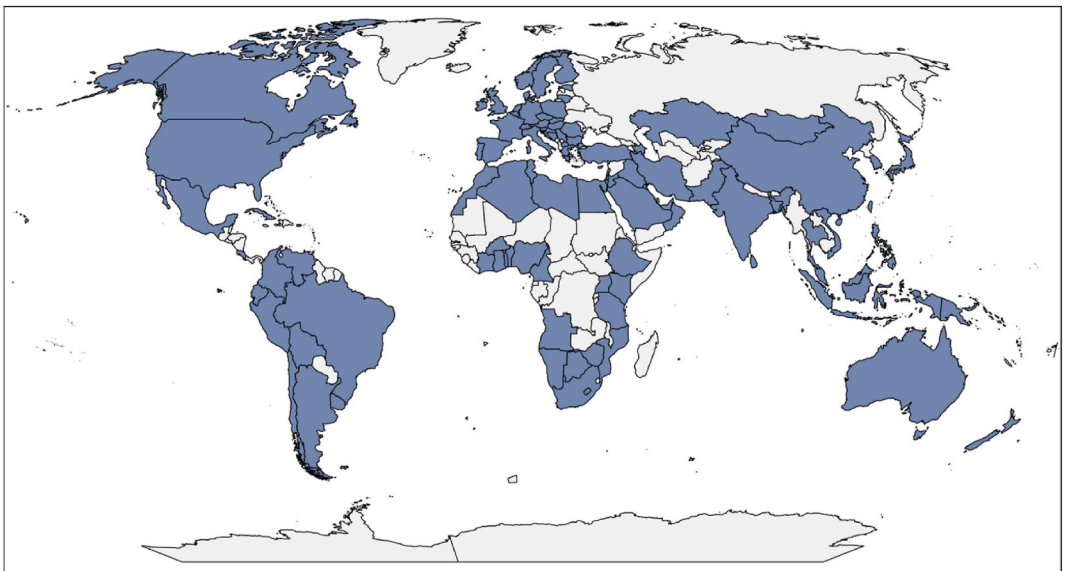


Fig. 1. Leadership framework for responsible management education.



Brazil	82	Pakistan	10	Finland	4	Togo	1
Australia	53	Chile	9	Botswana	4	Venezuela	1
India	53	Greece	8	Israel	3	Burkina Faso	1
USA	47	Tunisia	8	Iraq	3	Serbia	1
South Africa	41	Taiwan	8	Croatia	3	Morocco	1
UK	35	Ecuador	8	Saudi Arabia	3	Bosnia and Herzegovina	1
Canada	34	Poland	8	Uganda	3	Papua New Guinea	1
Egypt	32	Peru	8	Singapore	3	Slovakia	1
Nigeria	28	Switzerland	7	Cyprus	3	Cameroon	1
Ghana	28	United Arab Emirates	7	Belgium	3	Slovenia	1
Turkey	27	Kenya	7	Algeria	3	Mongolia	1
Colombia	26	Vietnam	7	Lithuania	2	Namibia	1
Italy	26	Japan	7	Uruguay	2	The Netherlands	1
Indonesia	23	Tanzania	6	Brunei Darussalam	2	South Korea	1
Malaysia	22	Austria	6	Mauritius	2	Lesotho	1
Iran	19	Bangladesh	6	Zimbabwe	2	Barbados	1
Spain	19	Denmark	6	Estonia	2	Libya	1
Argentina	19	Oman	6	Philippines	2	Sri Lanka	1
Thailand	16	Romania	5	Costa Rica	2	Cuba	1
Germany	16	Hungary	5	Bahrain	2	Kazakhstan	1
Ethiopia	11	Benin	5	Mozambique	2	Puerto Rico	1
Sweden	11	Portugal	5	Netherlands	2	Angola	1
China	11	Qatar	4	Côte d'Ivoire	2	Bolivia	1
France	11	Ireland	4	Czech Republic	2	North Macedonia	1
Jordan	10	Mexico	4	Norway	2	Azerbaijan	1
New Zealand	10	Kuwait	4	Lebanon	2	Bulgaria	1

Fig. 2. Country Distribution of Valid Responses
Notes: n = 969 respondents. 104 different countries.

in developed, in-transition and developing countries are represented, contributing to the main aim of the paper, which is to showcase the extent to which PRME signatories are more sustainability-oriented when compared to those who do not belong to a PRME business school. In this context, the authors recognise that the lack of representativeness of some countries could be a limitation of this study, which is further discussed in the last section of this paper.

Table 1 details the sample where 33% of the respondents reported having up to 39 years, and the remaining 67% more than 40 years. Regarding gender, the survey received 31% answers from female professors, 69% from males, and 1% that selected the option 'other or prefer not to say'. It is also worth considering that, due to the fact this research aimed to analyse the perspective of professors, the questionnaire was designed to receive answers from the teaching staff, who reported conducting activities strictly related to teaching (4%) or teaching and research (96%).

