Universitetet i Stavanger

UIS BUSINESS SCHOOL

MASTER'S THESIS

STUDY PROGRAM:	THESIS IS WRITTEN IN THE FOLLOWING SPECIALIZATION/SUBJECT:
Master of science in business and administration	Innovation IS THE ASSIGNMENT CONFIDENTIAL? (**NB**! Use the red form for confidential theses)

TITLE:

The journey towards a sustainability strategy for University of Stavanger

AUTHOR(S)		SUPERVISOR:
Candidate number:	Name:	Bjørn Asheim
3033 ……	Anna Alvsåker Hesthamar ……	
3114 ……	Benedikte Karoline Kristiansen ……	

Table of content

Preface

This master thesis marks the end of the master's program in Economics and Administration at University of Stavanger, 2020. The thesis comprises 30 credits within the main profile of the study, Innovation. To write this thesis has been an educational and exciting journey.

This has been an educational process where we have become aware that things do not always go as planned. Due to the situation with the Covid-19 pandemic, this master thesis has also been a very unusual situation for us all, especially with the schools closing and the adaption to new study routines. The assignment has given us the opportunity to immerse ourselves in something we are very interested in and which is highly topical. We have challenged ourselves and acquired useful knowledge about sustainability and our university that we find exciting, highly relevant for today's challenges as well as in the future. We knew early in our studies that we wanted to write a master's thesis with a theme rooted in the area of sustainability.

Furthermore, we would like to thank Statsbygg, the administration, professors and principal of university that took their time to share their thoughts and knowledge on sustainability area with us. We would also like to thank our supervisor, professor Bjørn Asheim who has contributing with insightful thoughts and fast feedback. Lastly, we would thank our family that have supported us with great input and encouraging words along the way.

Stavanger, July 2020
Anna Alvsåker Hesthamar and Benedikte Kristiansen

Abstract

The world is changing constantly. The most negatively impacting are the climate changes happening to our beautiful planet due to human consumption. Through Norway's commitment to the UN, Agenda 2030, it has become increasingly important to satisfy today's societies needs without destroying future generations' opportunities to meet theirs. Therefore, we need a plan to steer development in a sustainable direction that is beneficial for everyone worldwide. In order to follow the development of society as well as set a good example Norwegian university must adapt.

This thesis is therefore dedicated to creating input to our beloved schools' future strategy regarding the sustainability part. There have been conducted a survey that was optional to answer by students and employees at the school, there were also conducted interviews with 8 different individuals in order to obtain primary data for our study. It was also necessary to use secondary sources of data for analysis, such as for instance building reports, area reports, annual reports, Campus development reports, internal employee surveys and statistics from the Norwegian Central Bureau of Statiscs and Database for statistics on higher education.

Through internal and external analysis, we defined what sustainability should mean for UiS through new set of goal, values and vision. Secondly, we explored the possibility for UiS to integrate circular economy in their new strategy. Lastly, we assembled and presented the different sustainability measures that have been revealed throughout our analysis.

Sustainability is becoming a virtue which more people value higher. Our thesis suggests strongly that adapting the sustainable measures will help rebrand and change the reputation of the school. Eventually this will attract more highly qualified students, and more funding.

Keywords: Sustainability, Sustainable Development, Triple Bottom Line: Economic; Environment; social, circular economy, PESTEL analysis, Agenda 2030, S-SWOT

Figures:

Tables:

Acronyms and Abbreviations

CE	Circular Economy
CSR	Corporate Social Responsibility
HE	Higher Education
ME	Ministry of Education and Research
NMBU	Norwegian University of Life Sciences Universitet
NTNU	Norwegian University of Science and Technology
RCN	Recearch Council of Norway
SD	Sustainable Development
SDG	Sustainable Development Goals
UiB	University of Bergen
UiO	University of Oslo
UiS	University of Stavanger
UIT	Universitety of Tromsø
UN	United Nations
UNCED	United Nations Conference on Environment and Development
WCED	World Commission Environment Development

1.0 Introduction:

Sustainability!

We hear about it, we read about it, we think about it and we talk about it. It's seems to be the buzzword of our time and it is frankly on everybody's lips regardless of personal opinions. It is a fact that the sustainability concept has been around for over 30 years. It has been widely described in the famous Brundtland Report, titled "Our Common Future" from 1987. The UN-report made it clear already decades ago that the world is not limitless as one has previously dared to believe (Stoddart, et al., 2011). The tremendous importance of sustainability has blossomed exponentially with the awareness of the dangers that global warming constitutes for our planet. Scientists all around the globe state that the ever-increasing global temperature is anthropogenic, meaning that our day to day activities leave footprints of pollution and carbon emissions. This makes everyday choices important in order to change the pace of our self-destructive habits. UN´s seventeen sustainability goals also add worldwide guidelines on how to work towards a more sustainable planet, the members of UN have in fact committed to reach these goals. Which means that Norway have been committed since autumn 2015, but we still have a long way to go.

Several sources state that generation Z (the upcoming generation of new students born 1995-2015) are more conscious about the environment than millennials, generation X and baby boomers. A survey from UNiDAYS x Ad Age state that 82% of generation Z students are more likely to buy a product if it is environmentally friendly. The same survey also states that generation Z cares more about CSR, in fact 93% think that brands are obligated to address environmental challenges (UNiDAYS, 2019). These figures tell us that the younger generations are also the "greenest" of us. For the society, it means that the pressure as well as initiative to change our ways will be stronger with their contribution of opinions. To stay relevant, different stakeholders need to adapt their strategies to stay in pace with global development. This includes universities worldwide. This introduction eases us into the background for the theme of this thesis.

Background for choice of thesis:

After reading an announcement regarding the development of the new 2030 strategic plan for the University of Stavanger, we discovered that the previous as well as the current strategy missed a sustainability perspective (Universitetet i Stavanger, 2020). It made us wonder, why? For us it became instantly clear that we should dedicate our master thesis to the development of such a strategic sustainable plan for our beloved university. After proposing this for rector at UiS, Klaus Mohn, and owner of the strategic process, John Viflot, we came to an agreement that we would develop input to a brand-new sustainability strategy they could use.

So, what does strategic development have to do with generation Z? As already stated above, the new generation of our youngest university students as well as the upcoming generations who will have the opportunity to apply in the coming years do care about substantially, the environment and CSR. This means that such matters as greener campus and the sustainability aspect of the education has grown in importance and will keep doing so. As an institution which is educating for the future generations of workforce, it is a matter of social responsibility as well as the issue of keeping relevant.

In order to not lose the interest of potential applicants it would be wise of UiS to reflect the sustainable values of the upcoming generation of students. As we know from innovation theory, one must adapt in order to survive. Even though UiS is a public school, and will therefore survive anyway, the universities ambitions are higher than that. UiS should thrive in order to compete with other colleges and universities, both public and private. As a public stakeholder it is somehow limited what UiS can do by themselves and the university need additional funds and support to in their quest to adapt.

Research objective and questions:

The main research objective of this thesis is to develop preparatory work needed to assemble a sustainability strategy for UiS.

In order to do this, we have broken down the objective into three Research Questions:

1. What should sustainability mean for UiS?
2. Can circular economy be integrated into UiS´s new sustainability strategy?
3. What measures should UiS implement?

The first research question provides foundation for further examination by identifying what vision and values are going to define what sustainability will mean for UiS. The second and third question aim to explore what the strategic sustainability plan should contain.

Visual chapter overview

Beneath is a visual presentation over the different chapters in this thesis. This will give the reader a better overview and a roadmap over the upcoming chapters. The first chapter is the introduction, where you are now. Thereafter one enters the theory chapter which eases us into fascinating subjects as sustainability, strategy, circular economy and analytical framework. Thirdly, methodology is presented with a clear assessment of research method. Closely followed up by presentation of data, our findings from the survey. Chapter five consists of analysis, divided into an internal and external part. The sixth chapter is an interwind discussion and conclusion part for the research questions. Neatly follows the superior conclusion of research objective. Finally, the eight chapter gives insight into possible further research.

