

# Sustainability reporting as a way to foster entrepreneurial universities

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## **Abstract**

Higher education institutions (HEIs) play a major role in the development of societies. In the last decades, there has been an increasing interest on the commercialisation of knowledge by universities for economic development that lead to the emergence of the term “Entrepreneurial University”. This study aims to report the sustainability efforts of the University of Gävle, Sweden by applying a systematic tool, Graphical Assessment of Sustainability in Universities (GASU). This study highlights sustainability reporting as a way to improve communication practices between universities and stakeholder. The systematic and holistic assessment of HEIs gives insights of collaboration opportunities and by that foster their entrepreneurial journey.

**Keywords:** Entrepreneurial universities, Sustainability reporting, University of Gävle

## **Introduction**

In the past, HEIs played a role in developing so-called knowledge-based societies (following their mission of teaching and research), where the role of the universities embeds the innovation system (Etzkowitz et al., 2000). At national level, HEIs strive to take part in innovation processes (Philpott et al., 2011).

In the last decades, there has been an increasing interest on the commercialisation of knowledge by universities for economic development that lead to the emergence of the term “Entrepreneurial University” (Etzkowitz et al., 2000). These universities work with their external stakeholders to foster regional development (Koryakina et al. 2015). As the third mission highlights the relationships among academia, industry and government (Etzkowitz, 1998), where entrepreneurial universities play a key role in regional innovation, industry has taken the role to be more accessible and to restructure in a network mode, and government’s role is to develop programs and support the augmentation of the academies (Etzkowitz & Zhou, 2006).

An increasing number of universities (e.g. Leuphana University, Germany and Polytechnic University of Catalonia, Spain) are renewing their core strategies to adapt to expectations and needs of their stakeholders and society (Ferrer-Balas et al., 2009; Kościelniak, 2014; Lozano-García et al., 2009).

Since the end of the 1990s, the number of universities that have started to assess and report sustainability efforts is increasing (Calder & Clugston, 2003; Coretese, 2003; (Lozano, 2006); Hahn & Kühnen, 2013; Gamage & Sciulli, 2017), but it remains low when compared to corporations (Ceulemans et al., 2015). In HEIs, it is still considered that sustainability reporting is in its development stage (Huber & Basen, 2018; Ceulemans et al., 2015). However, Lozano (2006) proposed and updated (Lozano, 2013; Lozano & Huisinigh, 2011) a systematic tool to assess sustainability at universities called the Graphical Assessment of Sustainability in Universities (GASU). As communication with stakeholders is one of the main purposes of sustainability reporting (see Dalal-Clayton; Ratten, 2017), sustainability reporting can serve as a means to foster entrepreneurial universities.

The purpose of this paper is to analyse and report the sustainability efforts at the University of Gävle, Sweden by applying the GASU tool for sustainability reporting. The research objective is to assess the current state of the university's economic, environment, social, and education dimensions and proposes sustainability reporting as a means to foster entrepreneurial universities.

## **Literature review**

During the last two decades, the “third mission” of universities has been aimed at improving economic performance in the community, the universities' financial situation, and fostering the universities' entrepreneurship (Etzkowitz et al., 2000). This “third mission” adds to the “first” (teaching) and “second” mission (research) of HEIs (Etzkowitz, 1998).

One of the signs of this is HEIs involvement in sustainability, particularly through the publishing of sustainability reporting (SR) (Huber & Basen, 2018; Ceulemans et al., 2015). SR is a voluntary activity that has been identified as one of the primary drivers towards sustainability (Lozano, 2012, 2015). The main purposes of SR are (i) to assess the current state of an organisation's practices; and (ii) to communicate with stakeholders (Dalal-Clayton & Bass, 2002). Organisations moreover report about their sustainability activities (iii) to benchmark against other organisations; (iv) to assess performance over time; and (v) to demonstrate how the organisation affects and is affected by stakeholders and expectations about sustainable development (Daub, 2007; Prado-Lorenzo et al., 2009). Sustainability reporting can moreover serve as a base for planning changes for sustainability (Lozano, 2013). A study with CEOs showed that 74% of the respondents agreed that reporting on non-financial impacts contributes to the long-term success of their organisation (PWC, 2014). However, the effectiveness is highly dependent on the consistency in reporting and how the sustainability reports are integrated into decision-making processes and their consistency (Higgins & Coffey, 2016).