Regarding the HEIs that the participants are employed, 25% of the participants responded their HEIs have up to 5000 students, 17% up to 10,000, 22% up to 20,000, 12% up to 30,000, and the remaining 28% belong to HEIs with more than 30,000 students. Among these institutions, 268 (28%) are PRME signatories, 139 (14%) are not signatories, and the majority, 562 (58%), reported as 'I do not know'. Finally, the participants were asked which program they belonged to (multiple choice question), and the majority of the respondents reported as affiliated with a business management course/programme, followed by 27% to economic/economic sciences, 20% to entrepreneurship, 19% to marketing/marketing management/advertising; 19% to finances or accounting; 13% international business and 8% public management.

Table 1
Sample description.

Category	Options	Number	Percentage
Age	18–29 Years	34	4%
	30–39 Years	285	29%
	40–49 Years	362	37%
	50–59 Years	174	18%
	More than 60 Years	114	12%
Gender	Female	296	31%
	Male	668	69%
	Other/Prefer not to say	5	1%
Country categories	Developed	350	36%
	Developing or In Transition	619	64%
Position at the HEI	Teaching	41	4%
	Teaching and Research	928	96%
HEI category	Private Higher Education Institutions	255	26%
	Public Higher Education Institutions	714	74%
HEI's number of students	Up to 5000	241	25%
	Up to 10,000	166	17%
	Up to 20,000	213	22%
	Up to 30,000	113	12%
	More than 30,000	236	24%
PRME signatory?	Yes	268	28%
	No	139	14%
	I do not know	562	58%
HEI Programme	Business Management	546	56%
	Economic/Economic Sciences	259	27%
	Entrepreneurship/Entrepreneurial Studies	192	20%
	Marketing/Marketing Management/Advertising	187	19%
	Finances/Accounting	178	18%
	International Business/Trade/Commerce	130	13%
	Public Management	74	8%

Note: 969 respondents.

All 969 valid answers were considered for further analysis according to the goals of this research. The following two subsections underline the data collection and data analysis strategies deployed.

3.2. Data collection strategy

To conduct the survey, a questionnaire was initially created in the English language where each question was based on the relevant research on the field published by academic journals and the PRME's six principles fields (see. Collazo Expósito & Granados Sánchez, 2020; DuPuis & Ball, 2013; Goodall & Moore, 2019; Leal Filho et al., 2020; UN PRME, 2022a; 2022b). Before being disseminated among the participants, the questionnaire was sent to four experts in the field, who kindly agreed to analyse and provide suggestions for improvement in order to guarantee the questionnaire's content and face validity. In the second stage, the questionnaire was translated into Portuguese and Spanish by two researchers fluent in these languages, and then they back-translated into English to check if the content was preserved from the original version first produced in English. The reason behind having three versions in three different languages was to increase the number of participants in countries where respondents might not be able to answer in English, such as Latin American countries.

Four blocks of questions composed the design of the questionnaire. The first is related to the participant's background information as well as the details about their HEIs; the second concerns the implementation of sustainability-related concepts such as CSR, ESG, PRME and the ESGs; the third, in turn, aims to gather information on the support offered to academic staff and the fourth is related to how professors are implementing sustainability into teaching.

Table 2 summarises the variables and provides descriptive statistics. The first group of questions refer to the sustainability implementation aspects in teaching; the second is related to the support provided to professors by the HEIs and their superiors, and the third refers exclusively to the adoption of sustainability-related concepts into teaching. These questions were developed based on previous work published in the ESD research fields (see. Collazo Expósito & Granados Sánchez, 2020; DuPuis & Ball, 2013; Goodall & Moore, 2019; Leal Filho et al., 2020; UN PRME, 2022a; 2022b). Each question was developed using a 5-point Likert Scale, and the possible answers can be seen in Table 2.

The data collection took place online through a world survey. Before the respondents started to answer the questionnaire, they were asked to read the informed consent form. Upon agreement, the participants would automatically be transferred to the questionnaire.

The authors started disseminating the survey to their contacts from business schools and through the Inter-University Sustainable Development Research Programme (IUSDPR) network (IUSDRP, 2022). Also, during this stage, the authors opted for a snowball sampling technique, asking the participants to share the survey with other colleagues from business schools (Goodman, 1961). In the second stage, the survey was sent to a database of business school professors built by the author. The online survey remained open from June 2022 to October 2022, and 969 valid answers were received from PRME signatory and non-signatory professors worldwide.

Table 2
Descriptive Statistics.

