Sustainability Reporting and International Rankings in Higher Education : A Case of the University of Split, Croatia

Alfirević, Nikša; Jerković, Igor; Jelić, Petra; Piplica, Damir; Rendulić, Darko

Source / Izvornik: **World, 2024, 5, 107 - 118**

Journal article, Published version
Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

https://doi.org/10.3390/world5010006

Permanent link / Trajna poveznica: https://urn.nsk.hr/urn:nbn:hr:227:949599

world

Article

Sustainability Reporting and International Rankings in Higher Education: A Case of the University of Split, Croatia

Nikša Alfirević [1,*], Igor Jerković [2,3], Petra Jelić [3], Damir Piplica [4] and Darko Rendulić [5]

[1] Faculty of Economics, Business and Tourism, University of Split, 21000 Split, Croatia
[2] Faculty of Chemistry and Technology, University of Split, Ruđera Boškovića 35, 21000 Split, Croatia; igor.jerkovic@unist.hr or igor@ktf-split.hr
[3] Rector's Office, University of Split, Ruđera Boškovića 31, 21000 Split, Croatia; petra.jelic@unist.hr
[4] Department of Forensic Science, University of Split, Ruđera Boškovića 31, 21000 Split, Croatia; damir.piplica@unist.hr
[5] Department for Management, Karlovac University of Applied Sciences, Trg Josipa Jurja Strossmayera 9, 47000 Karlovac, Croatia; darkorendulic1@gmail.com
* Correspondence: nalf@efst.hr

Abstract: We offer practical, case-based experiences on sustainability reporting in higher education institutions (HEIs), with a focus on the integration of sustainability activities into strategic planning and quality management. A proposed approach is based on the experience of the University of Split, Croatia, and the lessons learned from the SEA-EU University Alliance. In line with the Sustainable Development Goals (SDGs), our model emphasizes the active engagement of stakeholders and the continuous collection and review of sustainability data. In addition, we propose to automate the collection and dissemination of sustainability research findings through the implementation of a Current Research Information System (CRIS). Our case study provides a roadmap for improving sustainability performance and reporting. The experience of the University of Split (Croatia) could be helpful and generalizable to a number of universities with an intermediate level of maturity in sustainability management and reporting, trying to improve their university rankings.

Keywords: sustainability; higher education; reporting; University of Split; Croatia

Citation: Alfirević, N.; Jerković, I.; Jelić, P.; Piplica, D.; Rendulić, D. Sustainability Reporting and International Rankings in Higher Education: A Case of the University of Split, Croatia. *World* **2024**, *5*, 107–118. https://doi.org/10.3390/world5010006

Academic Editor: Manfred Max Bergman

Received: 31 December 2023
Revised: 19 January 2024
Accepted: 31 January 2024
Published: 2 February 2024

1. Introduction

Higher education institutions (HEIs) are confronting the challenge of sustainability, with the impact of education on sustainable development becoming one of the focal policy points since the United Nations Decade of Education for Sustainable Development (2005–2014) [1]. Achieving sustainability depends on stakeholders' perceptions and interpretations [2], which requires efficient reporting of HEI efforts to achieve sustainable development [3]. Sustainability reporting is voluntary measuring and communicating the institutional sustainability performance to external and internal stakeholders [4]. Comparable to the corporate sector, sustainability reporting in academic institutions can be driven by the internal HEI's perspective of placing sustainability on the strategic agenda or by external stakeholders' pressures [5,6].

A set of general sustainability reporting guidelines [7] has been developed by the Global Reporting Initiative (GRI), which academic and research organizations can also use [8]. However, they have been criticized for taking the 'managerialist' approach, which is inapplicable to public and civil society organizations in its original form [9]. Voluntary, sector-specific sustainability reporting schemes, such as the Sustainability Tracking, Assessment and Rating System (STARS), can be used as a standard tool for evaluation, benchmarking, and improvement of HEI environmental performance [10], which might not be captured by the overly general GRI recommendations [11]. However, the implementation of such voluntary reporting schemes seems to be limited to individual case studies [12].

Individual HEI experiences are difficult to generalize or to compare internationally, which brings into focus the academic ranking practices, which have recently started focusing on HEI sustainability and social impacts. This especially applies to the Times Higher Education (THE) Impact Ranking, a single global academic ranking scheme assessing the university's performance in achieving the Sustainable Development Goals (SDGs) [13].

Considering THE Impact Ranking as a structured, globally comparable approach to measuring HEI SDG performance as well as an opportunity for HEIs from small countries to promote their higher education globally [14], we review the sustainability management and reporting model, focused on SDGs, as developed and implemented by the University of Split, Croatia (UNIST). There is a dual purpose to this study. Firstly, we seek to identify the local practices that could be transferred to other HEIs without extensive experience in sustainability implementation and reporting. Secondly, we use the expert evaluation for a critical look into those practices to suggest a generalized model of HEI sustainability reporting aligned with the requirements of THE Impact Ranking. We consulted an international expert in the field of sustainability in higher education, circular economy and sustainable development, with a background in environmental science, including multiple publications in international research journals and Horizon EU project proposals. Our initial proposal has been circulated within this expert's professional network and commented by multiple individuals with expertise on sustainable development, sustainability in higher education and environmental science. We express our gratitude to those individuals in finalizing the development of our model and this manuscript.

2. Theoretical Background

Sustainability is an essential trend in higher education, with multiple issues and challenges well described in a systematic review performed by Figueiro and Raufflet [15]. Those are illustrated in Table 1.

Table 1. Challenges of sustainability in higher education.