Dalal-Clayton & Bass (2002) suggested that to achieve measurable and comparable goals, the indicator based assessment approach is the best option in comparison with accounts and narrative approaches to assess and report sustainability. The GRI Guidelines are recognized as one of the best indicator based reporting tools by several scholars (such as Hussey et al., 2001; Lozano, 2006; Roca & Searcy, 2012). Nonetheless, these guidelines are not explicitly designed for universities, as they do not include an educational dimension, thus limiting the effectiveness of reporting universities sustainability efforts.

Several scholars have proposed tools developed specifically for universities (see for detailed reviews e.g. Shriberg (2002); Yarime & Tanaka (2012); Disterheft et al. (2016)). All these tools have advantages and disadvantages (Table 1).

This paper uses the Graphical Assessment of Sustainability in Universities (GASU) tool as it provides a holistic view on sustainability issues and their interlinkages (Lozano 2006; 2011) and is aligned with the GRI G3 guidelines. It assesses economic, environmental and social dimensions (of the GRI guidelines) and complements them with an educational dimension. The GASU tool moreover provides a systematic approach regarding data collection, categorisation, and capturing for further processing that the GRI is lacking (Lozano, 2006). For the detailed list of categories and aspects, refer to the GRI sustainability guide (2012).

*Table 1 – Advantages and disadvantages of sustainability tools for HEIs*  
(Sources: Adopted from Shriberg, 2002; Lozano, 2006; Yarime & Tanaka, 2012; Gomez et al. 2014; Alghamdi et al. 2017; Sepasi, 2018)

Year	Assessment tool	Advantages	Disadvantages
1993	Campus Ecology	- Cross-functional - Practical instructions and framework	- Environmental focused only - Outdated
2001	Sustainability Assessment Questionnaire (SAQ)	- Focus sustainability as a process - Helpful as a teaching tool - Investigative issues that identify weaknesses and set goals	- The mechanism is lacking for comparisons or benchmarking - Hard for large universities to complete
2006	Graphical Assessment of Sustainability in University (GASU)	- AMOEBA graph for better understanding - All sustainability issues are addressed	- Massive data is needed
2006	Sustainable University Model (SUM)	- Provide a structured framework for visualising - Tried and tested by other references	- Reporting effectiveness and efficiency of the model is time-consuming
2008	University Environment Management System (UEMS)	- Developed by emerging countries (Saudi Arabia)	- Indicators are not detailed in comparison with other tools
2009	Assessment Instrument for Sustainability in Higher Education (AISHE)	- The institutional comparison is easier due to flexibility in the framework - Process oriented - Developed through an international consensus	- Difficult to understand - Motivations are omitted - Narrative assessment
2009	Benchmarking Indicators Questions – Alternative University Appraisal (BIQ-AUA)	- Community learning in focus - HEIs can identify their own strengths and weaknesses by using the tool	- The social dimension is missing - Environmental indicators are not detailed in comparison with other tools
2009	Unit-based Sustainability Assessment Tool (USAT)	- Self-assessment by individual units is possible together with a holistic evaluation of institutions - supported by United Nations Environment Programme	- Social responsibility issues are missing
2012	The Green Plan	- All important sustainability issues are addressed	- Huge amount of information and efforts are required - No systematic approach about data collection
2014	Sustainable Campus Assessment System (SCAS)	- Most aspects of sustainability are covered - Unusual events like disaster management are covered	- Social issues are not stressed are adequately
2014	A adaptable Model for Assessing Sustainability in Higher Education (AMAS)	- Most aspects of sustainability are covered - Flexibility i.e. can be applied at different stages	- Economic dimension incomplete
2014	Sustainability Tracking, Assessment and Rating System (STARS)	- Most comprehensive tool - Detailed explanation - Technical manual	- Assessment methods are complex - Expensive regarding registration and participation
2014	Green Metric – UT's GreenMetric University sustainability Ranking (GM)	- Active support from the University of Indonesia	- Environment-focused - Social issues such as diversity and equity are missing

In the GASU tool, there are 43 performance indicators for the profile, nine performance indicators for the economic, and 30 performance indicators for the interlinking issues and dimensions. The tool is designed in an excel sheet where the users are allowed to grade all the indicators within each of the following dimensions: economic, environmental, social and educational. As the result of the data input in the excel sheet, following eleven charts could be generated. (i) a general chart, where the performance of all four dimensions can be seen; (ii) profile chart; (iii) economic dimensions chart; (iv) environment dimensions chart; (v) five social dimensions chart (overall chart, labour practices chart, decent work chart; human rights chart; society chart; product responsibility chart; (vi) education dimension chart; and (vii) inter-linked issues and dimension chart.

