Sustainable Development Goals and the role of universities: what does the community expect?

Bárbara Galleli*, Elder Semprebon, Noah Emanuel Brito Teles, Mateus Santos de Freitas-Martins and Joyce Aparecida Ramos dos Santos

Setor de Sociais Aplicadas,
Departamento de Administração,
Federal University of Parana,
Av. Prefeito Lothário Meissner, 632 – 2 Andar. 80210-170,
Jardim Botânico, Curitiba, PR, Brazil
Email: barbara.galleli@ufpr.br
Email: elder.semprebon@ufpr.br
Email: noahbteles@gmail.com
Email: mateussfmartins@gmail.com
Email: joysantosap@gmail.com
*Corresponding author

Abstract: The aim in this study was to identify the expectations of the academic community about the contributions of a Brazilian public university regarding the achievement of Sustainable Development Goals (SDGs). To accomplish it, we conduct a survey with staff, faculty members and students. We also verified the level of knowledge of the academic community about SDGs, and the different levels of engagement of the respondents with the themes surrounding the SDGs, and their reflections on the expectations of the contribution of this university in this area. We had 796 valid responses and conducted multivariate statistics analysis to test the hypotheses. The evidence demonstrated that engagement may be more relevant in terms of expectations towards SDGs. We hope this study can serve as benchmarking and assist in setting institutional policy priorities, developing action plans, communicating, and disseminating sustainability goals and practices in universities.

Keywords: Sustainable Development Goals; SDGs; university; survey.

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Biographical notes: Bárbara Galleli holds a Business PhD and is a Professor of Sustainability Management at the Federal University of Parana, Brazil.

Elder Semprebon holds a Business PhD and is a Professor of Marketing and Consumer Behaviour at the Federal University of Parana, Brazil.

Noah Emanuel Brito Teles is a Business PhD student at the Federal University of Parana.

Mateus Santos de Freitas-Martins is a Business PhD student at the Federal University of Rio Grande do Sul.

Joyce Aparecida Ramos dos Santos is a Business PhD student at the Federal University of Parana and is a Business Assistant Professor in Federal Institute of Education, Science and Technology of Parana.

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1 Introduction

The publication of the 15th edition of the World Economic Forum's Global Risks Report (WEF, 2020) had alarmed the world population on their impact on environment. For the first time in the history of the report, the environment filled the top five places in the list of concerns likely to have a major impact over the next decade. The report released ahead of the WEF's Annual Meeting in Davos, in January 2020, attended by the chief executives of some of the world's biggest and powerful companies, draws attention and reinforces the need for global efforts towards the sustainable development of society.

The most widely accepted definition of sustainable development (SD) appeared in the Brundtland report of the World Commission on Environment and Development, published in 1987 (WCED, 1987). As the greatest evident and recent international movement towards SD, the United Nations (UN) has proposed a new global framework for action: Sustainable Development Goals (SDGs). The SDGs present as their main objectives reducing poverty, protecting the planet, and guaranteeing peace and security, in a timeframe from 2015 to 2030. To this end, in the so-called '2030 Agenda', 17 objectives, 169 goals and 263 indicators were proposed. The SDG states that collaboration will require the involvement of all countries, all stakeholders, such as civil society and the private sector, including higher education institutions (HEIs) (United Nations, 2015).

Concerning HEI, and in specific the universities, it is consensual that they play a vital role in sustainable development from various perspectives (Leal Filho et al., 2019a). Given their social functions of creating and disseminating knowledge, universities have a unique position within society (Leal Filho, 2011; Zutshi et al., 2018) in building a more just and more sustainable society (Zamora-Polo et al., 2019), besides the responsibility to educate citizens, researchers and leaders to participate in solutions to sustainability issues (Storey et al., 2017).

We can find in the literature a reasonable amount of studies regarding the insertion of sustainability in the context of universities (e.g., Chiong et al., 2017; Leal Filho, 2011; Lozano et al., 2015). Leal Filho et al. (2019a) affirm that HEIs need to participate in SD practices, having education, research, internal management and community engagement as main areas of study and development. Amongst experiences and challenges, Conner et al. (2018) advert that for sustainability efforts to gain success, the academic community must be informed and empowered; its support and buy-in is essential. For the authors, strong initiatives have community members engaging in both individual and

collective efforts supported by partnerships and networks. Lozano et al. (2013, p.11) complements that "university leaders and staff must be empowered to catalyse and implement new paradigms and ensure that SD becomes the 'golden thread' throughout the entire university system."

The literature also shows some previous research on academic community's knowledge, interest and engagement about SD and sustainability, especially on students' domain. Conner et al. (2018) found out that the community members of a university in USA are, overall, supportive, informed, and engaged in individual behaviours, but not engaged in collective ones. Drayson's (2015) study indicated that students not only have a significant interest in sustainability, but they become increasingly engaged in such issues as they progress through university. As defended by Emanuel and Adams (2011, p.79), understanding "students' perceptions of sustainability may give insight into whether or not and how they are likely to engage in sustainable practices." Despite the existence of reasonable questioning, we could agree that student demand is having knock-on effects on universities' strategies related to sustainability (Cotton et al., 2018), what might be also truth for administration staff and faculty expectations.

