Lights and Shadows in the Operationalization of Sustainability through the 2030 Agenda in Spanish Universities

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Abstract

Purpose – The purpose of this article is to analyze how sustainability was operationalized in the Spanish universities through plans and actions that contribute actively to the achievement of the Sustainable Development Goals (SDGs).

Design/methodology/approach – A systematic search and content analysis served to examine information available on websites belonging to the 76 universities listed in the Conference of Rectors of the Spanish Universities (CRUE).

Findings – The participation of Spanish universities on initiatives focused on sustainability is very limited, highlighting the negligible role of private institutions in which topics like sustainability and the 2030 Agenda/SDGs were scarcely addressed.

Originality/value – The study outlines the actual extent of the inclusion of sustainability in particular co-curricular actions towards the SDGs in the CRUE. Findings enable to define a long-term sustainability road map for the Spanish university system.

Keywords University social responsibility, 2030 Agenda, Sustainable development goals, Sustainable campus, Community outreach, Sustainability plan, Spanish universities, CRUE

Paper type Research paper

1. Introduction

Among the initiatives towards sustainable development started in the aftermath of the release of the Brundtland Report in 1987, sustainability was mainstreamed in universities (Michelsen, 2016) as a multidisciplinary approach to give response to major society challenges (Décamps et al., 2017). Since education is a meaningful instrument to build a more sustainable world (Michel, 2020), higher education institutions (HEIs) must adopt as an early priority the formation of students (Barth and Rieckmann, 2012) who will play a leadership role in transforming societies (Zilahy and Huisingh, 2009) according to principles of sustainability (Leal Filho, 2020). In this vein, HEIs should mainly focus sustainability on several aspects (Lozano et al., 2013) to be transversally integrated (Tejedor and Segalas, 2018): institutional framework, campus-wide efficiencies, sustainability life experiences (Ramos et al., 2015), learning, research, outreach activities and reporting. However, learning and research practices nowadays concentrate most efforts of HEIs (Thomas, 2016).

The enactment of the 2030 Agenda in 2015 by 193 countries gave more responsibility to universities as a driving force to achieve the Sustainable Development Goals (Stephens et al., 2008; SDSN Australia/Pacific, 2017) and monitor progress across the world (Hope, 2021). According to SDSN (2020), the contribution of HEIs is undoubtedly needed to fully meet each

SDG. A broad literature has examined the involvement of HEIs in the SDGs (De Cámara et al., 2021), and hence, diverse specific issues were identified in the implementation of sustainability plans (Vagnoni and Cavicchi, 2015; Shiel et al., 2020), functions and operations to face social challenges (Mawonde and Togo, 2019), performance reporting (Paletta and Bonoli, 2019) or collaboration among stakeholders (Mori Junior et al., 2019). In the Spanish context, learning and teaching practices (Albareda-Tiana et al., 2018), visibility of the SDGs on websites from national universities (Vallez et al., 2022), knowledge and awareness of students on the SDGs (Leiva-Brondo, 2022), proclivity of senior management in HEIs toward the application of the SDGs (Larrán Jorge et al., 2015), environmental policies in campuses (Leon-Fernandez and Domínguez-Vilches, 2015) and SDG integration into HEIs activities (Ferrer-Estévez and Chalmeta, 2021) have occupied inter alia, the attention of scholars.

Operationalization process entails plan definition and execution, effective monitoring and assessment of related actions, and if necessary a realignment plan. Although the incorporation of sustainable development and SDGs into HEIs is being gradually performed, namely through own operations (Wu and Shen, 2016), academic programs (Verhulst and Lambrechts, 2015) and scientific investigation (Lozano and Lozano, 2014), operationalization of sustainability, and more specifically the SDGs, to arrange particular societal issues is still a pending question (Avila et al., 2017). In this respect, various frameworks rank universities (Quacquarelly Symonds (QS) World University Rankings, The Higher Education, University Sustainability Assessment Framework, etc.) according to their performance in the achievement of the SDGs, but no details were provided about the complete process followed.

The linkage between the SDGs and universities has been predominantly the subject of several studies with the focus on a few institutions of, namely Austria (Körfgen et al., 2018), Cuba (Bosmenier et al, 2020), Italy (Smaniotto et al., 2020), Latin America (Gonzalez-Perez et al., 2021), Malaysia (Afroz and Ilham, 2020), Nigeria (Akinlolu et al., 2017), Portugal (Aleixo et

al., 2018) Spain (Vallez et al., 2022), United Kingdom (Price et al., 2021) or United States (Cogut et al., 2019), but the analysis of the university setting in a country has not been addressed yet. This paper thus aims at filling those gaps by examining how Spanish universities operationalize the SDGs, beyond teaching activities, to identify shortcomings and suggest prospective actions to put in practice sustainability principles contained in the 2030 Agenda.

With this purpose, 76 Spanish universities (50 of which are public and the remaining 26 are private) affiliated to the Conference of Rectors of the Spanish Universities (CRUE), a non-profit organization that acts as interlocutor between member universities and the Spanish government (CRUE, 2022), were assessed. The CRUE is strongly committed to sustainability through the momentum of several actions. A specific working group (CRUE-Sustainability) was created in 2002 to define guidelines for introducing sustainability in the curriculum of national universities (Cebrián et al., 2012). In this vein, service-learning was then also implemented as an educational strategy to bring students closer to real world problems by means of a practice that combines community-service and critical-thinking (Barth et al., 2014). The 2030 Agenda inter-sector committee was launched in March 2019 to boost the implementation of the SDGs in the Spanish HEIs as well as the cooperation between those and other actors in promoting sustainability (MAEX, 2019).

A systematic content analysis was the methodology employed to scrutinize information available on the websites of the 76 HEIs of the CRUE (Table A1) in order to define strengths and weaknesses related to the operationalization of the SDGs. Findings showed the scarce engagement of institutions evaluated to apply sustainability and more specifically the SDGs in a practical manner to work around global issues outside the campuses.

The dearth of publications oriented to investigate how sustainability is embedded in the Spanish university context justifies the development of this study whose contribution is threefold. First, the research delivers a descriptive overview of the practical implementation of

the 2030 Agenda in the Spanish university context. Second, outcomes contribute to identify possible gaps and areas to be reinforced in sustainability-related actions. Finally, it provides sufficient evidence to shape new university policies that foster the effective enforcement of the 2030 Agenda in national HEIs to reach the SDGs.

The article embraces four additional sections. Next, literature review served to portray some aspects connected with sustainability to be examined when assessing operationalization of the 2030 Agenda, whilst the third section outlines the methodology followed in the study. Results and discussion are handled in the subsequent section. And lastly, main conclusions are summarized.

2. Further lenses to explore the practical implementation of the 2030 Agenda in HEIs

The arrival of the new millennium has meant a reconfiguration of the role played by universities from an approach where production and dissemination of knowledge prevailed to a necessity for addressing major social issues much more actively. This section delineates various aspects to be reviewed when gauging operationalization of the 2030 Agenda beyond curricular sustainability.

