Determinants, Mechanisms, and Consequences of UN SDGs Reporting by Universities: Conceptual Framework and Avenues for Future Research

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Abstract:

Purpose: The purpose of this paper is to present a conceptual framework that explores the determinants, mechanisms, and consequences of reporting on the United Nations Sustainable Development Goals (UN SDGs) by universities. The framework considers the relationship between reporting on the SDGs and the three main activities of universities: research, teaching, and service. As universities hold a unique position in society, understanding their experiences with SDG reporting offers insights into the promotion and integration of SDGs into reporting and practice more broadly.

Design/methodology/approach: The paper adopts a conceptual approach and draws on existing literature to develop a framework for understanding reporting on the UN SDGs by universities. The framework considers the challenges faced by universities in providing sustainability information and examines the motivations and outcomes associated with reporting. It also explores the coordination and collaboration necessary across departments within universities and discusses the risks associated with greenwashing.

Findings: The paper highlights that reporting on the UN SDGs can enhance university engagement with stakeholders, improve their reputation, and foster innovation and transdisciplinary research ideas. However, universities encounter challenges such as limited data availability, resource constraints, lack of coordination, and competing priorities. The growing scepticism surrounding reporting motives has led to increased allegations of greenwashing within the sector.

Originality: This paper contributes to the accounting literature by presenting a comprehensive framework that explores the determinants, mechanisms, and consequences of reporting on the UN SDGs by universities. The framework offers insights into how reporting on SDGs can lead to embedding the SDGs in research, teaching, and service activities and can be adapted to other organisational contexts. The paper also emphasises the need for further research on the mechanisms of reporting, which play a crucial role in driving long-lasting change.

Keywords: UN Sustainable Development Goals, Universities, Reporting, Sustainability, Stakeholders, Greenwashing

1. Introduction

Universities are key social and economic institutions. They create and disseminate new knowledge through their research and teaching and serve a broader social purpose as the 'critic and conscience' of society. Universities are advocates (and like to be seen as advocates) for broader social mobility and environmental awareness (Di Nauta *et al.,* 2018). Yet this broad social purpose sits at increasing odds with the commercial pressures a modern university faces. There is a growing expectation that universities should provide social value and impact, yet universities need to balance this broad social purpose with the types of commercial pressures more typical of corporate entities (Croucher and Woelert, 2022). Universities need to ensure that they are financially stable to maintain their research and teaching activities and remain attractive in an increasingly competitive sector (Pee and Vululleh, 2020). We consider the determinants, mechanisms and consequences of reporting on the UN SDGs by universities in this context, and how this reporting impacts the key university activities of teaching, research and service. As reporting on the UN SDGs can be used to manage the challenge of balancing multiple stakeholder information requirements, insights from the university sector may apply to other public sector bodies facing similar challenges.

Universities have multiple (sometimes competing) stakeholders, including students (past, present, and future), staff, funders (private and public), and society at large. Being held accountable by multiple stakeholders is difficult, and universities have been criticized for focusing more on profits, rankings and awards than on their broader contribution to society (Guthrie and Neumann, 2007; Swartz *et al.,* 2019; Shattock, 2017). While university reporting used to be aimed at funding providers, universities are now increasingly reporting on their broader societal impact, reflecting similar developments in corporate reporting. Organisations of all types are beginning to recognise that they need to provide more non-financial

information, including sustainability information, to be more transparent with their stakeholders about their purpose and activities (Malafronte et al., 2020; de Villiers et al.,, 2014; Deegan and Blomquist, 2006). Failing to provide such information could limit their access to the resources they need, such as external funding and future students. Many universities now report on issues such as sustainability, with the United Nations (UN) Sustainable Development Goals (SDGs) used as a popular voluntary reporting tool in the sector (Adams, Carol, 2013).
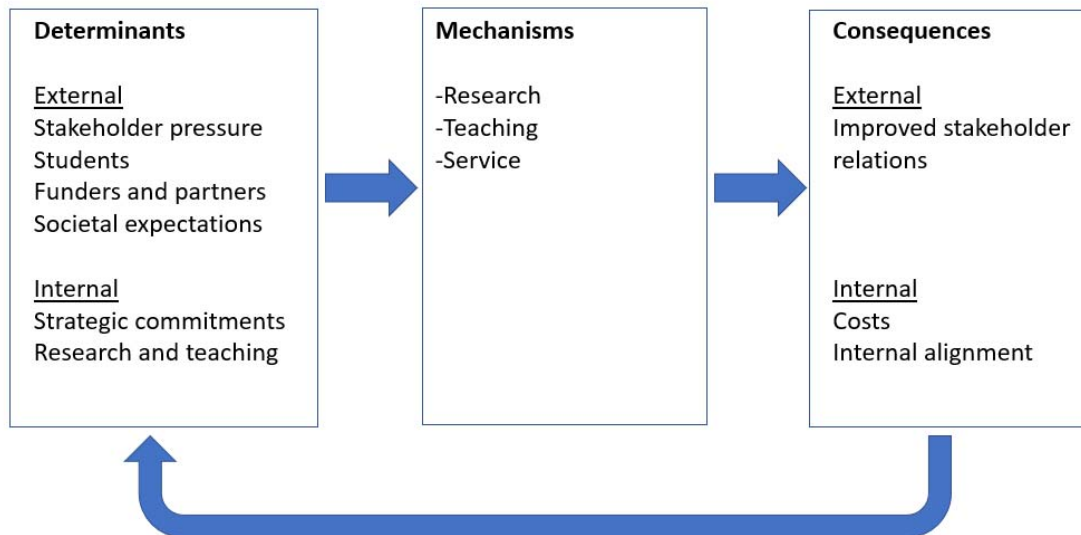
While reporting on the UN SDGs is used by universities to highlight their sustainability and social responsibility credentials, such reporting also impacts rankings. Rankings provide universities with a competitive advantage in attracting students and funding, as institutional reputation is no longer enough in a globally competitive tertiary sector (Shin and Toutkoushian, 2011). Recognition and reputational enhancement through awards and accreditations is likely to motivate universities to showcase their sustainability achievements. Students look to rankings to benchmark institutions and determine the best value for their investment (Kehm and Stensaker, 2009). Universities also need to report to their funding providers on their performance, as funders target universities that demonstrate their commitment to certain projects and initiatives (Huggins et al., 2019).