Coding	Question	Min.	Max.	Mean	Std. Deviation
TEACHING-1 [b]	I prepare my classes in order to foster the capabilities of students to be future generators of sustainable value for business and society at large and to work for an inclusive and sustainable global economy.	1	5	3.62	1.101
TEACHING-2 [a]	I have voluntarily revised the content of my classes to add more issues connected to the SDGs.	1	5	3.42	1.208
TEACHING-3 [b]	I incorporate into the academic activities, curricula, and organizational practices the values of global social responsibility as portrayed in international initiatives such as the United Nations Global Compact.	1	5	3.15	1.199
TEACHING-4 [b]	I create and use educational frameworks, materials, processes, and environments that enable effective learning experiences for responsible leadership	1	5	3.36	1.148
TEACHING-5 [b]	I create opportunities to interact with managers of business corporations to extend the knowledge of their challenges in meeting social and environmental responsibilities and to explore jointly effective approaches to meeting these challenges.	1	5	2.93	1.257
TEACHING-6 [b]	I facilitate and support dialogue and debate among educators, students, businesses, government, consumers, media, civil society organisations and other interested groups and stakeholders on critical issues related to global social responsibility and sustainability.	1	5	2.96	1.240
TEACHING-7 [a]	I use communities' sustainability-related challenges as case studies or examples in my classes.	1	5	3.12	1.252
TEACHING- 8 [a]	I encourage my students to engage in community projects related to the social and/or environmental dimensions.	1	5	3.29	1.273
SUPPORT-1 [a]	My superior or the program coordinator asked me to add more issues connected to the SDGs in the content of my classes.	1	5	2.31	1.268
SUPPORT-2 [a]	The curricula of the courses I teach at my university have been revised to include the SDGs.	1	5	2.75	1.341
SUPPORT-3 [a]	The SDGs are part of my institution's educational plans and activities.	1	5	3.00	1.304
SUPPORT-4 [d]	Considering the approach used at your institution, how do you evaluate the support currently offered to academic staff to teach about the SDGs	1	5	3.09	1.224
SUPPORT-5 [d]	Considering the approach used at your institution, how do you evaluate the support currently offered to academic staff to teach about the CSR	1	5	3.14	1.197
SUPPORT-6 [d]	Considering the approach used at your institution, how do you evaluate the support currently offered to academic staff to teach about the ESG	1	5	3.06	1.186
SDGs [c]	SDGs - Sustainable Development Goals	1	5	3.00	1.187
CSR [c]	CSR – Corporate Social Responsibility	1	5	2.96	1.200
ESG [c]	ESG – Environmental, Social and Corporate Governance	1	5	2.91	1.226
PRME [c]	PRME – Principles of Responsible Management Education	1	5	2.41	1.270

Notes: 5-point Likert Scale.
[a] Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4), Strongly agree (5).
[b] Never (1); Rarely (2); Sometimes (3); Often (4) and Always (5).
[c] Not at all (1); To a little extent (2); To a moderate extent (3); To a great extent (4); To a very great extent (5).
[d] Very poor (1); Poor (2); Acceptable (3); Good (4); Very Good (5).

Despite receiving a high number of responses, this study used non-probability sampling. Because sampling techniques conducted online often reach small samples (Barratt, Ferris, & Lenton, 2015), the final number of 969 was considered reasonable for the purpose of this paper since there is no other study with such a high number of answers in the field. Moreover, the authors believe that adopting probability sampling in business schools is not feasible because of their inherent diversity and barriers (Lamm & Lamm, 2019). Therefore, the challenges in guaranteeing sampling significance are mostly because professors usually do not have time or simply are not willing to engage in answering surveys. The authors, however, acknowledge that non-probability online sampling might result in biases, which is further discussed in the last section as a limitation of this study.

3.3. Data analysis strategy

The data analysis stage was conducted according to the goals of this study and the theoretical framework presented in the second section. In the first stage, all the data gathered was organised into a single Excel spreadsheet, where dummy variables were created to compare results (e.g., PRME signatory and non-signatory, male and female respondents, private and public schools, etc.), and codes were given to help with the analysis (Table 2). In the second stage, normality tests were performed to check if the independent samples from the PRME signatory and non-signatory followed a normal probability distribution (Appendix, Table A1). Because the data from each group are not normally distributed (Kolmogorov–Smirnov test; $p < 0.05$), the authors conducted non-parametric independent samples using the Mann-Whitney method. In addition, simple descriptive statistics, frequency analyses and graphs were adopted to support the investigation, also commonly adopted in several studies in the field (see Caldana et al., 2021; Leal Filho et al., 2022). The software used to test the hypotheses was the IBM SPSS Statistics 26 software (IBM SPSS Statistics 26, 2019).

4. Results

Table 3 brings the main results related to hypothesis testing. Overall, the distribution of answers for each one of the questions answered by the professors demonstrated to be significantly different, considering a very low significance level ($p < 0.0001$).

Fig. 3 details the answers provided by the 969 professors from PRME signatory and non-signatory business schools. The participants were asked to indicate the extent to which they apply sustainability-related concepts in their teaching. The results suggest that, on average, the teaching staff from PRME signatory business schools significantly tend to adopt more sustainability concepts such as PRME, CSR, SDGs and ESG when compared to those who do not work in a PRME business school. The implementation of the SDGs into teaching received the highest scores in both groups; however, they were significantly different between them. Approximately 49% of PRME signatory business professors reported implementing the SDGs in their teaching to a great extent and a very great extent, compared to only 29% from the non-signatory schools. It is also worth noting that the percentage of professors that do not implement the SDGs into teaching is much higher in the non-signatory business compared to those from signatory business schools, with a difference of 11pp.

This trend repeats for the other concepts with different magnitudes. For example, when considering teaching staff from PRME signatory, 46% reported adopting CSR and 44% adopting ESG to a great or very great extent in their teaching. In contrast, only 28% of professors from non-signatory business schools reported implementing CSR and ESG to a great or a very great extent. Surprisingly, when it comes to the Principles of Responsible Management Education, professors from both categories presented a scenario where they do not apply or apply to a little extent; however, when comparing both groups, the difference is 25pp, where 15% of the professors from signatory schools reported they do not apply the PRME concept into their teaching, while 40% of the professors from non-PRME schools do not use this concept.