2.1. University social responsibility

As the most common expression of social responsibility that applies to all types of organizations (Andrades Peña et al., 2018), corporate social responsibility aims at giving effective responses to social, economic and environmental concerns from the business side (López et al., 2015) by defining a path towards the attainment of the SDGs (Teixeira et al., 2018) with the participation of social multi-stakeholders (Ayala-Rodríguez et al., 2019). Nonetheless, social responsibility also involves HEIs that may produce negative impacts on society and environment (Bernardo et al., 2012) and therefore, it is pertinent to coin the term *"university social responsibility"* (USR) as the ability to act in a socially responsible manner

(Hopson et al., 2016) under the consideration of four facets: promotion of social awareness, reporting, education and community participation (Ali et al., 2021). The scarce understanding of the social responsibility notion is one of the major challenges to be overcome among university community (Calva and Vasquez, 2014). The existence of a social responsibility plan enables HEIs to detail their mission, vision, goals, policies, action lines and stakeholder engagement guidelines for the achievement of sustainability in universities.

2.2. Community outreach

The 2030 Agenda entails a societal process where individuals should act as agents of change (Stephens et al., 2008) to transform challenges into opportunities (Morawska-Jancelewicz, 2022). The function of HEIs in this shift can be deemed as a contribution to society (Urdari et al., 2017) under the concept of *"the third mission of the university"* (Puente et al., 2021) after teaching and research missions. Among all expressions of participation within this context, service-learning enables students to demonstrate capabilities in action through their application to projects executed in response to real needs (Tejedor et al., 2019). Learning is thereby developed by means of social actions (Bayuo et al., 2020) and based on experience and social responsibility (De la Rosa et al., 2019) which helps to achieve the SDGs and advocate sustainability education (Aramburuzabala, 2013). Service-learning methodology also bolsters a close collaboration between universities and social agents to benefit the community (Albareda Tiana and Alférez Villarreal, 2016) and empowers students as changemakers (O'Byrne et al., 2015). Partnership building with HEIs facilitates interconnections and exchanges where knowledge serves to strengthen social, economic, environmental and institutional dimensions of society (Smaniotto et al., 2020) and meet the SDGs. Long-term sustainable strategic partnerships are mandatory in the pursuit of a meaningful societal transformation (El-Jardali et al., 2018).

2.3. Sustainable campus

With the intention of promoting sustainability, HEIs are giving more emphasis to campus facilities where most academic activities are undertaken (Wright and Wilton, 2012). Hence, sustainable campus aspires to incorporate sustainable development principles into regular university life (Alonso-Almeida et al., 2015). Environmental management has been traditionally the pioneering initiative to start sustainable practices in universities (Hancock and Nuttman, 2014), but other aspects inter alia, human health, social justice or equity are gaining momentum in life on campus (Finlay and Massey, 2012). Because the notion *"sustainable campus"* is commonly associated to efforts towards minimizing environmental impacts (Too and Bajracharya, 2015), diverse campus greening actions such as energy efficiency to reduce carbon footprint (Larsen et al., 2013), resource conservation (Alshuwaikhat and Abubakar, 2008), waste management (Jain and Pant, 2010), pollution prevention (Christensen et al., 2009) or sustainable transport (Papantoniou et al., 2020) are being conducted in this direction.

The achievement of a sustainable campus demands the design and execution of a sustainability strategic plan, a guiding document for sustainability endeavors on the university campus developed in consultation with faculty experts, students, staff and other community actors, that enables the identification of key commitments to action in areas of utmost global concern to produce real change (Mohammed et al., 2022). Nevertheless, further efforts are needed so that campus can also contribute to the accomplishment of the SDGs. A targeted Strategy 2030 should thus put the focus on successfully integrating the SDGs in campus operations (Collazo Expósito and Granados Sánchez, 2020). The measurement of how effectively objectives are reached requires a complementary set of key performance indicators (KPIs) in addition to the plan.

2.4. Research

Research allows companies and HEIs working together on the creation of synergies that encourage the practical implementation of sustainability (Halila and Tell, 2013). However, the cross-sectoral nature of sustainability significantly hinders the holistic consideration of social, economic, environmental and institutional facets by university researchers (Waas et al., 2010). Thus, for instance, environmental issues are at the core of research agenda in most HEIs but their connection with the remaining sustainability dimensions is not explored in a coordinated manner (Aleixo et al., 2018), mainly owing to the shortage of interdisciplinary research teams (Stough et al., 2018).

Due to the transformative approach of sustainability, the inclusion of the SDGs on topics for research could deliver proposals to address major society concerns (Soini et al., 2018) and consequently, involve proactively universities in the accomplishment of the 2030 Agenda (Disterheft et al., 2016). There are three main funding schemes associated to the HEIs that permit assessing research on the SDGs: contract programmes, research groups and chairs. Whilst the former engages governing bodies and HEIs to examine a specific theme (Ribas and Vilalta, 2003), the latter establishes a longstanding strategic partnership among universities and public or private institutions to stimulate knowledge transfer in an area of common interest (Mirnezami and Beaudry, 2016).

2.5. Diffusion of information on sustainability among university community

Sustainability reporting is the preferred instrument used to measure, disclose and be accountable to stakeholders for performance towards sustainable development (GRI, 2022), that should be extensively employed by HEIs to disseminate information related to sustainable actions and progress among the university community (Lozano, 2011). Nevertheless, the circulation of sustainability reporting is still low (Holm et al., 2015) despite studies supporting the strong link between sustainability awareness and sustainable behavior (Cogut et al., 2019). The content of sustainability reporting should be aligned to a sustainability plan where strategy,

actions and goals are clearly defined (Kolk, 2010) to avoid fragmented and unrelated information (Ceulemans et al., 2015). Accuracy and visibility of sustainability reporting in HEIs have been notably amplified through the adoption of structured information standards like Global Reporting Initiative (GRI) (Alonso-Almeida et al., 2014), but some universities are still reluctant (Lozano and Huisingh, 2011). Within the debate on sustainability reporting, the publication of data referring to metrics and assessment frameworks for sustainability is also an outstanding issue (Disterheft et al., 2015). Prior weaknesses in sustainability reporting might help to explain why students show a low level of knowledge about the 2030 Agenda and the SDGs, as revealed in Ando et al. (2019) and Yuan et al. (2021). Since websites are interactive instruments well appreciated by internal and external stakeholders to gather information, the existence of direct access to sustainability data from specific navigation tabs of university websites is a measure of sustainability disclosure.

3. Methodology

The methodology proposed is grounded on the content analysis of information available on the websites of all the 76 HEIs listed in the Conference of Rectors of the Spanish Universities. Content analysis is a technique that examines data in an objective, systematic and structured manner (Krippendorff, 1980) to extract qualitative and quantitative information (Neuendorf, 2002). It determines and quantifies the presence of certain words, themes, or concepts within some given qualitative data (Elo et al., 2014). This work can be done by hand or by using software (Fielding and Lee, 1991) inter alia, QSR NVivo, Atlas.ti or R-RQDA package.

Although content analysis enables identifying trends and patterns, as well as making reliable inferences from data reviewed (Owen, 2012), this investigation was exclusively focused on exploring documents and/or information to evaluate the operationalization of the 2030 Agenda by the Spanish universities as the main research aim and consequently, no statistical analysis

was then performed. The use of software was also disregarded due to the navigation structure of the websites and the fact that some of them provide information in other languages like Catalan, which might increase error when scrutinizing data.