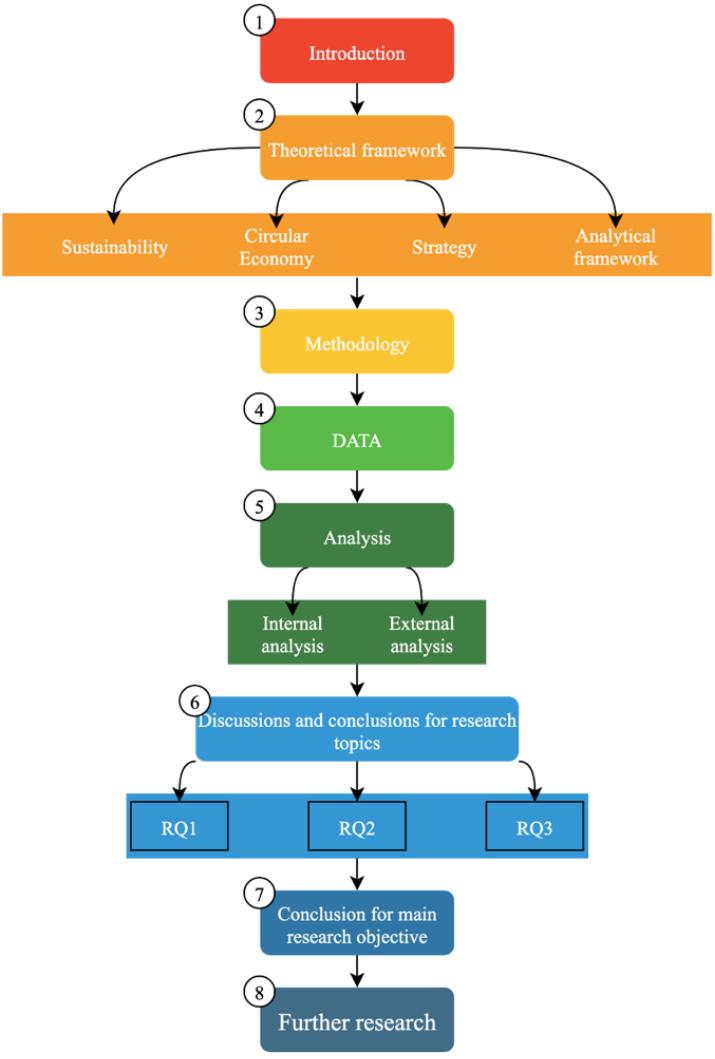


Figure 1 Chapter overview

2.0 Theoretical framework

2.1 Sustainability

2.1.1 Definition of sustainability

Sustainability is a complex concept and have over recent years clearly become a popular buzzword in the research arena that is applied to everything and draining the term of its impact Brown et al, (1987). Apparently, there is nothing that cannot be paired or described as "sustainable". However, in spite the massive popularity and its pervasiveness it has gained over the past years, many still seem to question its history, meaning and what being sustainable really entails for development and practice (Mensah & Casadevall, 2019). Finkbeiner et al (2010) argue that much of the literature describes the most important conditions for sustainability and the different ways of achieving sustainability where the term has been used in a variety of disciplines (Finkbeiner, Schau, Lehmann, & Traverso, 2010). Due to this, the paragraph will review some of the many ways in which the term sustainability and sustainable development (SD) has been defined and further attempt to clarify the use of the term that is well suited and applicable for this research topic within non-profit organizations. [. . .] *"The meaning of the term is strongly dependent on the context in which it is applied and on whether its use is based on a social, economic, or ecological perspective, sustainability may be defined broadly or narrowly, but a useful definition must specify explicitly the context as well as the temporal and spatial scales being considered* (Brown, Hanson, Liverman, & Merideth, 1987, s. p.713), (WCED, 1987)

A group of professionals from different scientific backgrounds as economic, ecology and engineering at the U.S. EPA's National Risk Management Research Laboratory proposed that "*sustainability* occurs when we maintain or improve the material and social conditions for human health and the environment over time without exceeding the ecological capabilities that support them" (Sikdar S. k., 2003)

Today, the word is used as a principle for guiding both corporate strategy and public policy Finkbeiner argues that; "*The biggest challenge for most organizations remains in the real and substantial implementation of the sustainability concept*" making (Finkbeiner, Schau,

Lehmann, & Traverso, 2010). Elkington (1998) argues that sustainability focuses more on the so-called 3 P´s (People, Planet and Profit) that will be explained later in this theoretical framework. Cambridge Dictionary defines sustainability as "the quality of being able to continue over a period of time", and "the quality of causing little or no damage to the environment and therefore able to continue for a long time" (Cambridge Dictionary, n.d.).

2.1.2 Sustainable development

Sustainable development has been associated with various meanings, definitions and interpretations in development discourse. Basically, the phrase of the two words "sustainable" and "development" combine to form the concept of SD. Even though the concept has been defined from a broad perspective, it has also been looked at from different angles, generating a plethora of various definitions. With the respect to sustainable development, the most common and quoted definition of the concept is proposed by the Brundtland Commission Report (Schaefer & Crane, 2005)**.** (Lélé, 1991) (Stoddart, et al., 2011)**.**

The World Commission on Environmental and Development under the leadership of the former Norwegian Prime Minister Brundtland first described the term in 1987 as: *"[...] a development that is capable to cover today's needs for an intact environment, social justice and economic prosperity, without limiting the ability of future generations to meet their needs*" (FN-sambandet, 2019).

The aforementioned definition of Brundtland take into account the three dimensions; social, environmental and economy which non-profit organizations deal with, this should therefore be included in the new description (Finkbeiner et al., 2010). In short, the Brundtland Report defines sustainable development as a development that meets the needs of current generation without compromising the ability of future generations. If everyone could accept that the earth´s resources decline for each day, we are then forced to slow down this decline in order to meet the challenges for future generation posed by population growth (Sikdar S. k., 2003)**.** This impact could either be positive or negative, the negative meaning is the undesirable form we would like to avoid. Positive due to pressure from humans that needs to respond with advancement in technologies and science which have over time given us increasing material efficiencies and energy in producing services and goods (Sikdar, Sengupta, & Mukherjee,

2016). However, it can be argued that the importance of sustainable development is becoming more important due to the fact that the population keeps increasing and the natural resources available are limited. This can be manageable through the involvement of environmental, economic and social interests in decision-making process. Nonetheless, treating sustainability and sustainable development as synonyms is quite common, even though the two concepts are distinguishable (Sikdar S. k., 2003). In the same manner, Diesendorf (2000) states that sustainability is the endpoint of the whole process called sustainable development. Similarly, refers to sustainability as a state, then sustainable development as the process of achieving this state.

2.1.3 The evolution of Sustainable development

The concept of sustainability was developed early in the 1960s to promote and encourage policies that would be able to achieve [. . .] "*the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy*" (OECD, n.d.)

With the passage of time, later on, there have been a broader approach of sustainability initiatives and increasingly adoption of the TBL (triple bottom line) i.e., economic, environment and social approach to sustainability. Sustainable Development is as previously mentioned from the Brundtland Commission (WCED, 1987). The mission of the report was to unite countries in the quest of making a SD path by proposing development strategies that could help create a united community internationally with shared sustainability goals (SDG) by raising awareness, identify sustainable problems worldwide and suggest implementation of solutions. The report has been criticized for being "too broad and general" (Bugge, 2002). Gro Harlem Brundtland´s assistant argued 15 years later; "*when I go back and read the chapter on sustainable development in the report today, I still find it consistent, convincing and very inspiring. I recommend it to everyone* » (Bugge, 2002)**.**

In 1992, the Brundtland Report had strongly influenced the conference called Rio Earth Summit of UNCED. Earth Summit was held for other Member States as a platform to collaborate in the field of sustainability, resulting in the document Agenda 21. It was here stated that SD should from now on become a priority on the agenda, and recommend new national strategies to be

developed, designed and address environmental, social and economic aspects of SD (Cameron, Metternicht, & Wiedmann, 2018).

Ten years later, in 2002, the conference Rio+10 of UNCED was held to review progress in implementing the outcomes from the Rio Earth Summit (third international conference). They developed a plan of implementation for the actions set out in Agenda 21(known as the Johannesburg Plan). The reports from UNCED after Rio+10 states that:

[. . .] "*we assume a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development – economic development, social development and environmental protection – at the local, national, regional and global levels*" (United Nations, 2002).

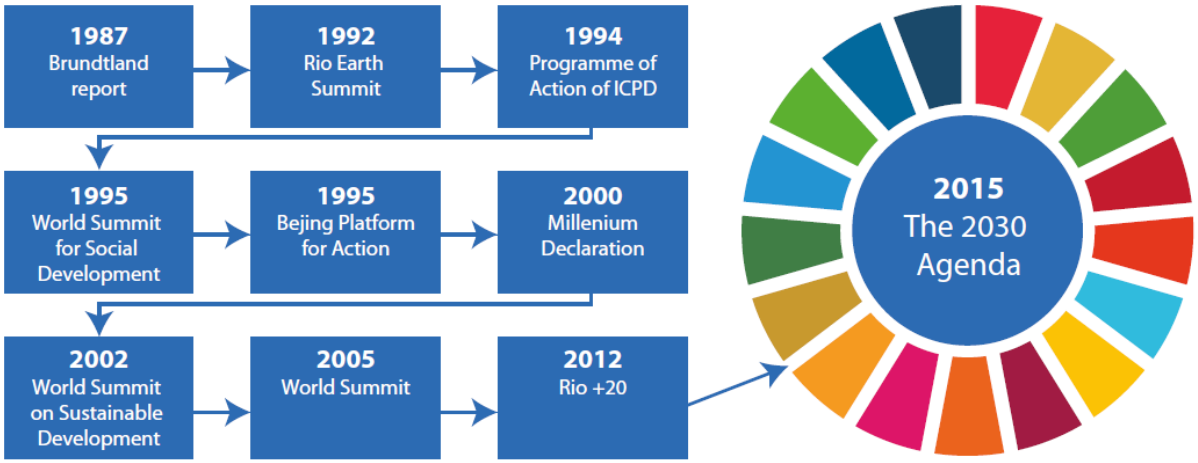


Figure 2 Historic perspective of sustainability (European Commission, n.d.)