As Trechsel et al. (2018, p.31) had pointed, there are still many gaps to answer the question: how do HEIs, particularly universities, serve society through education and are they in a position to help to transform our world towards SD? Add to that, we ask: what can universities do to contribute to the achievement of SDGs? What do the university community expect from them, in this regard? Although many studies address the students' knowledge, perceptions and behaviours on the topic, very few can be found including other sections of university community, like teachers or administration staff, what is recommended by Zamora-Polo et al. (2019).

Following such suggestion and in order to shed some light in the former questions, in this paper we aim to identify the expectations of the academic community about the contributions of a Brazilian public university regarding the achievement of SDGs. To accomplish this, we conduct a survey with staff, faculty members and students. We also verified the level of knowledge of the academic community about SDGs, and the different levels of engagement of the respondents with the themes surrounding the SDGs, and their reflections on the expectations of the contribution of this university in this area.

As for methodological contributions, our study provides a questionnaire for accessing the community's expectations concerning the university's contributions to SDGs. As the SDGs constitute a roadmap set by the international community in the next decade (Zamora-Polo et al., 2019), getting the community demands and expectations on it may facilitate and improve the planning for inserting sustainable development successfully at the university level (Leal Filho et al., 2019a). As for practical contributions, we hope that this study can serve as benchmarking and assist in setting institutional policy priorities, as well as in developing action plans, communicating and disseminating sustainability goals and practices in universities.

This paper is structured as follows: after the introduction, we discuss the SDGs and the role of universities in this regard, and we present two hypotheses; next, we point the methodological procedures taken; after that, we present the data results and discuss them, and the paper is concluded with final remarks, theoretical and practical implications and future studies suggestions.

2 SDGs and the universities

According to the UN, the 2030 Agenda had been determined as a plan of action for people, the planet and prosperity, seeking to strengthen universal peace with greater freedom. It seeks to encompass sustainable development, balancing in its three dimensions: economic, social and environmental (United Nations, 2015). It is divided into five areas or domains, considered crucial for humanity and the planet:

- *People:* Eradicating poverty and hunger, in all their forms and dimensions, and ensuring that all human beings can fulfil their potential in dignity and equality and in a healthy environment.
- *Planet:* Protecting the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change.
- *Prosperity:* Ensuring that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.
- *Peace:* Fostering peaceful, just and inclusive societies which are free from fear and violence.
- *Partnership:* Mobilising the means required to implement the agenda through a revitalised global partnership for sustainable development, based on a spirit of strengthened global solidarity, focused on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people.

The 17 SDGs demonstrate the scale and ambition of this new universal agenda. The goals are (United Nations, 2015):

Goal 1 End poverty in all its forms everywhere.

Goal 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

Goal 3 Ensure healthy lives and promote well-being for all at all ages.

Goal 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Goal 5 Achieve gender equality and empower all women and girls.

Goal 6 Ensure availability and sustainable management of water and sanitation for all.

Goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all.

Goal 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

Goal 9 Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.

Goal 10 Reduce inequality within and among countries.

Goal 11 Make cities and human settlements inclusive, safe, resilient and sustainable.

Goal 12 Ensure sustainable consumption and production patterns.

Goal 13 Take urgent action to combat climate change and its impacts.

Goal 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Goal 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Goal 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

Goal 17 Strengthen the means of implementation and revitalise the global partnership for sustainable development.

The SDG has achieved an important role in highlighting that inequality is something relevant and should be included in the debate, even if sometimes vaguely and abstractly, (Freistein and Mahlert, 2016). The inclusion of this goal is presented in more than half of all SDGs and demonstrates that inequality is planned to be addressed (Kanbur, 2021). In contrast, as shown by the SDG index, the disparity between OECD countries, considered the most developed countries, is very visible when it comes to achieving the goals proposed by the SDGs (Sustainable Development Report, 2021).

It is noteworthy that despite the importance of the movement, evidently, not all countries can achieve the SDGs equally; this is demonstrated in the *Sustainable Development Report* 2021. Led by the Scandinavians Finland, Sweden, and Norway, the SDG Index demonstrates the disparity between OECD countries and the other nations. Followed by Eastern Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, just above the world average. Below them, the countries of East and South Asia very close to the average. The greatest inequality is seen in Oceania and Sub-Saharan Africa, which are well below the world average (Sustainable Development Report, 2021).

With a total of 165 countries monitored, the Index ranks Brazil in position 65 when related to all SDGs gathered (Sustainable Development Report, 2021). Brazil's position is not surprising, considering that despite efforts and improved policies year after year, the country has several gaps in SD areas when compared to other countries (Ribeiro et al., 2018).

There is a need for the various sectors of society to be involved for the SDGs to become a reality, as they offer a unique opportunity to permanently transform the nature of development and make sustainability a defining feature of economic activity (Stevens and Kanie, 2016). Globally, universities are being called upon to contribute to the realisation of the SDGs (Fleacă et al., 2018; Trechsel et al., 2018; Weybrecht, 2017). Through the 2030 Agenda, it is not argued that education is essential. Although directly related to Goal 4, the presence of education is across almost all SDGs (Vladimirova and Le Blanc, 2016). In that sense, discussing the role of universities in pursuing the SDGs is essential.

