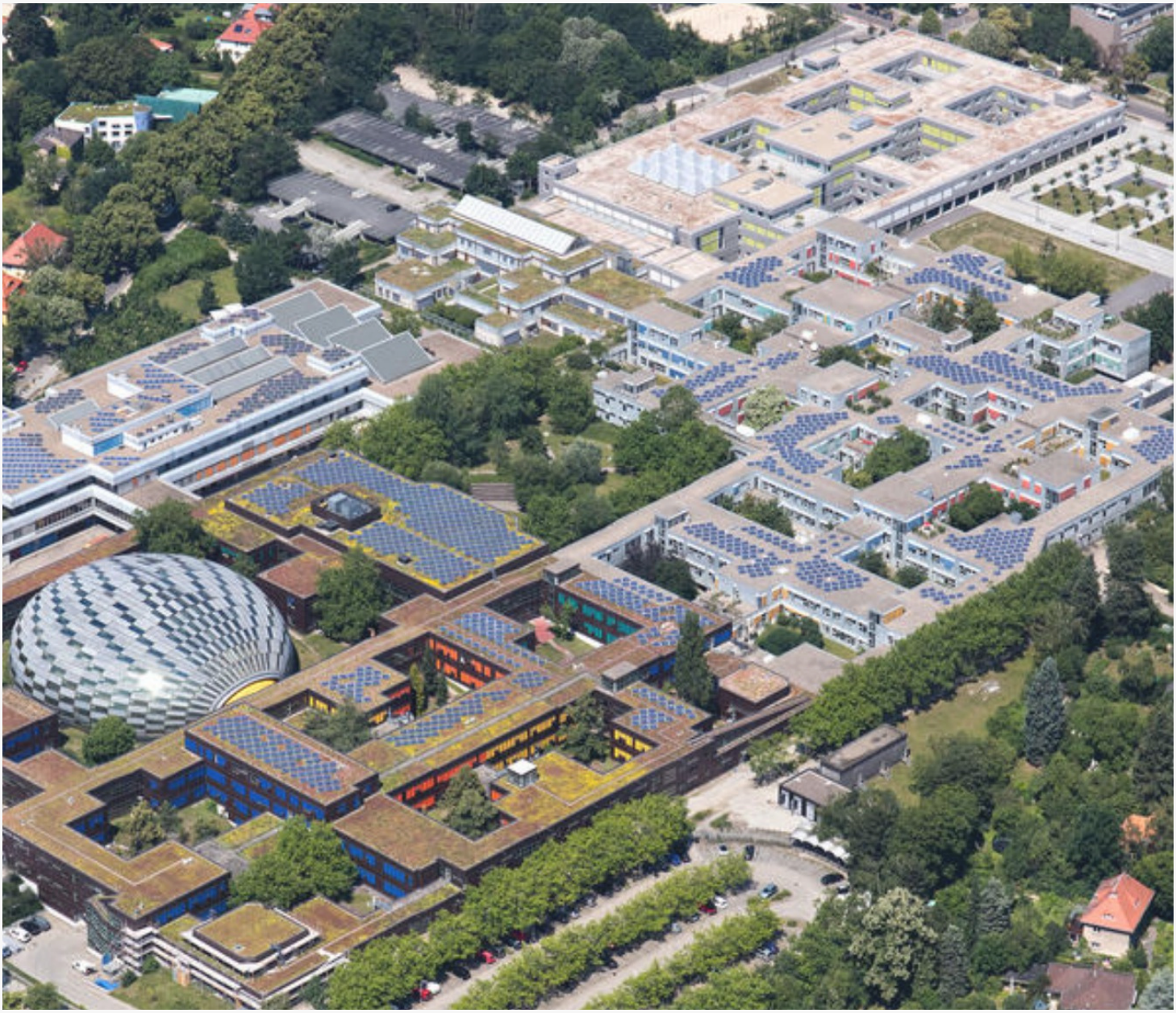

The Nuances of an SDG Report

Providing key recommendations to Freie Universität Berlin for an ideal SDG Report

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ABSTRACT

Sustainability has become a key factor in determining a university's appeal, so it is vital for a university to communicate its sustainability leadership to external audiences. To boost awareness of their sustainability practices, universities can use tools such as sustainability reports or a high position in sustainability rankings. The Times Higher Education Impact Rankings, one authoritative source for sustainability ratings, ranks universities according to the United Nations' Sustainable Development Goals (SDGs). These rankings are based on a specific style of sustainability report, known as an SDG report. Our goal was to make recommendations for Freie Universität Berlin's SDG report, and we accomplished this goal by conducting a content analysis of existing reports. Our analysis found that components of a well-done report include format and organization by sustainability goal, description of projects that apply to the goal, and presentation of statistics in a box separate from the text. In addition to this report, we were also tasked with the project of formulating recommendations for an interactive app. We developed recommendations best suited to the students of Freie Universität Berlin to communicate the university's sustainability efforts in a way that students will notice and care about. The SDG report recommendations and the interactive app will both assist Freie Universität Berlin communicate its sustainability practices with all current and future students, as well as help them to engage the community in becoming more sustainable.

UNIVERSITIES' ROLE IN GLOBAL SUSTAINABILITY

Germany is at the center of the European discussion of the global environmental crisis; it produces the second most greenhouse gas emissions in Europe after Russia, and the seventh most greenhouse gas emissions per capita globally. In 2021, flash floods caused by torrential downpours, uncharacteristic of the region, created the costliest natural disaster Germany has ever experienced[1]. Natural disasters like these are a serious issue for the safety and stability of the German people and their economy. This is a primary reason that Germany has undertaken Energiewende, a nationwide environmental initiative to transition Germany from its high reliance on coal mining to more renewable resources for energy consumption. In June 2021, Germany adopted new climate legislation that aims to cut emissions by 65% by 2030 and at least 88% by 2040[2]. This aligns with the EU's emission reduction plan for countries to achieve by 2030.

All areas of society must work together towards sustainability goals, however, higher educational institutions exist in a space where dominant trends tend to act against sustainability. These trends include status competition, marketization, and unbundling[3]. In addition, many universities are also rapidly growing and expanding campus activities which can present new challenges for sustainability. The current demand for higher education has also presented a growth in for-profit providers who often lack incentives and resources for investing in public- good outcomes like sustainability. Due to these trends, sustainable development has not been fully integrated into many universities' curricula.[4]

The British magazine Times Higher Education (THE) publishes a list called the Impact Rankings, which ranks universities in terms of sustainability. THE ranks universities according to the United Nations' seventeen Sustainable Development Goals (SDGs), shown in Figure 1, and then ranks each university based on a weighted average of its top three SDGs alongside SDG 17.

Although Germany has been making significant strides towards sustainability, its universities' progress toward sustainability is not reflected in international rankings. In the three years since this ranking list has been established, none of Germany's universities have made the top 100 overall, though many of them are able to do well in individual goals. Freie Universität Berlin is the top-ranked German university in terms of sustainability, yet in 2021, it failed to make the top 100 of the Times Higher Education Impact Rankings.

The mission of our research was to advise them on how to write a proper SDG report, a necessary element for the Impact Rankings. Our main objectives were to collect and analyze SDG reports from top ranked universities, provide recommendations to FU Berlin on an ideal SDG report format, and provide interactive offers for an Actionbound campus sustainability tour app. Having an SDG report would help Freie Universität to communicate their progress towards sustainable development goals to the general public as well as improve their standings with the Impact Rankings.

Figure 1. The 17 Sustainable Development Goals as given by the United Nations [5]

BACKGROUND

Achieving a sustainable Europe will require immense societal change that engages all sectors of the economy. This can be seen in how production and consumption systems are heavily linked to ecosystems as they output waste directly into the environment[6]. The European Commission has identified ten focus areas for policy action which range from societal actions, governmental actions, sustainability experimentations and innovations, anticipating consequences. In addition, it emphasizes the roles of cities, finances, and international action in each of these policies.

In the last 30 years, Germany has made strong efforts to integrate sustainability into decision making at national and local levels[7]. The green energy movement in Germany can be traced back to the 1950s, when German scientists wanted to establish atomic energy as a viable alternative to coal. Nuclear energy entails its own risks to the environment though, and Germans have long protested against its use. The Energiewende exemplifies the German commitment to transition from coal to renewable energy sources. Its main goal is to phase out nuclear power and fossil fuels and replace them with more sustainable sources of energy. In the 1990s, as awareness of climate change grew globally, research showed new ways of implementing green energy.

Energiewende has led to dramatic reductions in energy costs and led to the discovery that renewable sources of energy such as hydropower, wind, solar, and uranium are much cheaper than nonrenewables. Germany's Energiewende plan predicts that by 2050 that power production will be supplied by about 83% renewable energy sources.