Introducing Sustainability in Higher Education (HE)			
Challenges to introducing sustainability into HE	Terminological challenges	Teaching and learning challenges	Curriculum orientation
Planning and implementing organizational changes in HEIs	Ensuring a shared understanding of sustainability and related concepts	Creating sustainability-related dynamic learning processes	Choosing among the inter-disciplinary, horizontal (across different courses), vs. vertical curricular approach (by introducing separate, specialized courses)
Introducing changes into HEI management	Developing new sustainability-related HE concepts	Introducing problem-solving teaching and learning methods	Choosing among the cross-disciplinary (isolated, task-specific integration across courses), vs. inter-disciplinary (topic-specific integration across courses, including sharing of methods), vs. multi-disciplinary (field-specific integration across courses, retaining specific fields and methods within disciplines), vs. trans-disciplinary approaches (focusing on inclusiveness and real-world problems, transgressing the HE disciplines)
Ensuring stakeholder involvement	Addressing the lack of HEI staff and administrators' sustainability knowledge	Shifting content-centered HE teaching and learning toward the student-centered approach	
Ensuring sustainability leadership and shared values	Addressing the lack of HEI staff and administrators' competencies to generate and implement innovative concepts	Ensuring the active role of students in academic teaching and learning	

Source: Created by authors using the analytical framework from Figueiro and Raufflet [15].

Reporting such complex initiatives and practices can become difficult and cumbersome, especially for HEIs, without prior experience and established reporting practices. Multiple declarations of commitment toward the sustainability of HEIs and HE systems emphasize different dimensions of the concept, including curriculum integration, research orientation, operational practices, outreach programs, engagement strategies, and reporting mechanisms [16]. The evolving conceptual issues and practices of sustain-

ability in HE introduce ambiguities related to the implementation of the concept at the HEI level and reporting on the current level of sustainability performance. Therefore, there is a need for practical guidance toward implementing and reporting sustainability initiatives, simultaneously contributing to the transfer of best global practices to less experienced HEIs.

The 2030 UN Agenda for Sustainable Development, a comprehensive framework addressing global environmental and social sustainability challenges, with its 17 Sustainable Development Goals (SDGs), represents a relevant roadmap for universities committed to sustainability and sustainable development [17,18]. Structuring HEI sustainability actions and reporting according to the SDG framework might be beneficial for multiple reasons, including the SDGs' comprehensive and holistic nature, orientation toward innovation, interdisciplinarity, and stakeholder inclusion. This has been demonstrated by multiple case studies involving HEIs with different experience levels and maturity in sustainability implementation and reporting [19–21].

An additional benefit of adopting the SDGs as an action and reporting framework relates to the opportunities provided by the HEI accreditation and ranking initiatives. The already-mentioned THE Impact Ranking is one of the most significant global benchmarks of university commitment to social engagement and contribution to sustainable development. Beyond its applicability to measuring and demonstrating HEI activities' social and environmental impacts, it simultaneously represents an opportunity for global recognition of HEIs and their reputation [13]. THE Impact Ranking scores are aligned with the SDG-related HEI activities, with the best-ranked universities being committed to industry knowledge transfer (SDG9) and supporting institutions, peace, and justice (SDG16) [22]. An empirical study has demonstrated that the top-rated HEIs perform interdependent sustainability actions, with education defined in terms of academic teaching and learning as the focal point [23]. According to the same authors, the HEI sustainability actions can be clustered and evaluated according to a maturity model with four stages, starting with low (or no) sustainability, progressing through the stages of sustainability introduction, integrating sustainability into the strategic plans, and, ultimately, developing a full awareness of sustainable development as well as the capacity to offer innovative solutions to sustainability issues in the economy and society [23].

Previous research supports our intention to develop transferrable sustainability reporting activities aligned with THE Impact ranking evidence collection requirements. Those could be considered the 'best practices' within a group of HEIs located within the boundaries of a specific sustainability maturity stage. Our specific aim is to propose a generic and actionable conceptual model that is clearly associated with the widely adopted management frameworks in higher education. As already mentioned, the model needs to be aligned with the requirements of global university ranking data collection and reporting practices to contribute to higher HEI visibility. Simultaneously, the proposed model has to offer flexibility for adaptation to local and regional academic practices, which justifies its development on the conceptual level only. As we aim to make the model actionable and applicable within many different HEIs with moderate levels of sustainability reporting development, especially in smaller and peripheral countries, the implementation details are to be addressed by future research.

In this context, HEI sustainability reporting is interpreted as an integral part of an HEI quality management framework based on Deming's PDSA (Plan-Do-Study-Act) cycle. As a widely adopted continuous improvement framework, the PDSA framework starts with the improvement planning stage (in this case, sustainability-oriented HEI activities/initiatives). It continues with its implementation (Do stage), analysis of results (Study stage), and improvement (Act stage) [24].

Higher levels of HEI involvement in encouraging, reporting, improving, and reporting sustainability actions and their results lead to higher levels of sustainability performance and an improved reputation in the relevant public [25]. The improved social and environmental performance also helps showcase resilience after multiple global crises, especially

the COVID-19 pandemic, which has significantly affected academic teaching and learning [26] and sustainability research [27].

Since sustainability reporting has been inconsistent and incomplete so far [28], a more systematic approach should be adopted based on a universal HEI management framework, such as the strategic or quality management cycle. Although a wealth of indicators and internal evidence on HEI sustainability have been discussed as significant reporting content [29], adopting a global ranking initiative makes settling on an already standardized group of indicators easier. Therefore, it is essential to further focus on the organizational role of sustainability reporting within the chosen HEI management framework, which could be related to sustainability-oriented organizational learning and change, as well as developing general capabilities for HEI sustainability management [29]. In addition, reporting channels and communication tools are relevant and should be further studied, as they have been empirically confirmed to influence HEI stakeholder attitudes and university rankings [30].

