

Article

Sustainability Reporting in Higher Education: Interconnecting the Reporting Process and Organisational Change Management for Sustainability

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Abstract: Although there has been a considerable increase in the publication of sustainability reports in the corporate world in the last decade, sustainability reporting in higher education institutions is still in its early stages. This study’s aim was to explore the relationship between sustainability reporting and organizational change management for sustainability in higher education. A survey was sent to higher education institutions worldwide that have published sustainability reports in the last ten years. The survey was answered by 23 institutions out of a total of 64. The findings showed that sustainability reporting has been predominantly driven by internal motivations, and that the sustainability reporting process leads to incremental changes, such as an increase in awareness of sustainability and improvements in communication with internal stakeholders. Some factors impeding change are the absence of an external stakeholder engagement process, the lack of inclusion of material impacts in reports, and the lack of institutionalization of sustainability reporting in the higher education system. The paper proposes that higher education institutions need to consider sustainability reporting as a dynamic tool to plan sustainability changes, and not just as a communication activity.

Keywords: sustainability reporting; higher education institutions; organizational change management; Global Reporting Initiative

1. Introduction

Higher Education Institutions (HEIs) have a pivotal role in disseminating and mainstreaming sustainability thinking within society [1,2]. SD integration in HEIs aims at making students (*i.e.*, future managers, leaders, politicians, academics and citizens) capable of dealing with a large range of global and interlinked economic, environmental, and social issues in their future professional and personal lives [3–5]. During the last decade, an increasing number of HEIs worldwide have been teaching and researching sustainable development (SD), as well as integrating SD into their daily operations [6–8].

Some HEIs have developed and signed declarations, initiatives, and charters to help them demonstrate their SD engagement to their students and other stakeholders, and integrate SD holistically into their system, including education, research, community outreach, operations, assessment and reporting, university collaboration, the institutional framework, educate-the-educator programs, and campus experiences [9–11]. The integration of SD in HEIs requires a focus on the elements of the HEI system, on making SD part of the higher education culture, and on ensuring the institutionalization of SD in HEIs [5,8,12].

Two processes that have seen an increasing interest in the last five years in the Higher Education for Sustainable Development (HESD) discourses have been (1) sustainability reporting (SR); and (2) Organizational Change Management for Sustainability (OCMS). On one side, SR in HEIs has been studied by, for example, Lozano [13]; Fonseca *et al.* [14]; Alonso-Almeida *et al.* [15], who highlight that SR in HEIs is still in its early stages. Some of the reasons for this include the low number of HEIs publishing sustainability reports [13–15], the low quality of the reports [13,14], and the lack of consecutive reporting [15]. On the other side, studies on OCMS in HEIs have discussed the role of accreditation in fostering change towards SD [16], and the role of HEIs as change agents for SD in regional development processes [17]. However, research into the relationship between SR and OCMS in the context of HESD is still limited [18]. This study focuses on providing insights in this relationship.

The paper is structured in the following way: Section 2 presents a summary of SR; Section 3 offers a brief discussion on OCMS; Section 4 provides the methods used; Section 5 discusses the survey findings; Section 6 presents the discussion; and Section 7 provides the conclusions.

2. Sustainability Reporting in Higher Education

The Global Reporting Initiative (GRI) ([19] p. 3) defined SR as: “the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development”. SR is a voluntary activity aimed at communication and accountability on SD impacts towards stakeholders, and at the assessment and improvement of SD performance [20–22]. SR can help assess and improve SD performance over time, benchmark against other organizations, facilitate transparency and external auditing, and demonstrate how the organization influences, and is influenced by, stakeholders [23–26]. Other recognized objectives of SR

include helping to plan changes for SD in the organization, to become a leader in society, and to market SD efforts [27,28].

According to Burritt and Schaltegger [29], and further developed by Herzig & Schaltegger [30], there are two main perspectives that drive SR: the “inside-out” perspective, with internal performance measurement and strategic management for SD as the main drivers of SR; and the “outside-in” perspective, with external information requests from stakeholders as the main drivers for SR. In addition, Kolk [31] found that important motivations for SR include: enhanced ability to track progress against targets, increase of SD awareness, reputational benefits, improved all-round credibility from greater transparency, and cost savings identification.

SR has mainly been led by multinationals and large corporations [32–34], for example the KPMG surveys of the largest 250 global companies in the world have shown an increase in reporting from 35% of those companies in 1999 to 93% in 2013 [35]. Other types of organizations (e.g., small and medium-sized enterprises (SMEs), non-governmental organizations (NGOs), governmental organizations, and HEIs) have also been engaging in explicitly reporting their SD efforts to their stakeholders [36,37]. In particular, HEIs have been publishing sustainability reports (see [13–15]), with an increase from one report in 2004 to 35 reports in 2014 (see Figure 1) [38]. Nonetheless, these numbers are still very low compared to the total number of HEIs in the world [15], estimated at over 20,000 private and public universities worldwide [39,40].

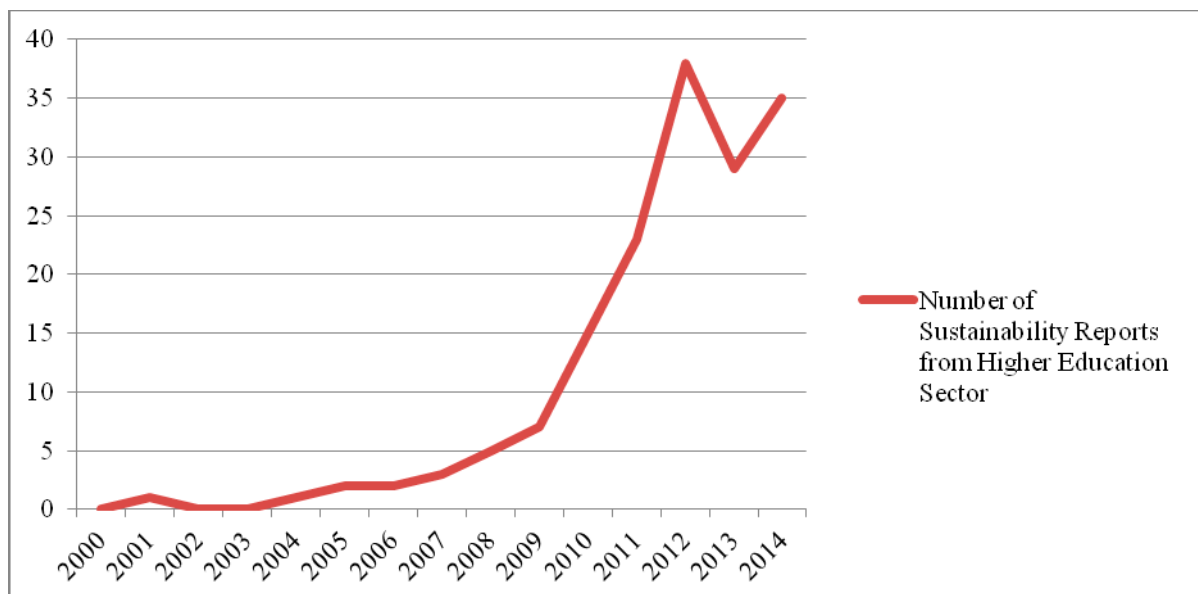


Figure 1. Number of sustainability reports published by Higher Education Institutions (per year) in the GRI Disclosure Database (source: based on [38]).