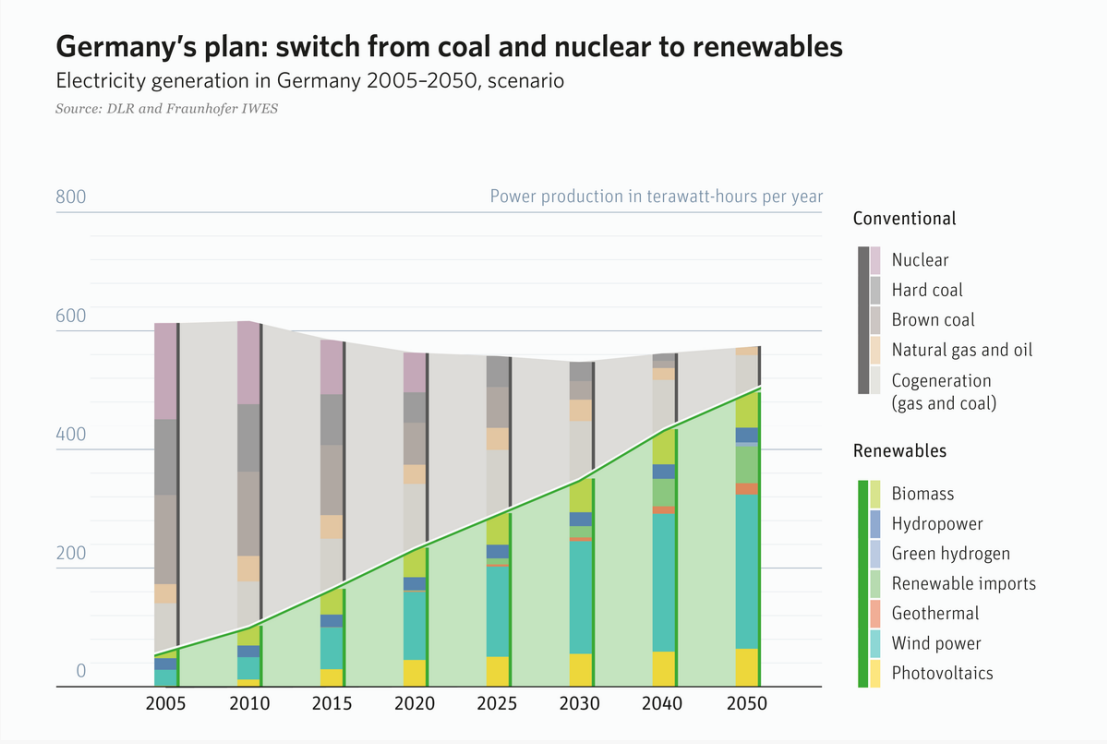

Figure 2.

Power Production in Germany from 2005 - 2050 [8]

While Germany has made major strides in improving carbon emissions and incorporating sustainability into policy-making, its universities have not found the same success. A major indicator of this lack of success is the universities' failure to make the top 100 in the Times Higher Education Impact Ranking. One might think that German universities' low rankings mean that they are not putting in the effort to be sustainable, but that may not be the case. This discrepancy between the national efforts to make Germany a European leader in energy reform and the rankings of universities could be due to a multitude of reasons and should not imply that universities are not putting in the effort that they ought to be.

THE UNITED NATIONS' SDGS

The United Nations Framework Convention on Climate Change (UNFCCC), published in 1998, was a starting point for many of Germany's current climate policies. In that same year, the Green party became part of the German governing coalition for the first time. In particular, its members have fought for the expansion of renewable energy and an end to the use of nuclear energy. Since the appearance of the UNFCCC, Germany has been working with its own policies, as well as the United Nations' climate policies to make Germany greener[7].

In 2015, the United Nations adopted the Sustainable Development Goals (SDGs) as a universal call of action to end poverty, protect the planet, and to ensure peace and prosperity by 2030. These seventeen goals recognize that action in one goal will affect the outcomes of other goals and that any future developments must balance social, economic, and environmental sustainability.[9] In addition, these goals are an urgent call for action by all countries to partner and recognize that ending poverty and other deprivations goes hand in hand with improving health and education, reducing inequality, and spurring economic growth. This is all while tackling climate change and working to preserve oceans and forests.

Since their creation, the SDGs have been a vital piece of sustainability planning in the EU. The European Commission, the executive wing of the European Union, works with EU member states to achieve the 169 targets of the 17 SDGs to follow through with the UN 2030 agenda for Sustainable Development[10]. The European Commission website has an outline for how the EU member states can work to achieve each individual goal.[11]

The 2030 action plan declared by the United Nations is a guiding principle of German government policy. Thus far, Germany has made significant progress in six main areas of transition: human well-being and capabilities; social justice, climate action and energy, circular economy, sustainable building and the transformation of transport, sustainable agricultural and food systems, and pollutant-free environment.

Part of the way that the German government has been working with the SDGs is to break them into transition areas that focus on different aspects of society. Progress can be more easily made by corporations or establishments by following the transition areas to better integrate the SDGs into their practices. Each of these transition areas aids in clustering a few of the SDGs.[12]

Figure 3. Separation of SDGs in each transition area identified by Germany

UNIVERSITIES' ROLE IN SUSTAINABILITY

As the magnitude and urgency of environmental problems grow, universities have an important role in promoting sustainability. There is a need for innovative interdisciplinary research that is problem-focused and use-inspired to advance the theory and practice of sustainable development. Research universities possess a breadth of expertise that is needed to examine the causes and consequences of sustainability problems[13]. Studies show that sustainability is a major factor for university applicants and universities that are not making efforts to become more sustainable will have a harder time recruiting incoming students[14]. Universities have many motivations to work on their sustainability initiatives, from attracting potential students, to following government guidance, to just plain caring about the world.

Alongside universities, younger generations are trying to make the world, and their futures, more sustainable. Many movements are being organized to raise awareness of climate issues and the lack of global sustainability. The Fridays For Future movement is perhaps the most well-known of these movements. Headed by Greta Thunberg, a Swedish activist who is now 19 years old, the movement began in 2018, when she staged a protest outside the Swedish parliament building. Since then, the Fridays For Future movement has organized climate strikes on high school and college campuses globally. Students at Freie Universität Berlin have participated in this movement since its inception. Thousands of students participated in a peaceful protest to display the student body's strong commitment to playing an active role in the Energiewende. The students prepared a list of grievances and handed them to the president of the university at a general assembly in 2019.[15]

These protests are not the only reasons for universities to think about sustainability. Clean energy and sustainability entered the curricula of many universities in the 1990s alongside movements for increased sustainability worldwide[16]. Universities have been making efforts to offer classes for students about topics in sustainability and reduce their carbon footprints, but it also makes them more likely to get involved in reducing it once they graduate[3]. Nowadays, many university sustainability initiatives can be seen in the forms of single-issue initiatives like sustainable transportation or systematic approaches like ethical investments[15]. Many of these initiatives focused on major areas like energy, buildings, water, waste, transportation, grounds, air and climate, and food.

SUSTAINABILITY RANKING TOOLS

In the twenty-first century, sustainability assessment tools such as rankings have become instrumental in structuring universities' approaches to sustainability and facilitating progress towards sustainability[15]. Sustainability rankings reflect a broader trend in which universities compete through a wide range of metrics. University rankings have become a popular instrument that allows for a simple and quick comparison of higher education institutions (HEIs) on the basis of select variables[17]. The Times Higher Education World University Ranking (THE) is one of the global benchmark ranking systems employed in many research studies. Having first appeared in 2004, the magazine is known for its ranking of universities in many categories including the most sustainable universities which is called the Impact Rankings. Its five major criteria consist of teaching, research, citations, international outlook, and industry income, and these criteria are weighted by importance.[19]

Teaching	Assesses the learning environment by means of a reputation survey, staff-to -student ratio, doctorate-to-bachelor's-ratio, doctorates-awarded-to-academic-staff ratio and institutional income	THE	30%
Research	Measures the volume, income and reputation of the research performed by universities by means of a reputation survey, the research income and research productivity	THE	30%
Citations	Research influence, which is quantified capturing the average number of times a university's published work is cited by scholars globally	THE	30%
International outlook	This criterion is made up by following indicators: Proportion of international students, proportion of international staff and international collaboration	THE	7.5%
Industry Income	Measures knowledge transfer as research income from industry due to inventions, innovations and consultancy	THE	2.5%

Table 1. THE's weighted ranking system

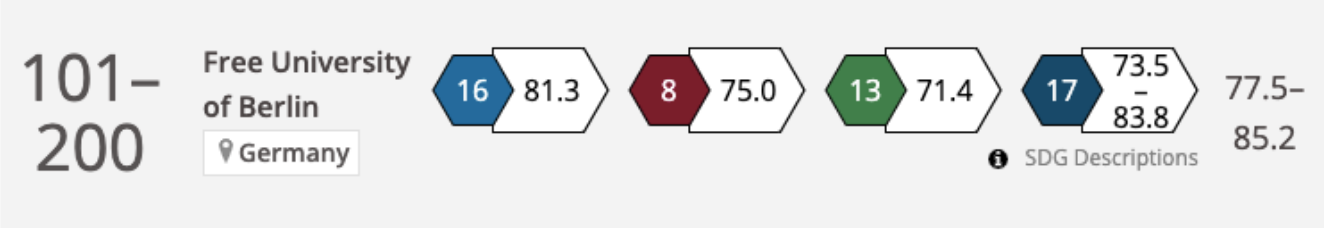

Figure 4. Freie Universität Berlin's THE Impact Ranking in 2021[20]

THE Impact Rankings aim to assess HEIs' performances against the SDGs[18]. THE has a list of 1,118 participating universities which are ranked by their progress towards the 17 SDGs. The ranking system allows each university to submit data on as many of the SDGs as it desires.

Each SDG for which a university submits data for ranking is given a score from 0 to 100, with a unique methodology for scoring for each separate goal. The overall rank of a university is determined by a weighted score of SDG 17 partnership for the goals) at 22% and the top three of the other 16 SDGs at 26% each. This variation is important because, while not every university will excel at every goal, ranking by the highest scores encourages universities to put strong efforts into fixing specific problems rather than mediocre efforts across the board. SDG 17, partnership for the goals, is the only compulsory ranking to be included on the overall list[19]. We have provided an example of a ranking assigned by THE to Freie Universität Berlin in 2021 above.

