

Web communication of the SDGs in Catalan universities**Núria Arimany-Serrat***Universitat de Vic - Universitat Central de Catalunya***Anna Sabata-Aliberch***Universitat de Vic - Universitat Central de Catalunya***Josep Burgaya***Universitat de Vic - Universitat Central de Catalunya*

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ABSTRACT

Universities as determining institutions for achieving the Sustainable Development Goals (SDG) of the 2030 Agenda, have been little studied at the level of web communication. In this aspect, this research focuses on the web communication of the SDGs. Sustainable Development (SDG) in Catalan universities in 2021. It is notable, the terminological diversity of Corporate Social Responsibility (CSR) as a means to achieve the SDGs, and through higher education, different objectives are achieved, therefore, its transparency is of great interest. The conceptual evolution of the term CSR, between Circular Economy, Social and Solidarity Economy, Economy of the Common Good, SDG and other non-exclusive terms, identifies a CSR evolved in line with the ESG (Environmental, Social and Governance) criteria (Peña et al. 2022). The study analyzes the web transparency of CSR and the SDGs, along with the transparency of the SDG icons as graphic indicators of these challenges.

The study analyzes the web communication of the Sustainable Development Goals (SDGs) in Catalan universities, exploring the content of the 17 SDGs on their web pages through the section referring to Corporate Social Responsibility (CSR) and with the web transparency of the icons of the SDGs (since the UN considers that graphic communication further facilitates the communication of the prescriptions of the 2030 Agenda, with graphic visibility of responsible commitments). The methodology used is

exploratory through web analysis of the information transparency of the SDGs of universities in 2021.

The research contributions reflect the need for greater web transparency of the SDGs in Catalan universities in 2021, although web communication related to people and climate change stands out in the 17 challenges analyzed.

The limitations of the study are the short period analyzed, since the websites are constantly updated, and the small sample investigated, referring to Catalan universities, although in future works all Spanish universities will be considered.

The practical implications are the need to provide more web transparency to CSR and the SDGs for the Sustainable Development of Society, since, through the web communication of universities, they encourage the professionals of the future to be more transparent in these areas.

The study focuses on universities as socially recognized institutions that must train future professionals in the SDG philosophy, in line with the 2030 Agenda and the 2019 European Green Deal.

The value of the study is to contemplate the web transparency of the SDGs in universities, through their CSR communication and, through the graphic web communication of SDG icons.

KEYWORDS

SDG, CSR, university web communication, Sustainable Development in universities.

1. Introduction

The 2030 Agenda and the 17 Sustainable Development Goals (SDGs) conceived at the United Nations Conference on Sustainable Development, held in Rio de Janeiro in 2012, came to light in 2015 after various studies. Specifically, in September 2015, the document *Transforming our world: the 2030 Agenda for sustainable development* was approved during the United Nations Summit in New York, and the SDGs replaced the Millennium Development Goals (MDGs). The SDGs, which are interrelated in the sense that the success of one affects all others, aim to end poverty, protect the planet and ensure that all people enjoy peace and prosperity, and represent an opportunity for future generations with the desire to create a more sustainable, safe and prosperous planet for humanity. In this scenario, universities play a fundamental role as higher education institutions with transmission and training in values in line with the SDGs. So, universities are decisive institutions to achieve the SDGs at a social level, to facilitate their promotion, communication and compliance, seeking a balance between respect for the environment and economic and social development (Heikkilä et al., 2018; Albareda -Tiana et al., 2020; REDS, 2020).

This research aims to analyze the web communication of the SDGs in the different Catalan universities, public and subsidized, examining the 17 SDGs on their web pages, as a current communication formula. The analysis is carried out at two levels, in its Corporate Social Responsibility (CSR) web section and throughout the website through the graphic icons of the 17 SDGs. The icons facilitate the graphic identification of the 17 SDGs for sustainable development, since they make visible the challenges of the 2030 Agenda and, according to the UN, these icons graphically express whether these responsible commitments are assumed. This study evaluates the web communication of the SDGs of Catalan universities in 2021, and this study will subsequently be carried out throughout Spain.

The existing academic literature does not include many articles on ODS web transparency by universities, nor ODS web transparency with universities' strategic plans (Díaz-Vega et al. 2021; Albareda et al, 2018; Bebbington and Unerman , 2020; Mio et al. others, 2020). But web communication is essential to determine whether the SDG philosophy is followed (Garro & Rodríguez, 2020), and universities train future professionals and they must be imbued with this SDG philosophy (Sánchez Carracedo et al., 2018). , in line with the provisions of Royal Decree 822/2021, on university study plans that incorporate

SDGs, to promote a more fair, sustainable and ethical society. Furthermore, academic literature on the SDGs points to them as a powerful transformative agent that must be made transparent.