Twenty years later, in 2012, Rio+20 was held with the outcome document "The Future We Want". The document contained practical and clear measures for implementing SD, resulting with the phrase Sustainable development appearing in a total of 238 times within 49 pages (Mensah & Casadevall, 2019). The focus was split in two main themes, namely institutional framework and green economy (Cameron et al., 2018). The outcome of Rio+20 included a new process for developing new SDG´s that took effect from 2015 with focus on action within the area of SD in every areas of global development agenda (United Nations, 2012). In 2015, the UNCED met at Headquarters in New York where the 2030 Agenda for SD could officially adopt the new agenda entitled "Transforming Our World", "agreed upon the 193 Member States

of the UN and includes 17 SDGs". The new agenda calls for action by all countries for all people over the next 15 years in five different areas of critical importance, namely prosperity, partnership, peace, people and planet (United Nations, 2015).

Figure 3 The 17 SDG

The 17 SDGs with 169 sub-goals is the world´s best plan to build a better world for our planet and people by 2030. SDG´s call for action by all countries and will serve as a common global direction for countries, businesses and civil society to promote prosperity and at the same time protect the environment (FN, 2020), (United Nations, 2015). Many people have been uncertain of the success upon 2030 Agenda and that it would not deliver what was promised. Addressing these concerns, the success of Agenda 2030 and its transformative goals can still be achieved, but a much more urgent and ambitious response is needed (United Nations, 2019).

2.1.4 Relationship between economic, environment and social well-being

Sustainable development, by common consensus, is thought to consist of three major related disciplinary dimensions: environment, economy and social components. As part of this, the pillars have also been criticised for being too "isolated" (Boström, 2012), "difficult to measure" (Lehtonen, 2004), "vague and broad" (Griessler & Littig, 2005) and "not containing enough information" (Parris, Leiserowitz, & Kates, 2005). The three pillars have appeared as a

paradigm for Sustainable development whereas meeting the need of the present and future generations accounts for these three pillars (Dyllick & Hockerts, 2002), (Lehtonen, 2004). Representing these pillars in one model is the so-called interlocking circles by Barron & Gauntlett (2002). The model has a widespread mode of thinking and are represented as equally circles of environment, economy and social overlapping each other, with sustainable development being placed in the intersection. While many agree with the importance of these three pillars, there are some disagreement. Particularity the pillar "environment" for different industries e.g. closure of a coal mine can have major economic and social consequences for a region (Kjørstad, 2020).

Several researchers have suggested that the pillar **"**social" do encapsulate more aspects such as social cohesion, social equity, regional diversity, cultural knowledge, recreational opportunities, child friendly environment, social institutions and communities and social solidarity (Parris, Leiserowitz, & Kates, 2005). Other researchers also suggested that all pillars should be interactively and there should be considered more or other than three pillars (Griessler & Littig, 2005), (Boström, 2012). For instance, from a theoretical point of view, (Griessler & Littig, 2005) argues that the three pillars are inadequate and therefore suggest that it should include religious-spiritual, political-institutional, or cultural-aesthetic pillars. The cultural pillar is also supported by (Burford, et al., 2013). Another example is from Elkington (Elkington, 1998) who coined the term "triple bottom line" of "People, Planet, Profit". Later on, known as 3P´S, 3BL or TBL.

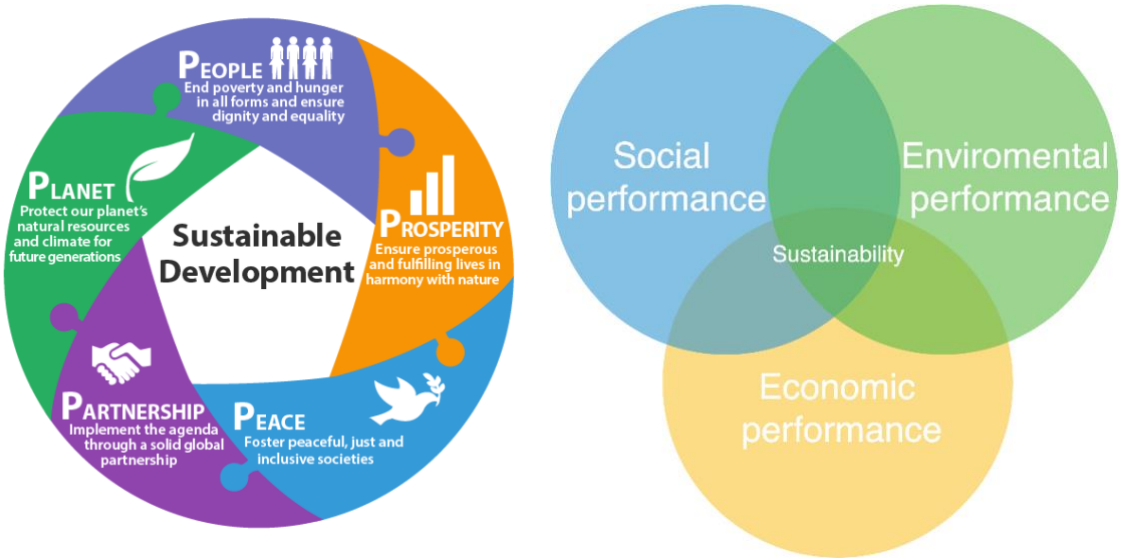


Figure 4 Relationship between environment, social and economic (Oneworldcentre, n.d.)

In 2015 when the 17 SDG´s where designed, UN made their so-called 5P´s model of sustainable development toward Agenda 2030 viewed through the lens of the three pillars. Building on the traditional pillars, it was further added two new and critical pillars, Peace and Partnership, giving the concept of SD a greater meaning. The 5P´s: People (social), Planet (environment), Prosperity (economic), Peace and Partnership gives a broad scope of the agenda. The fourth and fifth pillar describes the ethical aspect (human and justice) and collaboration, which is essential for every country to achieve in the success og the SDG´s, Agenda 2030 (Brown & Rasmussen, 2019). A notable example is the theme at the OECD Forum: "Investing in the future: People, planet and prosperity". The term "prosperity" reflects closely Elkington´s terminology of "Profit", but have been changed more accurately and kept the simplicity of the P´s.

The main argument is that the concept of sustainable development is based on three pillars but can also be understood as a five-dimensional model of SD that can be applied to all situations in the real world. Everything you do or plan to do on the planet, has implications for the society, environment, or the economy. Everybody wins because the environment is protected, natural resources are preserved, the economy is resilient and social well-being improved, due to respect and peace for human rights (Jari, Ontto, Vehmas, & Luukkanen, 2013).

2.2 Circular economy

2.2.1 Concept of a circular economy

The linear economy that we have today with the traditional "take-make-waste" pattern or "end-of-life" consumption, has never changed (Adam, Bucker, Desguin, Vaage, & Saebi, 2017). Companies extract natural resources from the ground and use them for goods that are consumed, resulting in whole products or parts which become waste at the end of its life cycle (Crowther & Gilman, 2014) (Kok, Wurpel, & Wolde, 2013). In the past century worldwide use of raw materials has increased eightfold (Krausman, et al., 2009) and towards 2050 this is estimated to triple (UNEP, 2012). As highlighted, this traditional way of "take- make- waste" pattern cannot be sustained in the long run and it is therefore highly important to find solutions for a circular approach that is essential and highly needed where we utilize products and natural resources for as long as possible, so minimal amount of resources are lost in the lifecycle (Adam, Bucker,

Desguin, Vaage, & Saebi, 2017). By reusing and repairing products, the same resources are utilized several times and the least possible is lost. When the products cannot be reused in their original form, the waste can be recycled and used as materials for new production (Valavanidis, 2018).

One can find many researchers that inform of different concept of CE. Many of the principles are also connected to each other. The organization Circular Norway informs of seven principles for a CE where they address all aspects, from the extraction of resources to the use of digital technology and collaboration (Circular Norway, n.d.). The general principles of CE are applied to both new and existing buildings where the focus is as the aforementioned "end-of-life" stage of products, materials and finding solutions to reuse materials and technological parts (EllenMcArthur.com, n.d.). The seven principals are (regjeringen.no, n.d.):

1. Make renewable resources a priority. Regenerate natural systems to maximize use of renewable energy.
2. Keep materials and products in use.
3. Dispose of waste as a resource.
4. Innovate business models.
5. Design for circularity to eliminate the concept of waste.
6. Use digital technology.
7. Collaborate to create common values.