Figure 1 illustrates the five stages contemplated by the tiered methodology envisaged that was geared towards the main research issue. Firstly, some research questions were posed to direct the content analysis. Secondly, the development of a set of categories or concepts was needed for answering research questions. Process to scan information on websites and define units of measurement along with rules for coding data was addressed in the third phase. Sample characterization was afterwards presented and lastly, results discussed.

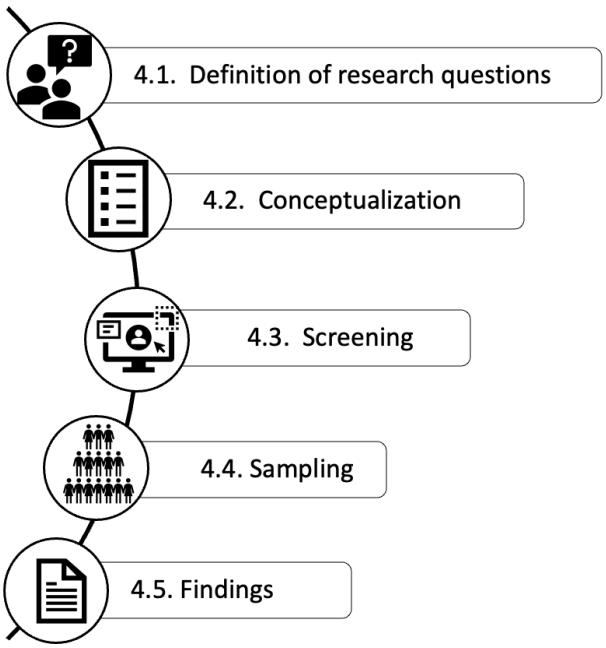

Figure 1. Methodology proposed to analyze the websites of the CRUE universities. **Source:** authors

Research questions bring a leading thread to successfully perform a content analysis, even though the existence of several possible and uncertain responses. However, data appraised can give extra information beyond literalism or suggest other search sources. Conceptualization consists of determining the extent and variables of analysis (word, expression, phrase, topic, document), but also coding schemes. The level of flexibility applied to increase the number of categories during the coding process was decided too in this step. A thorough manual scan of

all tabs of websites served to obtain salient data that helped to answer research questions. Although information was displayed by opening a new webpage (navigation tabs) or by presenting data on the same page (module tabs), screening also comprised a targeted search to locate additional necessary records on the own websites or by using search engines like Google. Public or private status, geographical location and position in the most worldwide prestigious rankings for universities were the main features of the sample selected to undertake the analysis. Results achieved from the content analysis were discussed in connection to research questions to determine how the 2030 Agenda was operationalized in the Spanish HEIs.

As an extension of the investigation described above, findings were also compared with the 2022 Impact Rankings, a framework designed by The Higher Education to measure the progress of universities towards the SDGs.

4. Results

This section presents the outcome of applying each methodological step designed in the prior section.

4.1. Research questions

Below enquiries were formulated on the basis of the rationale provided in Section 2 that synthesizes relevant matters associated to the 2030 Agenda and universities, along with the definition, execution, monitoring and appraisal of initiatives to support sustainability in those institutions.

- Question #1: How is social responsibility addressed by Spanish HEIs?
- Question #2: How are Spanish universities involved in real-world projects to propel sustainability/SDGs?

- Question #3: Which sustainability practices were implemented in university campuses?
- Question #4: What is the scope of investigation on sustainability in terms of research groups and chairs?
- Question #5: How visible is sustainability/SDGs information on the websites of Spanish universities?

4.2. Conceptualization

Aiming at responding to the research queries posed above, some variables or units of analysis, as well as keywords to perform the search were also defined as shown in Table 1. The accomplishment of social responsibilities (Question #1) requires the existence of a social responsibility plan, whilst the implication of universities in the development of real-word projects (Question #2) can be evaluated through the examination of a cooperation and development plan. Sustainable practices on university facilities (Question #3) are mainly described in any of those documents: sustainability plan, environmental sustainability plan or energy efficiency plan. The review of the investigation groups and chairs on sustainability illustrates research themes addressed by universities (Question #4). The wealth of diverse and varied material on institutional websites often hinders access to the desired information, i.e., sustainability (Question #5), this issue can be mitigated by the availability of a particular navigation tab for exclusive sustainability content. Furthermore, keywords were selected as notions related to the variables from the Glossary of Sustainability Terms (Appropedia, 2022). Two levels were hence considered when coding data scrutinized in websites. The first tier is linked to the referred research question, whilst the second corresponds to the own variable of analysis. The number of categories is flexible since scanning process may bring additional relevant elements to be incorporated in the study. Two options were only regarded for the last level: *"a"* for public universities and *"b"* for private ones.

Table 1. Units of analysis to be examined in the websites of Spanish HEIs.

Research Question #	Code and description of variables #.#., #.#.#.	Keywords
1	1.1. Availability of a social responsibility plan	Social responsibility, corporate social responsibility, university social responsibility
2	2.1. Availability of a cooperation and development plan	Local/regional cooperation, development projects, international aid
3	3.1. Availability of a sustainability plan (any)	Sustainability plan, environmental plan, energy efficiency plan, waste plan, consumption plan
	3.1.1. Availability of an integral sustainability plan	Sustainability plan, sustainability strategy
	3.1.2. Availability of an environmental sustainability plan	Environmental sustainability plan, environmental protection
	3.1.3. Availability of an energy efficiency plan	Energy consumption reduction, energy efficiency plan
	3.2. Availability of a specific 2030 Agenda / SDGs plan in force	2030 Agenda, SDGs plan
	3.3. Implementation and monitoring of Sustainability /SDGs metrics	Sustainability assessment, sustainable metrics/indicators/KPIs
4	4.1. Number of research groups on sustainability	Research groups, knowledge transfer, investigation
	4.2. Number of chairs on sustainability	Chairs, research contracts, university-company agreements
5	5.1. Availability of a particular navigation tab for exclusive sustainability content	Sustainability, 2030 Agenda, SDGs, sustainable development

A last item is added to each code of variable: a) for public universities (#.#.a.or #.#.#.a.) and b) for private institutions (#.#.b. or #.#.#.b.)

4.3. Screening

On the basis of the keywords defined for the search, the websites of all the CRUE universities (Table A1) were explored from April to June 2022 to evaluate the variables of analysis depicted in Table 1. All navigation tabs were thus reviewed by hand to identify pertinent data with the purpose of answering research queries. Moreover, further Google searches were also conducted to strengthen screening process by collecting salient documents not found on those websites. Because of the dearth of content in 31 institutions, several emails were sent to them in order to request additional information. Only three universities gave a comprehensive response to the appeal.

4.4. Sample of the study: The HEIs of the Conference of Rectors of Spanish Universities

The establishment of the Conference of Rectors of Spanish Universities (CRUE) in 1994 served to appoint this non-profit organization as the main interlocutor between HEIs and the central government to support regulatory development at the university level (CRUE, 2022). Figure 2 displays the allocation of all the 76 members of CRUE (Table A1) by geographical area of operation. The largest number of universities correlates to the most populated autonomous communities, namely Madrid, Cataluña and Andalucía. The amount of public institutions predominates over private ones, excluding Madrid. Universidad Internacional Menéndez Pelayo and Universidad Nacional a Distancia (both public universities) operate across the country.