METHODS

Our project aims to analyze SDG reports from top ranked universities and develop a model for a good report in order to improve the Times Higher Education Impact ranking of the Freie Universität of Berlin.

PROJECT OBJECTIVES

01

Collect and Analyze SDG Reports from Top Ranked Universities

02

Use Findings from SDG Analysis to Recommend the Most Ideal Techniques in Reporting Data in a SDG Report

03

Provide Exciting New Interactive Offers for the Existing Actionbound App

This methods chapter will open with a visual representation of the connections between our mission statement and goal, primary objectives, and methods that will be used to achieve these objectives. As seen in our graphic, the output of our first objective is directly linked to the methods presented in our second objective. Our last objective stands alone but indirectly relates to our topic at hand which is universities' role in the concept of sustainability.

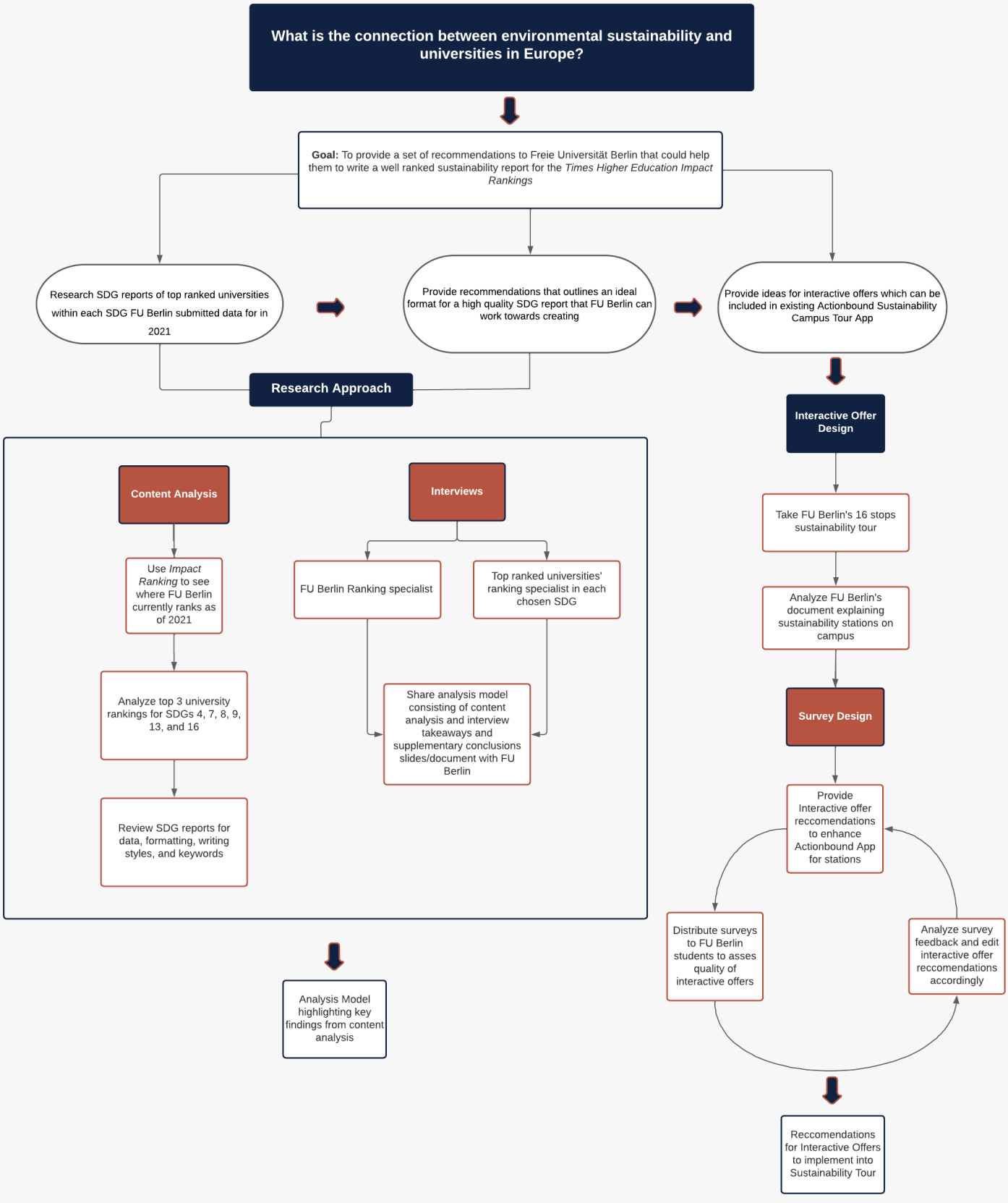

Figure 5. Visualization of Methods

Our project is sponsored by the Freie Universität Berlin, a public research institution located in Berlin, Germany. Freie Universität was founded in West Berlin in 1948 at the start of the Cold War. Since then, the university has become one of the top 10 schools in Germany and is one of eleven prestigious German research universities in the German Universities Excellence Initiative. Today, the university is internationally recognized as a leading university in the humanities and political science. Currently the university has approximately 32,000 enrolled students and offers majors in 150 different disciplines. The Sustainability and Energy Unit is responsible for coordinating activities and programs regarding sustainability research, sustainability focused course offerings, campus-wide energy monitoring, waste management, and sustainability report development.

The university is well known for its environmentally conscious campus community.

Many students and staff are very well informed and involved in climate protection. This community has birthed numerous programs, demonstrations, and projects promoting sustainability on campus. Students at FU Berlin established the FUdsharing-Fairteiler in 2017. This is a food saving initiative on campus; students collect donations and nonperishables that would otherwise be thrown away and offer them to students for free from their pantry. The students also utilize the pantry as a space to educate fellow students on food sustainability and rescue. The FUdsharing is just one of many things the university is doing to improve their sustainability status. It is also incorporating renewable energy sources, most notably in the form of solar panels. There are nine of these such photovoltaic systems on university rooftops, with the first one installed in 2008 and the rest installed in the following three years. These systems were, in part, initiated by a student project, UniSolar, in 2009, and was funded by the students.

OBJECTIVE 1

COLLECT AND ANALYZE SDG REPORTS FROM TOP RANKED UNIVERSITIES

First, we used content analysis to analyze several SDG reports. Content analysis is the process of identifying themes, words, and phrases in qualitative data. We carried this out by reading through many reports and noting down aspects such as number of headings, use of images, color scheme, formality of language used, and any other information that might be relevant. The reports that we collected were examined with respect to four key areas: formatting, visuals, data presentation, and language use. We then organized all of our information in spreadsheets in order to better compare reports.

To carry out this method, we consulted the Impact Rankings database to obtain the top three SDG reports in SDGs 4, 7, 8, 9, 13, 16, and 17. We selected these seven categories because these are the categories in which FU Berlin submitted data. We found the three highest ranked universities in each of those SDGS with publicly accessible SDG reports and analyzed those reports. We focused on the top three ranked universities per SDG rather than simply using the overall ranking of top universities because universities can rank highly in any three SDGs and this deviates from our mission to identify recommendations for SDGs that FU Berlin has submitted data in.

There were a couple of obstacles faced in collecting the best reports to build the best model. Firstly, there is no way to determine which of the reports ranked best according to the THE standard. While publishing a report is something that universities are required to do to get on the overall Impact Rankings list, the scores are not broken down enough to see which universities scored well on their reports. Universities with low overall scores can still have well written SDG reports, and in our analysis of many reports we found that a lot of lowly ranked universities did have similar reports to highly ranked ones. Additionally, universities who submit data to the THE are not required to write an SDG report if they do not intend to be part of the overall impact rankings, and even if they do submit a report, they are under no obligation to make it available to the public.

To give FU Berlin an understanding of how keywords in their reports occur in context in other non native and native English-speaking universities' reports, our team has created a keyword glossary where a handful of keywords from FU Berlin's Kompass, an entirely German SDG contributions website, are contextualized. Keywords and key phrases include those like industrialization, sustainability, peaceful, and partnerships. These words, along with others, occured in non-native English-speaking countries, namely Italy and France, and native English-speaking countries, namely the United Kingdom and the United States. The glossary provides the sentences in which these words occur for additional context. Keeping the universities and the countries constant throughout the SDGs allows for there to be cohesion to the glossary.

OBJECTIVE 2

USE FINDINGS FROM SDG ANALYSIS TO RECOMMEND THE MOST IDEAL TECHNIQUES IN REPORTING DATA IN A SDG REPORT

In addition to our content analysis from objective 1, we also conducted interviews to understand the process of creating an SDG report. Interviews are a great avenue for accessing information or documents that are not published. While each university compiles data that it makes public in its SDG reports, it also submits data sets that may not be public or included in the report. These data sets could inform FU Berlin on what types of data high ranking universities are reporting to the Impact Rankings for each SDG. In addition to this, interviews allowed our research team to inquire about writing techniques, paragraph structure, difficulties with the SDG reporting process, and general advice on how to construct a quality report. We primarily spoke with Bettina Tacke, the ranking specialist at FU Berlin and other similar ranking specialists at top ranked universities within our chosen SDGs. We organized our previous content analysis and our takeaways from these interviews in a Google Sheet where we separated all analyzed material from each SDG by university and by each main section. We shared this sheet, along with a concise document of focused recommendations, with our sponsor.