Fig. 4 complements Fig. 3 and shows a summary with the average of answers calculated for each category, where it was possible to better understand the hypotheses tested. On average, the implementation of the SDGs, CSR and ESG received similar answers, varying between 3.3 and 3.4 for PRME signatory and 2.8 for non-signatory. The difference of 0.6 (SDG and CSR) and 0.5 (ESG) between both categories was also demonstrated to be statistically significant ($p < 0.0001$). The adoption of the concept PRME into teaching, however, received the lowest answers in both categories but the highest difference (0.8) when compared to the two categories, also with a very low significance level ($p < 0.0001$).

Fig. 3, in turn, reports on the teaching practices of professors and support from HEIs and their superiors in both categories analysed. On average, the answers of PRME signatory schools' professors vary from 'neither agree nor disagree' to 'agree', while the average of answers provided by professors from non-signatory schools indicate they 'disagree' or 'neither agree nor disagree'. Among the questions, Fig. 4 shows that TEACH-1 and TEACH-2, which consider the extent to which professors apply sustainability into their teaching and have revised the curricula to implement the SDGs, received the highest scores. On the other hand, questions TEACH-5 and TEACH-4, which explore whether the professors create and use educational frameworks or create opportunities to interact with managers to explore jointly effective approaches towards sustainable development, received the lowest scores for both categories.

The participants were also asked about their opinions on the support they receive from their HEIs and superiors for implementing sustainability into their teaching (Fig. 5). The results of both groups are lower than those related to sustainability teaching practices. The PRME signatory business school respondents provided the highest scores to question SUPPORT-3 (the SDGs are part of my institution's educational plans and activities). On the other hand, SUPPORT-1 and SUPPORT-2 and SUPPORT appeared to have the lowest scores from the non-signatory professors when asked if their superiors or the program coordinator asked them to add more issues connected to the SDGs in the content of classes or if teaching practices at their HEI have been revised to include the SDGs,

Table 3
Summary of Tests – PRME Signatory vs. PRME Non-Signatory Business Schools.

Dimension	Codes	Null Hypothesis (H_0)	Sig.	Decision
Teaching practices	* TEACH-1	The distribution of TEACH-1 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* TEACH-2	The distribution of TEACH-2 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* TEACH-3	The distribution of TEACH-3 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* TEACH-4	The distribution of TEACH-4 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* TEACH-5	The distribution of TEACH-5 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* TEACH-6	The distribution of TEACH-6 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* TEACH-7	The distribution of TEACH-7 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* TEACH-8	The distribution of TEACH-8 is the same across categories of PRME signatory?	<0.0001	Reject H_0
Support for sustainability teaching	* SUPPORT-1	The distribution of IC-1 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* SUPPORT-2	The distribution of IC-2 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* SUPPORT-3	The distribution of IC-3 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* SUPPORT-4	The distribution of IC-4 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* SUPPORT-5	The distribution of IC-5 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	* SUPPORT-6	The distribution of IC-6 is the same across categories of PRME signatory?	<0.0001	Reject H_0
Sustainability-related concepts	SDGs	The distribution of IC-6 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	CSR	The distribution of IC-6 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	ESG	The distribution of IC-6 is the same across categories of PRME signatory?	<0.0001	Reject H_0
	PRME	The distribution of IC-6 is the same across categories of PRME signatory?	<0.0001	Reject H_0

Notes: Independent-samples Mann–Whitney *U* test. *p < 0.0001. Categories: 1) PRME signatory business school; 2) PRME non-signatory business school.

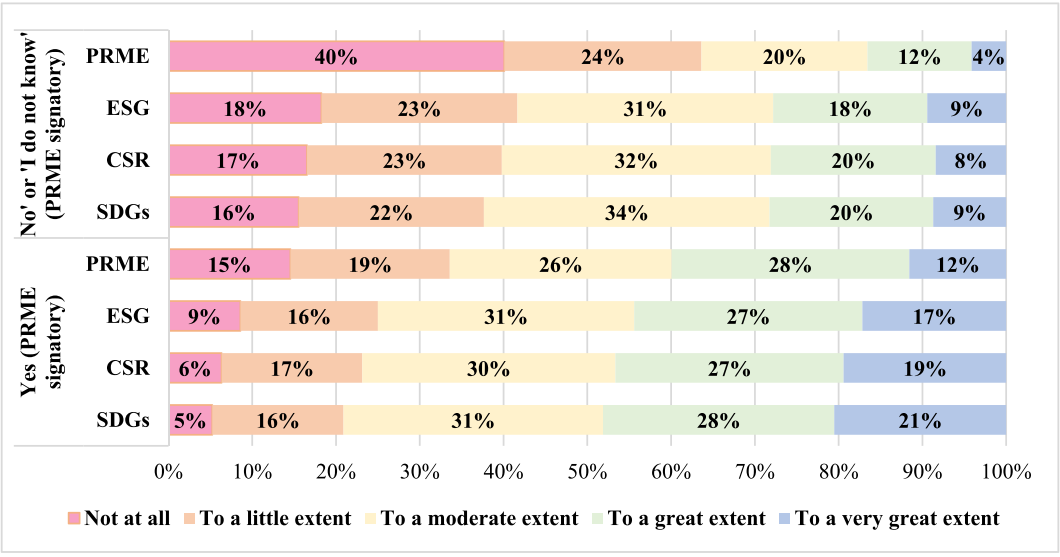


Fig. 3. Adoption of Sustainability-Related Concepts in Teaching
Note: n = 969 respondents
PRME signatory = 268; 'No' or 'I do not know' = 701.