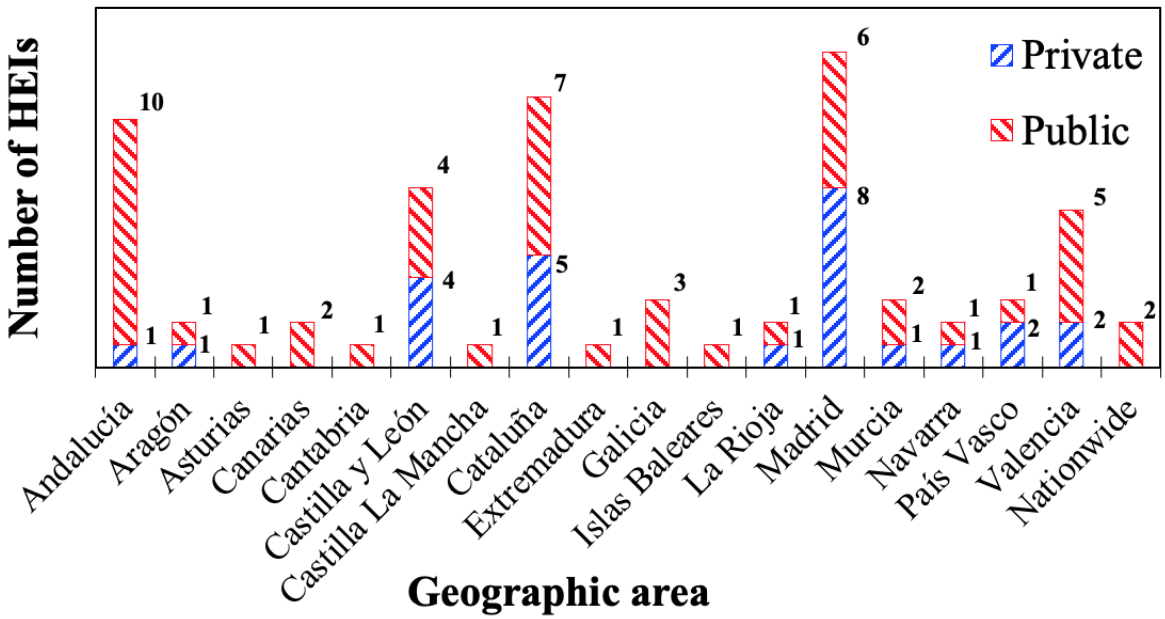

Figure 2. Distribution of private and public Spanish universities according to their area of action. **Source:** authors

Figure 3 and Figure 4 show the ranking of universities listed on the CRUE according to the 2022 Academic Ranking of World Universities and the 2022 Impact Rankings. The former was first released in 2003 by Shanghai Jiao Tong University to be annually updated with the objective of ranking universities by evaluating six indicators principally associated to institution performance and diverse aspects of research. An inventory of the best 1000 universities is published every year (Shanghai Ranking, 2022). Since 2004, Times Higher Education (THE) scores research, impact and teaching aspects of HEIs to yield a list where university performance is rated. Among the different rankings produced by THE, the Impact Rankings launched in 2019 examine the achievement of the SDGs individually and together (THE, 2022). No Spanish universities were listed in the top hundred and barely half of them reached the minimum score necessary to be admitted in both frameworks. Cataluña hosts the largest number of the highest ranked universities in Shanghai and THE rankings. La Rioja was otherwise unable to get its universities on any of the two lists.

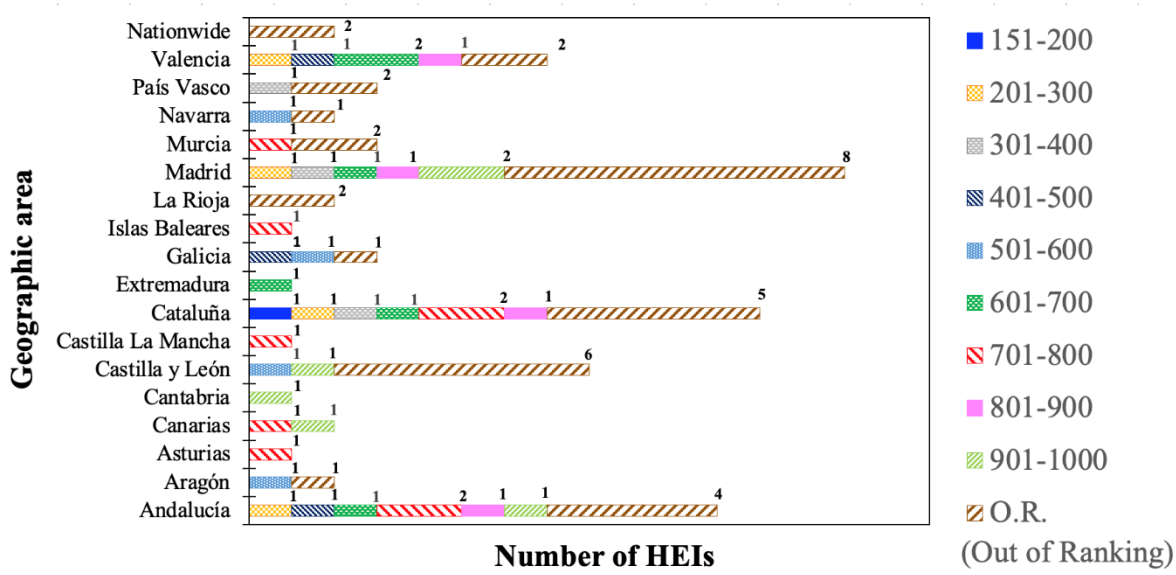

Figure 3. Ranking of CRUE HEIs by geographic area based on the 2022 Academic Ranking of World Universities (Shanghai Ranking, 2022). **Source:** authors.

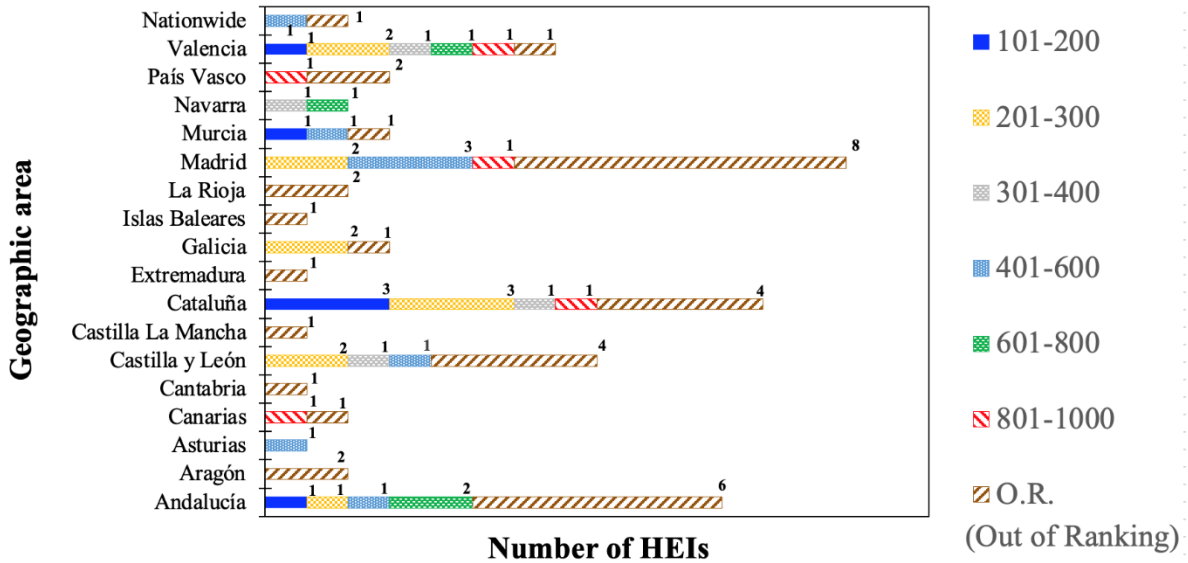

Figure 4. Ranking of CRUE institutions by geographic zones according to the 2022 Impact Rankings (THE, 2022). **Source:** authors.