OBJECTIVE 3

PROVIDE EXCITING NEW INTERACTIVE OFFERS FOR THE EXISTING ACTIONBOUND APP

Aside from looking at SDG reports from highly ranked schools, we made recommendations for new interactive offers on the Actionbound App which FU Berlin plans to use to promote sustainable activities on its campus. As of now, the university has an audio tour of 16 stations with detailed descriptions of the sustainable practices on campus. Freie Universitat Berlin is looking to also engage users with a sustainability education experience. The Actionbound App is its mode of completing this goal, as it incorporates location based app interaction offers called bounds. Our goal was to imagine the situation from a student perspective and create these interactive offers in order to get users excited about learning sustainability on the FU Berlin campus, as education about sustainability has proven to be essential in spreading awareness for the cause and receiving a broader audience for active efforts in support.

Our group brainstormed ideas for bounds that we would enjoy doing, as we are college aged and can place ourselves in the position of students on this campus. From this, we designed temporary phone screens for what we think the offers should look like. We created a broad spectrum of interactive offers for different circumstances depending which route the university wanted to take the app.

We created some fun games and trivia options, but also a more informative format in the case that FU Berlin wanted a more technical app. Different offers can be used for different bounds depending on what suits the situations best.

We have presented our ideas in slideshow format, as we feel this best displays them. Each interactive offer idea has slides dedicated to showing off how the screens would look along with a description of the interaction process between the user and the app. We shared these slides in survey form with a few students who were interested in sustainability at FU Berlin and updated some of our offers based on their feedback, so that all offers were better suited to the campus culture. The survey questions focus on ensuring that the students will get the most out of each app offer.

RESULTS

INTRODUCTION

When analyzing SDG reports, it is evident that there are obvious differences among them, whether that be the color scheme, the format of the report, or even the position of data, statistics, and graphics. Many of these choices are stylistic and left to the designers at each individual university. Our research aims to understand the nuances within the categories of formatting, visuals, data presentation, and language use. We developed a set of recommendations for our sponsor that could elevate the accessibility and communicative aspects of their future SDG reports.

Over the course of this project we analyzed 31 SDG reports submitted to the Times Higher Education Impact Rankings. Within these reports, we focused on sections dedicated to the SDGs in which Freie Universität Berlin submits data: SDGs 4, 7, 8, 9, 13, 16, and 17. These reports were drawn from a variety of universities in various groupings: universities who scored well in the Impact Rankings, universities who scored poorly in the Impact Rankings, non-native English speaking universities, native English speaking countries, and universities from different cultural regions such as the Anglosphere, Europe, and the Global South.

We provided our sponsor with our analysis data of many types of SDG reports, a supplementary document with specific takeaways, and a glossary highlighting the usage of a number of keywords and phrases. As an additional part of our overall project, we provided a set of interactive offers for the Actionbound app with goals to help promote sustainability on campus.

PRESENTATION OF SDG REPORTS

Our analysis revealed three unique presentation styles to present an SDG report: website, goal-oriented report," and project-oriented report. The website style relies on a website-based template where each of the 17 SDGs, and the work being contributed to each, are linked throughout the report. In some cases, it is also common to see links to projects relating to sustainability that are being done by the university. Goal-oriented reports, on the other hand, allow for an SDG report to be accessed as a PDF that is organized by SDG. Some of these PDFs are linked on university websites and some of them must be downloaded to view. The majority of the reports we found for top ranked universities within our individual SDGs were formatted this way. Finally, project-oriented reports similarly present a PDF view of the report describing the sustainability practices on campus, however rather than organizing by SDG, it describes each project and then specifies which SDGs the project applies to. This format is the least commonly used of the three.

Website-Based Reports

Goal-Oriented Reports

Project-Oriented Reports

WEBSITE-BASED REPORTS

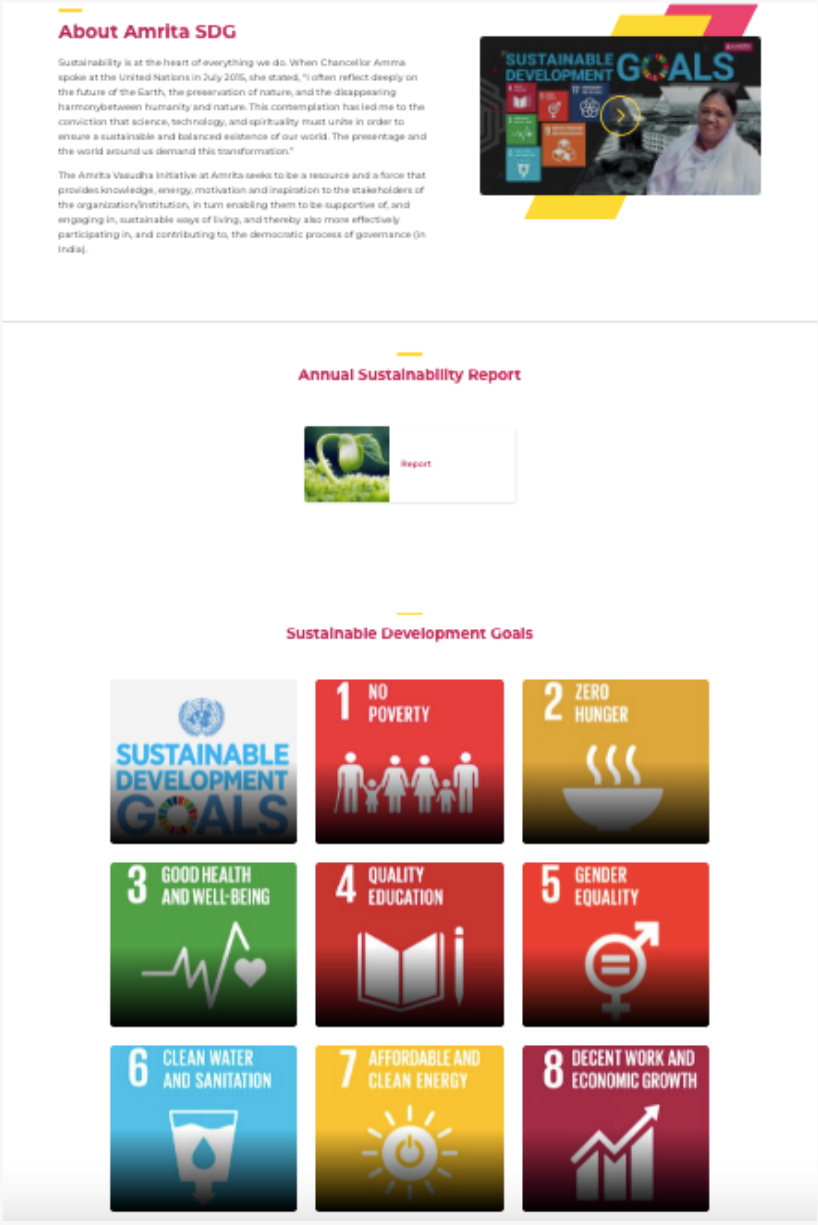

Figure 6. Links to information from Amrita Vishwa Vidyapeetham University's SDG website [21]

Just under a third of the top ranked universities whose reports we looked at made use of a website to present and share information on their efforts in the sustainable development goals. Websites help to keep project data organized and provide space for a university to report in-depth about projects without forcing readers to read sequentially through many pages of information. These websites typically had a main page explaining the United Nations' SDGs and the Times Higher Education Impact Rankings along with links to further information about the university's efforts towards each SDG. Usually, these links were in the form of interactive squares that allowed users to click and find more information. This extra information was usually a couple short paragraphs on the efforts the university had made in that particular area, or a discussion of why that area of sustainability was a problem that needed to be solved in the first place. Under their brief description, these websites typically have links to relevant projects for each SDG. If applicable, universities might link a single project for multiple SDGs. Contrastingly, there were also websites where there was no specific information about the SDGs that they were reporting on, just links to relevant projects.

GOAL-ORIENTED REPORTS

Goal-oriented reports were used for the majority of top ranked reports that we analyzed. These reports almost always included information about all 17 SDGs. Reports of this style had a large header displaying each SDG discussed. Following the header was one to three pages of writing about work done to accomplish the goal. Of the nineteen goal-oriented reports, two thirds of the reports tended to use horizontal page orientations and one third of the reports used vertical page orientations. When oriented vertically, it was typical to have two columns of text per page, and when oriented horizontally, three to four columns of text per page. The text in this style of report was broken up with many headings describing projects. In the reports we analyzed there are on average six headings per SDG. Some of the reports divide their writing even further, making use of subheadings, with as many as eleven total subheadings. The color scheme throughout the report represented the seventeen colors adopted by the United Nations and each goal's section was respectively color coded. Aalborg University, the top ranked university for SDG 4, has adopted this style.

Figure 7. Aalborg University shows a good example of a goal-oriented report [22]

Within the text of the goal-oriented reports, many universities include hyperlinks to further information about their sustainability projects. This is a helpful way of reducing information density in reports, since follow-up information is easily accessible, but the explanation of the projects is complete without this additional information if readers only want a brief overview. Of the reports we analyzed in this format, two thirds of them use hyperlinks embedded in the text to give readers easy access to additional information.

When presenting data, most goal-oriented reports highlighted key statistics. Only one of the 19 highly ranked reports we analyzed of this style used graphs to highlight data. The most common way reports presented important data was a sidebar with key statistics. Of the reports in this format, 45% had this data sidebar, and 16% had their key statistics pulled out from the text and highlighted without putting them all in a sidebar. Of the reports that had highlighted statistics, the average number of data points they highlighted was four per SDG. For the most part, statistics and numbers are kept out of the body of the text.