Several different rankings systems have emerged, some of which now incorporate the UN SDGs. For example, the global Times Higher Education (THE) Impact rankings, established in 2019, evaluate universities' research, teaching, outreach and stewardship against the UN SDGs. Universities provide institutional data for use in the rankings, and the 2022 THE Impact Rankings include 1,406 universities from 106 countries (THE, 2023). The THE Impact rankings are growing in influence and prestige, supported by influential bodies such as the World Economic Forum (WEF, 2022). Similarly, QS University Rankings, another important university ranking organisation, has recently (2023) increased the importance of alignment

with the SDGs in their overall rankings of universities. Universities devote substantial resources to managing their scores on these metrics, and ensuring these metrics are reported in a way that allows them to receive credit from these university ranking organisations, yet this focus on external metrics has led to accusations of greenwashing in the sector (Brankovic, 2018).

In this paper, we construct a framework for considering the determinants, mechanisms, and consequences of reporting on the UN SDGs for the university sector. While determinants of such reporting include external influences such as reporting norms and peer pressure, and consequences include increasing prestige and social accountability, the mechanisms through which such reporting impacts on the three key activities of universities (research, teaching, and service) are less explored. Yet these mechanisms are essential to making the critical link between external reporting and changes to internal management practices. Whether external disclosures enable and shape organisational change is an unresolved and critical research question (Adams and Larrinaga-Gonzáles, 2007; Adams and Larrinaga, 2019).

The contribution of this study is the construction of a conceptual framework to guide future research into UN SDG reporting. Our framework was influenced by similar frameworks in associated fields, for example Alrazi, De Villiers and van Staden (2015) in sustainability reporting, De Villiers and Dimes (2021) in corporate governance research and Dimes and Molinari (2023) which links non-financial reporting and management controls. Such studies have used conceptual frameworks to provide an overview of the field and to stimulate and guide future research. Figure 1 provides our conceptual framework highlighting the links between determinants, mechanisms, and consequences of UN SDG reporting. Although we base our construction and discussion of the framework in the university sector, it could also be applied to other organisations reporting on the UN SDGs.

Determinants

External
Stakeholder pressure
Students
Funders and partners
Societal expectations

Internal
Strategic commitments
Research and teaching

Mechanisms

-Research
-Teaching
-Service

Consequences

External
Improved stakeholder
relations

Internal
Costs
Internal alignment

Source: Figure created by the authors

Figure 1: Determinants, mechanisms, and consequences of UN SDG reporting for universities

The rest of our paper is structured as follows. Section 2 discusses the determinants of SDG reporting, Section 3 the mechanisms and Section 4 the consequences. Section 5 considers different theoretical perspectives. Section 6 concludes, highlighting multiple future research avenues. References are in Section 7.

2. Determinants of SDG reporting

2.1 External determinants

External determinants of SDG reporting by universities encompass a complex interplay of factors that emanate from the broader socio-economic, regulatory, and social contexts (Coy et al., 2001; Ntim et al., 2017). Understanding these external determinants is essential for elucidating the motivations and challenges universities face in adopting and implementing SDG reporting frameworks. Higher Education (HE) in Europe, North America, Australia, New Zealand, and various other nations is facing increased demands for enhanced accountability

and quality. Traditional notions of academic quality are being challenged by market-driven, corporate-style criteria that are assessed and regulated through accounting and managerial methods imported from the private sector (Maingot and Zeghal, 2008). Universities are now frequently tasked with articulating, in specific terms, their contributions to national welfare and delineating the link between a country's well-being and the activities of university teaching and research. Therefore, universities operate within a global and national regulatory landscape that may mandate or encourage sustainability reporting. Within this context, SDGs reporting could exert influence on national policies, shaping the expectations and requirements for universities to align with sustainable development objectives.

As Higher Education Institutions (HEIs) play a crucial role in society by cultivating knowledge and intellectual resources to promote social, economic, cultural, political, institutional, and individual development, there exists a compelling public interest in ensuring that these institutions align with their normative goals. This is especially pertinent given contemporary challenges associated with an excessive focus on managerialism, corporatization, and financial imperatives (Ntim et al., 2017; Parker, 2011). The concept of public accountability serves as a key motivation for the necessity of voluntary disclosure. Such disclosure should be of both adequate quality and quantity to empower diverse "public" audiences, enabling them to scrutinize HEI management openly and hold them accountable (Nicolò et al., 2020). Assessing the quality of university annual reports emphasizes a perspective rooted in public accountability, which underscores a comprehensive evaluation of reporting, as opposed to a more limited focus on specific aspects as financial viability or educational performance in isolation. For instance, within the context of New Zealand's present-day universities, public accountability entails the disclosure of thorough information encompassing the condition, performance, activities, and advancements, catering to the interests of individuals with social, economic, and political stakes (Coy et al., 2001). The

competitive landscape within higher education, coupled with the prevalence of university rankings, can incentivize institutions to engage in SDG reporting. Institutions may view sustainability reporting as a means to enhance their reputation, attract top talent, and differentiate themselves in a crowded academic marketplace.

Moreover, financial support and investments from public and private sources are often tied to sustainability performance. Universities may find that adopting SDG reporting practices enhances their attractiveness to environmentally and socially conscious investors, donors, and funding agencies. The pursuit of sustainable initiatives can align with broader financial trends favouring socially responsible investments. Collaborations with other educational institutions, industry partners, and non-governmental organisations can influence universities to adopt SDG reporting. Joint initiatives and partnerships may necessitate a commitment to shared sustainability goals, thereby encouraging universities to formalize their commitment through reporting mechanisms (Manes Rossi et al., 2020).