The correspondence between the rankings assigned to the Spanish universities by THE and Shanghai lists is very uneven. Despite 39 and 40 HEIs were ranked respectively by the two grading systems, only 27 institutions were rated by both. Among them, only four universities were categorized in the same level, being the Universitat de Barcelona the best positioned. Discrepancies were also found between universities excluded from one of the lists and rankings allocated by the other. Whilst 37 Spanish universities are out of the 2022 Impact Rankings, 11 of them are listed in the 2022 Academic Ranking of World Universities. And

conversely, 12 HEIs were included in THE despite they were disregarded by the Shanghai framework.

4.5. Results of the inquiry on HEIs websites

Table A2 displays values for variables defined in Table 1 after screening websites of the CRUE institutions. Only ten universities hold a separate plan for social responsibility (variable code #1.1.), of which eight are public institutions (variable code #1.1.a.). In terms of geographical distribution, Andalucia reflects the highest quantity of HEIs (3) followed by Navarra and Valencia (2 each), and Cantabria, País Vasco and Madrid with one each. The private universities of País Vasco (Universidad de Deusto) and Navarra (Universidad de Navarra) developed and implemented social responsibility plans in their organizations (variable code #1.1.b.). Tracking metrics alone were regarded by Universidad Carlos III in Madrid.

Community-outreach activities were merely adopted by seven universities through plans for cooperation and development (variable code #2.1.). Universidad CEU San Pablo of Madrid was the sole private institution participating in this initiative (variable code #2.1.b.). The remaining six public universities (variable code #2.1.a.) are divided between Andalucía (3), Madrid (1), Navarra (1) and Extremadura (1).

Apart from the regions of Aragón, Extremadura and La Rioja, there are 36 HEIs in the rest of the country that apply nowadays a sustainability plan (variable code #3.1.). Public universities (32) far exceed private centres (4). Cataluña (8) and Madrid (6) host the highest amount of institutions engaged with sustainability practices in a planned manner. Energy efficiency issues (variable code #3.1.3.) prevail over an integral plan for sustainability (variable code #3.1.1.) and environmental concerns (variable code #3.1.2.). From the 14 integral sustainability plans in force (variable code #3.1.), only two (Universitat Internacional de Catalunya and Universidad de Navarra) were launched by private HEIs (variable code #3.1.1.b.). In the same vein, Universitat de Vic and Universidad Camilo José Cela, were the only two private centres

(variable code #3.1.3.b.) with energy efficiency plans, together with other 15 plans promoted by public institutions (variable code #3.1.3.a.). All five environmental sustainability plans were boosted by public HEIs (variable code #3.1.2.a.).

A targeted plan towards the 2030 Agenda/SDGs was namely devised by 16 public (variable code #3.2.a.) and four private (variable code #3.2.b.) universities operating in Andalucía, Aragón, Canarias, Cantabria, Castilla y León, Cataluña, Madrid, Navarra, País Vasco and Valencia. Most 2030 Agenda plans (6) are located in Barcelona, where they are distributed evenly among private (Universitat Internacional de Catalunya, Universitat Ramón Llull and Universitat de Vic) and public centres (Universitat de Barcelona, Universitat Pompeu Fabra and Universitat de Lleida). Universidad Loyola in Andalucía was the other private university with a particular plan for achieving the SDGs.

The use of indicators to measure progress towards the SDGs is limited to 12 HEIs (variable code #3.3.), of which ten are associated with public universities (variable code #3.3.a.). Universidad Loyola and Universitat Internacional de Catalunya are the two single private centres with assessment frameworks for the SDGs (variable code #3.3.b.). Andalucía shows the highest number of HEIs where sustainability KPIs are implemented (3), whilst Madrid and Cataluña host only one.

The participation of Spanish HEIs in research activities on topics referring explicitly to the term "*sustainability*" and/or "*sustainable*" is scant. The number of research groups (variable code #4.1.) formed (156) is higher than chairs (variable code #4.2.) created (65) and similarly, the quantity of universities involved in the former (49) also exceeds that of the institutions fostering the latter (32). The marginal role of the two and ten private centres hosting respectively, 2 chairs and 10 research groups contrasts with the relevancy given by public universities to themes related with sustainability. Hence, public centres hoarded most groups of research (variable code #4.1.a.) and chairs (variable code #4.2.a.) with 139 and 59 ones. As

shown in Figure 5 and Figure 6, a holistic approach to sustainability was mostly preferred to be deemed by chairs (12), unlike architecture/buildings primarily studied in the groups of research (12). Three chairs particularly address the subject of the 2030 Agenda/SDGs in comparison to a single research group engaged on it. Chairs and research groups on sustainability are present in universities of the whole country, with the exception of Cantabria, Castilla y León, Islas Baleares, la Rioja and País Vasco where chairs are lacking. The HEIs of Madrid house the greatest amount of chairs (17) and research groups (28) followed by Cataluña and Andalucía with 10 chairs and 26 investigation groups, respectively.