CSR, in constant evolution, is a means to achieve Sustainable Development, and this conceptual evolution is identified with the ESG (Environmental, Social and Governance) criteria (Peña et al., 2022). This analysis of web content of the SDGs in the CSR section and at the level of SDG web icons in universities is in line with the ESG (Environmental, Social and Governance) criteria (Estanyol, 2020). It must be taken into account that the SDG icons alone do not detail the relevance of sustainable development, nor the collective commitment of the institution (Bovea et al., 2021), but they provide transparency of these challenges (Sánchez, 2021). Hence the need to assess web transparency in university institutions due to its relevance.

The methodology is exploratory and presents two different approaches, one referring to the analysis of the CSR web section of each university (which associates the different CSR policies with each SDG) and another referring to the graphic communication of the SDG icons (in different web sections of each university). The two approaches are necessary so that one complements the other, supported by previous studies (Nilsson, 2019). The exploratory methodology was carried out in April 2021, through web content analysis, in the Corporate Social Responsibility section and according to the web transparency of the SDG icons, throughout the website, to evaluate which objectives are most prevalent, due to their visibility and communication in each university, a methodology also supported by previous empirical studies (Nevado and Gallargo, 2016). A methodology that explores web transparency of CSR, SDGs and icons.

After this introduction, the review of the literature is presented, the empirical part with the detail of the methodology used and the discussion of the results, to end with the conclusions of the study.

2. Literature review

Corporate Social Responsibility is a transversal concept, introduced in the 20th century, which basically analyzes three areas of institutions, economic, social and environmental. In the 21st century, specifically in 2015, the United Nations approved the 17 SDGs as part of the 2030 Agenda to achieve a better and more sustainable future for all and, it is agreed that, if institutions comply with the SDGs, their CSR It is also evaluated positively.

Therefore, there is a direct relationship between CSR compliance and SDG compliance. On the other hand, both CSR and the SDGs are two terms that are part of the same field, they are not exclusive, and their transparency implies institutional ethics. In the language of the university community, the SDG terminology is currently used more than CSR, in addition, the United Nations SDGs highlight the need for universities to be models to achieve a more sustainable society (Bebbington & Unerman , 2018), in Specifically, in SDG 4 of quality education, along with the other SDGs, Universities seek the sustainable development of society (Leal Filho et al., 2019), through social responsibility evolved according to ESG criteria (Godemann et al., 2014; Shiel et al. 2019). Working on the SDGs in higher education promotes interpersonal skills associated with sustainability, and they are known by students and their web communication facilitates the promotion of the 2030 Agenda at the university (Alm et al., 2022). It should be noted that universities are essential to promote the UN SDGs in society and their communication must be transparent (Perfileva et al., 2022) and can be materialized on their websites (Dziubaniuk et al., 2022).

Furthermore, universities are committed to the SDGs, at an international, national and institutional level, with the Impact Rankings Score (The Times Higer Education), the document How to get started with the SDGs in Universities (Sustainable Development Solutions Network); the Action Plan for the implementation of the 2030 Agenda and Royal Decree 822/2021, and the Conference of Rectors of Spanish Universities for compliance with the SDGs and the 2030 Agenda, (Peña et al., 2022). Specifically, according to the 2030 Agenda, universities as transformative agents must incorporate the SDGs in teaching, research and management (REDS, 2020) as endorsed by the Conference of Rectors of Spanish Universities (CRUE; 2018) (García -Peñalvo, 2018). And, universities must instill the protection of People, the Planet, advance Peace, Prosperity and Pacts from the SDGs (Zeng et al. 2020; Heikkilä et al., 2018; Albareda-Tiana et al., 2020), and, to this end, web communication of the SDGs is of vital importance, as endorsed by the CRUE; although it is not sufficiently considered in the academic literature (Sánchez Carracedo et al., 2018; Díaz-Vega et al. 2021).

Currently, although universities promote competencies in the SDGs in teaching and research (Albareda-Tiana et al., 2020), the aim is to involve the entire university community in the SDGs (Albareda-Tiana et al., 2018), to promote sustainable development as a philosophy for future professionals developed at the university

(Sánchez Carracedo et al., 2018). We work with an evolved CSR, as a strategic value of comprehensive management, which must be adequately communicated (Albareda-Tiana et al., 2020; Sánchez-Carracedo et al., 2019; Albareda-Tiana et al., 2019; Albareda-Tiana et al., 2020; Estanyol, 2020). That is, the institutions that contribute to the achievement of the SDGs are socially responsible if they communicate this evolved CSR to stakeholders through websites (Estanyol, 2020). Furthermore, it is advisable to measure the thermometer of universities' web communication, since the Transparency Law of 2014 obliges public institutions to communicate their actions on the web and universities are no exception. This web transparency is evaluated through indicators that facilitate its assessment (Pacios et al. 2019; Shiel et al., 2019; Moggi, 2019; Dziubaniuk et al., 2022). And, in recent studies, the web visibility of the SDGs in universities has been analyzed in few studies and more research is needed in this regard (Murillo-Vargas et al., 2020; Vallez et al., 2022; Serafini et al., 2022; Fauzi et al., 2022; Brugmann et al., 2019).