It is legitim the demand to insert sustainability into a holistic approach in HEIs. This means incorporating it not only in teaching, research and outreach, but also in their own

management systems (Holm et al., 2015). However, there is still a considerable trajectory to be covered in terms of knowledge construction on the implementation of sustainability by HEIs (Zamora-Polo et al., 2019).

One way to open paths for this construction is enhancing the engagement of the academic community with sustainability. Especially the commitment of employees facilitates the implementation of sustainable practices at HEIs (Blanco et al., 2018), while resistance to change from the academic community acts as a barrier (Blanco et al., 2018). The involvement of the academic community is associated with their motivation, and it is essential to create a space for discussion and develop strategies that involve issues of sustainability in the institution.

Academic motivation "represents the perceived and actively exploited strength and conviction of university members to pursue their academic responsibilities" [Blašková et al., (2019), p.2]. In the academic environment, there are three basic types of motivation: the motivations of teachers and scientists, managers and employees of the institution, and students. Despite coming from different perspectives, for sustainability integration on campus, it should happen in a sustained way, so that a transcendental motivation can emerge, one that drives doing things for others, a motivation to contribute, in this case, to sustainable development.

Also relevant as the engagement of the academic community to promote sustainability is the public financial incentive of this size as HEI. The study by Zhao and Zou (2018) in Chinese universities identified that HEIs that received public funding and had the responsibility to meet government expectations feel more motivated to promote initiatives for sustainability than as HEIs that did not receive this type of financing. Lo (2015) examined the motivations of Chinese HEIs to achieve sustainability on campus, finding that HEIs are driven by governmental and financial pressures.

The pressures for HEIs to assist in the process of transition to a future aligned with SD, is based on the increase in society's awareness of pressing environmental and social issues (Vargas et al., 2019). Creating and disseminating knowledge about sustainability related issues is an important concern. Higher education is a key mechanism in business and society for finding and harnessing knowledge-based solutions (Zutshi et al., 2018). That said, assessing the knowledge of university students on SDGs can allow the following:

1 correctly design actions to teach and promote SDGs

2 evaluate the impact of future actions

3 study the evolution of SDG knowledge over time (Zamora-Polo et al., 2019).

We can add that getting the knowledge of university community could help on sustainability strategic planning: setting organisational goals and objectives, providing management with the essential guidance and lastly, operating the institution effectively and efficiently (Leal Filho et al., 2019a).

Investigations on students' knowledge on sustainability issues, in different universities' contexts, often registered low levels, below the expected average (Cezarino et al., 2018; Emanuel and Adams, 2011). Previous studies had shown that the lack of knowledge of stakeholders regarding the SDGs results in a more costly and slow adherence to these objectives in different areas at universities and society (Zamora-Polo et al., 2019). Besides, the lack of knowledge and awareness from staff and teachers has

been addressed as barriers to the implementation of sustainability at universities (Lozano et al., 2013).

In this sense, it is possible to affirm that the community's knowledge about the content of the SDGs, may lead them to expect more emphatic actions by the HEIs. Then, we could infer that the level of knowledge that the community have about the SDGs will influence their expectations about how the university should contribute to their achievement. Therefore, we present H1:

H1 The greater the community's knowledge about the SDGs, the greater the expectation regarding the contribution of the university to their achievement.

We agree that the entire university needs to be involved and transformed into a new institution focused on sustainability. For that, individual and collective commitment, and the development of synergistic actions are essential for the insertion of sustainability in higher education. We believe that a first move to insert sustainability at universities is bringing stakeholders together to articulate a common vision, extending knowledge about sustainability and serving to build commitment at the start of the journey (Leal Filho et al., 2019a). Numerous studies evidenced that successful university sustainability activity was dependent upon the community engagement and empowerment, people involved and the significance of networking, sharing and promoting good practice with a view to collective benefit (Conner et al., 2018; Zutshi et al., 2018).

For the purposes of this research, we understand engagement with SD issues as the personal and professional involvement to it (Zamora-Polo et al., 2019), in which the decision making on both areas consider sustainability concerns. Leal Filho et al. (2019a) found that the lack of involvement of the university community is amongst the problems related to planning and implementing sustainable development at universities. Leal Filho et al. (2019b) also mentioned the involvement of community stakeholders and internal and external communication as fundamental items for planning and implementing sustainability at HEIs.

The National Union of Students (NUS) in the UK has conducted a series of surveys which consistently reveal that students want to learn more about sustainability and want their institutions to take sustainability seriously. The most recent data indicate that 86% of respondents feel that 'sustainable development is something universities and colleges should actively incorporate and promote' and 57% would like to learn more about it (NUS, 2018). An encouraging finding of Azapagic's et al. (2005) survey is that all engineering students surveyed think that SD is important for them personally and even more important for them as engineers. Another interesting finding is that all students think that SD is more important for future generations than for them personally.