Fig. 4. Adoption of Sustainability-Related Concepts
Notes: Average of answers. Not at all = 1, to a little extent = 2; to a moderate extent = 3; to a great extent = 4; to a very great extent = 5
* $p < 0.0001$ – Independent-Samples Mann–Whitney *U* Test.

generating a difference of 0.8, 0.9 and 0.8 respectively.

Despite the findings presented before, it is important to consider, however, that the differences found could be a result of other characteristics of the sample and not due to the fact of being a PRME signatory or not. In this sense, specific samples were isolated and tested against the two categories for each particular sample related to gender, age, country category, type of HEIs and programmes (business management, economic sciences, finances and accounting and entrepreneurship). Table 4 presents the results for each sample, where from the 72 items tested, 69 questions were supported, and the groups showed to be statistically different ($p < 0.05$). The only questions that it was not possible to affirm the existence of a statistical difference between the groups tested were related to the sample with professors from finance and accounting programmes, more specifically considering issues related to the support offered to professors and the adoption of the PRME and ESG concepts into teaching.

5. Discussion

The results evidence that, in general, becoming a PRME signatory business school can foster universities' practices and organisational toward a more sustainability-oriented state (Blanco-Portela et al., 2017; Rieg et al., 2021). As stated by Haertle et al. (2017), there is a need for the PRME community not only to increase its brand value but also to become the most effective in contributing to

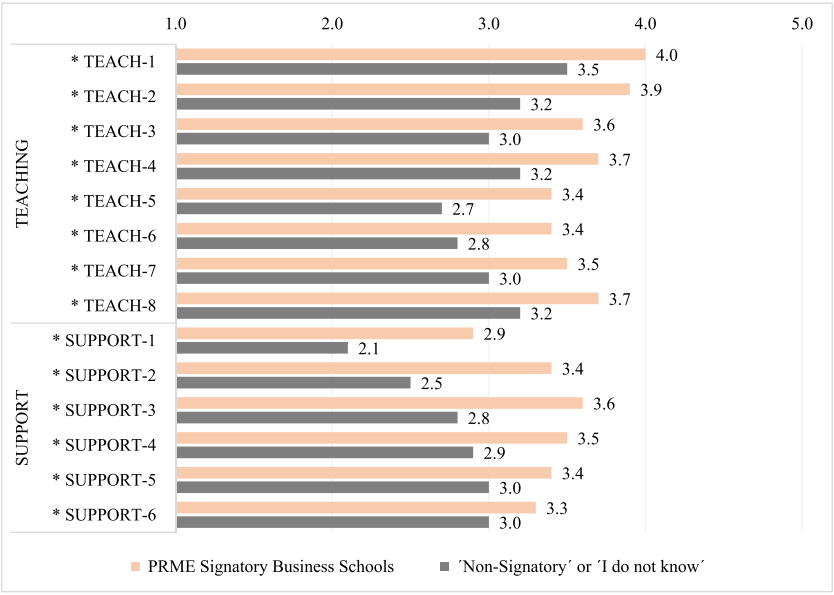


Fig. 5. Support Offered Towards Responsible Management Teaching
Note: Average of answers
* $p < 0.0001$ – Independent-Samples Mann–Whitney *U* Test.

RME in the next decade (2018–2027). The findings in this study support this statement since, in general, PRME business schools' professors demonstrated to implement sustainability-related concepts, adopted sustainability teaching practices and received more support from their HEIs than those who did not belong or reported not knowing if their institutions are PRME members.

Despite the results from PRME signatories being promising and aligned with what Haertle et al. (2017) have visualised, it is still worrying since from the sample of 969 professors surveyed, 14% of the respondents reported their institution is not a signatory, and another 58% stated that they do not know if their institutions are PRME members. In other words, 72% of the sample is not operating through (or engaged) by the six PRME principles (UN PRME, 2022). When considering the entire population of business schools (and professors) that are not PRME signatories, the scenario of resistance to implementing RME is scaled up. This perspective suggests that the PRME engagement models proposed so far should be reviewed to gain efficiency or advance. In this sense, it is important to involve stakeholders outside and inside the business schools where networks can effectively contribute to policy frameworks so business schools can promote organisational change towards sustainable development (Vargas et al., 2019).

Regarding the adoption of terms, it has become clear that PRME business schools' professors tend to use terms related to sustainability more often than when compared to the group of PRME non-signatory business schools and those who do not know if their business school is a signatory. This finding is expected because these concepts are directly or indirectly connected to the PRME's six principles and goals (UN PRME, 2022a). For example, CSR means corporate social responsibility, and it is related to balancing "economic prosperity, social integrity, and environmental responsibility" (Bansal & Song, 2017, p. 109; Montiel, 2008, p. 246, p. 246), and ESG is a concept more related in creating value to the company that adopts environmental, social and corporate governance, where investments should go beyond the economic interests not only it aims to deliver value to the investors, but also to address the needs of all stakeholders connected to the company (Gillan, Koch, & Starks, 2021), including meeting the 2030 Agenda of Sustainable Development to achieve the sustainable development goals (López-Concepción, Gil-Lacruz, & Saz-Gil, 2022; Lu et al., 2021).