In the context of higher education it has been recognized that SR can additionally increase cross-institutional comparability [41–43], provide evidence for accreditation bodies [44], and improve HEI’s SD ranking position [43,45]. Some limitations of SR in the higher education context are: the lack of sector-specific guidance on the development of sustainability reports, the limited time and resources for SR, and the lack of a common understanding of SD [42,46–48]. Adams [46] also found a

low identified responsibility for SD at senior levels of HEIs, resulting in a lack of engagement in SR by senior management.

The research on SR in HESD has mainly focused on assessment tools [41,49,50], such as the Graphical Assessment of Sustainability in Universities (GASU) (based on the GRI) [42], the Sustainability Tracking, Assessment & Rating System (STARS) [51], the Campus Sustainability Assessment Framework (CSAF) [52], and the Auditing Instrument for Sustainability in Higher Education (AISHE) [53]. While some of the existing SD assessment tools can help identify a set of core activity indicators for SR in HEIs, in some cases the evaluation of such tools have pointed out that they fail to assess material impacts, see [42,50].

In spite of the increased interest in the topic of SR and the development of assessment tools, only a limited number of articles (see [13–15,18,42]) have researched SR in HEIs [54]. Even fewer papers have discussed the relationship between SR and OCMS in the HESD literature, which include Albrecht *et al.*'s [55] work on organizational learning fostered by SR; and Ceulemans *et al.*'s [18] review on HESD literature and its potential future pathways, including the link between SR and OCMS.

3. Organizational Change Management for Sustainability

Organizational change is aimed at moving an organization from a certain status quo to another, more desirable or improved state [56–58]. Changes can range from minor or incremental changes [59–61] to radical changes [62,63]. The implementation of organizational change is perceived to be difficult due to the complexity of organizations, and the different variables and contextual factors involved [56]. If well anticipated and managed, change can generate opportunities [64], yet failure to respond to changes and new opportunities can entail economic losses [65], or exposure to unanticipated external events [66], such as regulations, technological innovations, or the effects of globalization.

Freeman [67] distinguished two types of change, focused on stakeholder involvement: internal change (*i.e.*, changes that affect or are affected by internal stakeholders); and external change (*i.e.*, changes that occur on the outskirts of the organization, or linked to external stakeholders). Organizations have, in general, more control over internal changes than over external ones, which can make them more proactive [67].

According to Bennis *et al.* [68] there can be three types of organizational change, according to intervention in the change process: (1) radical intervention, organized strictly top-down and emphasizes conflict; (2) serendipitous change, a continuous and unpredictable, “laissez-faire” style process of adaptation to changing conditions; and (3) planned change, which offers the advantage of some type of guidance, without being too constrictive or too serendipitous. Planned change builds on criticized values, evaluated practical experience, and research knowledge [69]. The planned approach is seen as a highly effective type of organizational change [70,71], yet its effectiveness is often related to the participation of members, at all levels of an organization, in assessing and diagnosing needful change, and in formulating its goals and objectives [72].

A number of authors (e.g., Doppelt [60]; Dunphy *et al.* [73]; Lozano [28,74]) have addressed SD through organizational change. They have proposed that organizational change management for sustainability (OCMS) is aimed at making organizations more sustainable by focusing on, and addressing, “soft issues”, *i.e.*, culture, employee behavior, leadership or stakeholder engagement,

rather than changes in technologies or management systems [27,57,75–77]. In general, most OCMS approaches have mainly focused on managerial issues and control mechanisms (e.g., DeSimone and Popoff [78]; Doppelt [60]; Henriques and Richardson [79]), relying on strategic adoption and development of SD activities and management practices [73]. Fewer authors have dealt with internal change and innovation, *i.e.*, focusing on more proactive approaches, and on participative cultural changes (e.g., Doppelt [60]; Dunphy *et al.* [73]; Linnenluecke *et al.* [80]; Lozano [28,74]).

In this context, Lozano [28,74] proposed a framework, based on Bennis *et al.* [68], Lewin [56], Anderson & Ackerman Anderson [81], and Luthans [82], for explaining the dynamics of orchestrating change for corporate sustainability (see Figure 2). The framework depicts organizational change dynamics, where orchestrated planned change can disrupt the *status quo* (SQ) and help the move towards a *More Sustainability-Orientated State* (MSOS), in a continuously iterative process. The entire system and its elements need to be addressed holistically, and during the change, the drivers to change need to be recognized and fostered, whilst the appropriate strategies have to be applied to overcome barriers to change. The institutional framework can help to maintain stability during the changes, and thus facilitate SD institutionalization. During these changes, the system would pass through a transitional period, where the balance of the different forces adjust to each other, to reach the MSOS. Once this has been achieved, the MSOS starts becoming the *status quo novo* (SQN). The process has to start again after stabilization. Lozano's [28,74] framework highlights that planning organizational changes, whilst engaging with the different organizational levels and their attitudes, could help organizations to better overcome resistance to change and integrate their efforts for sustainability more holistically.

In the particular case of HESD, some of the research on OCMS includes: the evolution of a campus sustainability network [83]; the implementation of an SD policy [84]; the role of accreditation in fostering change towards sustainability [16]; drivers and barriers for implementing SD in higher education [85,86]; incorporation and institutionalization into HEIs' systems (including barriers to change and how to overcome them) [5]; and the complexities of organizational change for SD [87]. Most of the articles focused on human interactions between stakeholders within the SD integration process in HEIs, such as the issue of “pointing at power” [87], where stakeholders tend to perceive SD initiatives as other peoples' responsibility, and they see others as holding the barriers to change for SD because of their power but unwillingness to affect change. In the majority of the cases, such organizational changes have been considered to be a radical innovation [5] and a “challenge that forces a paradigm shift” [86], where an integrated or whole-system approach is required [5,88].

In spite of the research on SR and OCMS in general, research focusing explicitly on the relationship between SR and OCMS is still limited. Some of the studies focusing on SR and OCMS include: Adams and McNicholas' [27] work stating that the process of preparing a sustainability report could lead to OCMS; Mitchell *et al.*'s [89] paper discussing that SR's change potential could be undermined by failing to link SR with SD strategy implementation; and Lozano's [74] work highlighting that the SR process is an important driver for change towards SD.

In particular in the HESD literature, the relationship between SR and OCMS has been directly addressed by Albrecht *et al.* [55], who indicated that SR can initiate organizational learning in HEIs, because of its potential to mobilize stakeholders and allow for incremental and fundamental learning.