In the comparative study of Emanuel and Adams (2011), of two universities in Hawaii and Alabama, it was found out that while there seems to be little or no 'knowledge gap' related to sustainability aspects, there does seem to be a 'commitment gap'. Students in Hawaii indicate to be more committed to campus sustainability than in Alabama. The reasons for that, as suggest by the authors, is the wide and traditional program of campus initiatives to protect the environment they have in Hawaii University. In agreement with Cezarino et al. (2018), it is reasonable to affirm that the development of sustainability programs at the universities may have direct impacts on students' engagement, as well on staff members.

Cotton et al. (2018) study revealed what they called of 'cautious optimism' that a 'sustainable university' can strengthen their students' response in terms of attitudes towards SD. In other words, the more the university incorporates, practices and communicates their sustainability activities, the greater the potential of their students to engage to it. Although the same research brings that there are some worrying researches results in the literature, that cast doubt on the enthusiasm of students for engaging with sustainability initiatives (Cotton et al., 2018), it is important that students can understand and anticipate future benefits (or consequences) of their activities today, by being engaged with sustainability during their university period. This may stimulate their interest in learning about sustainability while studying and motivate them to practice sustainability in their future professional life (Azapagic et al., 2005).

University community are likely to hold a mix of shared and diverse values, so gaining perspectives of many stakeholders is vital to empowerment and success of implementing sustainability in universities. But it is also known that such stakeholders are constrained by a lack of information and understanding of initiatives; what that could lead to disinterest and lack of commitment (Conner et al., 2018). From the arguments presented, we may infer that greatest levels of engagement from community with sustainable development have greater influence on expectations regarding the university's contribution to it. That leads us to H2:

H2 The greater the engagement of the university community with issues related to sustainable development, the greater its expectation concerning the university's contribution to the achievement of the SDGs.

3 Methodological procedures

To achieve the objective of the study and test the proposed hypotheses, we applied the quantitative survey method. Data collection was carried out with faculty members, administration staff and students from a public university in southern Brazil. The online questionnaire was widely disseminated to the entire academic community of around 30 thousand people, through e-mails and institutional websites. We had support from the university's institutional commission of evaluation for accessing the institutional e-mails of staff and students and sending the invitation for participating on the research. Besides, the institutional communication department supported the study by divulgating it on the university's website and social media. Data collection was carried out from 30 days between November and December 2019. We had 1,054 responses, of which 796 were considered valid once they were complete. As it was part of an institutional research, there was no need of submitting it to the ethics committee.

The items for measuring the variables were proposed by the authors according to the literature. The questionnaire had four sections, with a total of 40 questions. The first section, consisting on the knowledge items on SDGs (Zamora-Polo et al., 2019), were measured on a 5-point agreement Likert scale, containing four items: 'I know how many are the Sustainable Development Goals', 'I know what the Sustainable Development Goals are about', 'I know who are involved with the Sustainable Development Goals' and 'I know the time horizon for which the Sustainable Development Goals were designed'. The second section included items for measuring expectations, which

corresponded to the exact title of each one of the 17 SDGs (United Nations, 2015) plus the question about the level of expectation, which were answered on a 5-point scale (1 – no expectation; 5 – high expectation).

The third section of the questionnaire referred to the level of engagement with the five SD domains considered crucial for humanity and the planet (United Nations, 2015). It was measured using a 5-point Likert scale of agreement containing the five items: 'eradicating poverty and hunger and guaranteeing dignity and equality between people', 'ensuring prosperous lives and in harmony with nature', 'protecting the planet's natural resources and climate for future generations' and 'promoting peaceful, just and inclusive societies'. The fourth and final section was concerned to the respondent profile.

The exploratory factor analysis by the principal component method indicated the unidimensionality of the scales of engagement with SD domains (explained variance: 62.2%; KMO: 0.830; Cronbach's alpha: 0.846) and the knowledge on SDGs (explained variance: 85.09%; KMO: 0.844; Cronbach's alpha: 0.941).

4 Results

The sample is characterised predominantly by women (61.8%), average age 35.89 years (S.D.: 12/75), undergraduate (72.7%), and with majority represented by staff (30.3%) and faculty members (23.2%). The general level of knowledge is above average (2.82), while the general level of engagement with SD domains are above average (3.43).

Table 1 shows the results of the mean comparison tests for the type of bond, level of engagement with SDGs domains, and level of knowledge about the SDGs. It is important to note that the type of bond was classified as 'staff', concerning administration staff and teachers, and 'student' for undergraduates and post-graduation students.

According to the means values on Table 1, we can observe that all goals have expectations above average. The highest one fall on SDG4 – quality education (M = 4.28; SD = 0.96); followed by SDG5 – gender equality (M = 3.97; SD = 1.12); SDG16 – peace, justice and effective institutions (M = 3.86; SD = 1.05), and SDG9 – industry, innovation and infrastructure (M = 3.81; SD = 0.92).

Still on Table 1, to better understand if the level of expectations varies according to the profile of the sample, we compared this variable in relation to the respondent's bond to the university, the level of knowledge about the SDGs (H1) and the level of engagement with the SD domains (H2). Regarding the bond with the university, the level of expectation is higher for students compared to staff, both administrative and teachers. There is a statistically significant difference ($p < 0.05$) for all objectives, except for SDG1 – no poverty, SDG2 – no hunger, SDG7 – renewable energy and SDG13 – protect the planet.