Previous studies highlight that the most visible SDGs are those related to gender equality (SDG 5), the reduction of inequalities (SDG 10), decent work and economic growth (SDG 8) and peace, justice and solid institutions (Chaleta et al., 2021). Other studies point out that the importance of the first objective, the end of poverty (SDG 1), is very relevant and has a synergistic relationship with all the SDGs (Pradhan et al., 2017). On the other hand, there are studies that associate the promotion of green university campuses, quality education and gender equality (SDG 4, SDG 5) (Brandli et al., 2020) and others point out the need for university cooperation to meet the objectives of the 2030 Agenda, at the European level (Pollet i Huyse, 2019). It should be noted that sustainability has evolved in the field of higher education thanks to the SDGs and the ethics associated with them (Zamora-Polo i Sánchez-Martín, 2019; Sánchez-Carracedo et al., 2019). On the other hand, the Spanish Network for Sustainable Development (REDS) promotes the SDGs in universities, in four prominent areas, energy, water, biodiversity and gender, so that these institutions lead the changes necessary to comply with the 2030 Agenda through adequate institutional management (Pollet i Huyse, 2019; REDS, 2020). Universities also highlight the SDGs at a societal level to facilitate transparency and communication (Heikkilä et al. 2018; Albareda-Tiana et al. 2020; REDS, 2020), as an evolved CSR for future professionals.

At the level of the SDG icons, graphic communication allows these challenges to be conveyed, although there is no consensus on the use of icons on websites; but a field study

details that greater standardization of the graphic communication of icons would facilitate their transparency (Bovea et al., 2021). It should be noted that, although the SDG icons alone do not detail the relevance of sustainable development, their web visibility reflects the will to comply with the 2030 Agenda, as foreseen by the UN, which considers that they facilitate the communication of the Goals. 2030 (Nilsson, 2019). These SDG icons on university websites are not presented in a standardized way, making web exploratory methodology difficult (Nilsson, 2019). Regarding CSR web communication, most universities reflect the SDG information in this section (Peña et al., 2022). On the other hand, CSR web communication induces action and performance to achieve the SDGs (Nilsson, 2019). Finally, it should be noted that CSR and the SDGs of universities promote community leadership and economic and social development initiatives (Barón et al., 2020).

3. Methodology

The methodology used in the study is exploratory and focuses on the analysis of the web communication of public and charter universities in Catalonia to determine what information they detail about the SDGs and what visibility they give to the SDG icons.

The exploratory analysis was carried out in two parts. Firstly, information on the SDGs was searched on the website of each university, in the CSR section, associating the CSR policy with each of the corresponding SDGs. Secondly, all university websites were searched for the SDG icons in different web sections to evaluate their visibility and the graphic communication of the SDGs according to academic literature (Nilsson, 2019).

The existing terminological diversity is contemplated on the web pages, but in the section referring to CSR a direct relationship is observed between compliance with CSR and the SDGs. Regarding the icons of the SDGs, there is a great dispersion on the website of each institution.

In the web analysis, content analysis has been used to evaluate the communication of the SDGs on the websites of the Catalan universities in April 2021. Specifically, on each website of the universities under study, CSR is analyzed, exploring through links the actions and actions at the SDG level, carried out by the university and the information contained in the sustainability reports. This information from the CSR section is collected in a technical sheet through Excel with the SDGs analyzed. The methodology explores each website of each university and separates each of the 17 SDGs. In the CSR section of each website and each university, with the content analysis methodology, a 1 is noted

when the information for each SDG is found and a 0 when the information is not found, as a methodology validated in previous studies (Nevado and Vázquez, 2016).

Based on this information, Table 1 is presented, which includes the content of each SDG and each University at a comparative level. This content analysis methodology is reliable according to Cronbach's Alpha (Pache-Durán and Nevado-Gil, 2020). The table shows the order of priorities between SDGs and Universities and, at the same time, gives visibility to the SDGs with more actions by these universities in April 2021. In research, content analysis is used to interpret and code information (1 if the information is available and 0 if the information is not available) for later analysis based on the frequency of categories and their relationships. On the other hand, Cronbach's Alpha is a statistical measure to evaluate the internal consistency of the measurement, that is, whether the data is reliable. Therefore, once the data has been coded, Cronbach's Alpha can be used to evaluate the consistency of the categories created. Once the data has been collected with content analysis, Cronbach's Alpha verifies that the data works in a coherent manner and confirms its reliability, provided that the result of the formula exceeds 0.7 to ensure consistent results. Specifically, a value greater than 0.7 is generally considered acceptable for most research, as in the case of our study.