3. Materials and Methods

This paper is based on the qualitative research methodology, performed in two steps. Qualitative data collection was performed using interviews with six key informants employed at the rectorate office of the University of Split (UNIST), Croatia, and its constituent faculties and departments. All key informants were directly involved in sustainability management, reporting, and evaluation processes at UNIST. In June 2023, they were asked for their insight into three topics: (a) sustainability reporting at UNIST; (b) sustainability evaluation practices at UNIST, with a focus on evaluating SDG evidence relevant for university rankings; and (c) identification of good practices in UNIST sustainability-related activities, transferrable to other HEIs, which find themselves at lower maturity stages of sustainability reporting [23].

Our intention has not been to collect data on the alignment of student and faculty work and life with sustainability principles or evaluate the long-term effects of HEIs on their local social environment in terms of achieving sustainability. For the stated purpose of this paper, which is limited to evaluating opportunities for generalization for local HEI sustainability practices, a qualitative data collection effort with several key informants was considered adequate. The number of key informants was limited to six, in line with the suggestions of Muellmann et al. [31], who emphasize that the relevance of qualitative data improves only marginally when increasing the number of key informants from a relatively small pool of four to six to an extended group, composed of 12 to 15 actors.

Qualitative data collection via key informants has long been used in the social sciences [32]. It can be useful when informants occupy specialized roles within an organization or, generally, within a social structure. In this case, they can provide specialized information about their professional roles and activities [33], leading to a reliable assessment of the university's sustainability reporting practices. All informants were asked for informed consent to participate in data collection and were guaranteed anonymity. Interviews were semi-structured, i.e., three previously identified fundamental topics were introduced to the informants, who were free to structure their answers and introduce the additional topic(s) if they felt those were essential for understanding sustainability management and reporting at UNIST. Interviews were recorded using the smartphone's voice recording capability and later transcribed according to Akhter's methodological recommendations [34]. Descriptive coding has not been used since our goal was to summarize different perspectives and points raised by different key informants, which could have been missed otherwise, i.e., in the case of document analysis or using a single informant.

Content analysis has been performed by pooling quotes from all six key informants and classifying them into two categories, i.e., describing the current state and good practices of sustainability reporting at UNIST and denoting the planned improvements of the sustainability management and reporting processes. The co-authors reviewed quotes,

and those describing the same practices were joined and described using well-established concepts from the HEI sustainability field.

In December 2023, an independent international expert in HEI sustainability was invited to review the original interviews with the UNIST key informants and the entire procedure of qualitative data analysis. According to their suggestions, some initially selected practices were dropped since the expert rated them as not potentially generalizable across a range of other HEIs. The remaining practices identified by the original research were re-mapped, and a new presentation of the results was developed.

4. Results

4.1. Good Practices in Sustainability Reporting at the University of Split (UNIST), Croatia

Based on the information collected from semi-structured in-depth interviews with the key informants and the suggestions of an independent HEI sustainability expert, good practices established in reporting sustainability activities at the University of Split are presented in Table 2.

Table 2. Potentially generalizable local sustainability practices.

UNIST Implementation and Reporting Practices		
Sustainability data collection (focused on SDGs)	Sustainability data evaluation (focused on SDGs)	Sustainability data reporting and outreach (focused on SDGs)
Initial screening of the extant, SDG-themed HEI scientific output and corrections of HEI affiliations for papers indexed by Clarivate Web of Science and Elsevier Scopus, to be performed according to UNIST good practices [35]	Promoting the SDG data specialists (previously in charge of the entire data collection effort) to the advisory roles.	Communicating the HEI sustainability activities using a Web portal [36] to disseminate the SDG-themed reports [37,38].
Replacing the isolated data collection, focused on deadlines for evidence submissions to external ranking and accreditation agencies with continuous data collection and reporting (relevant research projects and outputs, as well as datasets and materials, made available to the public in the Open Science framework, according to the individual SDGs).	Developing internal standards for writing SDG evidence based on the requirements of external ranking and accreditation agencies.	Associating the outcomes of the SDG activities to the HEI strategic plan and its objectives. Communicating the outcomes using the public event and the HEI Public Relations office.
Introduction of expert sub-committees in charge of individual SDGs at the HEI level to monitor and map the activities within each SDG.	Introducing a centralized sustainability expert committee at the HEI level will consider how the external ranking and accreditation agencies might interpret the SDG evidence.	Internal benchmarking of the collected data and disseminated outcomes to other HEIs using analytical tools from global academic ranking institutions and bibliometric solution providers.

Source: Authors.

Although this paper is based on an evaluation of local practices, as performed by a single HEI, the previously presented results are, at least, partially generalizable since they have been coordinated internally within a large European University of the Seas (i.e., the European University Alliance of SEA-EU). This university network consists of partner universities in a range of EU countries with naval-related culture, traditions, and activities, currently connecting the University of Cadiz (Spain), University of Brest (France), University of Kiel (Germany), University of Gdansk (Poland), University of Malta (Malta), University of Naples Parthenope (Italy), University of Algarve (Portugal), and NORD University (Norway).

4.2. Toward a Generalized Model of HEI Sustainability Reporting

We propose a generalized HEI sustainability management and reporting model based on the previously reported (partially) generalizable sustainability reporting practices of

UNIST and insights into similar practices at SEA-EU partner universities, which will be further acknowledged in Section 5. Previous theoretical foundations for the model development include findings from Lozano et al. [39], who recognized a high level of interconnectedness among the academic leadership and their motivation to support sustainability initiatives, the formal sustainability commitment of an HEI, and its systematic implementation. We acknowledge those findings by adopting benchmarking with the best universities globally, committing to the sustainability standards of the global ranking agencies, and integrating sustainability management and reporting into the academic quality management cycle.