In the specific comparison between staff (n = 241) and teacher (n = 185), it was noted that there is greater engagement among teachers (M = 3.51; SD = 0.90) than staff (M = 3.34; SD = 0.97; Sig = 0.04). In addition, teachers (M = 3.16; SD = 1.30) demonstrated more knowledge about the SDGs than staff (M = 2.49; SD = 1.27; Sig = 0.00). There is no significant difference between these two groups regarding the level of expectation about the SDGs.

Table 1 Mean comparison tests

	General			*Bond*					*Knowledge*					*Engagement*				
	N	*M*	*SD*	*Group*	*N*	*M*	*SD*	*Sig*	*Group*	*N*	*M*	*SD*	*Sig*	*Group*	*N*	*M*	*SD*	*Sig*
SDG1	796	3.07	1.40	Staff	452	3.06	1.38	0.73	Low	400	3.01	1.41	0.20	Low	406	2.68	1.37	0.00
				Student	344	3.09	1.42		High	396	3.13	1.39		High	390	3.48	1.31	
SDG2	796	3.61	1.04	Staff	452	3.56	1.09	0.09	Low	400	3.58	1.06	0.39	Low	406	3.33	1.04	0.00
				Student	344	3.69	0.96		High	396	3.65	1.01		High	390	3.91	0.95	
SDG3	796	3.71	1.13	Staff	452	3.62	1.17	0.01	Low	400	3.70	1.16	0.70	Low	406	3.44	1.16	0.00
				Student	344	3.83	1.07		High	396	3.73	1.11		High	390	4.00	1.03	
SDG4	796	4.28	0.96	Staff	452	4.16	1.04	0.00	Low	400	4.28	0.97	0.86	Low	406	4.11	1.04	0.00
				Student	344	4.45	0.83		High	396	4.29	0.96		High	390	4.47	0.84	
SDG5	796	3.97	1.12	Staff	452	3.76	1.15	0.00	Low	400	3.87	1.16	0.01	Low	406	3.65	1.22	0.00
				Student	344	4.24	1.01		High	396	4.07	1.06		High	390	4.30	0.88	
SDG6	796	3.52	1.19	Staff	452	3.44	1.22	0.03	Low	400	3.47	1.23	0.25	Low	406	3.19	1.22	0.00
				Student	344	3.63	1.13		High	396	3.57	1.14		High	390	3.87	1.04	
SDG7	796	3.52	1.13	Staff	452	3.47	1.17	0.14	Low	400	3.51	1.18	0.81	Low	406	3.24	1.16	0.00
				Student	344	3.59	1.07		High	396	3.53	1.07		High	390	3.81	1.02	
SDG8	796	3.70	1.09	Staff	452	3.60	1.12	0.00	Low	400	3.63	1.12	0.08	Low	406	3.43	1.12	0.00
				Student	344	3.83	1.02		High	396	3.77	1.05		High	390	3.97	0.98	
SDG9	796	3.81	0.92	Staff	452	3.71	0.96	0.00	Low	400	3.78	0.93	0.36	Low	406	3.59	0.93	0.00
				Student	344	3.94	0.85		High	396	3.84	0.91		High	390	4.03	0.85	

Notes: N – sample.
M – mean.
SD – standard deviation.
Sig – significance.
Source: The authors

Table 1 Mean comparison tests (continued)

	General			*Bond*					*Knowledge*					*Engagement*				
	N	*M*	*SD*	*Group*	*N*	*M*	*SD*	*Sig*	*Group*	*N*	*M*	*SD*	*Sig*	*Group*	*N*	*M*	*SD*	*Sig*
SDG10	796	3.44	1.37	Staff	452	3.31	1.37	0.00	Low	400	3.41	1.39	0.52	Low	406	3.08	1.42	0.00
				Student	344	3.61	1.36		High	396	3.47	1.35		High	390	3.81	1.22	
SDG11	796	3.55	1.28	Staff	452	3.40	1.32	0.00	Low	400	3.50	1.31	0.21	Low	406	3.19	1.33	0.00
				Student	344	3.76	1.21		High	396	3.61	1.25		High	390	3.93	1.12	
SDG12	796	3.76	1.09	Staff	452	3.67	1.12	0.01	Low	400	3.69	1.12	0.08	Low	406	3.46	1.13	0.00
				Student	344	3.88	1.04		High	396	3.83	1.05		High	390	4.07	0.96	
SDG13	796	3.66	1.28	Staff	452	3.60	1.29	0.17	Low	400	3.55	1.30	0.02	Low	406	3.35	1.34	0.00
				Student	344	3.73	1.26		High	396	3.77	1.24		High	390	3.98	1.12	
SDG14	796	3.71	1.16	Staff	452	3.62	1.18	0.01	Low	400	3.66	1.20	0.15	Low	406	3.41	1.21	0.00
				Student	344	3.83	1.13		High	396	3.77	1.13		High	390	4.03	1.02	
SDG15	796	3.65	1.08	Staff	452	3.59	1.12	0.05	Low	400	3.62	1.11	0.36	Low	406	3.36	1.09	0.00
				Student	344	3.74	1.01		High	396	3.69	1.04		High	390	3.96	0.97	
SDG16	796	3.86	1.05	Staff	452	3.73	1.08	0.00	Low	400	3.84	1.06	0.56	Low	406	3.60	1.10	0.00
				Student	344	4.03	0.98		High	396	3.88	1.04		High	390	4.14	0.91	
SDG17	796	3.69	1.22	Staff	452	3.60	1.25	0.01	Low	400	3.66	1.22	0.45	Low	406	3.40	1.27	0.00
				Student	344	3.81	1.17		High	396	3.72	1.22		High	390	3.99	1.08	