The technical sheet, as a worksheet, describes the information collected in the web analysis with the SDGs, according to the parameters of academic literature, with different actions and actions regarding the 17 SDGs. Specifically, according to academic literature, volunteer activities, very frequent in universities, are associated with SDG 1 (end of poverty). It is notable that this SDG 1 shows a synergistic relationship with most of the other SDGs (Pradhan et al., 2017). Regarding the remaining SDGs, frequent on the websites of the universities studied, there are connections with the literature on the subject. For example, information on sustainability and the environment is associated with SDG 13 on climate change mitigation, information on inclusion and diversity is linked with SDG 10 on reducing inequalities, and information on a healthy and sustainable campus and on sport is linked to SDG 3 on health and well-being (Pradhan et al., 2017). The study clearly shows that various CSR actions of the universities under study are directly linked to the SDGs. Specifically, of all the universities analysed that participate in the study (UPF, UAB, UB, UPC, URV, UdL, UdG, UOC, UVic-UCC), the visit to their websites, carried out in the first half of April 2021, reveals a close

relationship between CSR and the SDGs, since many CSR actions aim to achieve sustainable development at an environmental, social and good governance level.

The first content analysis explored is presented in the double-entry table, universities-SDGs (Table 1), and allows analyzing the CSR activities related to the SDGs on the websites of the different universities. If there are CSR actions linked to the SDG, a value of 1 is given; if there is no action, the value is 0. On the other hand, table 2 shows the second exploratory analysis of the university websites, in April 2021, to detect the web diffusion of the SDG icons through of the content analysis, with a value of 1 when there is an icon and 0 if there is no icon, in line with the bibliography of this methodology. The interpretation of the results derived from Table 1 shows the order of priorities by SDG and by universities under study (rows and columns).

The order of the SDGs according to importance in each university is shown in the last row of Table 1, and in the interpretation of this in the discussion of the results.

This table 2 is made to show that graphic communication of sustainable development facilitates and promotes the step to action of the 2030 Agenda (Bovea et al. 2021; Nilsson, K. 2019). This second analysis allows us to identify the graphic communication of the SDGs in Catalan universities and at the same time show the dissemination of the SDG icons according to the order of priorities in the actions carried out.

4. Results

The results of the first exploratory analysis of the websites of the universities under study to evaluate CSR web communication related to the SDGs, through content analysis, show the link of each university with the SDGs reflected in the CSR section. (Table 1).

<i>CSR and SDG</i>	1	2	3	4	5	6	7	8	9	TOTAL
1. End of poverty	1	1	1	1	1	1	0	1	1	8
2. Zero hunger	0	0	0	0	0	0	0	0	0	0
3. Health and Wellbeing	0	1	1	0	1	1	0	0	1	5
4. Quality education	0	0	0	0	0	0	0	0	0	0
5. Gender equality	0	0	1	0	1	1	1	1	1	6
6. Drinking water and sanitation	0	0	0	0	0	0	0	0	0	0
7. Affordable clean energy	0	0	0	0	0	0	0	0	0	0
8. Fair work and economic growth	0	0	0	0	0	0	0	0	0	0
9. Industry, innovation, infrastructure	0	0	0	0	0	0	0	0	0	0

10.Reduction of inequalities	1	1	1	1	1	1	1	1	1	1	9
11. Sustainable cities and communities	0	0	0	0	0	0	0	0	0	0	0
12. Responsible consumption and production	0	0	0	0	0	0	0	0	0	0	0
13. Climate action	1	1	1	0	1	1	1	1	1	1	8
14. Underwater life	0	0	0	0	0	0	0	0	0	0	0
15. Life of terrestrial ecosystems.	0	0	0	0	0	0	0	0	0	0	0
16. Peace, justice and strong institutions	0	0	0	0	0	0	0	0	0	0	0
17. Alliance to achieve the objectives	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3	4	5	2	5	5	3	4	5		36

Table 1. Analysis of web content on CSR and SDG in Catalan universities

Table 1, through the CSR of each university, identifies various SDGs, and the results indicate that SDG 10 Reduction of inequalities is contemplated in all universities, with actions and actions regarding inclusion and functional diversity. Likewise, SDG 1, ending poverty, is a concern of almost all universities. One action to address this challenge is collecting toys for families without resources at Christmas and another action is aid with different types of scholarships for disadvantaged groups. Regarding SDG 13, climate action, 90% of universities carry out actions against climate change, such as consuming renewable energy, having presence sensors for light and sensors for water saving, more efficient toilet cisterns when dispensing water, taking advantage of rainwater, to water garden areas of the campus; recycle paper and collect garbage in fractions, among other actions to mitigate climate change.

Regarding SDG 3, health and well-being, 56% of universities carry out actions such as inviting the university community to climb stairs and not use elevators; give pieces of fruit to adopt healthy eating habits; schedule cultural events for the community and organize walking and cycling excursions. SDG 4, quality education, is carried out in all universities with educational quality management systems, at the level of teaching and research staff and administration and services, with teaching innovation courses. SDG 5, gender equality, is worked on in most universities with gender inclusion, in teaching, research and management, thanks to the equality units. Regarding SDG 10, reduction of inequalities, all universities promote inclusion and diversity.