The transition to a CE is a necessary shift to a low-emission society for achieving economic growth, value creation and long-term sustainability in the coming decades. To highlight the concerns, as consumption and population keeps growing, we would need two planets to sustain the lifestyle we have today by 2030, if nothing changes (Galli, et al., 2012). Therefore, given the high correlation between consumption and population growth, the economy has to be able to grow independent without gaining more need in resource usage and energy (Wijkman & Skånberg, 2015). For us, this requires that we use materials and renewable energy sources efficiently and that we have efficient systems for making todays waste into new materials in the future. For Norway, there is at the moment no national strategy for CE, i.e. recycling, reuse and waste management. There is also lack of infrastructure and harmonization of laws and regulations toward the shift (Boye, 2019) where the costs related to the change from linear to CE are possibly huge (Store norske leksikon, 2020). In 2019 NCR published a report on

Norwegians attitude towards CE (Forbrukerrådet, 2019). With a plural emphasize that Norwegians wish to engage more in a CE where service, quality and repairability are the most important factors. 9 out of 10 also agreed upon the importance of being environmental conscious.

2.2.2 Circular economy contributing to the SDG´s

As a part of the sustainability agenda a *circular economy* will contribute to many of the SDG´s due to its environmental, economic and social benefits. However, to stay in line with the UN´s sustainability goals, the transition to a low-emission society is demanding. The effects of transitioning from a linear economy that we have today to a CE are enormous. The UN Environment Program estimates that applying CE will contribute to 17,000 billion (equivalent to two times the Norwegian oil funds) in increased value to the world economy. Only reduction in food waste alone contributes to NOK 2200 billion (almost equivalent to two Norwegian state budgets). As one can argue, the potential of CE towards the 17 SDG´s is huge (Austmo, 2019).

2.2.3 Opportunities for a circular economy

CE is currently promoted through policy and *ongoing* strategies. In 2018, The government decided that Norway should be a pioneer in the area of developing green, circular economy that utilize resources more sufficiently (Klima og Miljødepartementet, n.d.). The following year, 2019, they also decided that Norway should "*develop a national strategy on circular economy*" (Olbergsveen, 2019). This specific strategy is expected to be published in the end of /late 2020 (Miljødirektoratet, n.d.) (regjeringen.no, n.d.). So far, primarily this have meant a commitment to better energy combustion, recycling and recycling systems (Boye, 2019). The authorities must contribute by creating new markets for circular solutions that entails new laws and regulations, long-term financing support schemes, tax changes and research. However, it is difficult for politicians to go ahead with such changes before suppliers and consumers have contributed to the creation of circular markets (Barth, 2020). On this matter, Norway is far behind the countries they would like to compare themselves with. For now, businesses are waiting for new policies, politicians are waiting for "correct technology" and policy instruments await guidance. The change is ready to begin and those who can do something are waiting for each other. Everyone has a responsibility to help and make the economy more circular which

is why it is unwise to wait for the authorities (Boye, 2019). The discussion ahead will not be whether we should reorganize our economy to have a circular economy, this is something governments, business, and environmental organizations all can agree on. On the other hand, there should be discussed how the reorganization towards a CE can be used to pave the way for deeper, structural changes around how we live our lives on this planet. Already, several regulations exist that define how such markets work, the problem is that the regulations work according to a linear, and not a circular logic (Boye, 2019).

Although we are waiting for the government's new strategy for a greener shift towards CE, there are many ways of contribution until the strategy is launched. From previous research, companies point to various measures that can be taken within different areas:

Knowledge and collaboration: Cooperation between business and the public sector must be improved in relation to procurement and competence enhancement. Also, by engaging the entire value chain, through B2B and B2C. This is however a demanding transition towards CE all alone, thus the importance between stakeholders can gain more opportunities and reduce risk, due to better competence through the whole process of procurement and acquisition (Norsk Gjenvinning, n.d.), (Energi og Klima, 2020). Sharing of knowledge and cooperation between companies, value chains and local government is therefore highly important (Solvang, 2019).

Learn from others/Innovation: Deloitte conducted a survey in 2017/2018 on CE. They analyzed 50 international pioneers compared to the largest Norwegian companies, based on information publicly available. The analysis clearly showed that the pioneers adopted several forms of innovation. Survey confirmed that there is untapped potential for Norwegian companies to use more opportunities in circular economics (Deloitte, n.d.).

Think long term and make well thought out strategies/plans: By starting early one gets the luxury of time to consider, discuss and reflect comprehensively abouts matters concerning the CE concept i.e. recycling, water and waste are destroyed with the right system. When making new strategies and action plan, it is wise to focus on the entire life cycle of a product and stay on line with the seven principles of CE (Solvang, 2019).

2.3 Strategy

2.3.1. Definitions and concept

Throughout times the term “strategy” has been perceived with some variation, but it has always been understood as an important matter. The word strategy can be tracked back to the Greek word “stratos” which means army, and “agein” which means to lead. Together they form the verb “strategos”; army leader. In ancient times this was first created as the post of the general in command during the war between Athens and Persia 506 BC. This person needed first to have tremendous experience; secondly intellectual skills were valued.

From the early days of ancient Greece, the philosopher, soldier and historian, Xenophon, has described one of the earliest definitions of strategy (Cummings, 1993). “Strategy is knowing the business you propose to carry out”. It's quite simple and straight forward, nevertheless some decoding can come in handy. Xenophon does in his definition stress the importance of deep knowledge of the business as well as the outlook. At the same time as the Persian Wars played out, a Chinese general, philosopher and tactician by the name Sun Tzu wrote the later to be world renown masterpiece “The Art of War”. His literature has relevant applications for today’s business management and strategy elaboration. Sun Tzu stressed having full knowledge of internal resources, strengths and weaknesses as the foremost important pillars to winning the war (Barney, 1991), (Wernerfelt, 1984).

Macmillan and Tampoe have a more modern take on the strategy definition; “Strategy are ideas and actions that conceive and secure the future”. This definition is very much in line with today’s fast pacing world where things are everchanging and the businesses struggle and thrive for sustainability for the future decades (Macmillan & Tampoe, 2000).

From the first definitions above the military origins of strategy shine through. We now see that the modern take on the concept is not about winning the war, but it is all about how one will play the game of business within the framework that strategy composes.

This will now take us further to the context of this thesis which is sustainability strategy development at the University of Stavanger. Within HE, government often outlays strategic

choices given their public funding. As output, they normally expect graduates and research. The governments input on strategic choices does however not provide answers on the future of HE and the individual universities. Even though the universities have funding limitations that put restrains on the priorities, this can be supplemented by other sources of funds.

2.3.2 Sustainability Strategy Development and the importance of the stakeholders

UN Global Compact and Accenture Strategy have in 2019 together conducted a CEO Study on Sustainability. The study explores businesses contributions to the Sustainable Development Goals. One of the findings in this study is the massive drop in CEOs belief that their business plays a critical role in achieving the global SDG´s (United Nations; Accenture Strategy, 2019). In 2015 when the UNs Agenda 2030 was established, 90% of CEOs believed to lead their companies according to the sustainable development agenda. Statistics from 2019 show that only 21% still think that their business plays a critical role in achieving SDG´s. This negative development is further explained by the fact that sustainability that goes beyond simple processes are often demanding comprehensive R&D funding's or innovative solutions. Coordinating all the different stakeholders in the direction of the same interest regarding SDG´s given their different views and power makes also a highly complex problem. In the very same study 94% of CEOs also stress that the matter of sustainability development is important for the survival and success of their company. In other words, the question is not whether the companies should develop or not, the question is, how long can they delay the crucial transformation (United Nations; Accenture Strategy, 2019).

This thesis mentions in the introduction the importance of consumers (Generation Z). The CEO study of sustainability supports this finding by appointing consumers and employees as top stakeholders by respectively 53% and 44% over the next 5 years.

In regard to funding and policies, 41% acknowledged the government as an important stakeholder, and 33% said the regulators would have an impact. This can imply that the cooperation between businesses, government and policy makers needs to be strengthened further. In the study this is referred to as "call to action 2". CEOs express that there is a need to come together and shape realistic collective solutions in order to create optimal market conditions. This implies that government must support changes, and especially those that need

to take place in non-profit organizations like public universities. The organizations that rely on government funding's struggle more because they might not get the opportunity to develop in the pace that is needed. But given the situation where digitalization and SDG´s are something the government have bound theme selves to comply to nationally, it can on the other hand possibly give non-profit organizations an upper hand regarding funding's and scientific support.