Lozano (2011) reviewed and assessed the state of sustainability reporting in universities by analysing the performance level of 12 universities sustainability reports using the GASU tool. The results showed that sustainability reporting was in early stages in comparison to sustainability reporting in corporations and the universities focused mostly on the economic and environmental dimensions in their sustainability reporting. The GASU tool was applied to present the sustainability efforts at the University of Leeds (Lozano et al., 2013) and the University of Gävle (Sammalisto et al., 2017).

### **Methods**

This study is based on a descriptive case study at the University of Gävle (HiG). HiG established in 1977. The University offers more than 50 study programmes and researches different discipline within three faculties namely, health and occupational studies; engineering and sustainable development; and education and business studies. The university has approximately 14,500 students and 700 employees.

The sustainability report of HiG was developed in a three-stage process: (i) compiling the information, i.e. data collection; (ii) populating the indicators; and (iii) performance assessment. The primary data were gathered from different sources, mainly interviews, internal documents (by searching the University's website and requesting from the concerned authorities within the University), and the annual report. The data was collected during March to June 2017. Different personnel was selected based on the dimensions mentioned in the GSAU tool, for instance, to populate the indicators, the information about social dimension gathered from the Human Resource Department by interviewing the HR-specialist, (see Sammalisto et al., 2017 for details). Following the instructions of the GASU tool, the third stage was conducted in an excel worksheet. The compiled information was graded from 0 to 4, where 0 refers to a total lack of information for the indicator; 1 refers to poor performance or 25% of the required full information; 2 refers to regular performance or 50% of the required full information; 3 refers to good performance or 75% of the required full information; 4 refers to excellent performance or maximum grade (see Lozano 2006; Lozano & Huisingh, 2011; Lozano. 2013) for more detail).

### **Findings**

The University has been ISO 14001 certified since 2004. The University endorses the Talloires Declaration, the United Nation's 17 sustainable development goals (SDGs) and applies ISO 19011:2011. The University is a member of the COPERNICUS University charter and the RIO 2012 Commitment to Sustainable Practices of Higher Education Institutions. Due to page restrictions of this paper, following figures about each dimension (as aforementioned) are selected to highlight the sustainability reporting results.

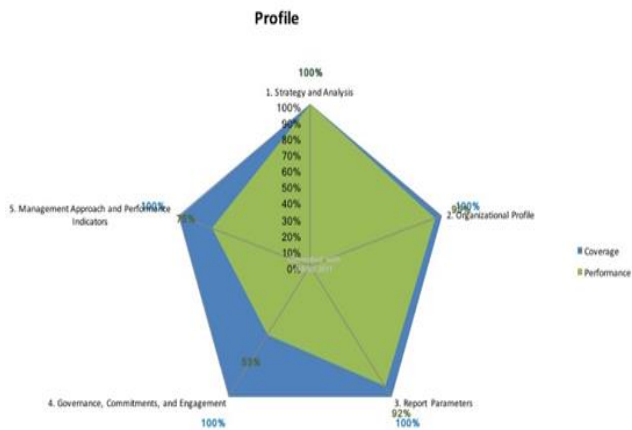


Figure 1 – Profile indicators gathered and their performance using GASU 2011

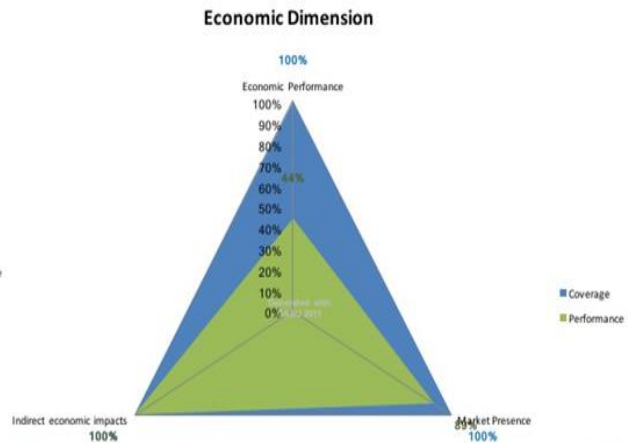


Figure 2 – Economic dimension indicators gathered and their performance using GASU 2011