It should be noted that different universities focus on different SDGs, although there are some SDGs with actions by all universities. at the same time, to fulfill the 2030 Agenda

for sustainable development. In the 2021 review, the CSR actions and activities of universities linked to SDGs 1, 3, 4, 5, 10 and 13 stand out, with dark blue, orange, gray, yellow, light blue and green colors respectively (Figure 1).

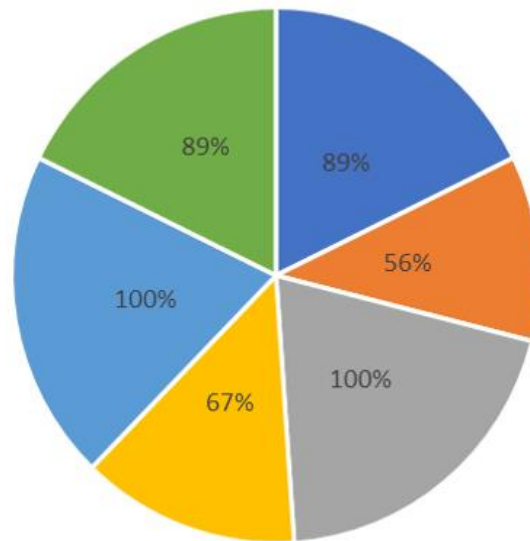


Figure 1. CSR actions in 2021 associated with SDGs 1,3,4,5,10 and 13 (own creation).

The results of the second exploratory analysis of university websites, to detect the web diffusion of the SDG icons in higher education institutions, through content analysis, detects the icons that are most communicated on the websites of the universities.

<i>SDG and universities</i>	1	2	3	4	5	6	7	8	9	TOTAL
1. End of poverty	0	1	1	0	1	1	0	0	0	4
2. Zero hunger	1	0	0	0	1	0	0	0	0	2
3. Health and Wellbeing	1	0	0	0	1	1	1	0	0	4
4. Quality education	1	0	0	0	1	0	1	0	0	3
5. Gender equality	0	0	1	0	1	1	0	0	0	3
6. Drinking water and sanitation	1	0	0	0	1	0	0	0	0	2
7. Affordable clean energy	1	0	1	0	1	1	0	0	0	4
8. Fair work and economic growth	1	0	0	0	1	1	0	0	0	3
9. Industry, innovation, infrastructure	1	0	0	0	1	0	0	0	0	2
10.Reduction of inequalities	1	1	0	0	1	0	1	0	0	4
11. Sustainable cities and communities	1	0	0	0	1	0	1	0	0	3
12. Responsible consumption and production	1	0	0	0	1	0	1	0	0	3

13. Climate action	1	1	0	0	1	0	1	0	0	4
14. Underwater life	1	0	0	0	1	0	0	0	0	2
15. Life of terrestrial ecosystems.	1	0	0	0	1	0	1	0	0	3
16. Peace, justice and strong institutions	0	0	0	0	1	0	1	0	0	2
17. Alliance to achieve the objectives	1	0	0	0	1	0	1	0	0	3
TOTAL	14	3	3	0	17	5	9	0	0	51

Table 2. Analysis of the web content of the SDG icons in Catalan universities.

Regarding the analysis of web content of the SDG icons in the Catalan universities in table 2, it is evident that SDG 1, end of poverty; SDG 3 health and well-being; SDG 7 affordable clean energy; SDG 10 reduction of inequalities; and SDG 13, climate action, are the SDGs that use icons the most as graphic communication on university websites. Specifically, 33% of universities communicate the activities they carry out for sustainable development using the SDG icons. Likewise, 33% of universities do not use graphic communication of icons on their websites, despite carrying out actions and actions on different SDGs.

It should be noted that one of the universities uses 100% graphic dissemination through the SDG icons, although in certain SDGs it does not detail the specific activities in this regard, it only provides information in general terms, without detailing actions and performances. The most common SDG icons on university websites are SDG 7 and SDG 13, clean and affordable energy and climate action, respectively. In 2021, not all the universities analyzed used the SDG icons, despite carrying out actions of these SDGs without an icon on the web.

5. Discussion results

The investigation, in line with the results obtained, of the web communication of Catalan universities at two levels, in April 2021, reflects that the transparency of Catalan universities regarding CSR actions related to the SDGs is approximately 30 %, so the remaining 70% is not communicated on the website, in the CSR section.

Furthermore, there is a notable dispersion in web communication related to CSR; as this information is not standardized, it is difficult to identify the actions of the SDGs and the comparison with the universities under study. Regarding CSR, the most notable concerns of the Catalan universities analyzed in 2021 are the end of poverty, health and well-being,

quality teaching, gender equality, the reduction of inequalities and the mitigation of change climate (SDG 1, 3, 4, 5, 10 and 13).

Regarding the web dissemination of the SDG icons in Catalan universities, transparency presents a great dispersion between universities: only 33% of the universities analyzed include half of the SDG icons on their websites. The most used SDG icons on the websites analyzed are the icons of SDGs 1, 3, 7, 10 and 13 (End of poverty; Health and well-being; Affordable clean energy; Reduction of inequalities and Climate action, respectively). A notable dispersion is also observed in web communication referring to the SDG icons, with little descriptive information in the majority of the universities analyzed.