Notes: N – sample.
M – mean.
SD – standard deviation.
Sig – significance.

Source: The authors

Table 2 Correlation

	SDG1	*SDG2*	*SDG3*	*SDG4*	*SDG5*	*SDG6*	*SDG7*	*SDG8*	*SDG9*	*SDG10*	*SDG11*	*SDG12*	*SDG13*	*SDG14*	*SDG15*	*SDG16*	*SDG17*	*EN*	*KN*
SDG1	1	.734**	.677**	.506**	.551**	.665**	.678**	.721**	.576**	.745**	.607**	.651**	.595**	.600**	.675**	.680**	.522**	.319**	.051
SDG2		1	.811**	.637**	.629**	.849**	.834**	.810**	.781**	.667**	.757**	.833**	.680**	.791**	.882**	.801**	.705**	.344**	.036
SDG3			1	.668**	.663**	.753**	.746**	.793**	.704**	.646**	.728**	.740**	.617**	.676**	.748**	.819**	.645**	.312**	.020
SDG4				1	.619**	.547**	.547**	.675**	.647**	.569**	.569**	.627**	.527**	.558**	.601**	.768**	.577**	.242**	.027
SDG5					1	.543**	.546**	.660**	.579**	.580**	.599**	.629**	.513**	.545**	.585**	.700**	.554**	.334**	.101**
SDG6						1	.894**	.729**	.725**	.610**	.742**	.780**	.616**	.745**	.847**	.723**	.663**	.331**	.053
SDG7							1	.739**	.755**	.628**	.734**	.762**	.637**	.732**	.833**	.720**	.647**	.331**	.026
SDG8								1	.757**	.720**	.720**	.764**	.619**	.694**	.749**	.810**	.687**	.298**	.056
SDG9									1	.587**	.693**	.752**	.603**	.706**	.787**	.741**	.687**	.298**	.045
SDG10										1	.584**	.653**	.613**	.599**	.641**	.704**	.551**	.294**	.043
SDG11											1	.699**	.565**	.670**	.762**	.729**	.654**	.340**	.059
SDG12												1	.649**	.769**	.823**	.768**	.707**	.350**	.061
SDG13													1	.700**	.742**	.663**	.556**	.293**	.069
SDG14														1	.848**	.701**	.658**	.324**	.046
SDG15															1	.760**	.709**	.342**	.036
SDG16																1	.679**	.320**	.038
SDG17																	1	.311**	.024
EN																		1	.291**
KN																			1

Notes: **p < 0.05.
EN – engagement.
KN – knowledge.
Source: The authors

As for the students' knowledge areas, differences were noted in relation to knowledge and expectations about SDGs 4 and 8. As for knowledge, the area of health (n = 70, M = 2.37, SD = 1.20) has the lowest average and there is a significant difference in relation to courses in the areas of exact (n = 96, M = 2.91, SD = 1.27, Sig = 0.05), business (n = 43, M = 3.27, SD = 1.19, Sig = 0.00) and earth with the highest average (n = 35, M = 3.33, SD = 1.21, Sig = 0.00). As for the expectation for SDG 4, there was difference only between the courses of the land area (n = 35, M = 4.14, SD = 0.91) and humanities (n = 19, M = 4.81, SD = 0.48, Sig = 0.04). Finally, we find differences of expectations regarding SDG 8 between the business course with higher mean (n = 43, M = 4.26, SD = 0.73) in relation to the health area (n = 70, M = 3.68, SD = 1.04, Sig = 0.04) and land (n = 35, M = 3.50, SD = 1.04, Sig = 0.01) with lower means.

It is noticeable that the expectation is higher for those who have greater knowledge in relation to the SDGs. But there is a statistically significant difference ($p < 0.05$) for SDG5 – gender equality and SDG13 – protect the planet, partially validating Hypothesis 1.

Overall, there is a statistically significant difference for all SDGs in the comparison between low and high engagement, validating Hypothesis 2 in which it is stated that expectations regarding the university's contribution to SDGs will be higher for the group with high engagement in SD crucial areas, according to the United Nations (2015).

In order to comprehend the relationship between the expectations regarding the contributions of the university to achieve the SDGs and the levels of knowledge and engagement, Table 2 shows the correlation indices between the variables.