We also acknowledge the widely recognized role of external stakeholders in developing HEI sustainability and reporting on institutional sustainability performance [40,41]. Our model assumes proactive stakeholder involvement via an opportunity to obtain limited access to the internal HEI IS, to obtain relevant sustainability information continuously, and to stay connected to the HEI via online communication and collaboration tools. Delgado Ceballos et al. [42] show that such an approach is useful for eliminating internal barriers to developing proactive environmental strategies. Regular communication and the development of mutual understanding related to sustainability issues address differences in stakeholder perceptions and prevent potential stakeholder conflicts. Those issues have already been recognized as a major challenge to achieving sustainability among Portuguese HEIs [43].

While this model is generic, it should be noted that HEIs with lower-to-mid levels of sustainable management practices maturity will find this model most useful, as UNIST itself is positioned in the 401st–600th bracket of the 2023 THE Impact Rankings [44]. This implies a mid-level sustainability management maturity stage with multiple improvement opportunities. The proposed model is presented in Figure 1.

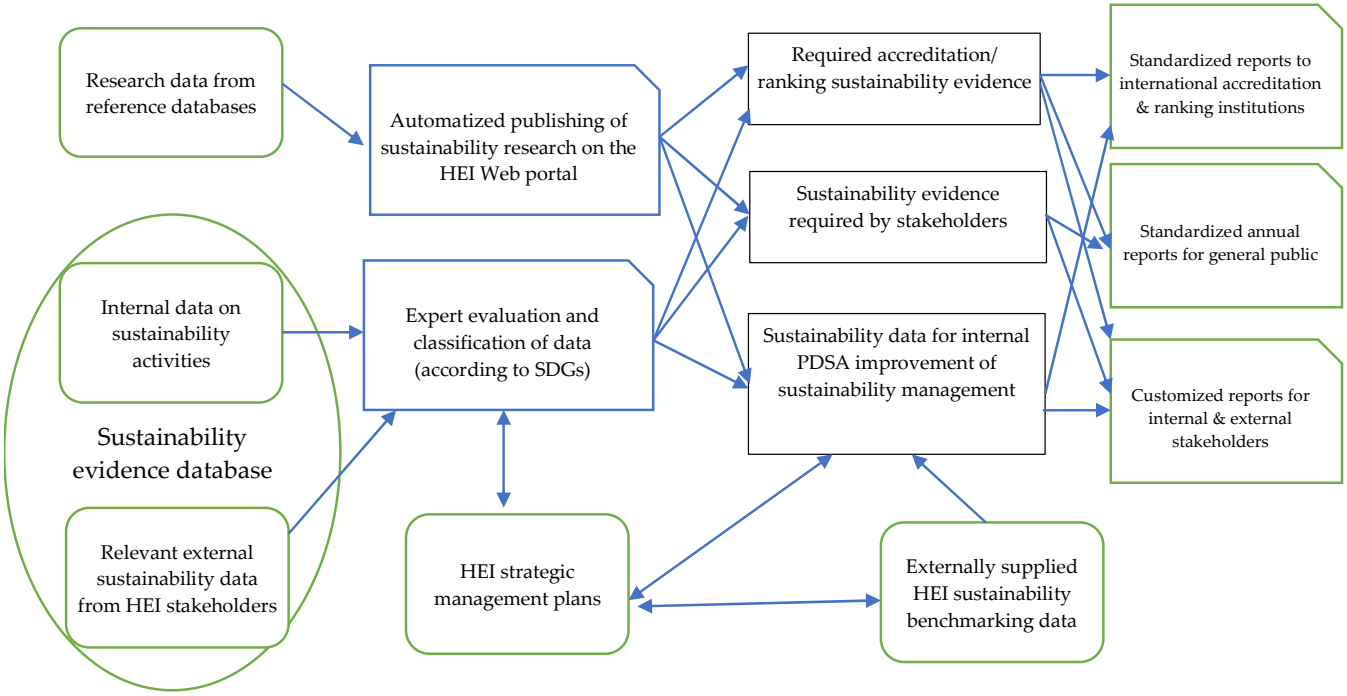

Figure 1. Generalized model of HEI sustainability reporting.

The model uses a variety of data sources and introduces several planned improvements over the current generalizable UNIST sustainability reporting practices, presented in Table 2. Since academic accreditation and ranking institutions require a significant amount of bibliometric evidence, a fair amount of manual work can be replaced by a CRIS (Current Research Information System), keeping current information about relevant

research activities and projects and research publications relevant for HEI sustainability. In addition to collecting research-based evidence and automatically publishing it on the institutional Web portal, such a system can be associated with an HEI Open Science repository to showcase institutional research potential [45]. A first step toward such a reporting practice has already been taken at the level of the entire SEA-EU University Alliance by the University of Gdansk, which has recently set up the Research Potential Database and Shared Infrastructure Database for the SEA-EU Alliance [46].

A good UNIST practice related to the expert evaluation of the sustainability evidence for HEI activities has been incorporated into the model. At the same time, an improved database system with internal browsing and search functionalities should be considered a support tool for sustainability experts serving on SDG (sustainability) evaluation and reporting (sub)committees at an HEI. It could be implemented as a stand-alone information system (IS) or a CRIS module. Such an IS can be easily used for centralized storage of HEI evidence for different purposes, including sustainability reporting and reporting for other international accreditation and ranking requirements. Some functionalities can be devoted to entering external data by HEI stakeholders, who can provide limited access to the system and the opportunity to continuously monitor the previously agreed HEI performance indicators relevant to their legitimate interests.