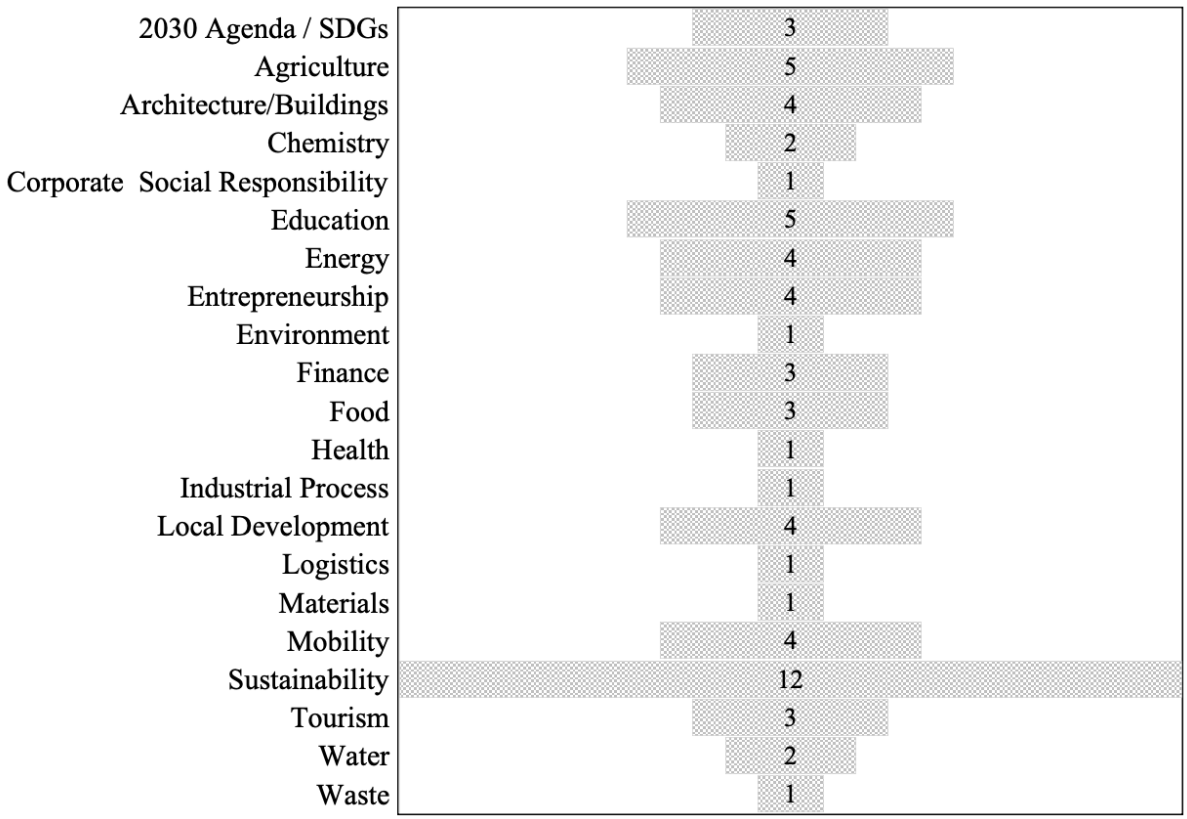

Figure 5. Distribution of the issues addressed by the existing 65 chairs. **Source:** authors.

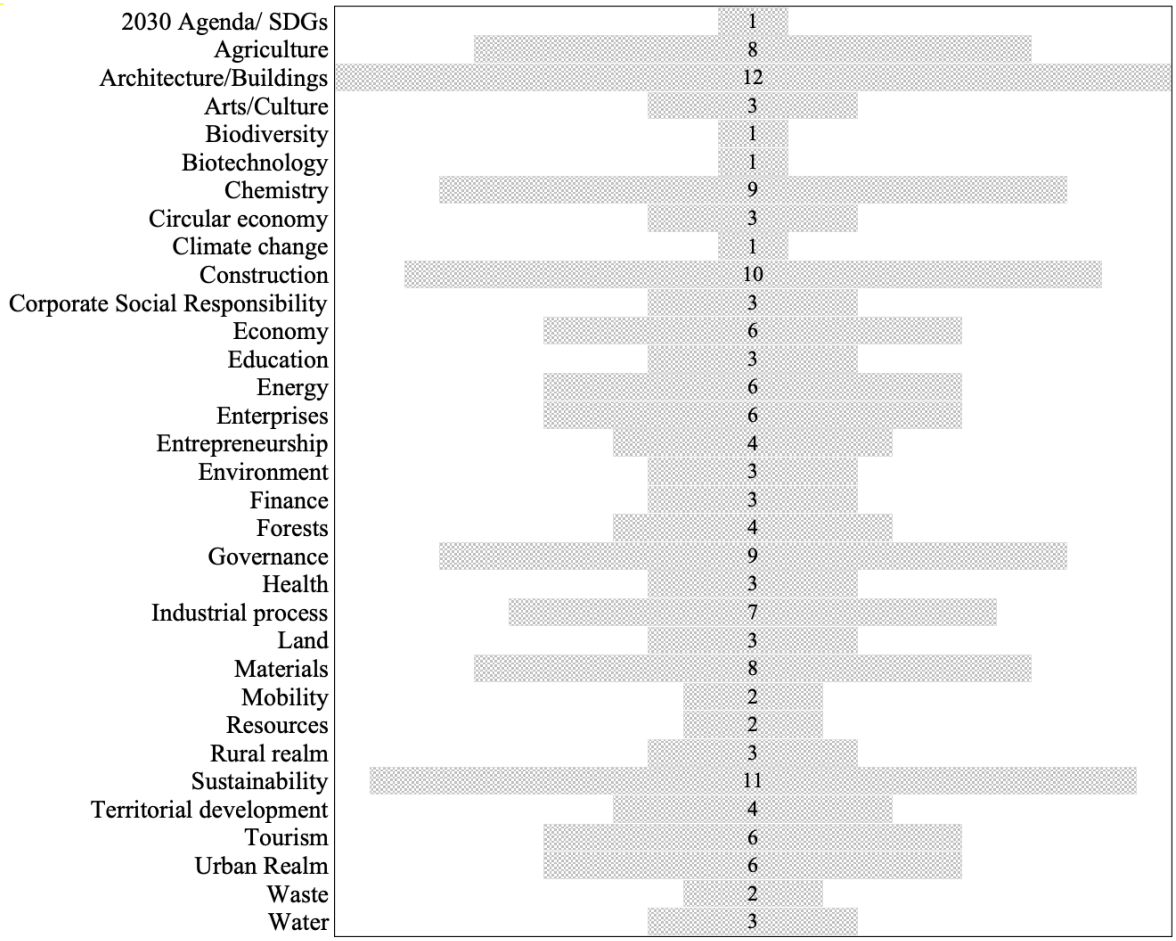

Figure 6. Breakdown of topics examined by the 156 operational research groups. **Source:** authors.

Navigation tabs for exclusive sustainability content are available in 26 universities (variable code #5.1.) of which 18 are public (variable code #5.1.a.). HEIs in Cataluña lead the amount of public (5) and private (3) institutions whose websites gather sustainability information in specific sections freely accessible to web users. On the contrary, Madrid only has two public centres with these particular tabs.

5. Discussion

In response to the research question #1, social responsibility is poorly covered by Spanish HEIs despite some studies underline the fact that the application of corporate social responsibility plans in universities is an important trigger for integrating sustainability in HEIs (Annan-Diab and Molinari, 2017). It reaffirms the belief that social challenges are nowadays behind

environmental issues in the list of top priorities to be tackled (Popescu and Beleau, 2014). Service-learning was adopted by the CRUE Sustainability Commission in 2015 as a pivotal teaching strategy for sustainability education (CRUE, 2022). And participation in community processes was similarly deemed by the CRUE as one of the four transversal competencies to boost sustainability (Aznar Minguet and Ull Solís, 2009). However, the participation of Spanish universities in projects that allow to apply both principles is lower than 10%, hindering students from putting the theory in practice in real-world settings (Price et al., 2021) to handle global problems linked to the SDGs (Elmassah et al., 2022). Consequently, the answer to the question #2 is that Spanish HEIs are barely engaged in projects towards sustainability.

Regarding the query #3, sustainability plans were developed and implemented by roughly half of the HEIs analyzed, most focused on environmental practices and energy efficiency which suits green actions in university campuses as a strategy towards sustainability (Hayder, 2018). But social and economic issues seem to have been put aside, even though the notion *"green campus"* is holistic (Chalfoun, 2014) and therefore, it encompasses all sustainability dimensions (Pereira et al., 2021). Findings are consistent with Leon-Fernandez and Domínguez-Vilches (2015) who highlighted efforts made by Spanish HEIs to transform campuses into more sustainable places. The absence of metrics in sustainability plans prevents the evaluation of progress on the SDGs (De la Poza et al., 2021).