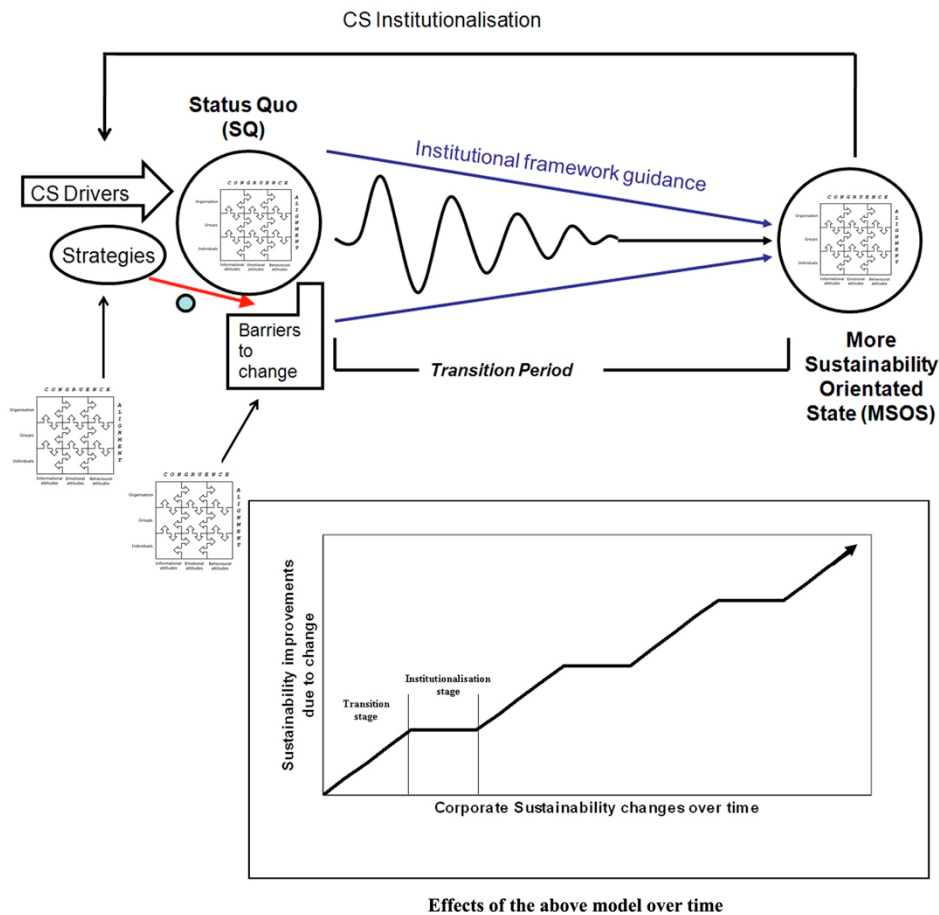


Figure 2. Framework for explaining the dynamics of orchestrating change for corporate sustainability (source: [28]).

As it can be noted, there has been very little research linking SR and OCMS in the context of higher education. Thus, this research focuses on whether and how the SR process contributes to organizational change towards SD in HEIs. The research is based on Lozano's [28] framework but adapted to the context of higher education.

4. Methods

An exploratory approach was undertaken, targeted at the innovators and early adopters of SR in the higher education sector, to study the relationship between the SR process in HEIs and OCMS. The prospective respondents of the study were the HEIs worldwide that had published at least one sustainability report between 2004 and 2013.

An online survey was developed for the data collection (February 2014–June 2014), using “Qualtrics Research Suite” [90] software. The survey had 32 questions, of which 22 were open-ended and 10 were closed-ended. Because of the exploratory nature of the research, mainly open-ended questions were used. To help with the explanatory part, a limited number of close-ended questions (e.g., through Likert scales and ranking boxes) were used for the (sub)topics where literature was available (e.g., for the motivations of sustainability reporting). The survey was divided into the following sections:

- General information on the HEI and the contact person;
- Motivations and objectives of sustainability reporting;
- Organizational change management;
- Stakeholder engagement; and
- Process of sustainability reporting.

The GRI Database was used to select the respondents of this study. The GRI's "universities" sector included 55 HEIs with sustainability reports between 2004 and 2013 at the start of the research (February 2014), and a total of 117 sustainability reports. The dataset was complemented with the data included in previous studies on the topic, *i.e.*, Lozano [13] and Fonseca *et al.* [14]. This resulted in 64 HEIs that had published 138 sustainability reports. The response rate of the survey was 35.9% (23 HEIs out of the 64 HEIs).

Most of the sustainability reports (67.4%) included in the study's database were published between 2011 and 2013. A total of 45.7% of the reports were published in Europe (29 HEIs with 63 reports in 2004–2013), followed by North America (16 HEIs with 41 reports in 2004–2013), and Latin America and the Caribbean (10 HEIs with 20 reports). More than 50% of the HEIs (33 out of 63 HEIs) in the database had not published any consecutive reports in 2004–2013, while only four HEIs (6%) had published five consecutive reports.

4.1. Data Analysis

The findings of the open-ended questions were analyzed using the constant comparative analysis of Grounded Theory, see [91,92], which has four stages.

The first stage of the coding process consisted of open coding [91,92], in which initial labels were attached to the data [93]. This was done through identifying categories in the data, using the concepts behind the survey questions as the starting categories (e.g., motivations for SR or stakeholder engagement), and adding other categories that emerge through the data analysis process (e.g., materiality, or SR as a learning tool).

The second stage consisted of selective coding [94], focusing on the analysis of the core categories that were expected to contribute to theoretical insights on SR in HEIs (e.g., SR objectives and motivations, organizational changes because of SR, and barriers to change in the SR process). In this stage, earlier categories and their properties were integrated, in order to categorize larger units of the data (see Section 5: Findings).

The third stage of the process was the theoretical coding [94,95], in which the most relevant categories for the study were compared to each other, with the purpose of developing these theoretical insights [93] (see Section 6: Discussion).

In the last stage, the new or modified theory was written, which can be used to develop, or test hypotheses [91,92]. The most relevant insights gleaned from the research are presented in the Discussion and Conclusion (Sections 6 and 7).

The results of the close-ended questions were analyzed through descriptive statistics, while for one close-ended question inferential statistics were used (see Figure 4 of Section 5). To test the statistic significance of the differences between the intended and the achieved objectives of sustainability

reporting, a paired *t*-test was used (see [96–98]). This analysis was done through the use of IBM's Statistical Package for the Social Sciences (SPSS) version 21 [99].

4.2. Methods Limitations

Due to the small sample size of HEIs publishing sustainability reports, the results of the survey may not be applicable to all HEIs involved in SR, or HEIs in general. The response rate within the sample of HEIs with published sustainability reports was 35.9%. While the high response rate positively affects generalizability to all the HEIs involved in SR, a sample size of 64 HEIs is low compared to the total number of HEIs worldwide. Non-response bias might be present because only two HEIs that stopped reporting participated in the survey.