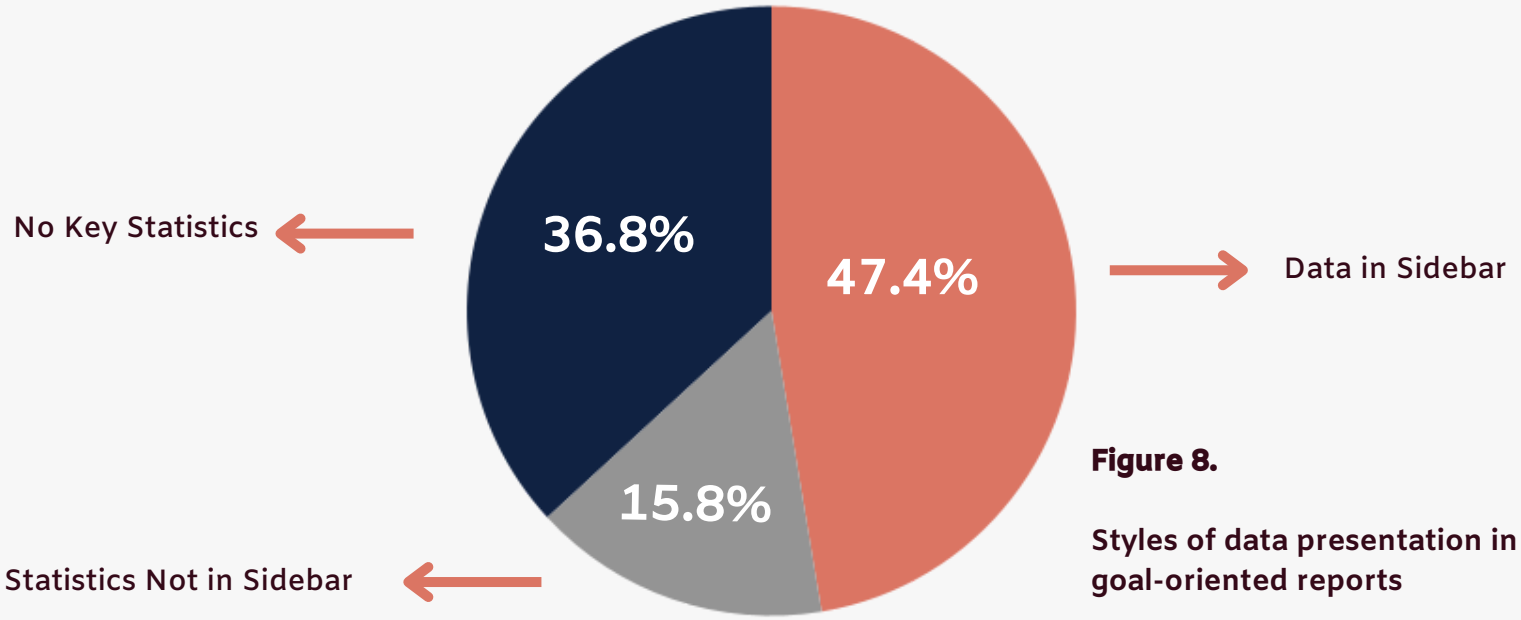

Figure 8.

Styles of data presentation in goal-oriented reports

Imagery is another key aspect of the goal-oriented report reports. Aside from any highlighted statistics, photographs composted the main visual component of most of these reports. Only two of the nineteen goal-oriented reports that we analyzed had no photographs within the text. Some reports appeared to use stock photos related to the SDG that they discussed; for instance one report had an image of scales and a gavel for goal 16: peace, justice, and strong institutions. It was quite common to see photographs of students, action shots of SDG related university projects, and recognitions of students and faculty at conferences or awards ceremonies talking about SDG progress. Inclusion of such imagery emphasizes the credibility of the university's SDG related practices and adds depth to their report's textual content. Only some of the reports captioned their photographs; without captions, however, it was hard to see how some photographs related to particular SDGs.

It is vital that reports use the space they have to the fullest extent to describe their sustainability practices rather than trying to let images simply speak for themselves. When comparing the imagery in the top ranked Aalborg University with a lower ranked university, Gdansk University of Technology, it initially looks quite similar. However for SDG 4, Quality Education, Gdansk Tech is ranked in the lowest category (801+). Both reports utilize visuals that emphasize the education at the university, but the Gdansk Tech report prioritizes visuals over actual descriptions of projects. This is seen in the extent of their writing on SDG 4 where the main image is generic and lacks explanation. The report goes on to use two more photos, only one of which is captioned, and there is still a small amount of empty space left on the page. Though it is likely largely the lack of sustainability practices on campus that caused the university to rank so low in this category, the report also does not include much explanation of progress towards the goals. It only has nearly the average number of headings, for example, but roughly a quarter of the amount of text.

Figure 9. Gdansk University of Technology SDG report for SDG 4 [23]

PROJECT-ORIENTED REPORTS

Though there is a third style of report, the project-oriented report, there are not nearly enough reports in our sample size to draw any definitive conclusions. It does merit discussion, however, as it is the style of report closest to current sustainability reports FU Berlin has created. This style of report is also a PDF, but rather than being organized by SDG, it is often organized by projects. Reports of this style use one to two pages to mention related sustainability university projects alongside including images of the relevant SDGs on the same page. Reports like this may be easier for universities to write if they do not have an overarching sustainability department and instead have different smaller departments related to sustainability concepts, such as transportation or solar energy (Inês Cabrita, personal communication, April 15 2022).

- Sulitest was also deployed among two cohorts of graduate students enrolled on the Green lab Principles and Practice module.
- NUI Galway hosted a Student Sustainability Summit on March 4th 2021 to support student organisations, clubs and societies focused on sustainability and to provide a platform for sharing sustainability ideas for the city and campus. The event brought together students from sustainability themed societies, the student volunteering programme ALIVE, the Student Union (SU) Sustainability Working group and representative form the CUSP team.
- The NUI Galway Student Volunteering Programme ALIVE, working in collaboration with James Hardiman Library, IdeasLab, CUSP and the non-profit organisation the Ladder, hosted the Global Goals Jam in September 2020. The Global Goals Jam is an international event where creative teams work together on local challenges related to the SDGs. The 2020 JAM event focused on public health and education for all.
- In AY 20/21, NUI Galway operated a Laptop for Loan Scheme to support disadvantaged students, in accessing computer devices. Over 900 students received a laptop on long-term loan in order to assist with online learning, Examples of target group prioritised under the scheme included students disadvantaged by socio-economic barriers, students with disabilities, lone parents students who are members of ethnic minorities.
- NUI Galway is a University of Sanctuary, a movement aimed at promoting the inclusion of International Protection Applicants, refugees and Irish Travellers within the community in meaningful ways. As part of the University of Sanctuary initiative, NUI Galway hosted 12 full time scholarships in AY 20-21. This was an increase from nine scholarships offered in AY19-20.
- A new sustainability toolkit was developed for students.

Figure 10. NUI Galway's project-oriented report shows SDGs under a description of a project [24]

In years past, FU Berlin has repurposed its sustainability website and submitted it along with select data to the THE Impact Rankings, rather than creating a specialized report. We recommend that when creating a formal SDG report, Freie Universität uses a goal-oriented report. This format allows for the report to have clarity and for readers to easily discern which SDGs are being reported on and what has been done to achieve them. Reports formatted as a PDF have the advantage over a website in that all the information is in the same place and readers can find it all easily without having to navigate through a series of links. The goal-oriented report style also eliminates confusion from project-oriented styles about which SDGs the university reports upon. The goal-oriented report format has an advantage over the other two formats as both require readers to take extra steps to learn about the University's initiatives towards any particular SDG.

The Impact Rankings evaluate universities and rank SDG reports as a whole, and by their ability to communicate findings for each SDG. Interviewing Matthew Lawson, the sustainability learning, teaching and reporting manager at the university of Edinburgh, it became clear that in order to get the best results on the report from THE Impact Rankings graders, the report should be well organized and the information should be easy to find, which means that project-oriented reports, though they show interconnectedness of the SDGS, will not do as well in the rankings.

Formatting

The SDG report should include an introductory section with information about the university's sustainability efforts, report writers, and other information the university thinks is relevant. For instance, this may include how sustainability practices were affected by the current COVID-19 pandemic. Following the introductory section, the university's report should move on to the information about the actual SDGs. The report should have at least two pages of information on progress towards each goal. The University of Auckland's report, shown, along with many other high ranking universities' reports, follows a structure of, on average, just over two pages per SDG featuring images, infographics, and various formats of text.