2.1.1 Students

As more universities around the world report on their contributions to the SDGs, there is an increasing expectation from stakeholders, including students, staff, funders, and wider society, for universities to demonstrate their commitment to sustainability and social responsibility by reporting in this way. University rankings, awards, and accreditations that assess contributions to the UN SDGs can increase peer pressure to report on SDG-related activities. Universities that do not report on their contributions to the UN SDGs may be perceived as less committed to social responsibility and sustainability compared to their peers who do. This is a real risk to universities given the age and interests of one of their critical stakeholders: students. In the private sector, organisations either failing to be held to account for their sustainability performance or found to be greenwashing are 'punished' by the market

(Ioannou, et al., 2022). The typical undergraduate body of a university, passionate about environmental and social issues, would be likely to punish institutions in a similar manner, impacting university competitiveness. Many faculty members may feel similarly passionate, seeking to work at universities which value research on sustainability issues.

Addressing the challenges related to equitable access to education and health and safety on university campuses is crucial, and the UN SDGs can play a pivotal role in framing solutions and engaging with students. For instance, universities can align their strategies with SDG 4 by adopting inclusive education policies. This includes ensuring accessibility for students with disabilities, providing financial aid, and promoting diversity. Moreover, universities can leverage international partnerships and programs, promoting global education experiences. This not only enhances students' understanding of diverse perspectives but also contributes to SDG 4's aim of inclusive and equitable quality education. Universities can also prioritize mental health services, offering counselling and support to students. This aligns with SDG 3's focus on mental health, contributing to a safe and supportive campus environment. Encouraging healthy lifestyles through fitness programs, access to nutritious food, and awareness campaigns aligns with SDG 3. This holistic approach contributes to overall well-being and helps create a healthier campus community. Furthermore, universities can establish robust financial assistance programs to address economic inequalities among students. This can involve scholarships, grants, and initiatives to alleviate financial burdens and reduce inequalities. Universities can form partnerships with local communities to address shared challenges, fostering a sense of community engagement and contributing to SDG 17's goal of building effective partnerships for sustainable development.

2.1.2 Funders and partners

There are additional sources of peer pressure. Universities often collaborate with other institutions and stakeholders (public and private) on sustainability and social responsibility initiatives. For instance, a university partnering with a private foundation committed to environmental conservation may find itself under pressure to align its projects with the foundation's objectives, such as biodiversity conservation or climate change mitigation. The university is not only accountable for delivering results in line with these objectives but also for transparently reporting on its progress and impact (Adams, 2013). Universities are accountable to donors and funding bodies that provide financial support for these initiatives and are responsible for keeping in with the donors' intentions or the funding bodies' criteria. An illustrative example is a research project funded by a government agency with a specific mandate to address societal challenges outlined in the SDGs. To continue receiving funding, the university must not only conduct impactful research but also meticulously document and communicate the outcomes in alignment with the SDGs specified in the funding criteria (Caputo et al., 2021). Through these collaborations, universities may feel pressure to report on their SDG-related activities to demonstrate their commitment and contributions to the shared goals of the initiative. Such reporting may even be required in the funding criteria. In such a situation, universities will want to be seen as leading and providing the maximum information available, rather than choosing to do the minimum reporting necessary, to maintain good relations and avoid funding withdrawals. By voluntarily providing comprehensive and transparent information on their SDG-related activities, universities aim to position themselves as leaders in sustainable development. This proactive approach not only strengthens their relationships with donors but also serves as a means to attract additional funding and support for future initiatives (Ntim et al., 2017).

2.1.3 Incentives and recognition

Universities that receive incentives and recognition for their contributions to the SDGs, such as rankings and awards, may be more likely to report on their contributions to the SDGs as a way to demonstrate their excellence and enhance their reputation. For instance, numerous international and national rankings have emerged to evaluate universities' sustainability performance, including their contributions to the SDGs. Rankings such as the Times Higher Education Impact Rankings and the UI GreenMetric World University Ranking consider universities' SDG-related research, teaching, and community engagement. High rankings provide universities with a competitive advantage, attracting students, and funding. Good rankings are therefore increasingly essential in a globally competitive tertiary sector, where institutional reputation is no longer enough (Shin and Toutkoushian, 2011). The growing interest in rankings has been associated with the massification and globalisation of higher education and demands by students (and their parents) to be able to both compare institutions easily and see the value of their investment (Kehm and Stensaker, 2009). Moreover, governments, international organisations, and philanthropic foundations offer funding opportunities specifically targeted at universities' SDGs-related projects and initiatives. Funding programs incentivize universities to align their activities with the SDGs, leading to increased reporting and accountability of their contributions (Huggins et al., 2019). Within this context, collaborative initiatives, such as the Sustainable Development Solutions Network (SDSN) and regional networks, bring universities together to exchange knowledge, share best practices, and collaborate on SDG-related projects. Active participation in such networks enhances universities' visibility and credibility, further motivating them to report on their SDG contributions (Fuentes-Bargues et al., 2019).

Prestigious awards and accreditations acknowledge universities' exemplary efforts in advancing the SDGs. For instance, the Global Universities Sustainability Initiative (GUSI) recognises universities demonstrating exceptional commitment to sustainability, encouraging

further reporting on SDG achievements. Accreditations, such as the Association for the Advancement of Sustainability in Higher Education's (AASHE) STARS program, provide benchmarks and frameworks for universities to assess and improve their sustainability performance (Lozano et al., 2017). Overall, universities that receive incentives and recognition for their contributions to the SDGs are more likely to report on their SDG efforts as a way to demonstrate excellence and enhance their reputation. Incentives such as rankings, funding opportunities, and partnerships encourage universities to align their activities with the SDGs and actively report on their contributions. Recognition through awards, accreditations, and reputation enhancement further motivates universities to showcase their sustainability achievements.

2.2 Internal determinants

2.2.1 *Strategic commitment to responsibility and sustainability*

Universities that are committed to social responsibility and sustainability are more likely to voluntarily report on their contributions to the UN SDGs as part of their commitment to making a positive impact on society and the environment. Universities that prioritise issues related to the UN SDGs and have a mission and values that align with these goals are more likely to report on their contributions to the SDGs. This is particularly true for institutions that have a strong focus on social and environmental issues (Adams, 2013).