Under the heading of sustainability, a broad spectrum of topics is discussed by research bodies associated to Spanish universities in reply to question #4. Nevertheless, the number of chairs created reflects the poor collaboration between national enterprises and academia (Castillo-Villar, 2020), in contrast to the growth experienced abroad (Ankrah and Al-Tabbaa, 2015), mainly due to the introduction of the SDGs (ElAlfy et al., 2020). Paradoxically, research on the 2030 Agenda/SDGs is marginal in Spain.

Less than a third of the CRUE universities websites offer exclusive navigation tabs where all

sustainability data is grouped together and hence, institutional websites are not the preferred dissemination medium for sustainability and/or the 2030 Agenda information (research question #5). This is in line with the low web visibility of Spanish HEIs in relation to the SDGs outlined by Vallez et al. (2022). Furthermore, the existence of an updated communication channel like university websites might contribute positively to the sustainability awareness of university stakeholders (Mulholland, 2019).

Findings also revealed serious inconsistencies between THE rankings to the HEIs listed in the CRUE and the assessment of the variables of analysis set in Table 1. Five out of six universities ranked in the range of 101-200 have neither a specific 2030 Agenda/SDGs plan nor KPIs to measure progress. On the other hand, Universidad Complutense de Madrid and Universidad de la Laguna with both instruments are located in the ranges of 401-600 and 801-1000, respectively. And moreover, whilst IE University with scores 0 for all variables of analysis is ranked 201-300th, Universidad Publica de Navarra scoring over 0 for all metrics ranks in the position 301 to 400th. Although Universitat Abat Oliba CEU and Universidad CEU Cardenal Herrera have the same scores as Universidad Publica de Navarra, both rank in the range of 801-1000.

In the light of the results, it can be stated the total absence of a common framework that standardizes the operationalization process of the 2030 Agenda in the CRUE universities but preserving their own institutional strategies. Some recommendations are suggested in this regard: i) deployment of university governance to align global strategies of the Spanish HEIs with the 2030 Agenda, ii) establishment of joint procedures, document templates and monitoring system, iii) definition of tracking metrics to rank universities, and iv) conducting periodic reviews and audits to enhance the framework.

6. Conclusions

The research scrutinized the websites of all the 76 universities attached to the Conference of Rectors of Spanish Universities (CRUE) to determine the level of operationalization of sustainability using as reference the 2030 Agenda. A systematic content analysis was the technique employed to measure diverse variables of analysis previously defined, related to the practical implementation of sustainability in the Spanish institutions. Some research questions were thus posed on the basis of this point to be responded by findings gathered. Main conclusions are summarized below:

- The operationalization of sustainability and more specifically, the 2030 Agenda/SDGs in Spanish universities is scant. The participation of private centres is minimal. This pattern is followed nationwide and hence, there is no evidence for affirming that some Spanish region actively promotes the practical implementation of sustainability in HEIs within its geographic boundaries.
- The low number of co-curricular activities undertaken by Spanish HEIs undermines opportunities to students for developing skills and applying knowledge related to sustainability in a practical manner.
- The total figures of research on sustainability disclosed by the study are misleading since investigation oriented exclusively to sustainability and the 2030 Agenda/SDGs is a minority.
- The poor visibility of sustainability information on the HEIs' websites impacts negatively on the promotion of sustainability among university community. Websites more functional might assist university community members to access to some educational opportunities and to participate in endeavors towards the SDGs.
- Despite CRUE guidelines focused on boosting participation in community and service-learning, community outreach is marginal which proves the lack of a sufficiently

influential role of the CRUE in the Spanish universities.

- A joint framework that standardizes the operationalization process of the 2030 Agenda in all the CRUE universities is highly recommended.

Three main constraints were found during the course of the study. Firstly, the uneven website's structure made it harder to perform the content analysis, whilst the absence of a common pattern to organize the structure of the strategic plans prevented from directly comparing them. Given the multidisciplinary nature of sustainability, information was also widely dispersed in different navigation tabs. Secondly, it is uncertain the accuracy, completeness and updating of data gathered. That information limitation can hide behind greenwashing practices that make people believe a good performance when the reality is quite different. And thirdly, research on sustainability was only appraised by examining the research groups of the universities, but other research initiatives such as projects or publications were disregarded. The design of a unified framework for all members of the CRUE to monitor the entire operationalization process encompassing the development of action plans, definition of tracking metrics, assessment of progress and rethinking of strategies might be addressed in a future line of research.

The results of this investigation hint substantial managerial implications for university leaders and decision makers of the HEIs to promote an effective operationalization plan on the basis of a descriptive overview reflecting the current state of the implementation of the 2030 Agenda in most Spanish universities. In social terms, the contribution of the Spanish HEIs to the fulfillment of the SDGs should be reconsidered to further engage university community members.

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Appendix

Table A1. 2022 World ranking and 2022 THE Impact ranking of the 76 Spanish universities members of the CRUE

2022 World Ranking	2022 THE Impact Ranking	University	Area of action	Website	Public/Private
O.R.	601-800	Universidad de Almeria	Andalucía	https://www.ual.es	Public
901-1000	601-800	Universidad de Cádiz		https://www.uca.es	Public
801-900	O.R.	Universidad de Córdoba		https://www.uco.es	Public
O.R.	O.R.	Universidad Loyola Andalucía		https://www.uloyola.es	Private
201-300	O.R.	Universidad de Granada		https://www.ugr.es	Public
O.R.	O.R.	Universidad de Huelva		http://www.uhu.es	Public
701-800	101-200	Universidad de Jaén		https://www.ujaen.es	Public
701-800	201-300	Universidad de Málaga		https://www.uma.es	Public
O.R.	O.R.	Universidad Internacional de Andalucía		https://www.unia.es	Public
601-700	O.R.	Universidad Pablo de Olavide		https://www.upo.es	Public
401-500	401-600	Universidad de Sevilla		https://www.us.es	Public
O.R.	O.R.	Universidad San Jorge	Aragón	https://www.usj.es	Private
501-600	O.R.	Universidad de Zaragoza		https://www.unizar.es	Public
701-800	401-600	Universidad de Oviedo	Asturias	https://www.uniovi.es	Public
901-1000	O.R.	Universidad de las Palmas de Gran Canaria	Canarias	https://www.ulpgc.es	Public
701-800	801-1000	Universidad de la Laguna		https://www.ull.es	Public
901-1000	O.R.	Universidad de Cantabria	Cantabria	https://web.unican.es	Public
701-800	O.R.	Universidad de Castilla La Mancha	Castilla La Mancha	https://www.uclm.es	Public
O.R.	O.R.	Universidad Católica de Ávila	Castilla y León	https://www.ucavila.es	Private
O.R.	201-300	Universidad de Burgos		https://www.ubu.es	Public
O.R.	O.R.	Universidad de León		https://www.unileon.es	Public
O.R.	O.R.	Universidad Pontificia de Salamanca		https://www.upsa.es	Private
501-600	301-400	Universidad de Salamanca		https://www.usal.es	Public
O.R.	201-300	IE University		https://www.ie.edu	Private
O.R.	O.R.	Universidad Europea Miguel de Cervantes		https://www.uemc.es	Private
901-1000	401-600	Universidad de Valladolid		https://www.uva.es/export/sites/uva/	Public
O.R.	801-1000	Universitat Abat Oliba CEU	Cataluña	https://www.uaoceu.es	Private
201-300	201-300	Universitat Autònoma de Barcelona		https://www.uab.cat/web/	Public
151-200	101-200	Universitat de Barcelona		https://www.ub.edu/web/portal/ca/	Public
O.R.	O.R.	Universitat Internacional de Catalunya		https://www.uic.es/es	Private
O.R.	O.R.	Universitat Oberta de Catalunya		https://www.uoc.edu/portal/es/index.html	Private
701-800	201-300	Universitat Politècnica de Catalunya		https://www.upc.edu/ca	Public
301-400	201-300	Universitat Pompeu Fabra		https://www.upf.edu/es/	Public
O.R.	O.R.	Universitat Ramón Llull		https://www.url.edu/es	Private
O.R.	O.R.	Universitat de Vic		https://www.uvic.cat/es	Private
801-900	101-200	Universitat de Girona		https://www.udg.edu/ca/	Public