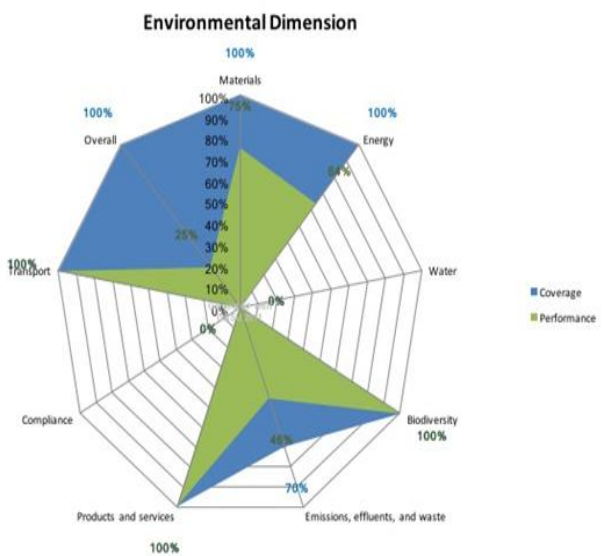


Figure 3 – environmental dimension indicators gathered and their performance using GASU 2011

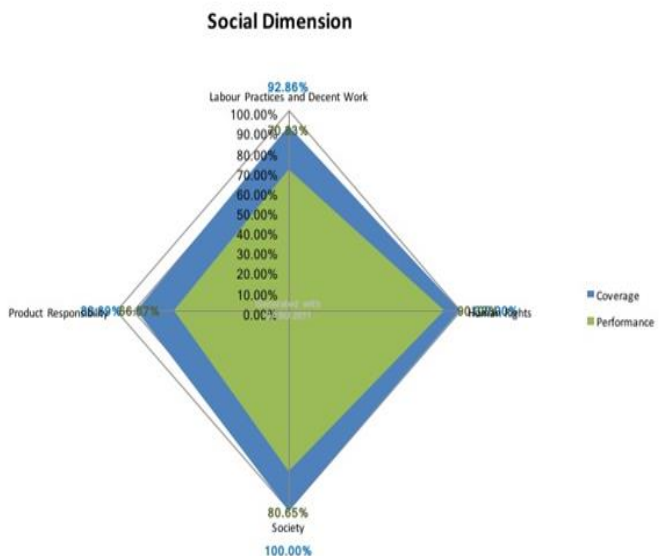


Figure 4 – Social dimension indicators gathered and their performance using GASU 2011

As shown in figure 1, there are five categories in the profile dimension, i.e. strategy and analysis; organisational profile; report parameters; governance, commitments, and engagement; and management approach and performance indicators. It can be seen that the performance of the last two categories is 53% and 75% respectively, which need to be improved.

As shown in figure 2, there are three categories in the economic dimension, i.e. economic performance, market presence, and indirect economic impacts. Overall, the results are satisfactory except in the economic performance, which is 44%.

As shown in figure 3, there are nine categories in the environmental dimension, i.e. material; energy; water; biodiversity; emissions, effluents and waste; products and services; compliance; transport; and overall. Among these categories, it can be seen that the performance of the following categories is 100%: biodiversity; products and services; and transport. For some indicators, for instance, water, the respondents could not obtain any data, explaining the low performance.

The overall performance about social dimension is 80%, which includes following four categories: labour practices and decent work, human rights, society, and product responsibility.

As shown in figure 4, the indicators of the *labour practices and decent work* perform 70.83%. The performance of employment and diversity and equal opportunity indicators is 93% and 100% respectively.

The indicators of the *human rights* perform 90.32% because generally the human rights issues have been addressed at governments level. The performance of following indicators is 100%: investment and procurement practices; freedom of association and collective bargaining; child labour; forced and compulsory labour; security practices; and indigenous rights.

The indicators about the society perform 80.65%. The performance of following indicators is 100%: bribery and corruption, public policy, anti-competitive behaviour, and compliance. The performance of community is low (25%) due to unavailability of information.