2.2.2 *Stakeholder expectations and demands*

Universities that have stakeholders, such as students, staff, and funders, who are interested in sustainability and social responsibility issues may be more likely to report on their contributions to the SDGs as a way to meet stakeholder expectations and demands (De Iorio et al., 2022). By addressing stakeholder expectations and demands through reporting on their contributions to the SDGs, universities can enhance their reputation, attract and retain talent,

secure funding opportunities, and ultimately contribute to the advancement of sustainable development at a local, national, and global scale. In this way, they not only meet the immediate needs of their stakeholders but also play a pivotal role in creating positive societal and environmental impact through their educational, research, and community engagement activities (Guthrie et al., 2020).

2.3 National and international norms

In earlier discussions in this section, we have referred to universities as a general category, but acknowledge that the sector itself is complex. The ways that universities operate and are funded differs substantially from country to country, and also within countries. The influence of the stakeholders mentioned as external determinants is likely to vary accordingly. Within institutions, the time and attention dedicated to UN SDGs may also vary. For example, high-ranking institutions may be able to afford to dedicate the time and resources to preparing information to submit for awards and rankings whereas lower-ranking institutions may not.

The complexity within the HE sector extends beyond the broad categorization of universities, acknowledging the nuanced variations in their operations and funding mechanisms. Within this context, the role and expectations of stakeholders, such as regulatory bodies, funding agencies, and the public, can vary dramatically based on the socio-economic and political landscape of each country (Nicolò et al., 2020). National policies, cultural contexts, and economic disparities contribute to the diverse ways in which universities interact with and respond to external pressures related to the reporting of SDGs. Moreover, the internal dynamics within university institutions add another layer of complexity. The allocation of time and resources dedicated to addressing UN SDGs may fluctuate significantly among institutions. High-ranking universities, often endowed with substantial resources and prestige, may have the capacity to commit considerable time and resources to meticulously prepare and

present information aligned with UN SDGs, especially for awards and rankings. In contrast, lower-ranking institutions may find themselves constrained by resource limitations, potentially hindering their ability to engage comprehensively with UN SDGs (Gonzalez-Torre and Suarez-Serrano, 2022). The disparity in resource availability introduces a critical dimension to the discussion. While prestigious universities might view SDG reporting as an opportunity for global recognition and a demonstration of commitment to sustainable development, resource constraints could pose significant challenges for less privileged institutions. This scenario not only affects their ability to participate actively in SDG reporting initiatives but also raises questions about the equity and inclusivity of the global sustainability discourse (Nicolò et al., 2020).

Engagement with UN SDGs can have broader implications for the overall effectiveness and impact of sustainable development efforts within the higher education sector. It prompts a critical examination of the potential biases that may be embedded in current reporting practices, with a focus on whether such practices inadvertently favour higher-ranking institutions (Parker, 2011). This calls for a nuanced and context-specific approach to understanding how external determinants, internal dynamics, and resource disparities collectively shape the landscape of SDG reporting within the HE (Ntim et al., 2017).

3. Mechanisms

Teaching, research, and service are the core activities that define the purpose and mission of a university. In this paper, we consider how reporting on SDGs could become institutionalised through these three focal areas. This is a critical area of our conceptual framework, as it explores whether or not reporting on the SDGs actually makes any difference to the activities of universities (activities which in turn have an impact on the environment and

society). By integrating reporting on the SDGs into teaching, research, and service, universities can create a holistic approach to sustainable development that permeates every aspect of their operations. This integration ensures that the reporting is not merely symbolic but influences the activities and decisions of the institution, ultimately having a tangible impact on the environment and society. It allows universities to go beyond rhetoric and demonstrate their commitment to sustainability through concrete actions and measurable outcomes.

The institutionalisation of reporting on the SDGs within teaching, research, and service activities may serve multiple purposes. For instance, it may support universities to align their efforts with the global sustainable development agenda, fostering a sense of purpose and direction. Moreover, it may enable universities to monitor and assess their progress in contributing to the SDGs, facilitating continuous improvement and accountability (De Villiers and van Staden, 2011). It may also enhance the visibility and recognition of universities as key contributors to sustainable development, attracting students, researchers, and funders who prioritise these values (Agyemang and Broadbent, 2015).

The sections discussed below explore the three mechanisms of teaching, research and service in turn, recognising that there are both internal and external influences on all three.

3.1 Teaching

Teaching is the primary function of a university. It involves imparting knowledge and skills to students through lectures, seminars, and other forms of instruction, including the supervision of research students. Universities are responsible for preparing students for future careers, guiding emerging researchers and contributing to the development of society through the education of each new generation (Austin, 2002). Incorporating the SDGs into teaching practice can help raise awareness and promote sustainable development among students. Moreover, adopting a transdisciplinary approach, where various disciplines collaborate to

address complex problems, enhances the effectiveness of SDG integration. This approach encourages students to draw upon diverse knowledge domains, fostering a holistic understanding of the interconnected issues related to sustainable development. It not only prepares them for the dynamic and evolving demands of the workforce but also instils a sense of collaboration and adaptability (Caputo et al., 2021).

The impacts of teaching are both internal and external, as graduates will go on into roles outside the institution, and many universities run programmes targeted at executive audiences (Manes Rossi et al., 2020). By incorporating the SDGs into teaching practice, universities can equip students with the knowledge and skills needed to become leaders in promoting sustainable development in their future careers and communities (Cottafava et al., 2019).

3.2 Research

Research is a critical function of universities, and the top-ranking universities globally are those with the best reputations for research. The pursuit of research excellence not only enhances the academic standing of the institution but also plays a crucial role in shaping the trajectory of societal progress (Parker, 2011). Research involves the creation of new knowledge and the advancement of existing knowledge through the conduct of scientific, social, and cultural inquiry (Nicolò et al., 2020). Universities play a vital role in promoting research and innovation, which is essential for the progress and development of society. By incorporating the SDGs into research, universities can contribute to the global sustainable development agenda and help address some of the world's most pressing challenges. Incorporating the SDGs into research can help universities contribute to the global sustainable development agenda (Fuentes-Bargues et al., 2019). For instance, a research initiative focused on clean energy solutions aligns with SDG 7 (Affordable and Clean Energy), while projects addressing poverty or hunger contribute to SDGs 1 (No Poverty) and 2 (Zero Hunger), respectively. An example

of universities incorporating the SDGs into research is the establishment of interdisciplinary research centres dedicated to sustainable development. These centres bring together experts from various fields to collaboratively tackle complex challenges outlined in the SDGs. Researchers in environmental science, economics, sociology, and engineering, for instance, might collaborate on projects aimed at developing sustainable urban planning solutions (SDG 11 - Sustainable Cities and Communities) or devising strategies for responsible consumption and production (SDG 12).