Using open-ended questions in the survey may have affected the validity of the study. The respondents mostly provided in-depth responses to the survey questions, yet they might also have provided socially desirable answers [100]. Because of the small sample of HEIs, the analysis of the close-ended questions was done through descriptive statistics. For one close-ended question, *i.e.*, represented in Figure 4 of Section 5, inferential statistics were used to test the significance of the differences between the intended and achieved objectives of sustainability reporting.

Three researchers were involved in the data analysis in order to minimize subjectivity of the data analysis and findings of the study, and thus improve the study's reliability. The respondents reached through the database emails might not have been experts on SR. Due to GRI's requirement of including a direct contact point into each GRI sustainability report, and since 73.5% of the included reports adhered to the GRI guidelines, many of the prospective respondents contacted were directly involved in the SR process, and thus experts on the topic. This strongly facilitated the reliability of the data.

5. Survey Findings

Most reports published by the HEIs that responded to the survey were from 2011 to 2013 (84.2%). The oldest report was published in 2007. Among the respondents, 18 HEIs had published more than one report (78.3%), while five HEIs had published only one report (21.7%), and 34.8% of HEIs did not have consecutive annual reports. Two HEIs indicated that they stopped sustainability reporting (8.7%), while 21 HEIs indicated that they were still publishing sustainability reports (91.3%).

The distribution of the HEIs over the different continents was as follows: 8.7% of the survey respondents are from Asia, 43.5% from Europe, 13.0% from Latin America and the Caribbean, 26.1% from North America, and 8.7% from Oceania.

The survey respondents were mainly directly involved in the preparation of the report (70%), oversaw its preparation (83%), or were responsible for the data collection of the report (61%) (multiple answers were possible for this question). These respondents reported that their experience in SR ranged from 0.5 to 11 years, with an average of five years.

When prompted about the motivations for preparing a sustainability report (Figure 3), 39% of respondents stated that this was driven by internal motivations only, while 48% stated that external pressures were important, but even so, the report was mainly driven by internal motivations (compared to 0% “only external”, 4% “mainly external”, and 9% “both internal and external” motivations).

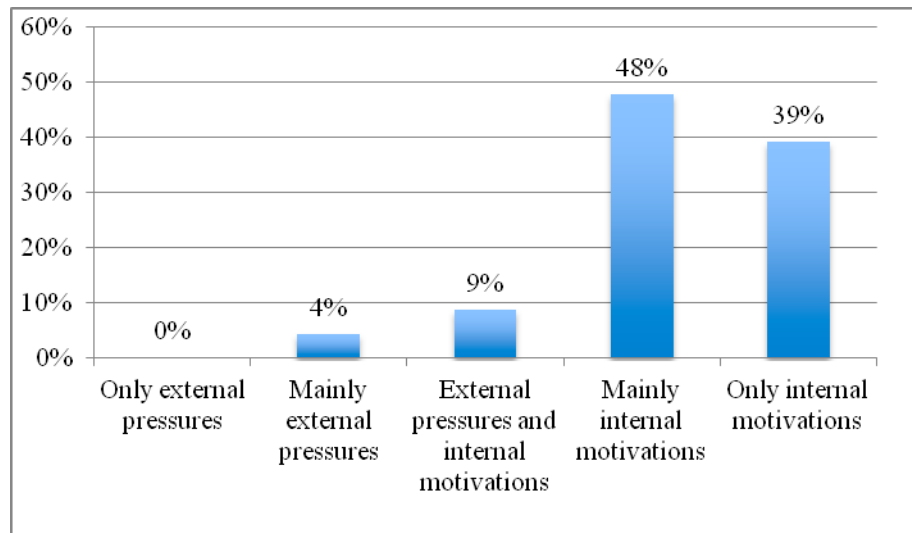


Figure 3. Survey results on the motivations for preparing sustainability reports.

The intended and achieved objectives of SR were measured through a Likert scale, with possible scores varying from 0 to 5, and representing “strongly disagree”, “disagree”, “neither agree nor disagree”, “agree”, and “strongly agree” (see Figure 4). The 12 categories of objectives provided in Figure 4 were derived from the SR literature (see Section 2), and a 13th “other” category was added.

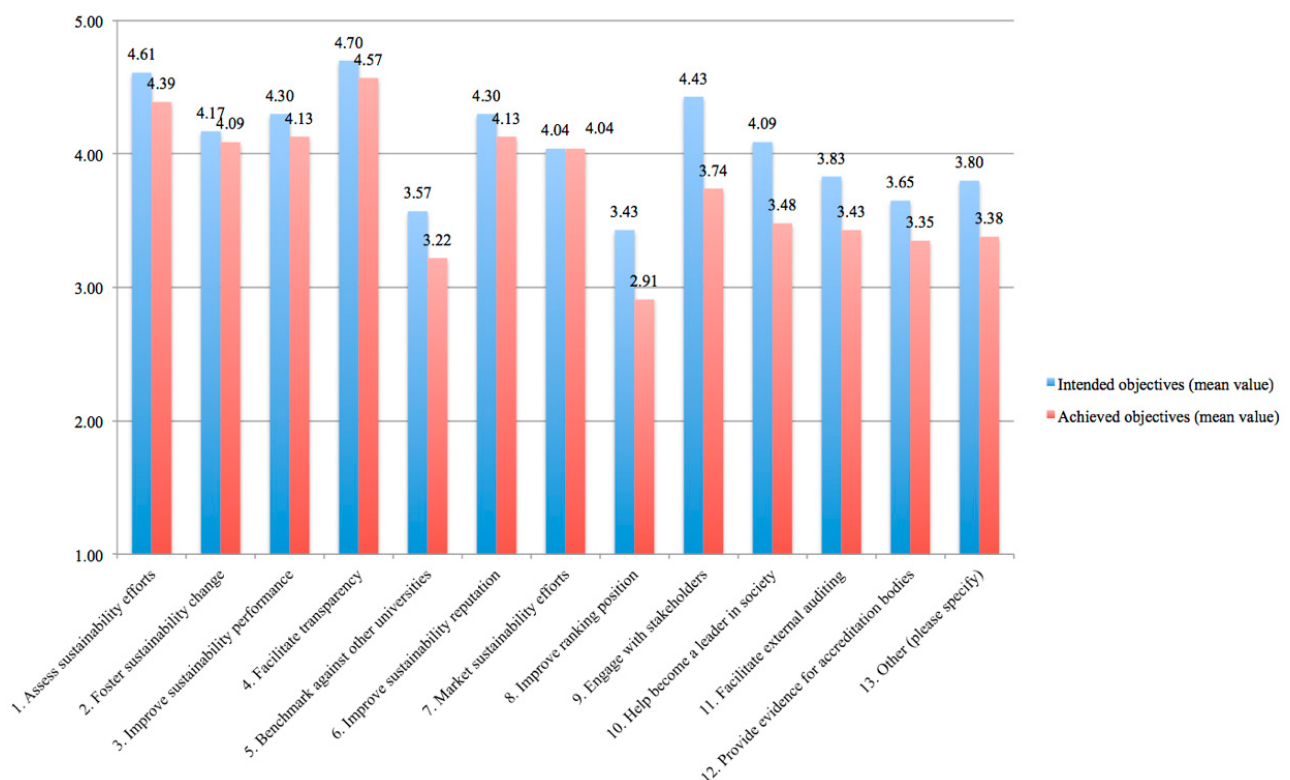


Figure 4. Survey results on the intended and achieved objectives of sustainability reporting.