Another dimension of the presented model, arising from good practices at UNIST, relates to integrating sustainability management and reporting into the system of academic quality management. The HEI quality cycle must integrate sustainability into its planning and improvement cycle based on the PDSA methodology. For this purpose, HEI sustainability reporting should be connected to the improvements planned within the quality management process. A separate IS module could be developed to serve the needs of both HEI quality and sustainability management staff. In addition, HEI information and reporting architecture can be supplemented by sources of external benchmarking data, usually supplied by international accreditation and ranking institutions.

The sustainability reporting process outputs are standardized reports for external accreditation or academic ranking. Those reporting processes can be easily automated with an appropriate IS in place. Standardized annual reports for the general public represent a reporting standard, which is expected from HEIs if they are to serve as forerunners of social and environmental sustainability [47]. Their production can be increasingly facilitated by the proposed (CRIS) and its functionalities, which can also be used to enable electronic communication with various external stakeholders and their on-demand reporting. Thus, stakeholder sustainability reporting can be simplified, with the production of separate reports completely replaced by the limited access to the HEI IS.

5. Discussion

A generalized sustainability management and reporting model for HEIs was proposed based on the good practices recently performed at UNIST, significantly improving the ranking position in 2023 for 13—out of the total 17 SDGs included in THE Impact ranking [44].

Some ‘take-outs’ from the UNIST sustainability management and reporting case, generalizable across a range of other HEIs positioned at a similar maturity level of sustainability practices, are as follows:

- SDG-related research outputs should be checked for institutional affiliations, with special attention paid to Clarivate Web of Science and Elsevier Scopus institutional affiliations and correcting, i.e., standardizing the institutional affiliations used by individual researchers and research groups. Instead of manually tracking the research outputs, a CRIS could be used, which also contributes to the HEI visibility by connecting an Open Science repository with publication and research data freely available to external research stakeholders.
- Expert sub-committees, including researchers, should be set up and put in charge of individual SDGs at the university level, including a joint committee coordinating

their work. It is easier for expert teams than administrative employees to monitor HEI research performance, evaluate and classify HEI activities according to an individual SDG, and prepare relevant reports for various stakeholders.

- Reporting should be performed in the national language and English through multiple communication channels to ensure transparency and visibility of HEI sustainability efforts in the international academic and professional communities. This is especially important for HEIs belonging to university partnerships and alliances. As a member of the SEA-EU university alliance, UNIST can enhance the work of SDG sub-committees by sharing the best practices from partner universities within the SEA-EU academic community. Furthermore, partner universities can mutually support achieving long-term sustainability goals by promoting scientific outputs and actions for sustainable development (e.g., identifying research potentials to conduct joint research and prepare publications and scientific projects). The described practices are expected to facilitate sustainability reporting and the entire UNIST non-financial reporting, well above the standards established in the Croatian public sector [48] and the wider region.
- HEI sustainability reporting should be planned and performed within the quality management process to mandate continuous (re)evaluation of the existing practices and their improvement. In addition, integrating sustainability management and reporting into the academic quality management system improves visibility and stakeholder perception of HEI sustainability performance, as shown by a study of SDG-related European standards in the commercial sector [49].
- Strategic planning must set general directions for HEI quality management, sustainability management, and reporting. All three HE practices are to be coordinated, as this approach ensures the alignment of all HEI activities with the sustainability principles [50] and aligns well with the efforts to achieve higher levels of sustainability maturity in voluntary reporting [51]. Our model acknowledges prior research results by linking them to the improvements intended by the quality management system, which should be directed toward implementing strategic plans. In addition, strategic planning informs the SDG expert (sub)committees of the strategic direction(s) that should be followed, as sustainability activities are discussed with the internal UNIST actors. Simultaneously, strategic plans are aligned with the competitive information obtained from the external HE benchmarking data, including the sustainability benchmarks from relevant competitive HEIs.

The generalizability of our model is supported by a range of proclaimed principles and comparable practices across the SEA-EU University Alliance. One of the benchmarks for the development of our model has been the University of Gdansk (UG), especially the insights into the work of the UG Centre for Sustainable Development, which serves as the enabler and promoter of sustainability-related attitudes and actions within the local and regional academic communities [52]. Within the SEA-EU University Alliance, UG places a special emphasis on developing sustainability networks, involving multiple relevant stakeholders. This practice is aligned with the stakeholder engagement strategies across different SEA-EU member universities [53,54], and the stakeholder reporting and reach out initiatives taken so far within the SEA-EU University Alliance [55]. We incorporated the principles of stakeholder reporting and involvement into our generalized model and followed the good practices of open science, as recommended for standardization across the SEA-EU University Alliance [56]. Using the SEA-EU University Alliance principles, recommendations and experiences, the proposed model strives to directly contribute to the HEI commitments to sustainability stewardship, higher levels of stakeholder and general public reporting and outreach, an emphasis on collaborative impacts, and continuous adaptation to the changing environmental challenges. These dimensions are assessed as key determinants of reporting, aligned with the formal 2024 methodology of THE Impact Rankings [57].

This study has multiple limitations, which reflect the proposed model's generalizability level. The most significant limitation can be found in the amount of data explicitly collected

at a single HEI, acknowledging the experiences and practices of a single EU University Alliance. Application of the proposed model by HEIs also needs to be further developed, since this manuscript is limited to the proposal of a conceptual sustainability reporting model and positioning such a model within the wider context of quality and strategic management frameworks. As previously mentioned, our aim is to offer an actionable generic model that could be readily adopted and customized by HEIs in smaller countries that do not have developed sustainability reporting and management systems but still wish to address the sustainability challenge and increase their visibility in the global university ranking systems.