Furthermore, universities can foster research initiatives that directly impact local communities, demonstrating the practical applications of sustainable development principles. For instance, a university-led research project could focus on sustainable agriculture practices (SDG 2), working closely with local farmers to enhance food security and promote environmentally friendly farming methods (Guthrie et al., 2020). In the realm of health sciences, universities can contribute to achieving SDG 3 (Good Health and Well-being) through research on public health interventions, disease prevention, and healthcare accessibility. Collaborative efforts with healthcare professionals and community organisations can lead to the development of effective strategies for improving health outcomes in underserved populations.

3.3 Service

Service is the third main focal area for universities. It involves engaging with the broader community to address societal needs and challenges. Universities have a responsibility to contribute to the betterment of society through their expertise and resources. This can include activities such as community service, public engagement, and outreach programs. One illustrative example of community service is the establishment of service-learning programs,

where students integrate academic coursework with hands-on experiences addressing real-world issues. For instance, a university might collaborate with local NGOs to create a program where students, guided by faculty, work on projects that directly contribute to achieving specific SDGs. This engagement not only empowers students to apply theoretical knowledge in practical settings but also serves as a tangible contribution to community development. Public engagement initiatives represent another facet of service, where universities actively involve themselves in dialogue with the broader public. This can take the form of public lectures, workshops, and forums that disseminate knowledge on sustainable development issues and foster open discussions. For instance, a university might organise a public forum on climate change, inviting experts to share insights and engaging the community in discussions on actionable solutions aligned with SDG 13 (Climate Action) (Adams, 2013). Outreach programs, on the other hand, involve extending university resources and expertise to communities beyond the campus borders. This might include providing educational resources, healthcare services, or technical assistance to underserved communities. An example is a medical school conducting health clinics in rural areas, contributing to SDG 3 (Good Health and Well-being) by improving access to healthcare services for marginalized populations. (Cottafava et al., 2019).

Incorporating the United Nations Sustainable Development Goals (SDGs) into internal and external service activities can help universities contribute to the global sustainable development agenda while also building strong partnerships and community engagement (Caputo et al., 2021).

4. Consequences of reporting on the UN SDGs for Universities

Agenda 2030 for Sustainable Development, including 17 Sustainable Development Goals (SDGs) provides a comprehensive framework for addressing global challenges and achieving sustainable development by 2030. As key institutions of higher education and knowledge creation, universities have an important role to play in contributing to the SDGs. Reporting on the SDGs has emerged as a mechanism for universities to demonstrate their commitment to sustainability and social responsibility. However, several challenges related to the implementation of sustainable practices in higher education arise. For example, some universities may prioritize public relations over genuine commitment to sustainability, which can lead to greenwashing. Additionally, some universities may struggle to implement sustainable practices due to financial constraints, lack of resources or expertise, and institutional barriers.

4.1 Improved stakeholder relations

From an external perspective, reporting on the SDGs serves as a means for universities to enhance their external legitimacy and establish their credibility as socially responsible institutions (Deegan, 2014). Failing to effectively report on the SDGs can create a legitimacy gap, eroding trust and diminishing the university's reputation among stakeholders, including students, faculty, staff, funders, and the wider public. This can have adverse effects on the university's ability to attract and retain talented students, faculty, and staff, as well as secure funding and partnerships (Liao et al., 2021). Furthermore, students are increasingly prioritizing sustainability values and seeking educational institutions that align with their beliefs. Effective reporting on the SDGs enables universities to showcase their sustainability efforts, initiatives, and contributions, attracting environmentally conscious students who are seeking educational

experiences that align with their values (Mochizuki and Fadeeva, 2019). Universities that effectively report on their sustainable practices and contributions to the SDGs are more likely to attract a diverse and motivated student body. Funding agencies and research partners are placing greater emphasis on sustainability and SDG-related research. By effectively reporting on their contributions to the SDGs, universities can enhance their prospects of securing research grants, collaborative partnerships, and research funding opportunities. Reporting provides evidence of the university's alignment with global sustainability agendas, making it more attractive to funders and research partners interested in addressing sustainable development challenges (Busco et al., 2018). It also helps universities position themselves as valuable contributors to sustainable development research.

4.2 Costs and internal alignment

From an internal perspective, reporting on the SDGs can serve as a catalyst for universities to improve their own sustainability practices and performance (Adams, 2013). By setting targets, monitoring progress, and reporting on their sustainability performance, universities can identify areas for improvement and take proactive steps to reduce their environmental impact, promote social responsibility, and achieve their sustainability goals. Effective reporting creates a culture of continuous improvement, fostering innovation and encouraging the integration of sustainability across university operations, teaching, and research. It also enables universities to align their internal practices with the broader sustainability objectives outlined in the SDGs. Moreover, reporting on the SDGs promotes a collaborative and partnership-oriented culture within universities. It encourages interdisciplinary collaborations and engagement with external stakeholders, such as businesses, government agencies, and community organisations. Through reporting, universities can

showcase their sustainability initiatives and seek collaborations with like-minded organisations, working together to address complex sustainability challenges (Dimes and Molinari, 2023). Effective reporting fosters knowledge exchange, shared learning, and collaborative problem-solving, leading to innovative solutions and collective action. SDGs reporting involves data collection, analysis, and reporting on various sustainability metrics. While implementing effective reporting systems may initially incur costs, the long-term benefits often outweigh these investments (Bebbington and Unerman, 2020). Through effective data collection and reporting, universities gain valuable insights into their sustainability performance, enabling informed decision-making, resource allocation, and targeted improvements. Transparent reporting of sustainability data also enhances accountability, builds stakeholder trust, and demonstrates a commitment to responsible and sustainable practices (Busco et al., 2006) which is helpful, useful and necessary given existing university mandates.