The main intended objectives for publishing a report were to “facilitate the transparency of your HEI’s sustainability performance” (mean value: 4.70) and “assess your HEI’s sustainability efforts” (mean value: 4.61), while the least important elements were to “improve your HEI’s ranking position”

(mean value: 3.43) and to “benchmark against other HEIs” (mean value: 3.57) (see Figure 4, “intended objectives of SR”).

The scores for the achieved objectives of SR were slightly lower than the intended objectives. The highest scores for the achieved objectives were attributed to “facilitate the transparency of your HEI’s sustainability performance” (mean value: 4.57) and “assess your HEI’s sustainability efforts” (mean value: 4.39) (see Figure 4, “achieved objectives of SR”).

It should be noted that all of the objectives, except “improve ranking position” (mean value, achieved objectives: 2.91), scored higher than 3, *i.e.*, on average, the respondents “agreed” with the proposed intended and achieved objectives of SR. The item “foster change for sustainability” scored relatively high for the intended and the achieved objectives of SR (*i.e.*, respective mean values of 4.17 and 4.09).

Overall, the achieved objectives of SR tended to score slightly lower than the intended objectives (see Figure 5, “Gap between the intended and the achieved objectives”). For example, a very small difference or no gap was found for “foster sustainability change in the HEI” (0.083); “facilitate the transparency of your HEI” (0.125); and “market your SD efforts” (0.000). The largest gaps between the intended and achieved objectives were found for “improve your HEI’s ranking position” (0.500); “engage with stakeholders about SD” (0.667); and “help your HEI become a leader in society” (0.585).

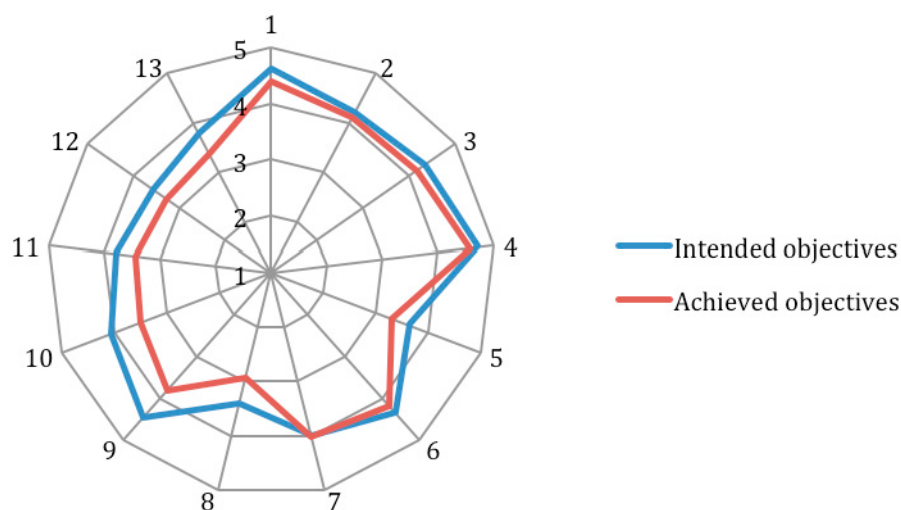


Figure 5. Gap between the intended and achieved objectives of sustainability reporting.

The differences between the “intended objectives” and the “achieved objectives” of SR in HEIs were analyzed using a *t*-test. The results of this analysis are presented in Table 1. It should be noted that the *p*-value provides information about the statistical significance of the differences between the objectives. As it can be observed in Table 1, the highest statistical significance of the differences between the 13 “intended” and “achieved” objectives were for “Help your university become a leader in society”, and “Engage with stakeholders about sustainability”. These were followed by “Assess your HEI’s sustainability efforts”, “Improve your university’s ranking position”, “Provide evidence for accreditation bodies”, and “Facilitate external auditing of your HEI’s sustainability efforts”. HEIs could improve the performance of their “achieved objectives” for these ones, or they could lower their expectations. It should be noted that the results may not be fully representative given the small sample size.

Table 1. Results of *t*-test between the intended and achieved objectives of sustainability reporting.

Paired Intended and Achieved Objectives	Paired Differences Mean	<i>t</i> -Value	<i>p</i> -Value
1. Assess your HEI's sustainability efforts	0.208	2.460	0.022 *
2. Foster sustainability change in the HEI	0.083	0.700	0.491
3. Improve sustainability performance of the HEI	0.167	1.163	0.257
4. Facilitate the transparency of your HEI's sustainability performance	0.125	1.813	0.083
5. Benchmark against other HEIs	0.333	1.621	0.119
6. Improve your sustainability reputation	0.167	1.446	0.162
7. Market your sustainability efforts	0.000	0.000	1.000
8. Improve your university's ranking position	0.500	2.398	0.025 *
9. Engage with stakeholders about sustainability	0.667	4.000	0.001 ***
10. Help your university become a leader in society	0.585	4.897	0.000 ***
11. Facilitate external auditing of your HEI's sustainability efforts	0.333	2.145	0.043 *
12. Provide evidence for accreditation bodies	0.292	2.290	0.032 *
13. Other reason(s)	0.300	1.406	0.193

*** highly significant ($p < 0.01$); * significant ($p < 0.05$).

5.1. Status Quo of the Sustainability Reporting Process

While most HEIs included in the survey do not report annually (see Table 2), nine HEIs (39.1%) referred to SR as an annual or biennial commitment: “we remain committed to annual sustainability reporting, updating our stakeholders on any advancement we have made, as well as any challenges we continue to face”, or annual reporting for “continuity, consistency and comparability”. Only a few of the survey respondents indicated a systematic approach, with annual or biennial reporting, e.g., “annual reporting is required by our sustainability policy”, or “we published annual reports with an update on performance and new targets each year”.

Table 2. Number of consecutive annual sustainability reports per higher education institution (2004–2013).