The results of the analysis indicate that not all the SDGs are identified in the CSR web section, and there is a lack of web information from Catalan universities, on the topic under study, in line with previous studies (Peña et al., 2022). . On the other hand, graphic communication of the SDGs on the websites of Catalan universities is scarce and dispersed. Therefore, the results of the study show that not all the SDGs have led to actions and actions by universities, with SDGs 1,3,4,5,7,10 and 13 being the ones that have prompted the most university actions.

Regarding the communication of the SDGs on the web, in the CSR section, quality education and gender equality are emphasized. Regarding communication through SDG icons, clean and affordable energy and climate action are emphasized.

These results show the concern of Catalan universities in sustainable development objectives focused on people and climate change that affects the planet. Both at the level of CSR web communication, and in graphic web communication, of the SDG icons.

In the research, the SDGs analyzed were classified into the five axes recognized by the literature (Axis 1 of People (SDG 1,2,3,4 and 5); Axis 2 of Prosperity (SDG 7,8,9, 10 and 11) ; Planet Axis 3 (SDG 6, 12,13,14 and 15); Peace Axis 4 (SDG 16) and Association Axis 5 (SDG 17)); It shows that universities understand sustainable development by putting people and the planet before prosperity.

6. Conclusions

Web transparency, through content analysis, is a methodology used in different academic studies (Pache-Durán and Nevado-Gil, 2020). In this research, this methodology allows us to analyze the web communication of CSR through the SDGs, and the web communication of the SDG icons in Catalan universities.

This web transparency research on the topic under study had not been carried out prior to 2021, in Catalan universities, and at the academic literature level, the necessary web transparency on these topics in universities is recognized (Sánchez Carracedo et al., 2018; Díaz-Vega et al.2021).

The results of the web communication of the SDGs, analyzed in this study, indicate that communication must improve by the universities analyzed. Furthermore, said transparency is supported by the Conference of Rectors of Spanish Universities in line with the approved competencies in sustainability (CRUE, 2018). Regarding the dual approach of this study, it is concluded that web transparency of the SDGs in relation to CSR is a priority in SDGs 1,3,4, 5,10 and 13, and web transparency according to the SDG icons is priority in SDGs 1,3,7,10 and 13. Regarding the communication of the SDGs in the CSR section, quality education and gender equality stand out, and in communication through SDG icons, clean and affordable energy and climate action stand out.

It should be noted that Catalan universities put people and the planet first to achieve sustainable development. Transparency is an essential ethical value for university institutions and, along these lines, the study concludes that in 2021, web transparency of the SDGs must improve in Catalan universities, although universities have carried out various actions at the level of individuals, and at the level of preservation of the planet for sustainable development. We must highlight web transparency at the level of gender equality and climate action on the websites of Catalan universities in 2021, with the aim of improving people's lives and mitigating the worrying climate change.

The most important contribution of this research is the analysis of the web communication of universities, in the year 2021, which aims to improve people's lives and mitigate climate change on the planet. The implication of the study at the level of University Management Systems is decisive, since the presentation of Sustainability Reports, as a fundamental piece of the 2019 European Green Deal, and, in line with the 2030 Agenda, will be equated with financial reports, in terms of reliability and comparability. This information integrated with a common European language of sustainability standardized across Europe requires appropriate web transparency, and universities are no exception. The different treatment of the SDGs in the universities under study derives from the different strategic priorities of each university, since the 17 SDGs cannot be addressed at the same time and, according to the order of priorities of each institution, actions are implemented to this end in order to achieve what the 2030 Agenda provides by 2030.

The article has limitations since it only analyzes the websites of Catalan universities, public and subsidized, in the 2021 financial year and does not include Spanish universities. In future studies, it is intended to extrapolate the study to all Spanish universities, analyzing different exercises, differentiating between public and private, to evaluate the trend of web communication of the SDGs and the evolution of CSR in Spanish universities to achieve Sustainable Development Academic, in tune with the SDGs and the European Green Deal.

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REFERENCES

Alba, D.; Benayas, J.; White, N. (2020). How to evaluate the SDGs in universities. Spanish Network for Sustainable Development (REDS). Ed. Sustainable Development Solutions Network-SDSN. ISBN: 978-84-09-19610-4.

Albareda-Tiana, S., Ruíz-Morales, J., Azcárate, P., Valderrama-Hernández, R., & Muñoz, JM (2020). The EDINSOST project: implementing the sustainable development goals at university level. In *Universities as Living Labs for Sustainable Development* (pp. 193-210). Springer, Cham. https://doi.org/10.1007/978-3-030-15604-6_13

Albareda-Tiana, S., Vidal- Raméntol, S., & Fernández-Morilla, M. (2018). Implement sustainable development objectives at the university level. *International Journal of Sustainability in Higher Education*, 19(3), 473-497. <https://doi.org/10.1108/IJSHE-05-2017-0069>.