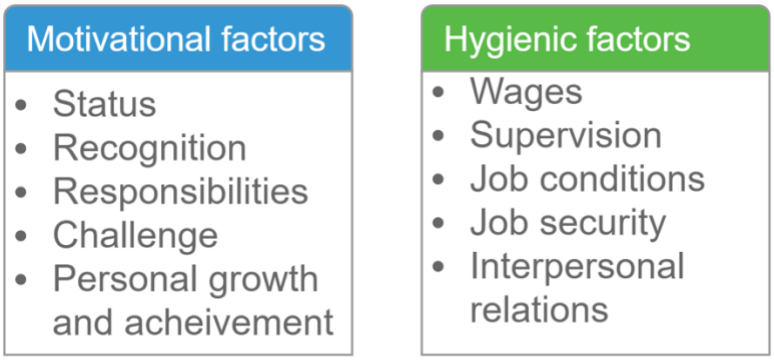
2.3.3 Process for strategies (Top-down and bottom-up)

A top-down strategy process is usually analysed, developed, and implemented by the top management, and later presented for the employees (Fjeldstad & Lunnan, 2014)This is often the easiest and fasters way to implement a new strategy. In the case of UiS there are already top-down strategies from the highest levels of the system, the Norwegian Government and the UN for instance. One does off course also have to include the board assembly, as an important part of the top-down strategy implementers. For the strategy to be implemented in a way that will create great value, a bottom-up strategy should be applied as well. The bottom-up strategy opens for employees to discuss the company's strategic challenges, and which direction one should move. This method does however have downsides. Due to the large flow of information it might get unmanageable. Therefore, the flow of information must take place in a controlled and systematic way. Although an open process can be very time-consuming, there is a great chance that it is precisely doing so that the company will find the most innovative and creative solutions that can give a competitive advantage. Not least, this method will include the employees in such a way that they may feel ownership and make the implementation of the new strategy easier. The approach of including the employees is supported by theory of fairness in procedures (Kaufmann & Kaufmann, 2009). It can also be an eye-opening experience for a company's top management to experience in practice what a wonderful the employees can be.

We know from organizational theory that having ownership over processes at the workplace in most cases also contribute to great motivation. Herzberg's two-factor theory divides into hygienic factors and motivational factors as presented in the table below (Kaufmann & Kaufmann, 2009). The hygienic factors are playing a negative role when they aren't present but are neutral if they are present. The motivational factors do have a positive impact if they are present, but not a severe negative impact if they are absent. The hygienic factors are further

down the Maslow's hierarchy of needs, while the motivational factors are placed further up the pyramid (The two factor theory of Herzberg, n.d.).

Table 1 Hertzberg's Motivational and Hygienic factors



Including employees in the company development whilst at the same time contributing to giving them higher motivation, are measures that will increase employee all over loyalty to the company. Knowing that you are contributing while feeling valued can often be the recipe for staying with an employer for a long time.

2.3.4 Strategy Development

In order to develop a strategy; vision, mission, values and goals for the company must be settled firstly. The theoretical section below on strategy development is inspired from Fjellstad and Lunnan (Fjeldstad & Lunnan, 2014).

Vision

The reason a firm chooses to invest in making a strategy is to reach an overall goal, and the overall goal is often the answer to the question, where do we see ourselves in the future? The answer to this is the company's vision. A sustainable vision represents values, norms and integrity that reflects the company. The vision should be formulated in such way that it is easy understandable for all kinds of stakeholders, both inside and outside the company. The purpose of the vision is to motivate for strategic action. IKEAS vision is for instance "To create an everyday life for many people" (IKEA). It is short and to the point. Other companies have longer statements about vision, **"**To move with velocity to drive profitable growth and become an even better McDonald's serving more customers delicious food each day around the world"

– (McDonalds) . Both short and long, specific or more general vision statements are acceptable. The important matter is that the vision should motivate the stakeholders that the organization affects in any way. According to Fjellstad and Lunnan (Strategi, (2014)) there are three important components that build a strong vision; inspire, give direction and focus.

Inspire: Do we want the vision to give us a competitive advantage? In which way should it inspire the recipient? Different personalities can respond various to the same vision. A person who appreciate and prefer financial security may choose to work for a large company with stable finances and will respond to a greater degree a vision that signals those values. A smaller company developing new innovative solutions would likely have a more ground-breaking vision that triggers those who look up to science, R&D, and sustainability, but might scare off the first group who value stability slightly more.

Give direction: From the smallest start-up to the biggest global market leaders, most employees value to know how their work contributes in the bigger direction. The vision must ensure that all employees and units strive to operate in such way that they follow the same path. This means that all leaders in a cooperation need to strive for the same goals whether it is quality, quantity, or somewhere in between. If they work with different goals in mind it will give the company an overall set back.

Focus: A clear vision should last but not least enlighten where the company should focus their resources and which tasks and units have to be prioritized in order to work towards the goal. Maybe in different stages of a strategy it will be natural that this applies for different departments and units within a firm. For UiS a new vision might be appealing and motivate potential new students to apply, for existing students and employees a powerful sustainability vision can awake a sens of pride and stimulate effort.

Goals

All strategies need goals, both specific and vague. The goals are telling us how we are going to reach our vision. Specific goals are preferable simply because they give more direction, are easier to relate to and are often quantified, which makes it easier to measure and track progress. In big corporations' specific goals will be easier to communicate to managers and middle level managers. A realistic timeline might also be useful. Especially within innovation it is often a race to R&D, patent or manufacture first. Sometimes it's simply too late and one can lose market

shares, first mover advantage, or even the chance to settle at all. Even though, sometimes it is not manageable to set specific goals due to lack of knowledge. It is better to have vague strategic goals then none at all, because they symbolize a beginning and give direction to something new when it's in the early phase of development. It is however necessary to specify them as fast as possible in order to work towards the vision.

Mission

A firm's mission describes what they do and how they do it. Simultaneously as the mission gives good understanding of what the firm is creating of value, it is important to make room for future growth. In other words, the mission gives direction and supports the company vision.

Values

In psychology, values, whether we already possess them or if they are goals that we work towards are what gives us moral direction in our decision making, and lay foundation on how we should behave. In organizational psychology values have just the same meaning, but they are meant to motivate the employees to identify with the organization in order to build a culture. It is highly usual for companies to present their values as acronyms, this makes it easier for employees to remember the values.

2.4 Analytical framework

2.4.1 Internal analysis

In the process of developing a new strategy, one of the most important things to take into consideration is the current capacity of resources an organization or firm holds. The capacity of resources and their extent regarding quality and quantity are the foremost factor that decide which strategic measures that are possible to implement. In order to develop an understanding of the capacity a company holds, it is important to see them in context of the activities in the strategy and value creation that comes with them. It is here important to remember that the first and foremost purpose of a firm or organization is maximizing their returns or in case of a government owned organisation, value maximization.

The internal analysis consists of four parts which regenerate themselves by coexisting in a loop. The purpose of this is to get an overall picture regarding if the organization holds the required resources themselves to implement a new strategy, but also whether the resources are exploited sufficiently or if there is a case of unused resources going to waste. The whole section on internal analysis is inspired from the internal analysis chapter 4 in (Roos, Krogh, Roos, & Boldt-Christmas, 2014).

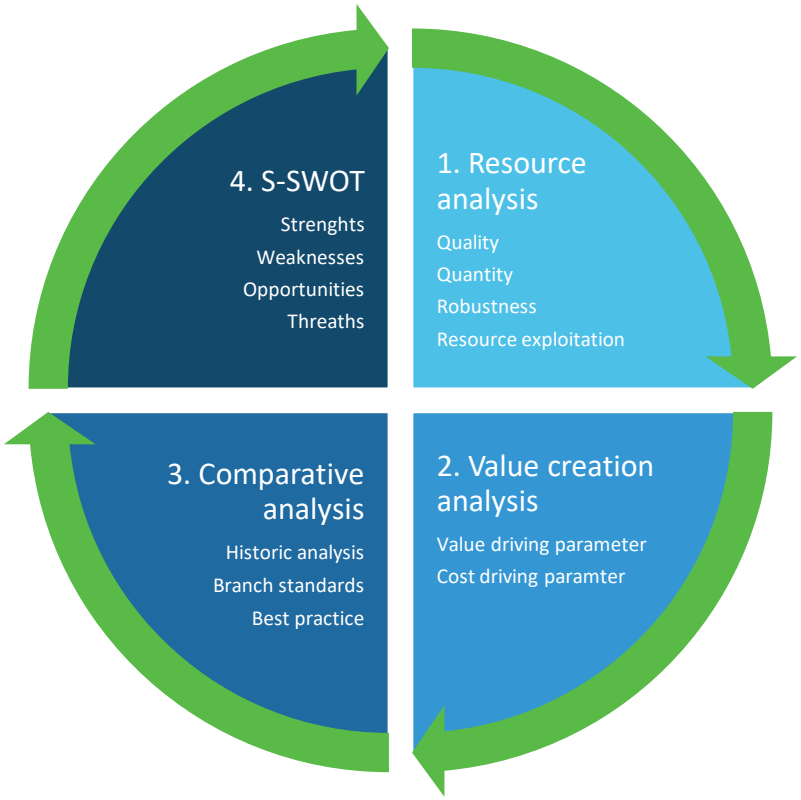


Figure 5 Internal analysis

1.Firstly, we have the resource analysis which serves its purpose through mapping the resources a firm has, and thereafter the quality, quantity, robustness of them and resource exploitation.