Number of Consecutive Annual Sustainability Reports	Number of HEIs	Percentage of HEIs
No Consecutive Annual Reports	8	34.8%
Two Consecutive Annual Reports	5	21.8%
Three Consecutive Annual Reports	8	34.8%
Four Consecutive Annual Reports	1	4.3%
Five Consecutive Annual Reports	1	4.3%
Total	23	100.0%

The findings showed that the data collection for SR was not done through a systematic process, *i.e.*, it was mostly organized *ad hoc*, where information was requested and received from various departments and faculties, often without a clear structure or plan. For example, the importance of data selection and prioritization for SR was hardly mentioned by the survey respondents. Six respondents

(28.1%) mentioned applying procedures set out in guidelines or standards, such as GRI, STARS or the Eco-Management and Audit Scheme (EMAS), for data collection and analysis. The data collection and analysis was mostly done by a coordinator or a sustainability office, while sometimes it was done by students or external experts.

Regarding the elements of the higher education system covered in the reports, the survey responses showed a focus on the “campus operations” dimension of HEIs in SR (see Figure 6). The results were measured through a Likert scale, with possible scores varying from 0 to 5, and representing “strongly disagree”, “disagree”, “neither agree nor disagree”, “agree”, and “strongly agree”. The respondents indicated that, in their opinion, their sustainability report assessed and communicated the sustainability efforts taking place in their operations (mean value: 4.61), followed by the institutional framework (covering policies, strategies, *etc.*) (mean value: 4.17), and campus experiences (mean value: 4.13). The core activities of HEIs (*i.e.*, education, research and outreach) scored lower mean values, *i.e.*, between 3.70 and 4.10.

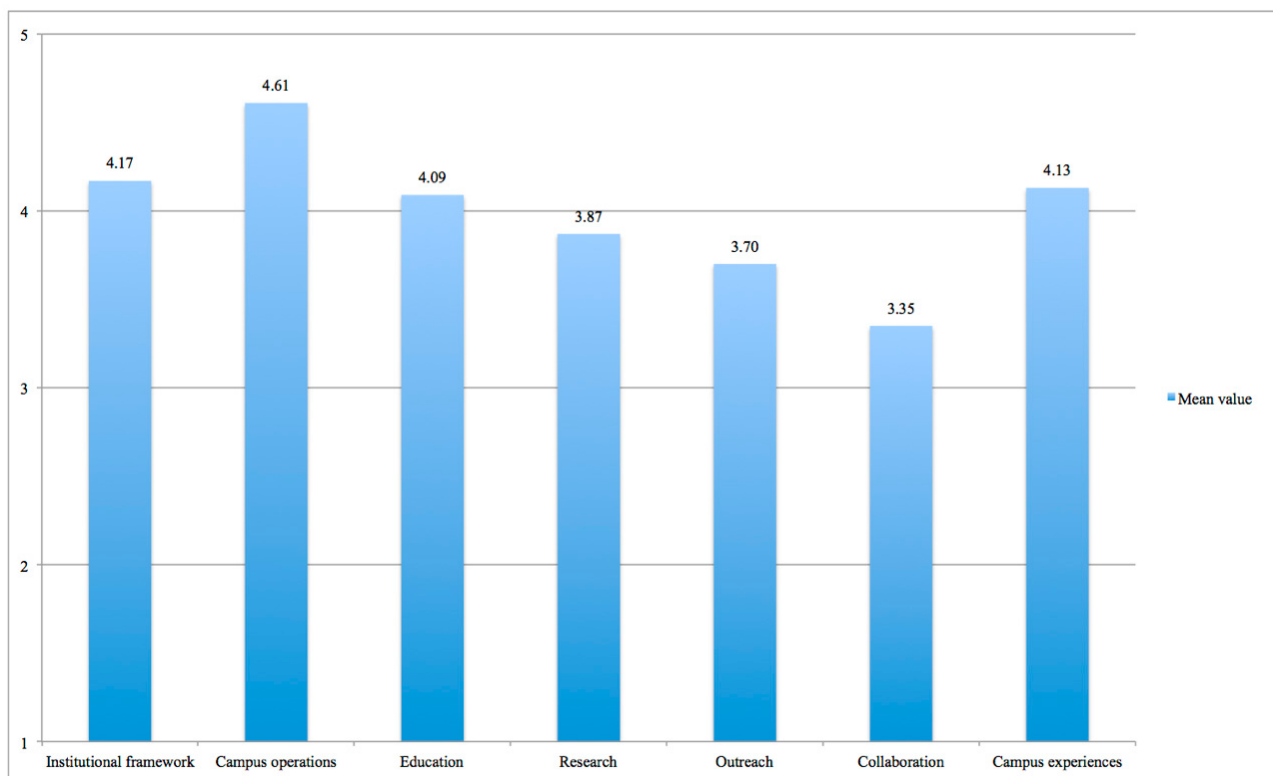


Figure 6. Survey results for the elements of the higher education system covered in sustainability reports.

The respondents mentioned that mainly internal stakeholders (*i.e.*, students and staff) were involved in the SR process. Five respondents (21.7%) referred to the inclusion of a select group of external stakeholders (e.g., NGOs, governments, assurance providers). The data collection process was mainly mentioned as the activity where some (internal) stakeholders were involved. Only one HEI described a structured and in-depth stakeholder engagement process for the creation of their sustainability reports.

5.2. Barriers to Change Identified in the Sustainability Reporting Process

The main barrier to change identified in the survey concerned the communication with and engagement of internal stakeholders in the SR process (mentioned by 12 respondents or 52.2%). Respondents indicated that data availability on SD was difficult, because of the specific structure of HEIs and the poor communication between departments. The difficulties of HEIs' organizational culture was also mentioned: "I don't think universities' working culture is good for this kind of report that requires the timely presentation of large amounts of data".

According to ten respondents (43.5%), the difficulty of identifying key information, or themes to report on, was another barrier to change for HEIs. This was mainly related to the representation of HEIs' core activities in sustainability reports (e.g., which information should be included and how should this information be translated to relevant indicators). Nevertheless, the use of reporting tools, guidelines or protocols for SR (e.g., GRI guidelines), or frameworks linked to it (such as the Association to Advance Collegiate Schools of Business (AACSB) accreditation, the Principles for Responsible Management Education (PRME) or STARS) were, according to six respondents (26.1%), expected to become more important in HEIs in the future.

Seven respondents (30.4%) pointed to the allocation of time and resources as a barrier to SR in HEIs. For example, "timely delivery", "shortage of resources", and "reporting for a large university requires significant efforts in terms of staff time" were mentioned by the survey respondents.

The respondents also commented on how they were planning to overcome some of the barriers to change in the SR process. Regarding difficulties in communication with stakeholders in HEIs, suggested ways to overcome this barrier were the installation of feedback mechanisms for staff involved in the SR process, obtaining management support for the SR process, repeated reporting to increase openness and awareness in staff for SR, increasing staff dialogue, and participation in the SR process. Indicator development (by external parties), and the institutionalization of the SR process by linking it to published plans and general reporting needs in HEIs were mentioned as ways to overcome the barrier to the identification of key information for HEIs.

One of the respondents indicated that "ensuring sufficient depth [in SR] to drive real change", thus providing a direct link between SR and change.