Apart from the sustainability-related concepts addressed, this study also aimed to understand sustainability teaching practices. The highest scores related to the teaching of responsible management in the perspective of PRME schools rely on the preparation of classes and revision of the content, where these practices are expected since they are adherent to the PRME's principles 1, 2 and 3 as well as standard practices focused on curricular and pedagogical perspectives, as identified by (Abdelgaffar, 2021). The lowest scores, on the other hand, are related to the ability of the professor to go beyond just implementing sustainability aspects into their teaching; they require extra effort in exploring non-conventional learning strategies (Leal Filho, 2021), especially connecting their classes with sustainability challenges faced by external stakeholders and society (Leal Filho et al., 2019).

In terms of support offered by professors of business schools, the questions that received the highest scores from PRME professors were the fact that the SDGs are part of their HEIs educational plans and activities, followed by the belief of professors that the curricula of the courses they teach have been revised to include the SDGs and the idea that the HEI offer a good the academic staff to teach about the SDGs, evidencing that institutional support is a crucial element (Leal Filho, Pallant, Enete, Richter, & Brandli, 2018). Among the most significant difficulties in implementing, SUPPORT-1 has received the lowest scores for PRME signatories and non-signatories. This is related to the professors' superiors supporting professors in adding more issues connected to the SDGs in the content, suggesting that leadership is an essential issue from the professor's perspective (Leal Filho et al., 2020).

Table 4
Hypotheses testing.

Dimensions	Null Hypothesis	Sig.	*N*PRME signatory	*N* PRME non-signatory	Avg. PRME signatory (A)	Avg. PRME non-signatory (B)	Difference (A-B)
Female Respondents	*Avg. – Teach	0,00000	86	210	† 3,5	3,1	0,5
	*Avg. – Support	0,00000			3,3	2,8	0,5
	*SDGs	0,00001			3,4	2,8	0,5
	*PRME	0,00000			3,3	2,9	0,5
	*ESG	0,00036			3,3	2,8	0,5
	*PRME	0,00000			**3,0**	‡ **2,2**	**0,7**
Male Respondents	*Avg. – Teach	0,00000	182	486	3,9	3,1	0,8
	*Avg. – Support	0,00000			3,5	2,6	0,8
	*SDGs	0,00000			† 3,6	2,8	0,7
	*PRME	0,00001			3,5	2,7	0,8
	*ESG	0,00001			3,2	2,7	0,6
	*PRME	0,00000			**3,2**	‡ **2,0**	**1,1**
Up to 39 years	*Avg. – Teach	0,00000	93	226	† 3,8	3,2	0,6
	*Avg. – Support	0,00000			3,5	2,8	0,7
	*SDGs	0,00018			3,5	3,0	0,5
	*PRME	0,00023			3,4	2,9	0,6
	*ESG	0,00036			3,4	2,8	0,5
	*PRME	0,00000			**3,2**	‡ **2,3**	**0,9**
Over 40 years	*Avg. – Teach	0,00000	175	475	† 3,6	3,0	0,5
	*Avg. – Support	0,00000			3,3	2,7	0,6
	*SDGs	0,00000			3,4	2,8	0,6
	*PRME	0,00000			3,3	2,8	0,6
	*ESG	0,00001			3,2	2,7	0,5
	*PRME	0,00000			**2,9**	‡ **2,1**	**0,8**
Developing and in transition countries	*Avg. – Teach	0,00000	169	450	† 3,6	3,2	0,5
	*Avg. – Support	0,00000			3,4	2,7	0,6
	*SDGs	0,00000			3,4	2,9	0,5
	*PRME	0,00005			3,3	2,8	0,4
	*ESG	0,00015			3,3	2,9	0,4
	*PRME	0,00000			**3,1**	‡ **2,3**	**0,8**
Developed countries	*Avg. – Teach	0,00000	99	251	† 3,7	2,9	0,7
	*Avg. – Support	0,00000			3,3	2,7	0,6
	*SDGs	0,00000			3,5	2,7	0,8
	*PRME	0,00000			3,5	2,8	0,8
	*ESG	0,00001			3,3	2,6	0,7
	*PRME	0,00000			**2,9**	‡ **2,0**	**1,0**
Public HEI	*Avg. – Teach	0,00000	183	531	† 3,6	3,0	0,6
	*Avg. – Support	0,00000			3,2	2,7	0,6
	*SDGs	0,00000			3,3	2,8	0,5
	*PRME	0,00000			3,3	2,8	0,6
	*ESG	0,00000			3,3	2,7	0,5
	*PRME	0,00000			**3,0**	‡ **2,2**	**0,8**
Private HEI	*Avg. – Teach	0,00001	85	170	† 3,7	3,2	0,5
	*Avg. – Support	0,00000			3,6	2,9	0,7
	*SDGs	0,00000			3,6	2,9	0,7
	*PRME	0,00060			3,4	2,9	0,5
	*ESG	0,00534			3,3	2,8	0,4
	*PRME	0,00000			**3,1**	‡ **2,2**	**0,9**
Business Management	*Avg. – Teach	0,00000	169	377	† 3,8	3,2	0,6
	*Avg. – Support	0,00000			3,4	2,8	0,6
	*SDGs	0,00000			3,6	2,9	0,6
	*PRME	0,00004			3,5	3,0	0,4
	*ESG	0,00003			3,4	3,0	0,4
	*PRME	0,00000			**3,1**	‡ **2,4**	**0,8**
Economics	*Avg. – Teach	0,00003	61	198	† 3,5	2,9	0,6
	*Avg. – Support	0,00001			3,3	2,7	0,6
	*SDGs	0,01383			3,2	2,8	0,4