The indicators about the product responsibility category (refer to the service responsibility) perform 66.67%. The performance of following indicators is 100%: marketing, communications, and compliance. The performance of customer health and safety and customer privacy is low, i.e. 19% and 25% respectively due to unavailability of information.

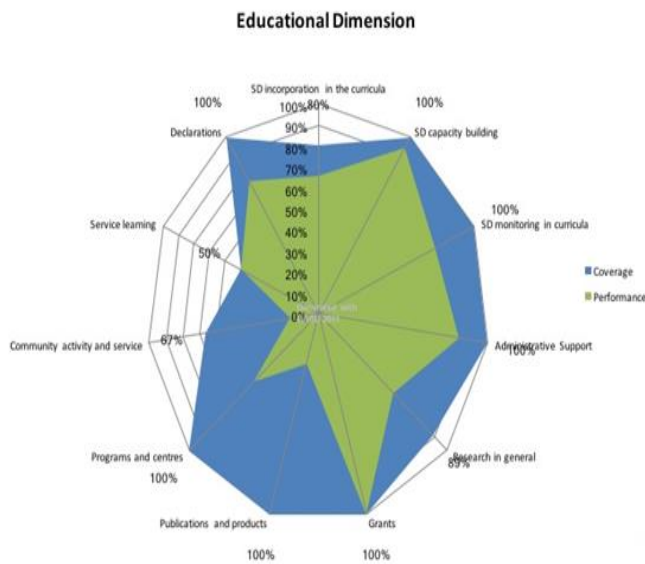


Figure 5 – Educational dimension indicators gathered and their performance using GASU 2011

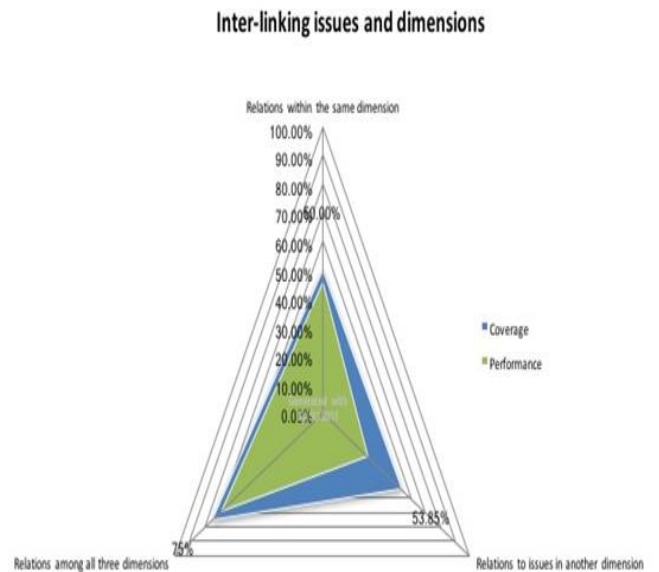


Figure 6 – Inter-linked issues, dimensions indicators gathered and their performance using GASU 2011

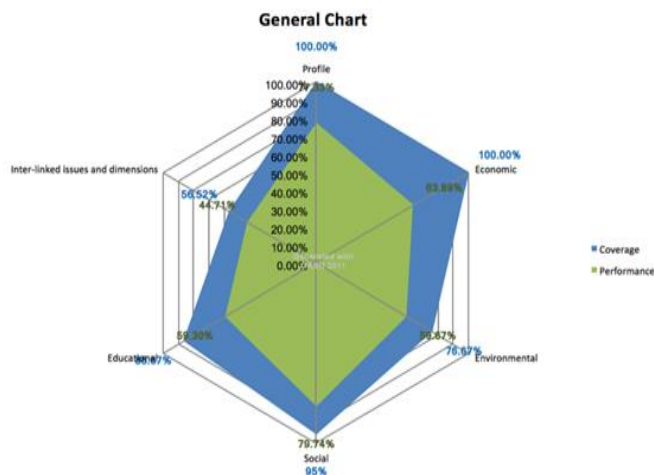


Figure 7 – General chart of the indicators gathered and their performance using GASU 2011

The overall performance of the educational dimension is 59.30%. As shown in figure 5, the performance about the grants and sustainability capacity building is 100% and 94%.