Overall, SDGs reporting has significant consequences for universities, both externally and internally. Effective reporting enhances external legitimacy, attracts sustainability-conscious students, and strengthens research collaborations and partnerships. Internally, reporting drives sustainability improvements, fosters collaboration, and promotes a culture of accountability and continuous improvement. However, universities need to ensure that their reporting aligns with their actions, avoiding greenwashing and addressing potential challenges such as financial constraints, resource limitations, and institutional barriers. By effectively reporting on the SDGs, universities can contribute to global sustainability efforts, meet stakeholder expectations, and advance the goals of higher education for a more sustainable future.

5. A worked example of the use of our conceptual framework: SDGs using Management Control Systems (MCS)

The aim of our paper is to provide a conceptual framework to delineate the field and provide future research directions. In this section, we provide a worked example of how the framework can be applied. We consider how the UN SDGs can become embedded into the teaching, research and service activities of universities with reference to the literature on management control systems. Management control systems play a significant role within organisations as they facilitate the tracking of performance, forming part of a feedback cycle that influences specific performance outcomes. Management control systems involve both formal and informal control mechanisms, financial and non-financial information employed by organisations to establish objectives and work towards their achievement (Broadbent and Laughlin, 2009; Ferreira and Otley, 2009; Dimes and Molinari, 2023). These systems incorporate performance management and performance measurement. While performance measurement is a necessary component of performance management systems, relying solely on measurement can lead to dysfunctional behaviour that may yield measured outputs but not necessarily optimal outcomes (De Villiers and Dimes, 2021).

Formal controls encompass planning systems that employ budgets and targets to establish expectations and monitor performance. They are explicitly articulated controls used for decision-making (Chenhall et al., 2010; Grossi et al., 2020). In contrast, informal controls rely on more open information sharing and processes, using dialogue and communication as primary means of disseminating information about activities and performance (Tucker, 2019). Ferreira and Otley (2009) acknowledge the importance of both formal and informal control mechanisms for organisational adaptation. Simons (1994), in his "levers of control" framework, further elaborates on these mechanisms and posits four levers of control available to managers. These include formal diagnostic controls, such as targets and performance

measures, used to monitor progress towards organisational goals. In the case of universities, the Research Excellence Framework (REF) can be seen as one such control system. Formal diagnostic controls need to be complemented by belief systems, boundary controls, and interactive controls. Belief systems relate to an organisation's core values and missions, which must be effectively communicated and shared among organisational members (Agyemang and Broadbent, 2015). Boundary systems establish parameters of what is permissible or not permissible. Interactive control systems encompass information gathering that enables managers to focus on the changing external environment and strategic uncertainties they face (Simons, 1994). Importantly, management control systems operate within organisations but are influenced by the internal and external context, indicating an inherent connectedness that can shape their design and implementation.

Broadbent and Laughlin (2013) highlight the distinction between inter- organisational control systems imposed by external regulatory bodies and intra- organisational control systems. Inter- organisational controls refer to societal controls aimed at regulation, while intra-organisational controls are developed internally in response to externally imposed inter-organisational controls. The context plays a crucial role in shaping responses to externally imposed controls and the nature of intra- organisational systems that emerge as a result. Arguably, universities have undergone a transformation wherein their systems have been reshaped to align with increased accountability, private sector management approaches, and a focus on performance measures (Agyemang and Broadbent, 2015). Aspromourgos (2012) straightforwardly suggests that universities are now viewed as organisations producing commodities, such as teaching and research services. Consequently, universities are expected to respond to their "customers," including students, employers, research councils, and funding councils (Parker, 2013).

As organisations, universities face management control and performance management challenges that stem from the societal and organisational context in which they operate. Broadbent et al. (2010) discuss the impact of external regulatory environments on university management. They argue that regulatory bodies responsible for university funding, such as government departments, often employ "transactional" steering mechanisms that rely on "command and control" approaches, expecting specific outputs in exchange for allocated resources. These external controls imposed on universities then influence internal systems within university departments as they strive to achieve the desired outcomes necessary to secure the desired resources. Moll and Hoque (2011) exemplify this phenomenon by demonstrating how an Australian university attempted to change its internal budgetary system to meet the needs of external stakeholders, aiming to gain external legitimacy by adopting an accounting budgeting control system similar to that used by the government for funding allocations.

Another key aspect of management control systems in the university context is the individualization of control. Influencing individual behaviour is essential for managing performance. Hopwood (1974) revealed that individuals were more likely to manipulate results when they were rewarded for achieving those results. Townley (1993) emphasized the constitutive power of control systems and the potential for internalization of institutional control measures, which can act as coercive yet effective self-control systems from the perspective of the controller.

Universities operate in environments where external stakeholders increasingly emphasize accountability. They face challenges in maintaining the "traditional ethic of collegiality" and self-regulation that were associated with managerialism in higher education (Aspromourgos, 2012). Therefore, universities are required to comply with external demands for accountability. Parker (2013) provides additional evidence by describing how universities

strive to demonstrate external accountability externally through various internal accountability mechanisms and management control practices, including the development of quantitative performance indicators that cascade throughout the organisation, from departments and faculties to schools and individuals. Broadbent and Laughlin (2013) also discuss how senior managers in universities often act as "boundary managers," balancing the requirements of external pressures with the expectations of internal university stakeholders, including academics, students, and university boards of governors. In response to this reorientation, internal management control systems may change, exerting pressures on academics who may then be subject to hidden forms of control (Parker, 2013). Within this context, Ahrens and Chapman (2004) propose that management control systems can be designed as enabling, providing support to individuals, or coercive, restricting individual behaviour.

Using our conceptual framework from Figure 1, we illustrate in Table 1 below how the UN SDGs can be incorporated into the teaching, research and service work of universities through management controls:

Table 1: Mechanisms for embedding the UN SDGs.