2.Secondly in order we have value creation analysis which according to Roos et al. is built up by three different models to choose from depending of the nature of the organization; value chain analysis, value network analysis and value workshop analysis. In addition, value- and cost driving parameters can be examined.

3.Next it can be useful to get new insight by comparing the new analysis for existing historical results, branch standards or best practice. In this thesis it means comparing to other schools that have made relevant changes within sustainability field.

4.Lastly the findings from internal and external analysis are presented all together in a S-SWOT.

As one will see in the PESTEL analysis on external factors, the goal with any new strategy is obtaining some level of competitive advantage. When exploring the different spectrum of resources, in order for them to be competitive they need to be valuable, rear, hard to copy and have non-equal substitutes. For a resource to be valuable it needs to be effective in how it exploits possibilities and reduces threats in the market. To be rear in the market is given when it is not possible for competitors to implement a strategy that can give the same benefits and advantages given the resources utilized. In order to be hard to copy by competitors it should be out most difficult for them to copy inhouse resources like for instance expertise. There are several measures that can be taken into consideration in the quest to keep intellectual capital within the borders of the company. Non-equal substitutes in form of emerging strategies from similar companies cannot exist. It is important when working towards a sustainable advantage within a market segment. All these traits can be used to analyse how robust the resources are.

2.4.1.1 Resource analysis

In order to understand the current state, it is necessary to conduct the first step mentioned above, a resource analysis. The reason for doing so is as stated earlier, the simple matter of how one is exploiting the capacity of existing resources. Traditionally resources were categorized into financial and physical. More modern theory highlights the intellectual capacity as the true source of uniqueness, value and competitive advantage. This regards resources as human relations, capabilities and expertise, patents, branding and company reputation for instance.

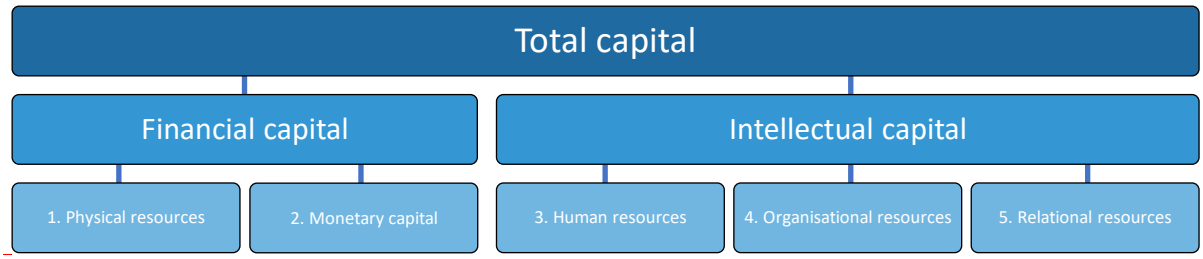


Figure 6 Intellectual capital in comparison with other resources

1. Physical resources: Consists of the machines and buildings an organization holds. The age and current state of these resources can be important to map in order to state their value.
Will it be easy to be to adapt for instance solar panels?

2. Financial resources: Consists of the sources to the monetary capital the firm holds. Do they have a loan? Where does the income come from? What prospects for capital do UiS have to be able to introduce changes?

3. Human resources: The most important intellectual resource for the company are the employees, and what they bring to the table in shape of unique set of skills, competency and ideas for innovation. Human resources when unique, individually, in group or at organizational level are hard to copy for a competitor. It is therefore of outmost importance to take care of employees regarding to factors that might make them consider turning elsewhere. Are the employees and students satisfied?

4. Organizational resources: Consists of the more process characterized elements to the organization as for instance the structure, brand name and intellectual properties. But it also consists of the softer and people-oriented characteristics as for instance organizational culture, reputation, and unity. Is the company Lean enough to focus on digitizing old processes? What does UiS do today to be sustainable? What associations do the brand name of UiS have? What are employees and students' attitude towards sustainable culture?

5. Relational resources: Tells us how well and valuable the network of the organization is. The nature of relationship with different stakeholders as customers, suppliers, business partners, and competitors combined all together contributes to the development of the organization. What the customers want and need for instance paves out the direction one chooses to take. Exclusive contracts with suppliers can give competitive advantages that might even be sustainable. UiS´s relation to relevant municipalities, landlord, students, employees? Are they participating in any networks?

Together these 5 different branches of resources form the total resource capital of a firm, and it is not limited to the resources they solemnly own, but what they have access to. They need to be measured up against the strategic goals, values and the business idea in order to map if one

has the needed resources within the reach of a hand or if they somehow need to be obtained. If the organization needs to obtain new resources, there should be compiled a plan on how to achieve the right quality and amount of these. A great system to map the quality and quantity is "traffic light system" (Roos, Pike, & Fernström, 2005). Where green indicates the best quality and quantity, yellow indicates medium satisfaction with the resource, and red indicates insufficient quality and quantity. In the real world, realistically most companies do not have such resources that bless them with everlasting competitive advantage. Not all organizations thrive aftermarket monopoly and grand profits. Some just need to adjust their resources to new standards or needs that are blossoming in the market or society.

2.4.1.2 Value creation

The next step of the analysis is the value creation of the resources that have been analysed in the previous section. It consists as initially presented of three different models to choose from: value chain analysis, value network analysis and value workshop analysis. In addition, value- and cost driving parameters are examined. The value chain analysis is mainly applicable for firms that are production intensive, for example factories. The purpose of this analysis is to help understand where one can potentially cut costs and does not consider the intellectual resources as part of the equation. The value workshop is suited for problem solving firms like consultancy agencies. The network analysis is applicable for banks or telecom companies, that connect different kind of services. For this thesis none of the above-mentioned analysis seam suitable and convenient to apply.

There is another pathway though. There has been conducted some research on an adaption of Porters value chain model that is designed for social service organizations such as higher education. Öncer (2018)Öncer (Öncer, 2018) states in her research the importance of internal analysis as a strategic tool in the quest of competitiveness regarding value creation. The value chain model for higher education has support activities and primary activities like Michael Porters original value chain, but the content is somewhat different.

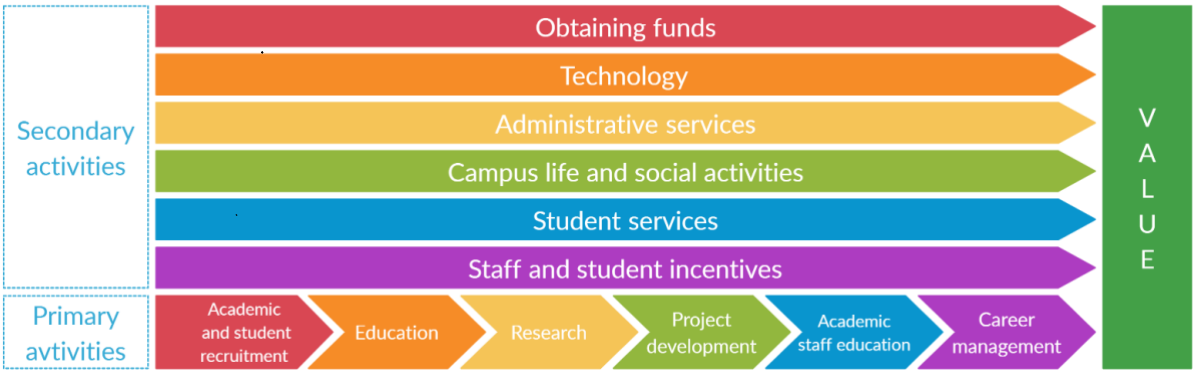


Figure 7 Value Chain Model for Higher Education, adaptet from Oncer

Within the primary activities we have academic and student recruitment, the step means gaining academic staff and student recruitment to the university, where in Porter´s original model this step is called inbound logistics. Next in Porter´s model comes operations that is an adapted version and concerns all activities that lead to some kind of "production". In educational perspective these are education, research, project development and education of academic staff. Lastly within the primary activities is outbound logistics, in the adapted version it is called career development, of both student and staff.

The secondary activities consist of creating funds, technology, administrative services, campus life and social activities, student services and academic staff and student incentives. The supportive activities are elementary for the primary to work properly, they need to coexist and complete each other in order to maximize the all over value creation within a university. It is here especially interesting for this thesis the aspect of academic and student recruitment as well as campus life, funding and technology segment. In this analysis one will map which activities do and do not create value as well as how they depend and influence each other, and most importantly strong and weak sides of the chain. A resource alone does usually not generate value but put together they generate a desirable service.