Figure 11. An introduction to the University of Aalborg's SDG report [22]

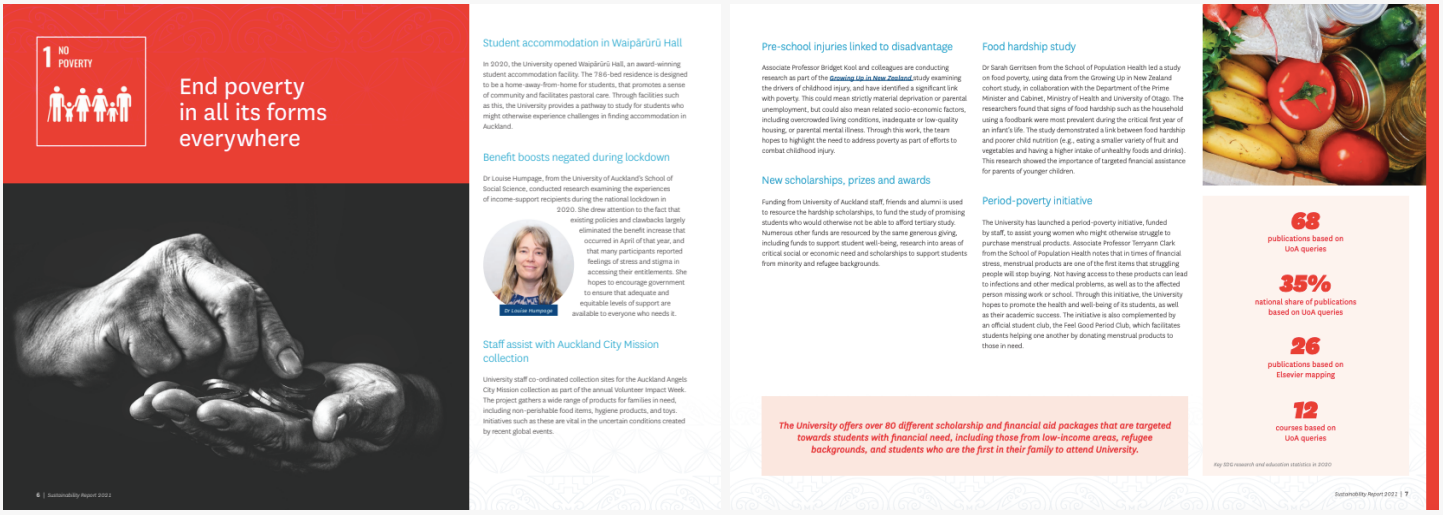

Figure 12. This report from the University of Auckland has at least two pages dedicated to each SDG, and highlights key data points in a sidebar [25]

Within each section describing an SDG, every new idea or initiative should be accompanied by a clear and informative heading. When referencing our content analysis model, we can see that most universities feature a minimum of 5-8 distinct headings or initiatives per SDG, regardless of category or topic. The figure below displays the headings of three universities that rank highly in three distinctive SDGs. As shown in the table, the KTH Royal Institute of Technology includes ten headings in its discussion of SDG 13, the University of Auckland features nine headings in its report on SDG 16, and the National Cheng Kung University formats its writing into four headings and seven subheadings in their discussion of SDG 4.

Headings		
National Cheng Kung University (SDG 9)	KTH Royal Institute of Technology (SDG 13)	University of Auckland (SDG 16)
Research	Energy Efficient Negative Emissions from the Agricultural Sector	Investigating new ways to prevent phishing
(sub) Space Technologies	The Centre Production, Use and Storage of Hydrogene, PUSH	Business Summer Scholars
(sub) Intelligent Manufacturing and Industry 4.1	Electrical Engineering	Professor Warren Swain elected to the Royal Historical Society
Education	Sustainable Development, Environmental Science and Engineering (SEED)	Christmas Appeal 2020
(sub) Example Courses	Civil and Architectural Engineering	Pacific Experiences of the Criminal Justice System
Action	Transport and Geoinformation Technology Master's Programme	GovHack Opens up Data
(sub) GLORIA	Climate and Economic Research in Organisations project (CERO)	Using the Law as a tool for Freedom
(sub) Fostering Innovation	Centre for Sustainable Aviation	UN Academic Group Calls for Global Ceasefire
(sub) Start Up Accelerator	The Climate Framework	University Commits to Improving Cultural Compotency
(sub) Smart Campus Security	KTH's Climate objectives and measures	
Outreach		

Figure 13. This screenshot is taken from the content analysis and depicts headers used by three universities that rank highly in various SDG categories.

We recommend that FU Berlin include 6-8 headings for discussions of featured projects and headings in their report. Using subheadings in this manner also provides an opportunity for FU Berlin to showcase more of its student-run organizations and projects that may not have been highlighted in previous university-wide sustainability reports. The University of Auckland provides descriptions of various student and faculty run projects across multiple SDG categories. These projects vary in design and purpose and can be things such as research initiatives, university clubs, or student run businesses. Many top-ranking universities utilize these projects as an opportunity to display how they as a whole campus have adopted and worked toward the SDGs. We recommend that FU Berlin showcase at least two projects not directly commissioned by the universities in their discussions of each SDG as this will help to show how FU Berlin's community is implementing the ideals of each SDG into everyday campus life.

The venture using AI to breathe new life into New Zealand businesses

While completing their PhDs in Bioengineering, University of Auckland alumni Daniel Xu and Ming Cheuk developed an idea for leveraging AI to help businesses increase productivity and reduce costs. With support from the University's Velocity Challenge, this idea eventually became Spark 64, a specialist AI agency that has worked on a range of AI-based projects for a wide variety of businesses in many different industries such as labelling, help-desk automation and the world's first mortgage-lending digital human assistant.

Dr Daniel Xu (far right)

Disaster resilience in schools

Professor Carol Mutch

Professor Carol Mutch works with schools to improve their readiness and response to increasingly common natural disasters, and to understand the impacts and trauma on students and staff alike. Her award-winning work has taken her to schools around the world, including Japan, Nepal and Australia following earthquakes, tsunamis and bushfires. In recent times, she has broadened her scope to look at the impact of Covid-19 on schools. Her ultimate goal is to facilitate the important role of schools as community hubs in the immediate aftermath of natural disasters, and to support the staff and students to find a new normal.

Figure 14. Student and faculty run projects featured in University of Auckland New Zealand's SDG Report.[25]

Hyperlinks embedded in the text of the reports would also aid FU Berlin in the discussion of their projects. These links can be formatted to appear as though they are part of the sentence, differentiated only by color and underline. This is standard format for linking additional information, and it means that if the report is handed out in paper, as some copies of FU Berlin's sustainability report are, these links will not be obtrusive or impact readability. Hyperlinks are important for readers viewing the report digitally, as it provides them easy access to more information about projects that the university and its students have undertaken. This also saves space within the report by allowing for brief analysis, as more thorough discussions can be accessed via the hyperlink. This will help the report to be more communicative and reader friendly, as it enables more information to fit in the same space without clutter.

Visuals

There are important strategies for balancing appropriate visuals with appropriate textual documentation. Nearly all of the goal-oriented reports made use of photographs to highlight their projects and contributions towards the SDGs. Some reports used stock photos that went alongside the concept of the SDG, but these types of photos do not serve any purpose other than to eliminate white space. It is for this reason that we recommend that all the photos used in the report be relevant to the ongoing sustainability projects being discussed. These photographs should showcase the human element of the sustainability efforts by showing people working directly on the projects being discussed in the report. We recommend including an average of two photographs per SDG discussed. If need be, there can be more photographs, but more than two per page looks cluttered and detracts from the space for words on the page. Most of the report should be dedicated to describing the different projects carried out to further the sustainability goals. Photographs are necessary to break up blocks of text but they should not be the focus of the report.

Non-photographic visual aspects of the report should be kept to a minimum. Some reports use symbols near the headers of each of their projects to indicate whether the project falls into categories such as research, teaching, or community engagement. As seen previously in Figure 22, symbols like these help reduce information density of the report without being overwhelming, and can also be used to incorporate the SDG color scheme. It is vital that if symbols like these are included in the final report, there is an easy to locate key on an overview page before the in-depth explanation of all SDGs. Other than these symbols, reports can incorporate symbols representing the Impact Rankings and symbols alongside key statistics to help provide context to the numbers at a glance. This report from RMIT uses only these types of symbols as the visual aspect to its report.

Figure 15. The only visuals used in RMIT's report on SDG 8[26]

Data Presentation

Data serves as the backbone for every SDG report as it quantifies the impacts of all efforts on sustainability initiatives. We have informed our recommendations by analyzing popular mechanisms across top ranking universities to display data in each SDG category. Data is either communicated via text boxes or infographic. Only one of the top reports analyzed used a graph. Instead of using graphs, we recommend that FU Berlin only highlights key statistics throughout the report. These statistics should be separated from the text in a report, commonly by putting them in a box separate from the text. A single visual can contain five or six different statistics regarding a singular SDG category, but some reports only highlight one major statistic that they feel requires emphasis.

The data included in the boxes often displays things such as number of relevant publications or number of courses related to the SDG. We recommend that FU Berlin's report highlight data that emphasizes the reach of the sustainability projects, such as their total number of publications on the topic, or their percent of German publications on the topic. Some reports also include things such as the number of classes in that area of sustainability, which shows that the university is making an effort to help future generations be sustainable. If there are many projects in one area of sustainability, the report should talk about the projects that they find most important in the text of the report, but then use one of their data points to specify how many projects were undertaken in this area.