Teaching	Research	Service
Formal controls	Formal controls	Formal controls
1. **Integrate the SDGs into course content:** Universities can revise course content to include topics related to the SDGs. This can be done across all disciplines to ensure that students from different fields of study are exposed to the concepts and goals of sustainable development. 2. **Create interdisciplinary courses:** Universities can create interdisciplinary courses that focus on the SDGs. This will help students understand how different disciplines can collaborate to achieve sustainable development. 3. **Foster partnerships with communities:** Universities can partner with local communities to	1. **Focussed research on the SDGs:** Universities can prioritize research topics that align with the SDGs. This can involve collaborating with other institutions and organisations to address specific SDG-related issues. 2.**Interdisciplinary research:** Universities can promote interdisciplinary research to address complex issues related to sustainable development. This can involve collaborating with researchers from different fields to develop innovative solutions to SDG-related challenges. 3. **Engagement with stakeholders:** Universities can	1. **Adopt sustainable practices on campus:** Universities can adopt sustainable practices on campus such as reducing waste, using renewable energy sources, and promoting sustainable transportation. This can help reduce the environmental impact of the university while also raising awareness of the importance of sustainability among students and staff. 2. **Engage in community service projects:** Universities can engage in community service projects that align with the SDGs. This can involve collaborating with local organisations and communities to address specific SDG-related

address issues related to the SDGs. This can involve community-based research, community service projects, and other collaborative efforts.	engage with stakeholders such as policymakers, NGOs, and community members to ensure that research is relevant and impactful. This can involve consulting with stakeholders during the research process and sharing research findings with relevant audiences. **4. Research-informed policy:** Universities can use research to inform policy decisions related to sustainable development. This can involve sharing research findings with policymakers and advocating for policies that align with the SDGs.	issues such as poverty, health, and education. **3. Offer pro bono services:** Universities can offer pro bono services to local organisations and communities. This can involve providing legal or financial advice, conducting research, or offering technical expertise to help address SDG-related challenges. **4. Collaborate with industry partners:** Universities can collaborate with industry partners to develop sustainable solutions to SDG-related challenges. This can involve working with companies to develop sustainable products or technologies or engaging in research collaborations to address sustainability challenges.
Informal controls	Informal controls	Informal controls
1. Host SDG-focused events: Universities can organise events such as workshops, seminars, and conferences that focus on the SDGs. This can help raise awareness among students and engage them in discussions on sustainable development. **2. Encourage student-led initiatives:** Universities can encourage students to take the lead in promoting sustainable development on campus by providing support and resources for student-led initiatives. This can include initiatives such as sustainable food programs, waste reduction campaigns, and green energy projects.	**1. Research dissemination:** Universities can promote the dissemination of research findings through academic journals, conferences, and other platforms. This can help raise awareness of SDG-related issues and promote knowledge sharing.	**1. Promote international service opportunities:** Universities can promote international service opportunities for students and staff that align with the SDGs. This can involve partnering with organisations in other countries to address issues such as global health, poverty, and inequality.

Source: Table created by the authors

6. Conclusion

Universities play a crucial role as social and economic institutions, generating knowledge, fostering social mobility, and promoting environmental awareness. However, the increasing commercial pressures faced by modern universities have led to a delicate balance between their broad social purpose and the need for financial stability. While universities have

multiple stakeholders, including students, staff, funders, and society at large, there is a growing expectation for universities to provide social value and impact. To meet these expectations, universities have started reporting on their broader societal impact, including sustainability, using the United Nations Sustainable Development Goals (UN SDGs) as a voluntary reporting tool.

Although reporting on the UN SDGs enhances universities' sustainability and social responsibility credentials, it also influences rankings, such as the influential Times Higher Education (THE) Impact rankings. This evolving landscape of reporting on the UN SDGs raises important questions regarding the determinants, mechanisms, and consequences of such reporting for universities. While determinants encompass external influences and reporting norms, mechanisms and their impact on universities' key activities (research, teaching, and service) remain understudied but essential for understanding the link between external reporting and internal management practices.

To address this research gap, we construct a conceptual framework that considers the determinants, mechanisms, and consequences of university UN SDG reporting. Building on similar frameworks in sustainability reporting, corporate governance research, and non-financial reporting, our framework provides an overview of the field and offers guidance for future research. The framework can be applied not only to the university sector but also to other organisations reporting on the UN SDGs, allowing for the exploration of different theoretical lenses. We illustrate the potential usefulness of our framework by providing a worked example that highlights the links between mechanisms for embedding SDGs and management control systems. Future research could focus further on investigating the mechanisms through which UN SDG reporting influences the research, teaching, and service activities of universities. Understanding how reporting drives organisational change and shapes internal management practices is crucial. Additionally, exploring the interactions between different determinants,

such as reporting norms and peer pressure, and their impact on universities' reporting practices can provide valuable insights. Furthermore, it is essential to examine the consequences of university UN SDG reporting. This includes assessing the prestige and social accountability associated with reporting on the UN SDGs, as well as examining the potential trade-offs between financial stability, academic excellence, and broader societal contributions. Longitudinal studies can shed light on the long-term effects of reporting, both internally within universities and externally in terms of stakeholder perceptions and actions.

We acknowledge the challenges associated with broadening academic workloads, particularly in light of the substantial pressures that academics face in terms of performance measurement (Parker, 2011). The scholarly discourse on this issue is extensive, and engaging with a broader range of literature can provide a more comprehensive understanding of the challenges and potential solutions. The literature on academic workload and performance measurement emphasizes the need for a nuanced approach that balances academic responsibilities with the integration of sustainability initiatives, such as those aligned with the SDGs. Parker (2011) highlights the tension between the increasing demand for performance measurement and the potential strain on academic workloads. This tension is a critical consideration when advocating for the incorporation of additional responsibilities related to sustainability initiatives. To reconcile these challenges, it is necessary to consider existing literature that offers insights into effective strategies for managing academic workloads while fostering engagement with sustainability initiatives. Additionally, exploring related literature on workload management, job satisfaction, and the impact of organisational culture on academic engagement can provide valuable perspectives (e.g., Kyvik, 2014; Hattie and Marsh, 1996). Our paper intends to emphasize the role of university management in facilitating this balance. It recognizes that effective engagement with the UN SDGs requires strategic leadership and supportive policies from university administrations. Drawing on literature that

addresses organisational change, leadership styles, and employee motivation within the context of higher education (Fullan, 2014) can contribute to the discussion in future research.