(*continued on next page*)

Table 4 (*continued*)

Dimensions	Null Hypothesis	Sig.	*N*PRME signatory	*N* PRME non-signatory	Avg. PRME signatory (A)	Avg. PRME non-signatory (B)	Difference (A-B)
	*PRME	0,00014			2,9	2,3	0,7
	*ESG	0,00019			3,1	2,4	0,6
	*PRME	0,00000			**3,0**	‡ **1,9**	**1,0**
Finances and Accounting	*Avg. – Teach	0,01357	67	111	† 3,4	2,9	0,4
	ns Avg. – Support	0,40645			2,9	2,8	0,1
	*SDGs	0,00308			3,3	2,7	0,5
	ns PRME	0,09816			3,3	3,0	0,3
	ns ESG	0,07967			3,3	3,0	0,3
	*PRME	0,00000			**2,9**	‡ **2,0**	**0,9**
Entrepreneurship	*Avg. – Teach	0,00212	59	133	† 3,4	3,0	0,5
	*Avg. – Support	0,03996			3,1	2,8	0,3
	*SDGs	0,01588			3,6	3,2	0,4
	PRME	0,00320			3,6	3,1	0,5
	*ESG	0,01024			3,5	3,0	0,5
	*PRME	0,00008			**3,3**	‡ **2,5**	**0,8**

Notes: Independent-samples Mann–Whitney *U* test. *$p < 0.01$. *ns* = not supported.
† Highest value. ‡ Lowest value. Bold: highest difference.
Categories: 1) PRME signatory; 2) PRME non-signatory.

Finally, HEIs, especially business schools, stand at the nexus of driving societal change towards sustainability. Their growing commitment is evident with the rising number of PRME signatories, advocating for sustainability's systemic integration in research, operations and teaching (Biancardi et al., 2023; UN PRME, 2022a).

However, this integration in teaching is multifaceted, involving formal, informal, and non-formal learning approaches, as well as innovative methodologies such as the i5 initiative (Caldana et al., 2021; Leal Filho, 2021; UN PRME, 2023). Yet, as critical as the role of teaching staff and adopted pedagogies are, there is still a need to understand the leadership dynamics (Eustachio et al., 2023) that could change business schools' educational systems towards RME. This entails at least two other dimensions such as 1) understanding how favourable the environment/context of the HEI is for changing (e.g. being a PRME signatory business school) (UN PRME, 2022a), and 2) the level of support professors receive from the administrative staff (Leal Filho et al., 2020).

6. Conclusions

This study aimed to understand the extent to which there are differences between PRME signatory and non-signatory business school professors in adopting sustainable development aspects in their teaching and the support they receive from the university towards RME. In order to achieve its goals, the authors collected 969 valid answers from business school professors around the world (104 different countries). In general, the results indicate statistical significance where, on average, it is possible to say that PRME business school professors tend to adopt sustainability-related concepts and sustainability teaching practices and receive more support from their HEIs and superiors.

The results and discussion bring relevant implications for theory and practice. Concerning theoretical implications, it is the first study conducted worldwide designed to compare PRME signatory business schools and PRME-non-signatory business schools in order to understand the extent to which professors implement sustainability-related concepts and the PRME in their teaching as well as assess if they have top-management administration support. Second, this research extends the literature by providing teachers' perceptions regarding their education practices and the support they receive from the university in implementing RME. Third, our study also sheds light on the role of professors as sustainability leaders in implementing PRME in universities. Fourth, the results can be seen through the sustainability leadership theory lens, where the PRME can act as a context affecting the dyads: 1) management staff – teaching staff, 2) management staff – students and 3) teaching staff – students.

The practical implications of this study are threefold. Firstly, it evidences the importance of business schools becoming PRME signatories. This seems to be a relevant contextual change for the university to foster the implementation of sustainability and RME. Secondly, the share of answers provided by PRME non-signatories and professors who do not know if their business school is a signatory creates an alert since education for sustainable development might not be implemented in their institutions; this is even more concerning because these represent only a sample of the whole population of non-signatory business schools and the number of professors who do not make efforts to connect their disciplines with the sustainable development goals or other business sustainability-related terms and practices such as CSR and ESG.

The authors acknowledge that this study has limitations, which can be viewed as opportunities for future research. While this is the most comprehensive survey comparing PRME signatory to non-signatory business schools, its use of a convenience sampling approach introduces potential bias. The non-probability sampling method may not capture the full diversity of the broader population, thus challenging the generalizability of the findings beyond the specific sample. This also brings to discussion the lack of representativeness of some countries, which the authors believe that conducting other surveys in specific countries or continents should be considered for future studies in order to capture relevant cultural aspects of business schools.