2.4.1.3 Comparative Analysis

Lastly it is important to analyse how the organization has performed by looking at how they have done in the past, industry norms, and look at best practice from other organizations.

A historical analysis looks into previous performance to estimate the development that has taken place, and what it has led to. This is a good way to establish trends. Industry norms is a

good way to find reference on what is normal. Are there good times or bad times for instance? Best practice is learning from those who have evolved further, it might be wise to look for references both nationally as well as internationally.

2.4.2 External analysis

2.4.2.1 PESTEL analysis

PESTEL is a framework that provides a situational analysis of companies' externalities (macro environment) that may affect the industry. The framework presents following six key factors that are important for the companies' operations: political, economic, social, technological, environmental and legal. They can give a good description of the trends and status of factors that have an impact for the business (Roos et al,. 2014). (Roos, Krogh, Roos, & Boldt-Christmas, 2014)those change. The results of such an analysis can be used further in strategic decision making. However, the analysis does not provide strategies to deal with the individual factors or solutions alone and should therefore be used in combination with an internal analysis to strengthen the strategy. The framework thus includes economic and non-economic conditions that can affect the players in an industry. This framework for analyzing macro environments is flexible, which factors should be included in the analysis and the content of them are optional. Which means that the PESTEL framework can be used in several industries. It is important to remember that factors such as “environment” changes over time, so the industry must have at all times updated information to make good strategic decisions.

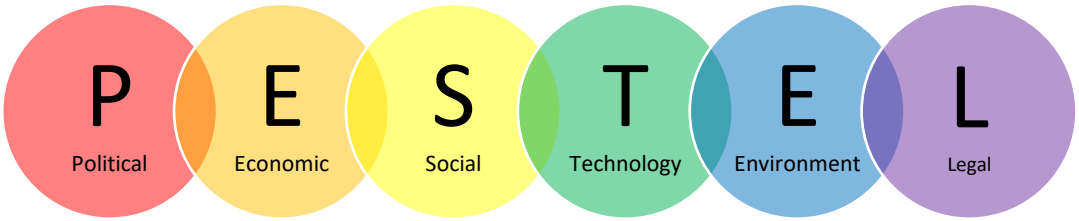


Figure 8 PESTEL model

Political factors

National conditions can be of great importance to different industries and individual companies. The authorities have the opportunity to both facilitate the market situation in a country and make it more difficult in general or for individual industries by adapting the policy (Perera, 2017). Examples of such changes are tax reform, changes in legislation and welfare policy. The state can also be an important customer, supplier or company owner providing the state negotiating power and influence. It is not uncommon that influenced by major changes in society the state chooses to tighten regulations in some industries. A known example of such regulations took place in the banking industry after the financial crisis in 2008. Other changes could be matters of EU that are EEA- relevant which shall be dealt with by the Parliament or involve Norwegian legislation (Stortinget, 2019).

Economic factors

Economic factors refer to macroeconomic conditions globally and nationally. Examples of such factors are exchange rates, cyclical fluctuations, and inflation. These affect international trade and have an impact on the country's trade balance. This is where World Health Organization (WTO) has the task of ensuring that international trades in investments and international goods and services happens fairly between countries (Isbrekken, 2020). To make an analysis of such conditions one will shed light on how the industry and the players are influenced by economic development. Few countries have a closed economy, and Norway is referred to as a small, open economy that is exposed to international economic trends.

Social factors

The third factor is about how culture, norms, traditions and religious values in a society can influence industry. Changes in social factors can have both positive and negative effects on private and public actors. An example of such change is the positive attitude people have gained regarding protecting the environment and ethics. This has affected the market adaptation in different industries (Perera, 2017). If a company does not live up to society's expectations with regard to ethical guidelines, it can affect the company's reputation and then profitability.

Technological factors

New technology can create major upheavals in an industry. Various technological innovations can contribute to changes in existing industries and the emergence of new industries. Industries can also become outdated by the introduction of new technology into society and over time disappear completely. The introduction of new technological solutions has a major impact on

the labor market and the emergence of a new industries requires new skills and can lead to structural unemployment. For an industry to survive, one must constantly adapt the business to new technology. Today, technology has become a vital part, where most of the operations are over technical use and the internet (Perera, 2017).

Environmental factors

Environmental factors concern for example sustainable development, pollution and climate change that can impact an industry. Various market players use the environmental trend to establish new industries, especially in circular and divisional economics. Some companies also use one environmental focus as a differentiation factor. A challenge for many businesses is to keep pace and attention to the environmental aspects, where they only see expensive challenges, and not opportunities.

Legal factors

Legal factors are about regulations, laws, guidelines, rules, principles and regulatory constraints, which all or most industries are affected by (Perera, 2017). Examples of such matters may be special tax or competition law which has provisions regarding mergers and acquisitions. Regulatory factors may be changes that allows for goods to flows across borders more secure. It is just as important for a company to follow national as well as international regulatory changes as most industries operate in an open economy.

Purpose of PESTEL

By using the PESTEL framework, you will get an overview of the factors and trends in the macroeconomic environment that influences the industry. The purpose of using this as part of the analysis is to discover changes in the environment that may be the explanation of the growth of the industry. The most effective use of the framework is to uncover the key drivers that matter the most, rather than making a complete continuous update. By finding the key drivers, one can find out what matters to most industries and focus on their development. Finally, it must be mentioned that change within one factor can have an impact on the others, so the total effect is impossible to predict. One must therefore see the changes in the various factors in context and not separately.

2.4.3 S-SWOT (internal and external)

A S-SWOT is a modern take on the traditional SWOT which analysis the internal strengths and weaknesses as well as the external opportunities and threats in a sustainability perspective. This analysis is a good spot to invite internal and external stakeholders to contribute through a group process. Working on the S-SWOT gives an excellent opportunity to systematically review the environmental challenges the firm is facing, further it can help to unwrap possibilities and potential for further growth (Grønn Markedsføringsledelse (2019)). Beneath is an example of what a S-SWOT analysis can contain.

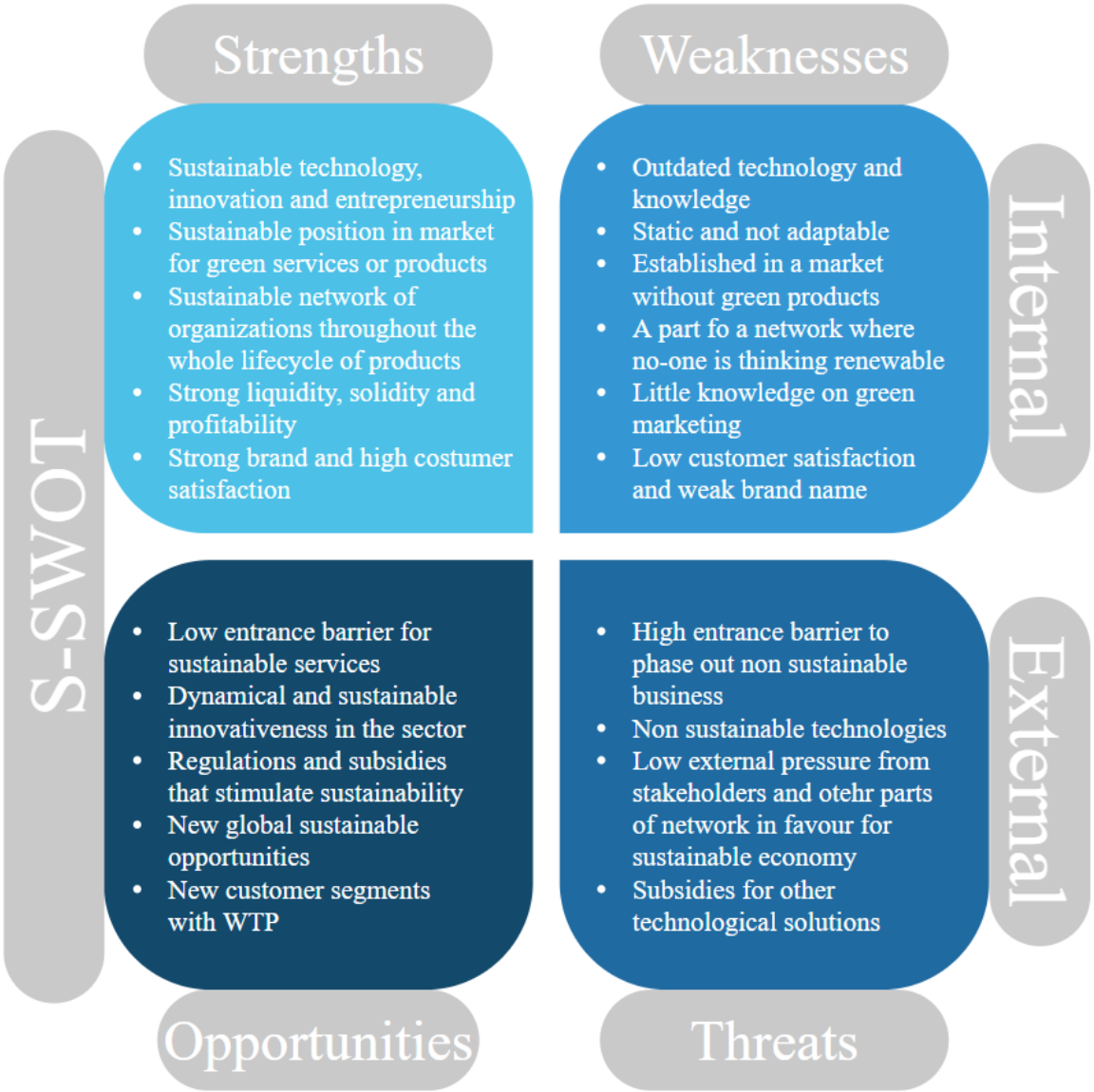


Figure 9 S-SWOT

Translated and adapted from: Grønn markedsføringsledelse,p 106.