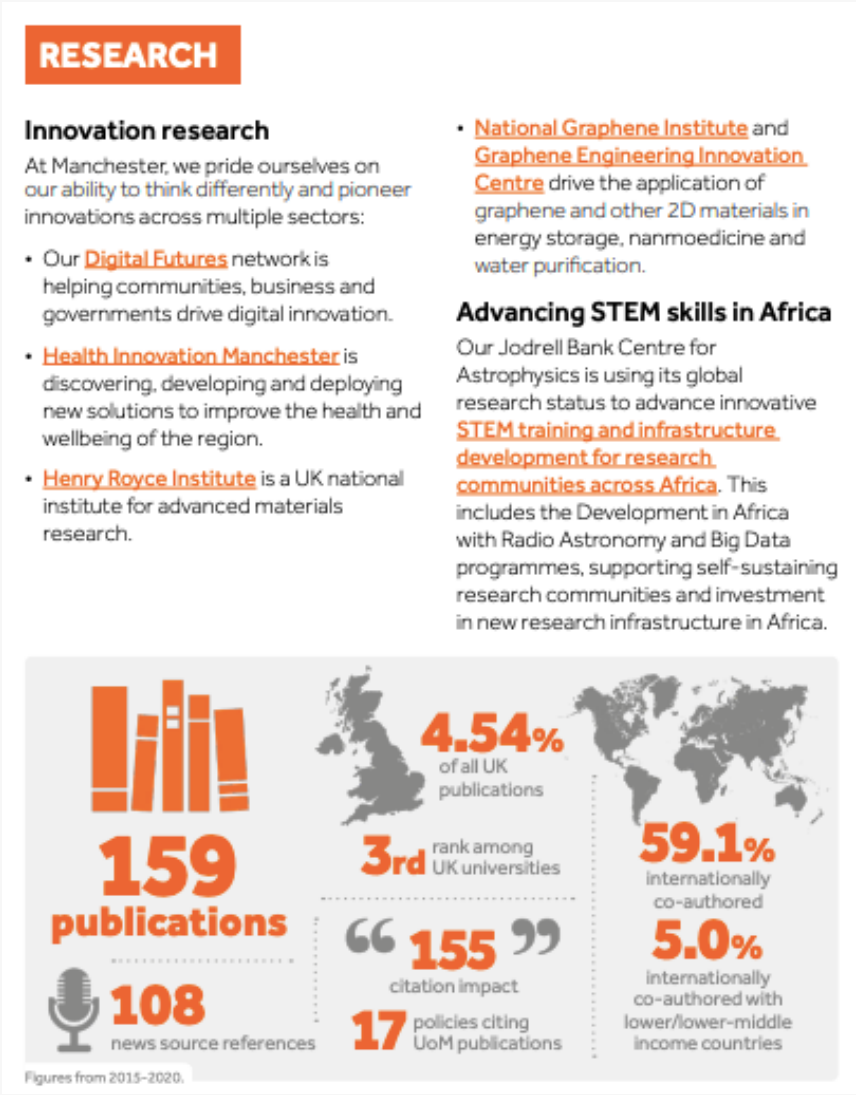

Figure 16.

University of Manchester's report highlights data about their publications [27]

Language Use and Writing Techniques

The language used in a report is a key to its readability and communicative potential. Since submissions to the THE Impact Rankings must be in English, the English skills of report writers ought to be attuned to the nuance of language that appears across SDG reports, This is already a challenge for writers from Anglophone universities, but a bigger challenge still for writers for whom English is a second or third language. This can even be seen in the way non-native English-speaking universities translate the name of the SDG from their native language to English. For example, for SDG 7: "Affordable and Clean Energy," IMT Atlantique, a native French speaking university, translates it as "Clean Energy and a Cost Affordable." Although this conveys the same overall message, it poses challenges to comprehension.

The most commonly occurring language in the SDG reports comes directly from the United Nations. The UN provides a brief description of each SDG, and often words and phrases from these descriptions are repeated in universities' reports. Language and its use is constantly evolving as the discussions around sustainability issues change. Our recommendation for FU Berlin is that in addition to relying on a professional translator, the sustainability team should also consult with their sustainability expert contacts in the Anglophone world for input on use of keywords and concepts. In addition it may be beneficial to reach out to scholars and editors of leading academic journals in the English speaking field of sustainability. Consultants from the field could help FU Berlin to employ accurate and current terminology.

(noun) energy that is produced using the sun, wind, etc., or from crops, rather than using fuels such as oil or coal which cannot be replaced

(https://dictionary.cambridge.org/dictionary/english/sustainable-energy)

	Native Language	Translated English	Context	Context (Translated English)
Freie Universität Berlin (German)	Nachhaltiger Energie	Sustainable Energy	Zahlreiche Forschungsprojekte erforschen an der Freien Universität Technologien **nachhaltiger Energie** und Umsetzungsmöglichkeiten.	Numerous research projects at Freie Universität research **sustainable energy** technologies and implementation options.
IMT Atlantique (French)	N/A	N/A	N/A	N/A
University of Manchester (British English)	-	Sustainable Energy	Energy is one of our five research beacons and we have more than 600 academics addressing **sustainable energy** challenges.	-
University of Georgia (American English)	N/A	N/A	N/A	N/A

Table 2. A snippet of our glossary for the word sustainable energy in SDG 7

ACTIONBOUND APP

INTRODUCTION AND PURPOSE

In addition to the SDG report, the Actionbound App is another form of communication with the community at the Freie Universität. In order to help the sustainability team spread awareness of its projects and encourage more people to take an active role in sustainability within the community, we designed ideas for an app that helps to get users excited about sustainability. We have created five different interactive offer ideas that the university can implement. We have proposed five styles of interactive offers: Detailed Description, Guess the Location, Trivia, Spot the Difference, and Spot the SDG.

FUNCTIONALITY

To start, once the user commences the FU Berlin sustainability tour, the Actionbound App will begin with a map of all sixteen locations around campus. The user will be directed via GPS to the starting location with a welcome section and directions for where to go. Upon arrival at a location, the user will be prompted to scan a QR code that is displayed somewhere visible at the current station. Listed and described below are our fun and interactive ideas for the Actionbound App based on feedback from ten university students.

Offer 1: Detailed Description

In addition to the SDG report, the Actionbound App is another form of communication with the community at the Freie Universität. In order to help the sustainability team spread awareness of its projects and encourage more people to take an active role in sustainability within the community, we designed ideas for an app that helps to get users excited about sustainability. We have created five different interactive offer ideas that the university can implement. We have proposed five styles of interactive offers: Detailed Description, Guess the Location, Trivia, Spot the Difference, and Spot the SDG.

One participant from our surveys mentioned that he does not enjoy reading a lot of information, but was still intrigued by the idea of our app and the support of education for sustainable practices. His original qualm was with the Detailed Description interactive offer. He described that for some students it may be beneficial to have an audio version, so that no reading was necessary when walking around campus. Our group thought this was a valid point because as we were handing out surveys, we noticed a large amount of the student body wore headphones while walking around campus. Also, this adds an interactive aspect to this interactive offer.

Offer 2: Guess the Location

The original idea for this interactive offer was to provide a picture of a campus location, and use that and the app user's surrounding area to guess the correct location name from a screen with 4 options to choose from. During the survey process there were two students with similar comments on this offer. Both mentioned that it will be quite easy to choose the correct option because the user is at the place and there will be things that clue users in to the correct answer every time, rendering the question pointless and not engaging. So, after brainstorming and receiving feedback from students, we have decided that this interactive offer should be converted to the Trivia option.

Offer 3: Trivia

In this interactive offer, the app user is asked a question and given four options to choose from. However, the questions in this interactive offer are about key details in the description of the location. Also, they relate more to how the location embodies sustainability rather than just scratching the surface of the location name. From the feedback we received from students on campus, the opinions of this option are very polar. Around half of the participants scored this offer as their favorite or second favorite, while the other half ranked it as either their least favorite or second least favorite offer. Those who ranked it low explained that they were afraid it would be too hard because they know nothing about the subject. Further, they mention that if they were to play the app, it would be to learn about how their campus is sustainable and the efforts they are making, not to be quizzed on information that they are just learning. The other half of our participants expressed that this would be fun and interesting. They explained that this offer would stimulate the audience and provide a good way of learning more information about the location.

We recommend combining the ideas of both sides of the student feedback. A good interactive option for this trivia option is to provide a brief description of the location and its sustainability practice, and then to commence a short quiz with 3-5 questions regarding the information presented and some supplementary information.

Offer 4: Spot the Difference

Spot the Difference is one of our most game-like interactive offers. In this game, the user is shown two pictures that appear the same at first glance. However, one of the images has been slightly edited to contain 2-4 small differences that the user must search for and click on. On average, this interactive offer was our lowest ranking offer out of the five. Our feedback from students was that the idea was on the right track, but this game in particular was not very fun. Further, most students reported that they would prefer the app to be more educational.

Offer 5: Spot the SDG

Our last idea for an interactive offer developed out of Spot the Difference. In Spot the SDG, after the user scans the QR code at a given location, the app will utilize augmented reality technology with the phone's camera. The user can look around the location with their phone and search for hidden SDG icons. Once they find an SDG icon, they can click on it to learn about that SDG, why it is important, and how the location on FU Berlin’s campus relates and contributes to that SDG. We envision that every location will have 2-4 related SDGs. From our surveys, this was overwhelmingly our most popular interactive offer. Students found the idea of using augmented reality very modern and interactive. Also, they were interested in learning more about the SDGs and how the locations contribute to them.

RECOMMENDATION HIGHLIGHTS

INTERACTIVE OFFERS

Based on survey data, Offer Five: Spot the SDG was the favorite amongst the five offers. Students felt that it was the most engaging option, while also being quite educational. From the perspective of our team, this offer's inclusion of SDG information connects very well to the University Alliance for Sustainability's plans for SDG reportings. We recommend that this be the most prominent offer used throughout the tour. Offer Three: Trivia had mixed results, but could also be one of the most used in the app due to its practicality and educational properties.
Not many students were interested in a game like interactive offer, so we cannot recommend that Offer Four:Spot the Difference be utilized frequently, if at all.