Empirical verification remains to be conducted by future research, which should also address the research questions of the impact related to the relationship(s) among HEI strategic planning, quality management, and sustainability initiatives. Some of those individual relationships have been empirically analyzed in the existing literature. Some literature looks at the empirical evidence on how strategic planning and quality management are related in the HE context [58,59]. In addition, the roles of several strategic management tools in achieving HEI sustainability have been analyzed [60], with some quality-related tools and approaches also being empirically verified as contributing to the measurement of sustainable HEI development [61]. However, empirical relationships and potential causal links among the triad of HEI strategic planning, quality, and sustainability management remain relatively unexplored. Although practically oriented, the proposed model of HEI sustainability reporting has tackled the need for further theoretical modeling and empirical verification of the relationships among the three considered constructs.

6. Conclusions

From a theoretical viewpoint, this paper introduces a generalized model of HEI sustainability reporting integrated with the existing strategic planning and quality management HE literature. It draws from the existing theoretical literature and the good practices at the University of Split, Croatia. We believe that the model will be practically relevant, especially for HEIs with a mid-level sustainability management maturity, as well as useful for future research on HE sustainability and its relationships with other academic practices.

Author Contributions: Conceptualization, N.A. and I.J.; Formal analysis, I.J. and P.J.; Investigation, N.A. and P.J.; Methodology, N.A.; Project administration, N.A.; Supervision, N.A.; Validation, D.P. and D.R.; Writing—original draft, N.A., I.J. and P.J.; Writing—review and editing, N.A., D.P. and D.R. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable, as this study does not involve research on humans or animals.

Informed Consent Statement: Not applicable, as this study does not involve research on humans.

Data Availability Statement: Data are contained within the article.

Conflicts of Interest: The authors declare no conflicts of interests.

References

1. Wals, A.E. Sustainability in higher education in the context of the UN DESD: A review of learning and institutionalization processes. *J. Clean. Prod.* **2014**, *62*, 8–15. [CrossRef]
2. Aleixo, A.M.; Azeiteiro, U.M.; Leal, S. UN Decade of Education for Sustainable Development: Perceptions of Higher Education Institution's Stakeholders. In *Handbook of Theory and Practice of Sustainable Development in Higher Education*; Leal Filho, W., Azeiteiro, U., Alves, F., Molthan-Hill, P., Eds.; World Sustainability Series; Springer: Cham, Switzerland, 2017. [CrossRef]
3. Caputo, F.; Ligorio, L.; Pizzi, S. The Contribution of Higher Education Institutions to the SDGs—An Evaluation of Sustainability Reporting Practices. *Adm. Sci.* **2021**, *11*, 97. [CrossRef]
4. Ceulemans, K.; Lozano, R.; Alonso-Almeida, M.D.M. Sustainability reporting in higher education: Interconnecting the reporting process and organisational change management for sustainability. *Sustainability* **2015**, *7*, 8881–8903. [CrossRef]