Albareda-Tiana, S., Vidal- Raméntol, S., Pujol-Valls, M., & Fernández-Morilla, M. (2018). Holistic approaches to developing sustainability and research competencies in initial teacher education. *Sustainability*, 10(10), 3698.; <https://doi.org/10.3390/su10103698>

Alm, K., Beery, T.H., Eiblmeier, D., & Fahmy, T. (2022). Sustainability of student learning: implicit, explicit or non-existent: a case study approach on key student competencies addressing the SDGs in the IES programme. *International Journal of Sustainability in Higher Education*.

Barón Mercado, S., Cantillo Orozco, A., & Martínez Tapia, E. (2020). Challenges of Corporate Social Responsibility in Higher Education Institutions. *Economic Overview*, 28(2), 116–128. <https://doi.org/10.32997/pe-2020-2693>.

Bebbington, J., and Unerman, J. (2018). Achieving the United Nations Sustainable Development Goals: A facilitating role of accounting research. *Journal of Accounting, Auditing and Accountability*, 31(1), 2-24.

Bebbington, J., and Unerman, J. (2020). Advance research on accounting and the United Nations sustainable development goals. *Journal of Accounting, Auditing and Accountability*, 33(7), 1657-1670.

Bovea, MD, Pérez- Belis, V., Torca-Adell, L., & Ibáñez- Forés, V. (2021). How do organizations graphically communicate their sustainability? An exploratory analysis based on corporate reports. *Sustainable Production and Consumption*, 28, 300-314. <https://doi.org/10.1016/j.spc.2021.04.011>

Brandli, LL, Salvia, AL, da Rocha, VT, Mazutti, J., and Reginatto, G. (2020). The role of green areas on university campuses: contribution to SDG 4 and SDG 15. In *Universities as living laboratories for sustainable development* (pp. 47-68). Springer, Cham. https://doi.org/10.1007/978-3-030-15604-6_4

Brugmann, R., Côté, N., Postma, N., Shaw, EA, Pal, D., & Robinson, JB (2019). Expanding student engagement in sustainability: Using SDG-and CEL-focused inventories to transform curriculum at the University of Toronto. *Sustainability* , 11(2), 530. <https://doi.org/10.3390/su11020530>

Carro, CB (2019). Integrating training and research on the transversality of the SDGs: Gender and health, essential dimensions of sustainability. *Science, Technology and Social Mainstreaming*, (3), 1-12.: <https://doi.org/10.4995/citecma.2019.11002>

Chaleta, E., Saraiva, M., Leal, F., Fialho, I., & Borralho, A. (2021). Higher Education and Sustainable Development Goals (SDG) Potential Contribution of the Undergraduate Courses of the School of Social Sciences of the University of Évora. *Sustainability* , 13(4), 1828. <https://doi.org/10.3390/su13041828>.

CRUE (2018). The commitment of Spanish Universities to the 2030 Agenda.

Díaz Vega, M., Moreno-Rodríguez, R. and, Gallardo -Pino, C., (2021). The Spanish University in the face of SDG 4: Strategic plans as the main barrier to achieving inclusion. *Journal of Inclusive Education* , 14(1), 69-91.

Dziubaniuk , O., Ivanova- Gongne , M., Nyholm , M., Gugenishvili , I., & Brännback , M. (2022). Sustainable Development Goals in University Strategies: Making Sense of Sustainable Development in the Context of a Finnish University. In *Handbook of Best Practices in Sustainable Development at University Level* (pp. 3-19). Springer, Cham.

Estanyol , E. (2020). Communication of corporate social responsibility (CSR): analysis of the most awarded campaigns in 2018. *The information professional (EPI)*, 29(3). <https://doi.org/10.3145/EPI>

Fauzi , M.A., Abdul Rahman, A.R., & Lee, C.K. (2023). A systematic bibliometric review of the United Nations SDGs: which ones are most related to higher education institutions? *International Journal of Sustainability in Higher Education*, 24(3), 637-659.

García-Peñalvo, FJ (2018). University technological ecosystems.

Godemann , J., Bebbington, J., Herzig, C., & Moon, J. (2014). Higher education and sustainable development: exploring possibilities for organizational change. *Journal of Accounting, Auditing and Accountability*, Vol. 27 Edition 2 pages. 218 – 233. <http://dx.doi.org/10.1108/AAAJ-12-2013-155> .

Heikkila , T., Villamayor-Tomas, S., and Garrick , D. (2018). Highlight polycentric systems for environmental governance. *Environmental Policy and Governance* , 28(4), 207-211. <https://doi.org/10.1002/eet.1809>

Leal Filho W, Shiel C, Paço A, Mifsud M, Ávila LV, Brandli LL, Molthan-Hill P, Pace P, Azeiteiro UM, Vargas VR, Caeiro S (2019). Sustainable Development Goals and teaching sustainability in universities: Falling behind or ahead of the rest? *Journal of Cleaner Production*, 232, 285-294.