OTHER COMMENTS

WEB BROWSER OPTION

One of our participants introduced the idea of an option not based on the Actionbound App location system. He recommended the same game system and process, but in a way that one could play from a web browser and use a keyboard to navigate the tour. This option could be useful for people interested in sustainable practices at FU Berlin, but perhaps they cannot travel to the campus for the in person Actionbound App experience.

DISCUSSION

SURVEYS

Over the course of two days, we had the opportunity to survey ten students on campus at FU Berlin. An important aspect to the surveys was to find students who felt that having a sustainable campus was important to them. We asked our participants to rank from one to five the importance of a sustainable campus, with five being extremely important. The average score was 4.8, which helped us to know that the people we were talking to were more likely to be interested in taking a sustainability tour on campus. We followed this up by asking about what

sustainability practices students had heard of on campus, and despite their interest in sustainability, most students surveyed were only able to name one thing: the goal of the university to become climate neutral by 2025. Another key aspect to our surveys was knowledge of the Actionbound App. None of the participants in our surveys had heard of the app, or of the campus ever making a sustainability related app tour. Despite this, all ten students surveyed indicated interest in participating in the FU Berlin's tour on the app once it is completed.

Figure 17. Two examples of our recommended interactive offers

CONCLUSION

The recommendations that we have provided in the previous pages are a collection of highlights from our analysis over these last weeks. We see these recommendations as a way to improve the communicative aspects of FU Berlin's innumerable sustainability efforts on campus and hope that in turn, they will act as an aid in raising the university's THE Impact Ranking in future years.

Throughout this project, we have gained the opportunity to deeply analyze the SDG reports of various esteemed universities through which we were able to provide our own set of recommendations for our sponsor, Freie Universität Berlin. We hope that our recommendations are valuable to the sustainability team at the university and we look forward to seeing any implementations. We are eager to see future SDG reports written and published by FU Berlin.

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- Matthew Lawson, The University of Edinburgh
- Professor Sarah Strauss, Worcester Polytechnic Institute
- Karen Coughlin, Worcester Polytechnic Institute

CITATIONS

1. Fekete, A., & Sandholz, S. (2021). Here Comes the Flood, but Not Failure? Lessons to Learn after the Heavy Rain and Pluvial Floods in Germany 2021. Water, 13(21), 3016. MDPI AG. Retrieved from http://dx.doi.org/10.3390/w13213016
2. admin. (n.d.). Immediate climate action programme for 2022—Federal Ministry of Finance—Issues. Bundesministerium Der Finanzen. Retrieved April 13, 2022, from https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Topics/Priority-Issues/Climate-Action/immediate-climate-action-programme-for-2022.html
3. McCowan, Tristan (2020) The impact of universities on climate change: a theoretical framework. Transforming Universities for a Changing Climate, Working Paper Series No. 1. Transforming Universities for a Changing Climate
4. Filho, L., McCowan, T., & Brandli, L. (Eds.). (2021). Universities facing Climate Change and Sustainability. Korber Sitfung. Universities facing Climate Change and Sustainability
5. The United Nations and the Sustainable Development Goals. (2021, March 9). https://www.fu-berlin.de/sites/mun/news/2021_03_09-SDGs.html
6. Sustainability transitions: Policy and practice — European Environment Agency. (n.d.). EEA. Retrieved March 23, 2022, from https://www.eea.europa.eu/publications/sustainability-transitions-policy-and-practice
7. Hake, J.-F., Fischer, W., Venghaus, S., & Weckenbrock, C. (2015). The german energiewende – history and status quo. Energy, 92, 532–546. https://doi.org/10.1016/j.energy.2015.04.027
8. Energiewende—Wikipedia. (n.d.). Retrieved April 13, 2022, from https://en.wikipedia.org/wiki/Energiewende
9. Sustainable Development Goals | United Nations Development Programme. (n.d.). UNDP. Retrieved February 28, 2022, from https://www.undp.org/sustainable-development-goals
10. Transforming our world: The 2030 agenda for sustainable development | department of economic and social affairs. (n.d.). Retrieved March 31, 2022, from https://sdgs.un.org/2030agenda
11. Sabev, D. (2019, July 2). Sustainable development goals [Text]. International Partnerships - European Commission. https://ec.europa.eu/international-partnerships/sustainable-development-goals_en
12. Report on the implementation of the 2030 Agenda for sustainable development: German Voluntary National Review to the HPLF 2021. (2021). The German Federal Government. Report on the implementation of the 2030 Agenda for sustainable development
13. Hart, D. D., Bell, K. P., Lindenfeld, L. A., Jain, S., Johnson, T. R., Ranco, D., & McGill, B. (2015). Strengthening the role of universities in addressing sustainability challenges: the Mitchell Center for Sustainability Solutions as an institutional experiment. Ecology and Society, 20(2).http://www.jstor.org/stable/26270212
14. Beringer, A., & Adomßent, M. (2008). Sustainable university research and development: Inspecting sustainability in higher education research. Environmental Education Research, 14(6), 607–623. https://doi.org/10.1080/13504620802464866
15. Fridays for climate justice. (2020, February 3). https://www.fu-berlin.de/en/sites/nachhaltigkeit/mitmachen/Fridays-for-Climate-Justice/index.html
16. Soini, K. (2018). Universities Responding to the call for sustainability: A typology of sustainability centers. Journal of Cleaner Production. http://www.elsevier.com/locate/jclepro
17. Burmann, C., García, F., Guijarro, F., & Oliver, J. (2021). Ranking the Performance of Universities: The Role of Sustainability. Sustainability, 13(23), 13286. MDPI AG. Retrieved from http://dx.doi.org/10.3390/su132313286

18.De la Poza, E., Merello, P., Barberá, A., & Celani, A. (2021). Universities' Reporting on SDGs: Using THE Impact Rankings to Model and Measure Their Contribution to Sustainability. Sustainability, 13(4), 2038. MDPI AG. Retrieved from http://dx.doi.org/10.3390/su13042038
19.Impact Rankings 2021: Methodology. (2021, April 14). Times Higher Education (THE). https://www.timeshighereducation.com/world-university-rankings/impact-rankings-2021-methodology
20.Impact Ranking. (2021, April 16). Times Higher Education (THE). https://www.timeshighereducation.com/impactrankings
21. Amrita sustainable development goals (Sdg)-Amrita vishwa vidyapeetham. (2021, October 19). https://amrita.edu/unsdg/
22. Kristensen, H. S., & Juul-Andersen, M. (Eds.) (2022). Aalborg University Sustainability Report 2021. Aalborg University. https://prod-aaudxp-cms-001-app.azurewebsites.net/media/3ryh3el0/aau-sdg-report-2021-v6.pdf
23. Sustainability report | gdańsk university of technology. (n.d.). Retrieved April 29, 2022, from https://pg.edu.pl/en/sustainable-development/sustainability-report
24. NUI Galway Sustainability Report 2020/21. (2021). Retrieved from: https://nuigalway.ie/sustainability/sustainabilityreports/nuigalwaysustainabilityreport202021/.
25. A Heart in the Pacific with a Global Outlook: The University of Auckland SDG Report 2021. (n.d.). University of Auckland. https://cdn.auckland.ac.nz/assets/auckland/about-us/the-university/sustainability-and-environment/sustainability-development-goals/SDG%20Report%202021.pdf
26. Sdgs impact annual report. (n.d.). Retrieved April 29, 2022, from https://www.rmit.edu.au/about/our-values/sustainability/sdgs-impact-annual-report
27. The University of Manchester sustainable development goals 2021/22 report. (2021). University of Manchester. Retrieved from: https://documents.manchester.ac.uk/display.aspx?DocID=57219

IMAGES

Collaboration. (2016, April 18). https://www.fu-berlin.de/en/universitaet/kooperationen/index.html — Cover Page

deutschlandfunk.de. (n.d.). 70 Jahre FU Berlin—Auf den Spuren von Dutschke, Kennedy und Co. Deutschlandfunk. Retrieved April 29, 2022, from https://www.deutschlandfunk.de/70-jahre-fu-berlin-auf-den-spuren-von-dutschke-kennedy-und-100.html — Page 3

Germany flooding: Huge rescue effort in Rhineland-Palatinate as deadly floods also hit Belgium, Netherlands, Luxembourg—CNN. (n.d.). Retrieved April 30, 2022, from https://edition.cnn.com/2021/07/15/europe/germany-deaths-severe-flooding-intl/index.html — Page 5

Fridays for Climate Justice. (2020, January 15). https://www.fu-berlin.de/sites/nachhaltigkeit/mitmachen/Fridays-for-Climate-Justice-FU-Berlin/index.html — Page 10

Fridays For Climate Justice FU Berlin (@FU4CJ) / Twitter. (n.d.). Twitter. Retrieved April 29, 2022, from https://twitter.com/FU4CJ — Page 10

Klimaverträgliche Geldanlage. (2009, July 21). https://www.fu-berlin.de/campusleben/campus/2009/090715_solardach/index.html — Page 15

University of Bedfordshire News on Twitter. (n.d.). Twitter. Retrieved April 30, 2022, from https://twitter.com/uniofbedsnews/status/1367869434753388545 — Page 18

Sabev, D. (2019, July 2). Sustainable Development Goals [Text]. International Partnerships - European Commission. https://ec.europa.eu/international-partnerships/sustainable-development-goals_en — Page 18

Mapped: Impact Rankings 2020. (2020, May 6). Times Higher Education (THE). https://www.timeshighereducation.com/impact-visual — Page 20