5.3. Changes Achieved by the Sustainability Reporting Process

According to eight survey respondents (34.8%), SR facilitated a more effective implementation of SD, mainly by making data more visible and accessible (e.g., targets, figures, indicators). It was also noted that monitoring of SD performance took place through the SR process, and that there was an increased ability to set targets based on empirical data from sustainability reports.

Six respondents (26.1%) reported an increase in performance (often of operational performance, and mainly environmental improvements), or in drive towards change, while others referred to improvements in the HEI systems (e.g., improved environmental management systems as a result of the reporting process, or a better data collection process). Another point mentioned was a higher commitment to integrate SD into strategic plans and goals due to SR.

Eight respondents (34.8%) mentioned that there was a higher level of engagement and collaboration, awareness, or sense of responsibility due to the SR process (e.g., more open communication, a change in culture, or a change in the engagement of students and/or management for SD because of SR), or “it allows a focus on discussion and improvement”.

SR also improved the understanding and openness towards SD, according to six respondents (26.1%). For example, SR contributed to a “more holistic understanding internally of what sustainability means”. In general, the SR process was seen as a learning experience for the involved parties, while in some cases it was also the starting point for new types of collaboration or learning on SD (e.g., for students).

The role of SR as an individual driver for change in a larger system was also referred to in the survey responses: “reporting is important, but just one tool in driving change”, or “it is hard to give examples, because the report is really only a part of a larger sustainability initiative on campus”.

6. Discussion

The survey findings reinforced that SR in HEIs is still in its early stages, because of the low number of HEIs reporting (see Figure 1), the lack of consecutive reporting (see Table 2), and the lack of focus on material impacts (see Figure 6). This concurs with Adams [46], Alonso-Almeida *et al.* [15], and Lozano [13], who mainly dealt with low numbers of HEIs reporting, low quality of reporting, and the lack of consecutive reporting.

The responses to the survey indicated that the intended objectives of SR in HEIs concentrate mainly on: (1) facilitating transparency; (2) assessing SD efforts; (3) engaging with stakeholders; (4) improving SD performance; (5) improving SD reputation; and (6) facilitating change, as discussed by Kamal & Asmuss [41]; Lozano, [42]; Shriberg [43]. Other objectives of SR, such as benchmarking against other HEIs; improving HEIs’ ranking position; facilitating external auditing; and providing evidence for accreditation bodies (see [41,43–45]) were of less importance during the time of the survey. These findings could provide some reasons for the relatively low adoption of the practice of SR.

The findings also highlighted that SR has been mainly driven by internal motivations. This points to a proactive attitude towards change for SD, and links with Burrit & Schaltegger’s [29] and Herzig & Schaltegger’s [30] “inside-out approach” of SR. Proactivity appears to be more important for HEIs than pressures from the outside. This may be due to the HEIs being “innovators” in terms of SD integration and reporting, while another reason could be that there is simply no, or low, pressure from external stakeholders towards sustainability disclosures.

The SR process facilitated changes in the involved HEIs, such as a more effective implementation of SD, an increase in SD performance, and a higher level of engagement and collaboration on SD, which are mainly incremental changes, see [59–61]. The main change in HEIs due to SR was its effect on the internal stakeholders in terms of creating awareness on SD and facilitating communication with internal groups, which concurs with Adams & McNicholas’ [27] findings for SR in companies.

The findings pointed to an increased communication and interaction on SD, a continued engagement of internal stakeholders, and a better understanding and openness towards SD. The reporting process was perceived as a learning experience for the involved stakeholders (see also [27]), *i.e.*, staff, faculty and management, and in some cases also students, when the reporting process was

used as a didactic concept. All these elements might lead to a “campus culture” that is (more) sensitive to SD issues, see [87]. Yet, since the SR process is currently leading to incremental changes, it is difficult to assess whether the changes are lasting, or likely to lead to lasting transformation towards SD within HEIs. Communication with internal stakeholders in the SR process was also identified as a barrier to change for SD, which points to the importance of this issue in HEIs. Therefore, it should be further investigated whether these changes are present in the whole institution or solely in certain parts or departments/faculties, and whether they are lasting.

An analysis of the survey findings shows that there are still some factors impeding change for SD in HEIs, such as the external stakeholder engagement process (see [27,46]), the institutionalisation of SR (see [47,89]), the allocation of time and resources for SR [46–48], and the inclusion of key impacts in SR (see [42,46]).

According to the survey findings, the reporting process facilitated the internal dialogue and collaboration between stakeholders (mainly within the data collection process), but the external stakeholder dialogue was not fully developed. External stakeholders could be included in the development of targets, the selection of indicators, and the evaluation of progress towards SD of the SR process (see [27]), but at present they were often absent. Thus, the SR process in HEIs is currently not being used at its full potential in terms of external stakeholder engagement and dialogue.

While the internal drive towards change could foster the institutionalization of SR in HEIs in the change process (see [28]), the survey findings showed that SR is not, as yet, institutionalized in most HEIs. The respondents were mainly still in the early learning processes of optimizing SR data collection and management, and were developing feedback mechanisms. It was shown that SR was often separate from SD management practices and strategy formation, which might impede a learning cycle that can result in change (as was discussed by Mitchell *et al.* [89]).

The survey findings indicated that the inclusion of HEIs’ material impacts in sustainability reports still remains a challenge for HEIs (see also [42,46,47]), which may be a factor impeding change for SD. The suggestion of some respondents to wait for external parties to develop such SR core activity indicators, relates to the issue of “pointing at power” in change processes (see [87]).

The respondents stated that staff and students were the most involved actors in developing sustainability reports (see also [46]), which might be another impediment to its change potential. The survey also found that the presence of leadership for SD or sustained management support is considered as a success factor for SR and SD integration (as discussed by Adams [46]; Velazquez *et al.* [6]). Adding this type of support to the SR process in HEIs could lead to a situation of planned change, where directions are set up from the top, but there is space for internal change and innovation.

From the findings, Lozano’s [28] framework (see Figure 2) was adapted to the context of HEIs to better explain the relationship between SR and OCMS (see Figure 7). The figure shows that the first sustainability report drives change in the HEI system (including education, research, community outreach, operations, assessment and reporting, university collaboration, the institutional framework, educate-the-educator programs, and campus experiences). This helps the system move from the *status quo* (SQ) to the *More Sustainability-Orientated State* (MSOS), and results in organizational changes to improve the HEI’s sustainability performance. In this process it is important to recognize the barriers to change, and apply the appropriate strategies for attaining change to overcome the barriers to change. The institutional framework can help to maintain stability during the changes. During these changes,

the system would pass through a transitional period, where the different balance of forces adjust to each other, to reach the MSOS. The implemented changes are, then, institutionalized. The process is continuous and iterative, where the changes help to improve and develop the second sustainability report, which in turn drives more changes. The framework in Figure 7 can be useful to help HEI leaders and managers to understand which efforts have been undertaken for SD in their institution, where their institution is in the SR and organizational change processes, and how SR can serve to better plan organizational changes throughout the entire system to become more sustainability-oriented.