Our paper advocates for the proactive involvement of university management in using the UN SDGs as a mechanism to better engage with academic staff and students. It explores how aligning institutional priorities with the SDGs can be a strategic approach to promote a sense of purpose and shared responsibility within the university community. In further research, the literature on organisational commitment, employee engagement, and the psychological contract can be consulted to understand how these concepts relate to sustainable development initiatives in higher education (Meyer and Allen, 1991; De Vos et al., 2003).

Overall, this study contributes to the literature by constructing a conceptual framework to guide future research on university UN SDG reporting. By exploring the determinants, mechanisms, and consequences, this framework can deepen our understanding of the complexities and impacts of reporting on the UN SDGs in the university sector. It opens up avenues for multidisciplinary research, encourages the application of diverse theoretical perspectives, and provides a foundation for scholars to explore this important area further.

6.1 Future research avenues

In this section, we consider different theoretical perspectives that could be undertaken in future research and identify multiple future research directions using our framework.

6.1.1 Applying different theoretical lenses

Reporting on the UN SDGs is voluntary, and the reasons for organisations providing such information are many and varied (De Villiers, C. and Maroun, 2018). Agency theory (Jensen and Meckling, 1976) assumes that the provision of such information is intended to reduce information asymmetry, maximising managerial rewards. Agency theory suggests that there may be conflicts of interest between the owners and managers of an organisation, which can

result in managers pursuing their own interests rather than those of the owners. In the context of universities, the owners represent the government, donors, or other stakeholders who provide funding or support to the university, while the managers represent the university administrators and faculty who make decisions about how to allocate resources and prioritise activities. While agency theory does not directly explain why universities adopt SDGs, it does provide a framework for understanding the incentives and motivations of different stakeholders in the university context.

Legitimacy theory suggests that universities report this information to improve the reputation of their organisations in the eyes of their stakeholders, seeking to gain, maintain or repair legitimacy. By adopting the SDGs, universities may enhance their legitimacy and reputation, which can help attract funding and support from stakeholders. Yet universities may also face conflicts of interest between different stakeholders who have different priorities and goals. For example, faculty may prioritize research and teaching, while managers may prioritize fundraising and financial stability. One positive result of reporting on the SDGs could be that it helps align these different interests and provide a common framework for decision-making.

Institutional theory suggests that universities are heavily influenced by norms and policies within their sectors, mimicking peers to align with others in the same organisational field (DiMaggio and Powell, 1983). In the context of universities, adopting the United Nations' Sustainable Development Goals (SDGs) may be seen as a way of conforming to a widely accepted norm of promoting sustainability and social responsibility. In the case of universities, there may be external pressures from stakeholders, such as government agencies, accrediting bodies, and other institutions, to adopt the SDGs as a way of demonstrating their commitment to sustainability and social responsibility. These pressures, which can be mimetic, coercive, and normative, may lead organisations to adopt structures, policies, plans, and management

initiatives to adapt and become isomorphic with their environment (Di Maggio and Powell, 1983). Alternatively, decoupling may exist, and statements and policies may differ from actions (Meyer, 2010).

Exploring the reporting on the UN SDGs using these different theoretical perspectives may add insights that are applicable to other organisations in the public sector.

6.1.2 Additional research avenues suggested by our framework

Using Figure 1 as a guide, Table 2 identifies multiple future research avenues in addition to our worked example:

Table 2: Mechanisms for embedding the UN SDGs.

Determinants	Mechanisms	Consequences
Investigate how institutional characteristics, such as university size, structure, governance, and mission, influence the adoption and extent of SDG reporting. Explore how factors like leadership commitment, organisational culture, and resources affect the integration of SDGs into reporting practices. Examine the role of external stakeholders, including students, faculty, staff, alumni, community organisations, and funding agencies, in driving SDG reporting in universities. Analyze how stakeholder demands, expectations, and engagement influence the adoption and disclosure of SDG-related information. Explore the impact of regulatory frameworks, policies, and guidelines on SDG reporting in universities. Investigate how national or regional sustainability reporting standards, accreditation requirements, or government initiatives influence the reporting practices of universities. Assess the influence of organisational capacity, including financial resources, human resources, technical expertise, and data management systems, on SDG reporting. Investigate how universities' capabilities and infrastructures enable or hinder the adoption and implementation of SDG reporting practices.	**Teaching:** Study how learning processes and knowledge transfer within universities shape SDG reporting practices. Examine how collaboration, networks, and knowledge-sharing mechanisms among academic departments, research centres, and administrative units facilitate the integration of SDGs into reporting. **Research:** Assess the effectiveness of research grant programs specifically dedicated to SDGs. Assess the effectiveness of research and innovation that leverages technology to address sustainability challenges. Critique international collaborations and partnerships with universities and research institutions around the world in terms of their success in addressing global sustainability challenges. **Service:** Conduct research on sustainable practices within the university itself. This can involve energy and water conservation, waste management, sustainable procurement, and green building design. Use the campus as a living laboratory to test and implement sustainable initiatives. Develop frameworks and methodologies to assess the impact of university initiatives on SDGs and vice versa. This can include evaluating the contribution of research, teaching, and service activities in achieving sustainability targets and identifying areas for improvement.	Investigate the relationship between SDG reporting and organisational performance metrics within universities. Assess the impact of SDG reporting on indicators such as resource allocation, efficiency, reputation, stakeholder satisfaction, and long-term sustainability metrics. Critically evaluate the suitability of university management metrics for achievement of the SDGs. Examine how SDG reporting enhances stakeholder engagement and collaboration within universities. For example, investigate the effects of reporting on relationships with students, faculty, staff, alumni, local communities, and industry partners, and analyse the potential for co-creation of knowledge and solutions. Explore how SDG reporting influences organisational change and sustainability practices within universities, considering management control systems (formal and informal). Investigate the adoption of new policies, practices, and initiatives that emerge as a result of reporting and assess their effectiveness in advancing sustainability goals. Assess the role of SDG reporting in enhancing accountability and transparency in universities (both real and perceived). Analyse how reporting processes and mechanisms increase transparency in decision-making, resource allocation, and the achievement of sustainability targets. Investigate how SDG reporting contributes to knowledge dissemination and societal impact. Examine the ways in which universities communicate their sustainability efforts, the dissemination of research findings, and the utilization of knowledge for policy-making and practical applications.

Source: Table created by the authors

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