The indices shown in Table 2 demonstrate that the expectations on the contribution to the SDGs are highly correlated, with emphasis on the correlations between SDG15 – life and land and SDG2 – no hunger, SDG6 – clean water and sanitation, SDG7 – renewable energy, SDG12 – responsible consumption and SDG14 – life below water. The highest value in Table 2 is found in the correlation between SDG6 – clean water and sanitation and SDG7 – renewable energy.

Reinforcing H2's evidence, we observe that the engagement with SD domains is positively correlated with the expectations in all SDGs in a significant way ($p < 0.05$). This does not occur with the level of knowledge, as only SDG5 – gender equality is positively correlated significantly.

In summary, the results demonstrate that the community has a high expectation that the university will work towards achieving the SDGs, especially those related to education, gender, innovation and peace, justice and effective institutions. Expectations are higher among students and those with a higher level of engagement with sustainable development domains.

5 Discussion

As we may have anticipated, the results showed that the highest expectations from the university community fall on SDG4 – quality education. Although it is a fact that universities' mission is directly related to SDG4, we cannot disregard that the presence of education is across almost all SDGs (Vladimirova and Le Blanc, 2016). At the same time, universities are globally pressured for their unique position in building a more just and more sustainable society (Leal Filho, 2011; Zamora-Polo et al., 2019), and maybe that is the reason why all the SDGs presented expectations above average, i.e., > 3.

The other three most cited SDGs of highest expectations were SDG5 – gender equality, SDG16 – peace, justice and effective institutions, and SDG9 – industry, innovation and infrastructure. A reasonable explanation for such results is probably related to the context that Brazil in facing in the last few years. For example, for SDG5, according to the OECD (2019), although Brazilian women are 34% more likely to graduate from higher education than their male counterparts, they are less likely to get a job. The difference in the employability rate varies between 7% to 31%, depending on the level of education. We can infer then that eliminating such differences falls primarily on the role of HEIs.

Also, for both SDG16 and SDG9, as reported by United Nations Development Programme (UNDP, 2019), Brazil is ranked 79th in the global Human Development Index (HDI) and is the seventh most unequal in the world. Brazil is in a situation of stagnation in terms of development, since its indexes have varied very little since 2014/15, when a major political and economic crisis began in the country. According to Oxfam (2018), the stagnation of development and the reduction of inequalities occurred because the distribution of income is stagnant, poverty has returned and the equalisation of income between men and women, and blacks and whites, has started to retreat.

Additionally, the results found in this research may reflect the demands of an distrusting Brazilian society in government for solutions (Edelman Trust Barometer, 2019), but who is optimist on science and technology sector, and confident on the knowledge of scientists from universities and public research institutes, according to the Public perception of Science and Technology in Brazil report (Centro de Gestão e Estudos Estratégicos, 2019). Future studies should investigate other HEIs in Brazil, to extend and deepen the evidences and inferences, as for HEIs around the world, in order to better understand the relations amongst contextual aspects and the expectations regarding universities and the SDGs.

In sequence, the data analysis showed that the level of knowledge on SDGs influences the expectation regarding the contribution of university in achieving them except for SDG5-Gender Equality and SDG13-Protect the planet, partially validating Hypothesis 1. This evidence, somehow, contrasts with most results that claim for the importance of specific knowledge on the subject (Azapagic et al., 2005; Zamora-Polo et al., 2019).

The results in this study shows that, for those who expects more contributions from the university, more relevant than knowledge in terms of SDGs is the level of engagement with SD concerns. In line with the analysis of Emanuel and Adams (2011), once the level of knowledge seems to be of little importance, the level of engagement does have. An, to improve and guarantee the community commitment, HEI's administrators must provide opportunities and incentive the engagement by talking about, committing to, and leading the way in establishing sustainable practices on campus. By raising awareness of sustainability and by providing opportunities for the whole community to participate in it, universities can be powerful change agents with far-reaching impact.

Concerning the specific results for SDG5 and SDG13, we suppose that the general public sensitivity on both could have affected the results. For the former, we may assume that as it presented a high level of expectations, the university is also more pressured to attend to it. As for the latter, it also presented an expectation above average, but not so expressive. Maybe, it is due to the global movement and awareness on climate change,

and the understanding that it requires complex solutions that involve HEIs, but extends to governments and companies with even more weight and responsibility (WEF, 2020).

Another interesting result is that expectations are higher among students and those with a higher level of engagement with SD domains. This validates Hypothesis 2 and is supportive of previous studies, suggesting that students have demonstrated interest and personal involvement on sustainability at universities, and that they expect their institutions to take it seriously (Azapagic et al., 2005; Cotton et al., 2018; Drayson, 2015; NUS, 2018). Additionally, this result meets former statements having the community members' support and engagement is crucial for sustainability efforts to gain success at universities (Conner et al., 2018; Lozano et al., 2013). In other words, we can assume that when the university community is engaged with SD, they expect more efforts from the institution and more committed to contributing to this task.

At the same time, it gives opportunity for research and action plans for sharing information and getting administration staff and teachers involved once the need for educators' and staff's awareness and training is reported in the literature as one of the major difficulties in the insertion of sustainability in higher education (Lozano et al., 2013).