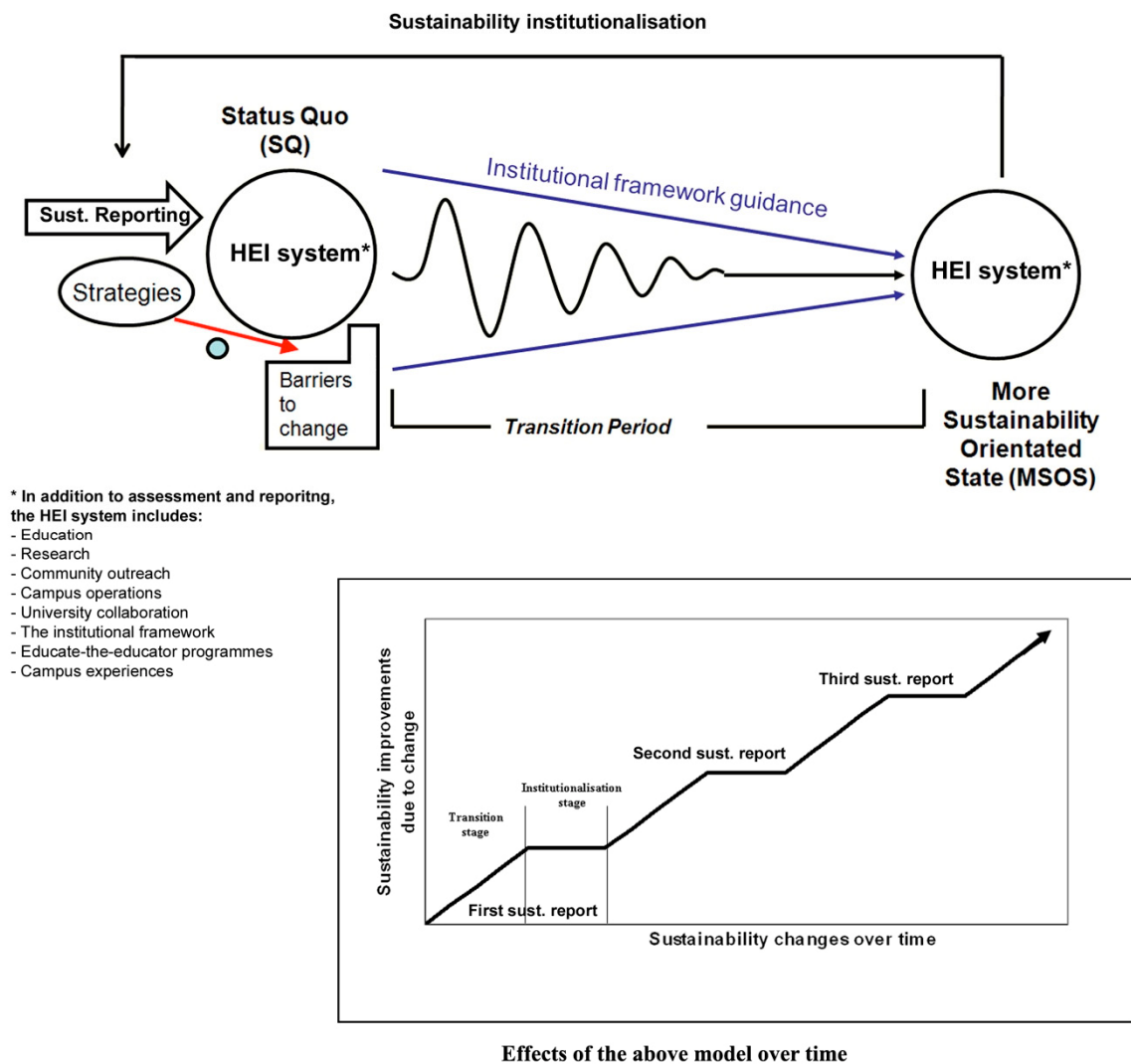


Figure 7. Framework for explaining the interconnections between sustainability reporting and organizational change management for sustainability in Higher Education Institutions (source: adapted from [28]).

7. Conclusions

HEIs around the world have been integrating SD into their systems to achieve lasting change towards SD. The SR process has been identified as one of the drivers contributing to change for SD in corporations. This paper offers an initial exploration of the interconnections between the SR process and OCMS in HEIs, where SR is an important driver for change in HEIs.

The research shows that SR in HEIs is predominantly driven by internal motivations, with the majority of the efforts being mainly led by staff, and sometimes by students. The sustainability reporting process is currently leading to incremental changes, such as an increase in awareness of sustainability, and improvements in communication with internal stakeholders, while factors impeding the change process are the absence of an external stakeholder engagement process, the lack of inclusion of material impacts in reports, and the lack of institutionalization of SR.

SR can serve as an instrument for HEIs to assess where they are, and to plan the future direction of change towards SD in HEIs. The changes due to sustainability reporting need to be institutionalized and fed back into the higher education system. To achieve its full potential, sustainability reporting has to incorporate material issues and engage with external stakeholders. This highlights the need for HEIs to actively engage in planning their organizational changes for sustainability by assessing and reporting their efforts in education, research, community outreach, operations, university collaboration, the institutional framework, educate-the-educator programs, and campus experiences. In order to better plan change towards sustainability, it is important to assess and report SD activities, to institutionalize the SR process into the organization and to obtain management support (including the allocation of time and resources for SR). This can help HEIs overcome resistance to change and integrate SD efforts more holistically, through connecting the SR process with general SD integration processes.

This study provides insights into a topic that has been under-researched, the relationship between SR and OCMS. Such insights highlight that HEIs need to consider sustainability reporting as a dynamic tool to plan sustainability changes, and not just as a communication activity. The process of SR requires systemic, systematic, and continuous evaluations of economic, environmental, and social criteria (as discussed in the adapted GRI guidelines for HEIs) in each of the system's elements and the stakeholders. This may be challenging at first, but would help to build a sustainability-oriented culture.

Since the SR process is a learning process for HEIs that drives change, the HEIs that are currently reporting should take an active role in exchanging information on the topic, so that, in the future, SR can become a more mainstream tool for change towards SD in HEIs around the world.

Further research on this topic should focus on in-depth empirical studies on SR and OCMS in HEIs, for example, on the process of institutionalization of SR in HEIs, or on the use of an external stakeholder dialogue in the SR process to foster change. Another topic for further research could be how the SR process interacts with the different elements of SD integration in HEIs, and how these drivers contribute, holistically, to change for SD.

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Author Contributions

Rodrigo Lozano and Mar Alonso-Almeida conceived the original idea for this study. Rodrigo Lozano and Kim Ceulemans designed the questionnaire. Kim Ceulemans conducted the empirical survey, the analysis and drafted the manuscript, under supervision of Rodrigo Lozano and Mar Alonso-Almeida. All three authors contributed to writing and finalizing the paper. All authors have read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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