5. Burritt, R.L.; Schaltegger, S. Sustainability accounting and reporting: Fad or trend? *Account. Audit. Account. J.* **2010**, *23*, 829–846. [CrossRef]
6. Herzig, C.; Schaltegger, S. Corporate Sustainability Reporting. In *Sustainability Communication*; Godemann, J., Michelsen, G., Eds.; Springer: Dordrecht, The Netherlands, 2011. [CrossRef]
7. Global Reporting Initiative. Consolidated Set of GRI Standards. Available online: https://www.globalreporting.org/pdf.ashx?id=12024 (accessed on 6 June 2023).
8. Amiano Bonatxea, I.; Gutiérrez-Goiria, J.; Vazquez-De Francisco, M.J.; Sianes, A. Is the global reporting initiative suitable to account for university social responsibility? Evidence from European institutions. *Int. J. Sustain. High. Educ.* **2022**, *23*, 831–847. [CrossRef]
9. Dumay, J.; Guthrie, J.; Farneti, F. GRI sustainability reporting guidelines for public and third sector organizations: A critical review. *Public Manag. Rev.* **2010**, *12*, 531–548. [CrossRef]
10. Urbanski, M.; Filho, W.L. Measuring sustainability at universities by means of the Sustainability Tracking, Assessment and Rating System (STARS): Early findings from STARS data. *Environ. Dev. Sustain.* **2015**, *17*, 209–220. [CrossRef]
11. Moggi, S. Sustainability reporting, universities and global reporting initiative applicability: A still open issue. *Sustain. Account. Manag. Policy J.* **2023**, *14*, 699–742. [CrossRef]
12. Kirrane, M.J.; Pelton, C.; Mehigan, P.; Poland, M.; Mullally, G.; O'Halloran, J. Reaching for the STARS: A Collaborative Approach to Transparent Sustainability Reporting in Higher Education, the Experience of a European University in Achieving STARS Gold. In *International Business, Trade and Institutional Sustainability*; Leal Filho, W., Borges de Brito, P., Frankenberger, F., Eds.; World Sustainability Series; Springer: Cham, Switzerland, 2020. [CrossRef]
13. Nogueiro, T.; Saraiva, M. Quality and Practices for Sustainability in Higher Education—An Impact Ranking Approach. In *Perspectives and Trends in Education and Technology*; Mesquita, A., Abreu, A., Carvalho, J.V., de Mello, C.H.P., Eds.; Smart Innovation, Systems and Technologies; Springer: Singapore, 2023; Volume 320. [CrossRef]
14. Nogueiro, T.; Saraiva, M. Global Academic Rankings. A Challenge or a Chance to Portuguese Higher Education Institutions. In *Higher Education for Sustainability*; Machado, C., Davim, J.P., Eds.; Management and Industrial Engineering; Springer: Cham, Switzerland, 2023.
15. Figueiró, P.S.; Raufflet, E. Sustainability in higher education: A systematic review with focus on management education. *J. Clean. Prod.* **2015**, *106*, 22–33. [CrossRef]
16. Lozano, R.; Lukman, R.; Lozano, F.J.; Huisingh, D.; Lambrechts, W. Declarations for sustainability in higher education: Becoming better leaders, through addressing the university system. *J. Clean. Prod.* **2013**, *48*, 10–19. [CrossRef]
17. González-Torre, P.L.; Suárez-Serrano, E. A framework for implementing and reporting United Nations sustainable development goals in Spanish higher education institutions. *Int. J. Sustain. High. Educ.* **2022**, *23*, 1349–1365. [CrossRef]
18. Serafini, P.G.; de Moura, J.M.; de Almeida, M.R.; de Rezende, J.F.D. Sustainable development goals in higher education institutions: A systematic literature review. *J. Clean. Prod.* **2022**, *370*, 133473. [CrossRef]
19. Wright, C.; Ritter, L.J.; Wisse Gonzales, C. Cultivating a collaborative culture for ensuring sustainable development goals in higher education: An integrative case study. *Sustainability* **2022**, *14*, 1273. [CrossRef]
20. Hansen, B.; Stiling, P.; Uy, W.F. Innovations and challenges in SDG integration and reporting in higher education: A case study from the University of South Florida. *Int. J. Sustain. High. Educ.* **2021**, *22*, 1002–1021. [CrossRef]
21. Sáez de Cámara, E.; Fernández, I.; Castillo-Eguskitza, N. A holistic approach to integrate and evaluate sustainable development in higher education. The case study of the University of the Basque Country. *Sustainability* **2021**, *13*, 392. [CrossRef]
22. De la Poza, E.; Merello, P.; Barberá, A.; Celani, A. Universities' reporting on SDGs: Using the impact rankings to model and measure their contribution to sustainability. *Sustainability* **2021**, *13*, 2038. [CrossRef]
23. Mejía-Manzano, L.A.; Vázquez-Villegas, P.; Smith, A.; Soeiro, A.; Kálmán, A.; Atabarut, T.; Otaduy-Rivera, N.; Membrillo-Hernández, J.; Caratozzolo, P. An Exploratory Study Examining the Key Aspects and Actions for Universities to Achieve High Sustainability Rankings. *Sustainability* **2023**, *15*, 4165. [CrossRef]
24. Deming, W.E. *Out of the Crisis (Reissue)*; MIT Press: Boston, MA, USA, 2000.
25. Muñoz-Suárez, M.; Guadalajara, N.; Osca, J.M. A comparative analysis between global university rankings and environmental sustainability of universities. *Sustainability* **2020**, *12*, 5759. [CrossRef]
26. Balaj, D.; Zhigolli, G. Effectiveness of online learning process during the COVID-19 pandemic in Kosovo. *Manag. J. Contemp. Manag. Issues* **2022**, *27*, 109–128. [CrossRef]
27. Leal Filho, W.; Azul, A.M.; Wall, T.; Vasconcelos, C.R.; Salvia, A.L.; do Paço, A.; Shulla, K.; Levesque, V.; Doni, F.; Alvarez-Castañón, L.; et al. COVID-19: The impact of a global crisis on sustainable development research. *Sustain. Sci.* **2020**, *16*, 85–99. [CrossRef] [PubMed]
28. Sepasi, S.; Braendle, U.; Rahdari, A.H. Comprehensive sustainability reporting in higher education institutions. *Soc. Responsib. J.* **2019**, *15*, 155–170. [CrossRef]
29. Ceulemans, K.; Molderez, I.; Van Liedekerke, L. Sustainability reporting in higher education: A comprehensive review of the recent literature and paths for further research. *J. Clean. Prod.* **2015**, *106*, 127–143. [CrossRef]
30. Shan, Y.G.; Zhang, J.; Alam, M.; Hancock, P. Does sustainability reporting promote university ranking? Australian and New Zealand evidence. *Meditari Account. Res.* **2022**, *30*, 1393–1418. [CrossRef]