It is important to add that in Brazil the role of HEIs as agents of change becomes even more relevant in face of the current socio-economic and environment crises (Carta Capital, 2021). All over the years, many public HEIs have suffered from cuts and financial adjustments (CNN Brasil, 2021), which has led many universities to review their priorities. However, we argue that sustainable development needs to be among them. Public funding is crucial for encouraging and motivating the implementation of sustainable practices in HEIs (Lo, 2015; Zhao and Zou, 2018), if they are absent, the odds of sustainable development being marginal are raised.

Given these circumstances, both engagement, knowledge and expectations of the academic community regarding the 2030 Agenda and the SDGs, can make difference for action towards sustainable development in HEIs. They allow and provide conditions for pressuring public actors for support, facilitate the involvement society in general, and raise individual but significant initiatives. Even immersed in oceans of poor conditions, HEI can operationalise the basics of their activities and still succeed by going further by actively engaging with sustainability. In this situation, we argue that engagement with the SDGs should be viewed through an investment lens and that, for this reason, they will return significant results over longer time horizons.

6 Final remarks, implications and future studies

This paper had the purpose of shedding light on questions about the contributions of universities concerning the achievement of the SDGs. We consulted students, administration staff and faculty members about their knowledge on SDGs, their engagement on SD areas and their expectations on the university's contributions to the proposals on the 2030 Agenda.

Different from most studies on literature that lies on students' perceptions and behaviours on SDGs, our research presented results with a great sample of staff participants. Besides aggregating knowledge on this area, the results revealed that they are not the most engaged public at the university. At the same time, we found out that it is

the engagement that makes difference on the expectations regarding the university's contribution to SDGs. Considering the claims for having administration and academic staff aware, empowered and engaged for the success on implementing sustainability in HEIs (Conner et al., 2018; Lozano et al., 2013), this is alarming on the strategic planning point of view (Leal Filho et al., 2019a).

We can find a significant number of proposals for the incorporation of SD in higher education, and common points include awareness of the theme and the search for collective engagement (Venhulst and Lambrechts, 2015). Given the evidence on this research, it also contributes to the literature suggesting as a starting point the assessment of the community level of engagement with SD aspects, focusing mainly on the professionals who will be responsible for making it a routine and having it institutionalised at the university. Important to clarify that we do not discard the importance of accessing the community's knowledge on sustainability. But, different of previous studies, we demonstrated that excepting two recent public sensitive SDGs – related to gender equality and climate change – more relevant for the expectations is the level of engagement with SD issues.

In this vein, in practical terms, the results of the research do not fail to suggest the need for the development of training programs on the specific content of the SDGs for the internal stakeholders. This approach needs to cross the teaching boundaries for the student body and reach teachers and staff. As interest and knowledge about the aspects involving DS at the university increases, we believe that commitment and engagement will also increase.

Not only for the scope of the studied university, we agree that outreach or third mission programs seem to be an opportunity to stimulate the involvement of different university audiences (Leal Filho et al., 2019a, 2019b). Once clarified which SDGs are priorities for the internal community, we argue that outreach actions can be envisaged as an opportunity to provide academic community's engagement towards SDGs, while enabling HEIs to meet the demands around these issues.

Likewise, as general implications for HEIs, this research shed light on which SDGs deserve focus on the elaboration of their institutional strategies and policies, since they are of great expectation of their community. In this situation, the survey results of this study can be used as a basis for formulating internal sustainability strategies and policies by demonstrating which or which SDGs deserve priority treatment in that context.

This study is not exempt of limitations. The main one lies in the number of valid responses obtained. This, however, did not prevail us of having a great sample of data and reasonable results. The fact that we only investigated the university's internal community is another limitation. Despite this effort to ensure a holistic view of the level of expectation, engagement and knowledge of the public that make up the university nucleus, the impact that HEIs cause beyond walls (Savelyeva and Douglas, 2017) highlights the need for external audiences to be consulted as well. Thus, as a suggestion for future studies, we believe that other domains interested in the actions of universities should be consulted, like society in general, companies, NGOs and government representants, allowing a more comprehensive picture from those who are sometimes seen as underrepresented stakeholders at HEIs (Findler et al., 2019).

Our survey had only accessed the individual level of engagement, and it could be interesting to map the collective domain of it (Conner et al., 2018). Also, we understand that the exclusively quantitative approach, although it sets important standards on what has been expected of universities about the achievement of the SDGs (Zamora-Polo et al.,

2019), is insufficient to guarantee in depth understanding around the subject. Thus, we recommend mixed research methods, consulting documents, conducting interviews and focus groups, to allow a more exploratory analysis of the phenomena, and a more detailed understanding of the specifics that permeate sustainable development and the role of universities.

Another limiting point of the study refers to the context in which the research was taken. In Brazil, a series of affirmative policies are necessary to guarantee the access of the less well-off population to the classrooms (Bezerra and Gurgel, 2012), it is possible that the research results have not captured the perceptions of audience at whom the SDGs are targeted. To deal with this limitation, future studies can turn their lenses to investigate higher education institutions in which the poorest population represents a protagonist in the classrooms and in the surrounding communities.

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