In addition, this study combined the answers of professors who stated they do not belong to a PRME business school and those who are unsure about their institution's status. The authors adopted this approach based on the rationale that those who stated they were unaware of their school's PRME status are likely not part of a PRME signatory business school. This is because PRME-affiliated schools are anticipated to actively integrate and promote numerous sustainability initiatives, activities, and the SDGs within their educational, research, and administrative frameworks. Additionally, such schools would typically engage their teaching staff in understanding and assessing the institution's efforts towards embedding sustainability in their curricula. Future studies could try to understand the possible differences between these three groups or even reveal why professors do not know if they belong to a PRME signatory business school.

Other future research ideas in this field should consider alternative sampling techniques to reduce bias and enhance generalizability. In this perspective, for subsequent research, it would be beneficial to involve a larger pool of respondents, not just through cross-sectional data but by assessing how business schools adopt RME over time. It would also be insightful to determine if PRME-affiliated schools adopt RME principles faster than their non-affiliated counterparts. Moreover, gathering data via interviews and contrasting sustainability teaching models between the two categories of schools could provide a deeper understanding. Also, the authors believe that new research should focus on validating the constructs used in this paper, as well as understanding the possible relationships between them through quantitative techniques such as structural equation modelling. Lastly, the authors see a potential to delve into the implementation of RME within leadership theory, exploring and evaluating the leadership frameworks suitable for RME.

Compliance with ethical standards

All authors have approved and have agreed to submit the manuscript to this journal. This manuscript has not been published and is not under consideration for publication elsewhere.

Research involving human participants and/or animals

Not applicable

Informed consent

Not applicable

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CRediT authorship contribution statement

João Henrique Paulino Pires Eustachio: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Validation, Visualization, Writing – original draft, Writing – review & editing. **Walter Leal Filho:** Conceptualization, Funding acquisition, Methodology, Resources, Supervision, Validation, Writing – original draft, Writing – review & editing, Software. **Amanda Lange Salvia:** Data curation, Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing. **Marina Lourenção:** Formal analysis, Visualization, Writing – original draft, Writing – review & editing. **Yana Medeiros Guimarães:** Data curation, Investigation, Methodology, Validation, Writing – original draft. **Laís Viera Trevisan:** Data curation, Methodology, Validation, Writing – review & editing. **Jelena Barbir:** Data curation, Validation, Writing – original draft, Writing – review & editing. **Adriana Cristina Ferreira Caldana:** Conceptualization, Formal analysis, Funding acquisition, Supervision, Validation, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijme.2023.100920.

APPENDIX

Table A
1Normality tests

Code	PRME signatory?	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
SUPPORT-1	'No'or 'I do not know'	0,254	701	<0.001	0,827	701	<0.001
	Yes	0,158	268	<0.001	0,899	268	<0.001
SUPPORT-2	'No'or 'I do not know'	0,186	701	<0.001	0,878	701	<0.001
	Yes	0,190	268	<0.001	0,895	268	<0.001
SUPPORT-3	'No'or 'I do not know'	0,154	701	<0.001	0,902	701	<0.001
	Yes	0,215	268	<0.001	0,872	268	<0.001
SUPPORT-4	'No'or 'I do not know'	0,154	701	<0.001	0,915	701	<0.001
	Yes	0,210	268	<0.001	0,896	268	<0.001
SUPPORT-5	'No'or 'I do not know'	0,163	701	<0.001	0,916	701	<0.001
	Yes	0,225	268	<0.001	0,894	268	<0.001
SUPPORT-6	'No'or 'I do not know'	0,160	701	<0.001	0,917	701	<0.001
	Yes	0,187	268	<0.001	0,906	268	<0.001
TEACHING-1	'No'or 'I do not know'	0,216	701	<0.001	0,897	701	<0.001
	Yes	0,230	268	<0.001	0,849	268	<0.001
TEACHING-2	'No'or 'I do not know'	0,201	701	<0.001	0,906	701	<0.001
	Yes	0,265	268	<0.001	0,843	268	<0.001
TEACHING-3	'No'or 'I do not know'	0,171	701	<0.001	0,913	701	<0.001
	Yes	0,210	268	<0.001	0,891	268	<0.001
TEACHING-4	'No'or 'I do not know'	0,203	701	<0.001	0,906	701	<0.001
	Yes	0,233	268	<0.001	0,879	268	<0.001
TEACHING-5	'No'or 'I do not know'	0,155	701	<0.001	0,904	701	<0.001
	Yes	0,197	268	<0.001	0,900	268	<0.001
TEACHING-6	'No'or 'I do not know'	0,171	701	<0.001	0,909	701	<0.001
	Yes	0,174	268	<0.001	0,896	268	<0.001
TEACHING-7	'No'or 'I do not know'	0,203	701	<0.001	0,894	701	<0.001
	Yes	0,224	268	<0.001	0,892	268	<0.001
TEACHING-8	'No'or 'I do not know'	0,197	701	<0.001	0,898	701	<0.001
	Yes	0,230	268	<0.001	0,875	268	<0.001

Note: Lilliefors Significance Correction.

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