Mio, C., Panfilo, S. and Blundo, B. (2020). Sustainable development goals and the strategic role of business: a systematic literature review. *Business Strategy and Environment*, 29 (8), 3220-3245.

Moggi, S. (2019). Social and environmental reports in universities: a Habermasian vision of its evolution. In *Accounting Forum*, 43(3), 283-326. Routledge.

Murillo-Vargas, G., González-Field, CH, & Brath, DI (2020). Mapping the integration of the Sustainable Development Goals in universities: is it a field of study? *Journal of Teacher Education for Sustainability*, 22(2), 7-25.

Nevado Gil, MT, & Gallardo Vázquez, D. (2016). Information on Social Responsibility contained on the websites of the town councils. Study in the Alentejo region.

Nilsson, K. (2019). The communicative power of the 2030 Agenda: a qualitative text analysis of how the SDGs function as an aspirational discourse on CSR.

Pache-Duran, MT; Nevado-Gil, MT (2020). Commitment of the Spanish companies of the Dow Jones Sustainability World Index 2018 with the disclosure of responsible information. *Spanish Journal of Scientific Documentation*, 43(1), e255. <https://doi.org/10.3989/redc.2020.1.1658>

Pacios, AR, Rodríguez, IT, & Caverro, MMM (2019). Communicate transparency. The case of Spanish university archives. *General Magazine of Information and Documentation*, 29(2), 527.

Peña, FJA, Martínez, DM, & Chamizo, EB (2022). The Sustainable Development Goals in Spanish universities. *AECA: Magazine of the Spanish Association of Accounting and Business Administration*, 140, 37-39.

Perfilieva, OV, Savvinov, VM, & Petrosyants, DV (2022). Incorporating the Global Sustainable Development Goals in the strategic development of the university: the case of the North Eastern Federal University in Yakutsk. *Journal of Higher Education Theory and Practice*, 22(3).

Pollet, I. and Huysse, H. (2019). Universities and global challenges: redesigning university cooperation for development in the era of the SDGs.

Pradhan, P., Costa, L., Rybski, D., Lucht, W., & Kropp, J.P. (2017). A systematic study of the interactions between the sustainable development goals (SDGs). *The future of the Earth*, 5(11), 1169-1179. <https://doi.org/10.1002/2017EF000632>

REDS Spanish Network for Sustainable Development (2020). How to evaluate the SDGs in Universities? P.1-29 <https://www.miteco.gob.es/es/ceneam/recursos/materiales/guia-evaluar-ods-universidades.aspx>

Romero, AG, & Careaga, SA (2017). The role of the university and University Development Cooperation in the new scenario of the 2030 Agenda. *Spanish magazine of development and cooperation*, (41), 13-24.

Sánchez Carracedo, F., Álvarez Orive, MJ, Barrón, Á., Caballero, D., López, E., Muñoz, JM, ... & Vidal, S. (2018). Development of a questionnaire to evaluate the level of sustainability of ICT engineering degree students. In Proceedings of the XXIV Conference on University Teaching of Informatics (Vol. 3, 2018) (pp. 141-148). Association of University Computer Science Teachers (AENUI).

Sánchez-Carracedo, F., Moreno-Pino, FM, Sureda, B., Antúnez, M., & Gutiérrez, I. (2019). A methodology to analyze the presence of sustainability in engineering curricula. Case study: ten Spanish engineering degree curricula. *Sustainability*, 11(17), 4553. <https://doi.org/10.3390/su11174553>

Sánchez-Carracedo, F., Ruiz-Morales, J., Valderrama-Hernández, R., Muñoz-Rodríguez, JM, & Gomera, A. (2019). Analysis of the presence of sustainability in Higher Education degrees of the Spanish university system. *Studies in Higher Education*, 1-18. <https://doi.org/10.1080/03075079.2019.1630811>

Serafini, PG, de Moura, JM, de Almeida, MR and de Rezende , JFD (2022). Sustainable development goals in higher education institutions: a systematic literature review. *Cleaner Production Magazine*, 133473.

Shiel , C., Smith, N., and Cantarello , E. (2020). Aligning campus strategy with the SDGs: an institutional case study. *Universities as living laboratories for sustainable development: supporting the implementation of the Sustainable Development Goals*, 11-27.

Vallez , M., Lopezosa , C., & Pedraza-Jiménez, R. (2022). A study of the web visibility of the SDGs and the 2030 Agenda on university websites. *International Journal of Sustainability in Higher Education*.

Zamora-Polo, F., & Sánchez-Martín, J. (2019). Teaching for a better world. Sustainability and sustainable development objectives in the construction of a change-generating university. *Sustainability*, 11(15), 4224. <https://doi.org/10.3390/su11154224>

Zeng, Y., Maxwell, S., Runting , R.K., Venter, O.; Watson, J., Carrasco, R. (2020). Environmental destruction is not prevented by the Sustainable Development Goals. *Nat Sustain* 3, 795–798. <https://doi.org/10.1038/s41893-020-0555-0>