701-800	401-600	Universitat de Lleida		https://www.udl.cat/ca/es/	Public
601-700	101-200	Universitat Rovira I Virgili		https://www.urv.cat/es/	Public
601-700	O.R.	Universidad de Extremadura	Extremadura	https://www.unex.es	Public
O.R.	201-300	Universidade da Coruña	Galicia	https://www.udc.es	Public
401-500	O.R.	Universidade de Santiago de Compostela		https://www.usc.gal/es	Public
501-600	201-300	Universidade de Vigo		https://www.uvigo.gal	Public
701-800	O.R.	Universitat de les Illes Balears	Islas Baleares	https://www.uib.es/es/	Public
O.R.	O.R.	Universidad Internacional de la Rioja	La Rioja	https://www.unir.net	Private
O.R.	O.R.	Universidad de la Rioja		https://www.unirioja.es	Public
801-900	401-600	Universidad de Alcalá	Madrid	https://www.uah.es/es/	Public
O.R.	O.R.	Universidad Alfonso X El Sabio		https://www.uax.com	Private
O.R.	O.R.	Universidad Antonio de Nebrija		https://www.nebrija.com	Private
301-400	O.R.	Universidad Autónoma de Madrid		https://www.uam.es/uam/inicio	Public
O.R.	O.R.	Universidad Camilo José Cela		https://www.ucjc.edu	Private
901-1000	201-300	Universidad Carlos III de Madrid		https://www.uc3m.es/inicio	Public
O.R.	801-1000	Universidad CEU San Pablo		https://www.uspceu.com	Private
201-300	401-600	Universidad Complutense de Madrid		https://www.ucm.es	Public
O.R.	O.R.	Universidad a Distancia de Madrid		https://www.udima.es	Private
O.R.	O.R.	Universidad Europea de Madrid		https://universidadeuropea.com/conocenos/madrid/	Private
O.R.	O.R.	Universidad Francisco de Vitoria		https://www.ufv.es	Private
601-700	401-600	Universidad Politécnica de Madrid		https://www.upm.es	Public
O.R.	201-300	Universidad Pontificia Comillas		https://www.comillas.edu	Private
901-1000	O.R.	Universidad Rey Juan Carlos		https://www.urjc.es	Public
O.R.	401-600	Universidad Católica San Antonio	Murcia	https://www.ucam.edu	Private
701-800	101-200	Universidad de Murcia		https://www.um.es	Public
O.R.	O.R.	Universidad Politécnica de Cartagena		https://www.upct.es	Public
501-600	601-800	Universidad de Navarra	Navarra	https://www.unav.edu	Private
O.R.	301-400	Universidad Pública de Navarra		https://www.unavarra.es/portada	Public
O.R.	O.R.	Universidad Internacional Menéndez Pelayo	Nationwide	http://www.uimp.es	Public
O.R.	401-600	Universidad Nacional a Distancia		https://www.uned.es/universidad/inicio.html	Public
O.R.	O.R.	Universidad de Deusto	País Vasco	https://www.deusto.es	Private
301-400	O.R.	Euskal Herriko Uniberstsitatea		https://www.ehu.eus/es/	Public
O.R.	801-1000	Mondragon Unibersitatea		https://www.mondragon.edu/es/inicio	Private
601-700	601-800	Universidad de Alicante	Valencia	https://www.ua.es	Public
801-900	301-400.	Universidad Miguel Hernández de Elche		https://www.umh.es	Public
601-700	201-300	Universitat Jaume I		https://www.uji.es	Public
O.R.	O.R.	Universidad Católica San Vicente Mártir		https://www.ucv.es	Private
O.R.	801-1000	Universidad CEU Cardenal Herrera		https://www.uchceu.es	Private
401-500	201-300	Universitat Politècnica de Valencia		http://www.upv.es/es	Public
201-300	101-200	Universitat de Valencia		https://www.uv.es	Public

O.R.: Out of ranking

Table A2. Values gathered for the variables of analysis.

Code	Description	Value
1.1.	Social responsibility plan (all centres)	10
1.1.a.	Social responsibility plan (public centres)	8
1.1.b.	Social responsibility plan (private centres)	2
2.1.	Cooperation and development plan (all centres)	7
2.1.a.	Cooperation and development plan (public centres)	6
2.1.b.	Cooperation and development plan (private centres)	1
3.1.	Sustainability plan (all centres)	36
3.1.a.	Sustainability plan (public centres)	32
3.1.b.	Sustainability plan (private centres)	4
3.1.1.	Integral sustainability plan (all centres)	14
3.1.1.a.	Integral sustainability plan (public centres)	12
3.1.1.b.	Integral sustainability plan (private centres)	2
3.1.2.	Environmental sustainability plan (all centres)	5
3.1.2.a.	Environmental sustainability plan (public centres)	5
3.1.2.b.	Environmental sustainability plan (private centres)	0
3.1.3.	Energy efficiency plan (all centres)	17
3.1.3.a.	Energy efficiency plan (public centres)	15
3.1.3.b.	Energy efficiency plan (private centres)	2
3.2.	A specific 2030 Agenda / SDGs plan (all centres)	20
3.2.a.	A specific 2030 Agenda / SDGs plan (public centres)	16
3.2.b.	A specific 2030 Agenda / SDGs plan (private centres)	4
3.3.	Implementation and monitoring of Sustainability /SDGs metrics (all centres)	12
3.3.a.	Implementation and monitoring of Sustainability /SDGs metrics (public centres)	10
3.3.b.	Implementation and monitoring of Sustainability /SDGs metrics (private centres)	2
4.1.	Number of research groups on sustainability (all centres)	156
4.1.a.	Number of research groups on sustainability (public centres)	139
4.1.b.	Number of research groups on sustainability (private centres)	17
4.2.	Number of chairs on sustainability (all centres)	65
4.2.a.	Number of chairs on sustainability (public centres)	59
4.2.b	Number of chairs on sustainability (private centres)	6
5.1.	Particular navigation tab for exclusive sustainability content (all centres)	24
5.1.a	Particular navigation tab for exclusive sustainability content (public centres)	18
5.1.b	Particular navigation tab for exclusive sustainability content (private centres)	6