However, on the lowest side, the performance about the community activity and service and publications and products is 17% and 25% due to unavailability of information related to students, faculty and staff contributions to community development and service. A sustainability report can contribute to achieving better performance in the following years.

The overall performance of the inter-linked issues and dimension is 44.71%. As shown in figure 6, the performance about the relations among all dimensions is 68.75%. The relations to issues in another dimension is lacking due to, for instance, unavailability of information regarding relations between environmental and social dimensions.

The overall performance of the indicators is 67.11%. As shown in figure 7, the performance of the social dimension and the profile is 79.74 and 77.33% respectively, followed by economic 63.89%, environment 59.67%, educational 59.39%, and inter-linking issues and dimensions 44.71%. The gathered information about each indicator shows the sustainability efforts of the University of Gävle. In comparison to other universities (see Lozano, 2011), this study quantified the data regarding performance and highlighted inter-linking issues and dimensions, (see Sammalisto et al., 2017 for more detail).

## **Discussion**

This research presents the process of developing the first sustainability report of HiG and discusses the learnings obtained from the process. The GASU tool allows taking into account all stakeholders and their views that results in achieving the desired performance. While collecting, populating and assessing performance, various challenges were faced. Because of huge numbers of indicators, it took a while to educate the respondents for more specific information. In some cases, several interviews were conducted to gather the information for a specific indicator. However, once the required information is collected, the GASU tool was easy to use in the worksheet, i.e. to assign a number based on the instructions (as aforementioned in the literature review section) due to its systematic nature.

The results show that the University of Gävle performs well in all the dimensions. The performance percentages can be seen in the finding section above. Some notable strengths of the University's sustainability efforts are well worthy to highlight here in comparison to already published work of other HEIs. In 2017 it is reported that the sustainability issues have been included in 78% of the courses that are offered in different programs, the contribution to sustainable development is also high, i.e. 96% of researchers and 85% of PhD students have reported the same. 100% of the head of departments and 85% of staff in technical and administrative services integrate sustainability into their work. The ISO 14991:2015 certification assures that the University has an effective and structured approach. An environmental management system is used to coordinate the work for the environment, social and economic issues of sustainability. About the environmental dimension, there are energy efficient windows, solar panels, bike-charging stations. About the social dimension, the University of Gävle has an evenly distributed sex ratio among the employees. The HiG's procurement policy strictly take into account the environmental requirements as per rule and regulations.

The aforementioned findings distinguish HiG's sustainability efforts to other universities. HiG aims to use the sustainability report as a foundation to foster its entrepreneurial activities and outreach.

GASU helped in reporting sustainability efforts by more systematically assessing the performance of sustainability issues. One unique dimension that distinguishes the GASU tool from other assessment tools in reporting sustainability efforts of HEIs is the fact that GASU allows finding indicators that relate to others in other dimensions. GASU can help other HEIs to push towards sustainable future by focusing on the weakness or the area of improvements. This leads to a way to foster entrepreneurial universities. Despite the third mission being proposed many years ago for developing a sustainable future, for example, by reporting sustainability efforts, HEIs can set examples as HEIs could act as a driving force by assimilating sustainability in their research, education and even in operations.

Publishing a sustainability report can be mean to showcase what activities have been done at a university and to communicate and diffuse knowledge to relevant stakeholders as well to benchmark against other universities. The systemic and holistic assessment of the universities internal and external activities and relationships using the GASU tool gives insights of collaboration opportunities and by that foster its entrepreneurial journey.

## Conclusion

The purpose of the study was to analyse and report the sustainability efforts at the University of Gävle. This study reported the development of a sustainability report of the University of Gävle and its current state of the economic, social, environment, and education dimensions. By reporting its sustainability efforts, the university can improve communication practices between the university and its stakeholders and facilitate the shift from a traditional university to an entrepreneurial. It can be an example of how HEIs could act as a driving force by assimilating sustainability in their research, education and even in operations. The results could be useful to benchmark other HIEs and perform longitudinal studies. Sustainability reporting can serve as a strategic initiative towards entrepreneurial transformations of universities.

It would be interesting to compare the sustainability efforts of the University of Gävle to other HEIs in Sweden and other countries, carry out a longitudinal study to see the improvement areas based on this study, engage and analyse the perspectives of external stakeholders, and compare sustainability reporting efforts of new HEIs against of those that are established for longer time.

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