31. Muellmann, S.; Brand, T.; Jürgens, D.; Gansefort, D.; Zeeb, H. How many key informants are enough? Analysing the validity of the community readiness assessment. *BMC Res. Notes* **2021**, *14*, 85. [CrossRef] [PubMed]
32. Tremblay, M.A. The key informant technique: A nonethnographic application. *Am. Anthropol.* **1957**, *59*, 688–701. [CrossRef]
33. Houston, M.J.; Sudman, S. A methodological assessment of the use of key informants. *Soc. Sci. Res.* **1975**, *4*, 151–164. [CrossRef]
34. Akhter, S. Key Informants' Interviews. In *Principles of Social Research Methodology*; Islam, M.R., Khan, N.A., Baikady, R., Eds.; Springer: Singapore, 2022. [CrossRef]
35. Dimzov, S.; Matošić, M.; Urem, I. University rankings and institutional affiliations: Role of academic librarians. *J. Acad. Librariansh.* **2021**, *47*, 102387. [CrossRef]
36. University of Split. Ciljevi Održivog Razvoja. Available online: https://www.unist.hr/sveuciliste/odrzivost (accessed on 15 July 2023).
37. University of Split. Izvješće o Ciljevima Održivog Razvoja. 2020. Available online: https://www.unist.hr/Portals/0/adam/Content/ZX-yS6gchke9U9ehqFm8ag/Image/izvjesce_SDG_UNIST_2020.pdf (accessed on 15 July 2023).
38. University of Split. Izvješće o Ciljevima Održivog Razvoja. 2021. Available online: https://www.unist.hr/Portals/0/adam/Content/ZX-yS6gchke9U9ehqFm8ag/Image/izvjesce_SDG_UNIST.pdf (accessed on 15 July 2023).
39. Lozano, R.; Ceulemans, K.; Alonso-Almeida, M.; Huisingh, D.; Lozano, F.J.; Waas, T.; Lambrechts, W.; Lukman, R.; Hugé, J. A review of commitment and implementation of sustainable development in higher education: Results from a worldwide survey. *J. Clean. Prod.* **2015**, *108*, 1–18. [CrossRef]
40. Ferrero-Ferrero, I.; Fernández-Izquierdo, M.Á.; Muñoz-Torres, M.J.; Bellés-Colomer, L. Stakeholder engagement in sustainability reporting in higher education: An analysis of key internal stakeholders' expectations. *Int. J. Sustain. High. Educ.* **2018**, *19*, 313–336. [CrossRef]
41. Crocco, E.; Giacosa, E.; Culasso, F. Stakeholder Engagement in Higher Education: State of the Art and Research Agenda. *IEEE Trans. Eng. Manag.* **2022**, 1–12. [CrossRef]
42. Delgado-Ceballos, J.; Aragón-Correa, J.A.; Ortiz-de-Mandojana, N.; Rueda-Manzanares, A. The effect of internal barriers on the connection between stakeholder integration and proactive environmental strategies. *J. Bus. Ethics* **2012**, *107*, 281–293. [CrossRef]
43. Aleixo, A.M.; Leal, S.; Azeiteiro, U.M. Conceptualization of sustainable higher education institutions, roles, barriers, and challenges for sustainability: An exploratory study in Portugal. *J. Clean. Prod.* **2018**, *172*, 1664–1673. [CrossRef]
44. Times Higher Education, Impact Rankings. 2023. Available online: https://www.timeshighereducation.com/impactrankings#!/length/-1/sort_by/rank/sort_order/asc/cols/stats (accessed on 18 July 2023).
45. Biesenbender, S.; Petersohn, S.; Thiedig, C. Using Current Research Information Systems (CRIS) to showcase national and institutional research (potential): Research information systems in the context of Open Science. *Procedia Comput. Sci.* **2019**, *146*, 142–155. [CrossRef]
46. University of Gdansk. Research Potential Database and Shared Infrastructure Database for the SEA-EU Alliance. Available online: https://research.sea-eu.ug.edu.pl/ (accessed on 17 December 2023).
47. Schaffhauser-Linzatti, M.M.; Ossmann, S.F. Sustainability in higher education's annual reports: An empirical study on Australian and Austrian universities. *Int. J. Sustain. High. Educ.* **2018**, *19*, 233–248. [CrossRef]
48. Dragija Kostić, M.; Broz Tominac, S.; Ljubić, M. Are the reasons behind publishing non-financial reports by Croatian public sector entities?–A survey of public managers. *Manag. J. Contemp. Manag. Issues* **2023**, *28*, 153–167. [CrossRef]
49. Blind, K.; Heß, P. Stakeholder perceptions of the role of standards for addressing the sustainable development goals. *Sustain. Prod. Consum.* **2023**, *37*, 180–190. [CrossRef]
50. Sanches, F.E.F.; Souza Junior, M.A.A.D.; Massaro Junior, F.R.; Povedano, R.; Gaio, L.E. Developing a method for incorporating sustainability into the strategic planning of higher education institutions. *Int. J. Sustain. High. Educ.* **2023**, *24*, 812–839. [CrossRef]
51. Bieler, A.; McKenzie, M. Strategic planning for sustainability in Canadian higher education. *Sustainability* **2017**, *9*, 161. [CrossRef]
52. University of Gdansk. The Centre for Sustainable Development of the University of Gdansk. Available online: https://czrug.ug.edu.pl/en/en_start/ (accessed on 16 January 2024).
53. University of Kiel. Strategies of Stakeholder Engagement: Mapping and Analysis of Approaches and Strategies within the SEA-EU Alliance. Available online: https://drive.google.com/file/d/1gsu8QdHJpiMRgOpFOYerbKTELy0rvwt1/view (accessed on 16 January 2024).
54. University of Kiel. Involving Stakeholders: A Good Practice Guide for Transdisciplinarity. Available online: https://researcheu.sea-eu.org/wp-content/uploads/2023/12/D4.3.pdf (accessed on 16 January 2024).
55. University of Cadiz. Open Report to the Stakeholders. Available online: https://researcheu.sea-eu.org/reports-to-stakeholders-digital-version/ (accessed on 16 January 2024).
56. University of Malta. Develop SEA-EU Open Research Data Policies and Toolkit. Available online: https://researcheu.sea-eu.org/wp-content/uploads/2023/12/D5.2-1.pdf (accessed on 16 January 2024).
57. Times Higher Education. Impact Rankings Methodology 2024. Available online: https://the-ranking.s3.eu-west-1.amazonaws.com/IMPACT/IMPACT2024/THE.ImpactRankings.METHODOLOGY.2024.pdf (accessed on 16 January 2024).
58. Oschman, J.J. The role of strategic planning in implementing a total quality management framework: An empirical view. *Qual. Manag. J.* **2017**, *24*, 41–53. [CrossRef]
59. Moldovan, L. Integration of strategic management and quality assurance in the Romanian higher education. *Procedia-Soc. Behav. Sci.* **2012**, *58*, 1458–1465. [CrossRef]

60. Fuchs, P.; Raulino, C.; Conceição, D.; Neiva, S.; de Amorim, W.S.; Soares, T.C.; de Lima, M.A.; De Lima, C.R.M.; Soares, J.C.; de Andrade Andrade Guerra, J.B.S.O. Promoting sustainable development in higher education institutions: The use of the balanced scorecard as a strategic management system in support of green marketing. *Int. J. Sustain. High. Educ.* **2020**, *21*, 1477–1505. [CrossRef]
61. Shriberg, M. Institutional assessment tools for sustainability in higher education: Strengths, weaknesses, and implications for practice and theory. *High. Educ. Policy* **2002**, *15*, 153–167. [CrossRef]