According to Nygaard the analysis must start with the strengths and weaknesses of the different resources the firm holds (Nygaard, 2019). This implies evaluation of:

- Human resources.
- Competence and relevant experience.
- Research & Development.
- Physical resources as technology, production equipment, buildings etc.
- Process operations, organization and structure of the firm.

Secondly external threats and sustainability opportunities must be analysed:

- Manage energy use
- Exploit transportation in an emission efficient way.
- Digitalization, robotics, automation in operations can reduce emissions.
- Investments and other financial development towards a sustainable change.
- Global and national rules and restrictions that change preconditions.
- Infrastructure and disruptive technologies that might influence decisions.
- Social/cultural changes that affect the sustainability aspect both positively and negative.
- Demographic, social and cultural changes that affect development and growth in markets.
- Map and evaluate development globally of the relevant sustainability aspect.
- Map trends that change the market and their segments.

3.0 Methodology

This section aims to provide a description of the method used to answer the study's research questions. First, there will be given an overall overview of the considerations that are done along the way in this thesis, and the research methods the thesis uses. First section, 3.1 to 3.4 describes the dissertation's scientific approach, the difference between quantitative and qualitative methods, research design and research strategy. Second subsection, 3.5 to 3.7 describes the actual methods used. In addition, potential sources of error are identified, and the results of credibility is discussed against concepts such as reliability and validity.

3.1 Research design

The starting point for the work has been the research objective and the underlying research questions. A comprehensive literature study was initially conducted to form an overview of differences themes and sources. Various search engines have been used, but the sources have mainly – besides statistics, articles and reports - been obtained through a chain search on the Oria search service. In addition, relevant informants have contributed with information/data through their respective interview rounds. Sustainability is the main focus of the thesis and is supported by data from both the literature study, the survey and the interviews.

(Dalland, 2012) emphasizes the importance of choosing "correct" method for a specific problem, as different method and strategy choices have different consequences for the research work - which in turn influences what angle the results are presented with. According to Thagaard (2002) there is a need for a strategic and structured working method for gathering information, and for explaining procedures during data collection, analysis and interpretation. This chosen method is based on which phenomenon to be investigated. Thagaard (2002) further informs that research is either done by:

- Deductive approach, which seeks nuance or further development of established theory through e.g. testing of hypotheses.
- Inductive approach, which involves the development of new theory based on the accumulation of collected and processed data from empirical studies. Here is to a large extent identification of trends and correlations an important aspect.

In this dissertation, we have chosen to adopt a deductive approach to the theme. The chosen approach is related to seek familiar theories and earlier research that results in own data or hypotheses.

3.2 Research method: Quantitative and qualitative method

There are two different methods for obtaining information: qualitative and quantitative research (Samset, 2014), (Kotharl, 2004). Qualitative methods seek more depth, and emphasize meaning, while quantitative methods focus on prevalence and numbers (Thagaard, 2002), (Kotharl, 2004). As it is desired to explore and test theories within sustainability, strategy and CE, both primary and secondary data is compiled with quantitative and qualitative method in this thesis.

3.3 Primary- and secondary data

The thesis is based upon both primary and secondary data. The primary data is self-collected information in the form of surveys and interview. Secondary data is data collected by others, but still relevant to answer the main objective and the sub-problems.

Primary data

Survey: The survey contains both quantitative and qualitative research data. For this thesis, it was necessary to reach out to all employees and students. The survey was created through Onlineundersokelse.no. Using a hyper-link, the survey was posted from several student organizations Facebook pages after discussing this with the organization, UiS's own website (UiS.no) and Facebook page (Universitetet i Stavanger – UiS). There can be noted that there were some faculties that did not participate as much because the student organizations were not interested to shear the survey. As the survey applies to both employees and students at UiS, it was necessary to distribute it through e-mail in order to reach out to the employees. After sending out approximately 200 emails manually, the need to distribute the mail more time efficiently became a priority. Therefore, a python script was written to systematically go through the UiS webpage and gather all the employee emails in a svc file. After this file was sorted out to not contain external sensors and retired inactive professors due to the high likelihood for not checking the UiS mail, the list was sorted into 4 groups of 500 recipients given that this is the limit of how many you can send an email to at once. In this way,

approximately 2000 emails were sent out with a link to the survey. We reached the majority of students via Facebook, all the employees through e-mail, and both parties through Uis.no. This resulted in over 500+ responses, relatively distributed between 291 from staff and 213 from students.

It was clear that reaching respondents through the right channels was important. To increase the response rate, two reminders was posted through the UiS-Facebook page. This was done at intervals of just over a week between each reminder were the survey was active for one month before it was completed. The disadvantages of electronic surveys are that one cannot be completely sure who has answered the questionnaire. However, it is assumed that the respondents answer honestly and objectively.

Defection of respondents:

When conducting surveys, loss of respondents is a common challenge. Depending on the topic, channel and those involved in the survey can affect the response rate (Johannessen, Tufte, & Kristoffersen, 2006). Other factors that could influence the response rate is the way the survey is conducted, such as how questionnaire is designed and if there has been presented some information on the subject in advance. Survey shows that 85,31% (430 respondents) finished the whole survey and 14,68 % (74 respondents) participated but did not complete the survey. It is of course desirable to have the highest possible response rate in order to be able to generalize the findings. It was announced that a gift card of NOK 500 would be raffled off to a lucky participant. This was to attract more participants. Surprisingly enough only 3/5 of the respondents left contact information necessary to participate in the survey.

Design of survey

The survey consisted of 17 different questions that included closed answer alternatives and questions where the respondents could come up with suggestions and write its own answer. This turned out to be very informative, where lots of creative suggestions were obtained. The disadvantage of having closed answer alternatives is that respondents must adapt to the alternatives that are. Here, the answer alternative was used as yes / no and do not know. With questions where scale was used, this includes scale from 1 (not good / negative) to 6 (very good /positive). It can also be mentioned that on some of the questions there was only an option for yes /no. This was because it is particularly relevant for everyone who resides at UiS (employees or students), as this study was intended for. With such answer alternatives, the researcher risks

that the respondent chooses one of the answer alternatives at random, which can provide sources of error when the data is to be analyzed (Johannessen, Tufte, & Kristoffersen, 2006). Another danger is that the questions remains unanswered, without knowing particularly why.

Interviews: There were conducted five interviews where one of them was a group interview and the remaining four were single interviews. Entailing in total nine interview objects:

- Klaus Mohn, Principal, UiS
- Frode Alvheim, Property and area director, UiS
- Roy, Property and area manager, Former Statsbygg- now UiS
- Adriana Cvjetkovic, Estate manager, Statsbygg
- Leif Inge Larsen, Operations manager, Statsbygg
- Rune Dahl Fitjar, Deputy Principal for innovation and society, UiS
- Harald Nils Røstvik, Professor of urban planning specialization sustainability, UiS
- Ole Ringdal, Director for organication and infrastructure, UiS

The interview objects were chosen based on their expertise area and affiliation with the university, within areas such as buildings, innovation, society and infrastructure. In order for the interview objects to prepare and reflect around the questions an interview guide was sent in advance. Estimated time per interview was set to approximately 1 hour. Interview guide was tailored based on the area of the interview objects work area, therefore there are attached different interview guides in the appendix. Several of the questions in the interview guides are also overlapping to ensure the credibility of the information through cross-checking with other independent sources.

All interviews were conducted across Teams, due to Covid-19. During the interview, recordings were made, approved in advance by all parties. In order to not omit important information and facts. Finally, all the interviews were transcribed. A strength to the group of selected interviewees is that they either work at UiS or have important connections to the university now. This means that they possess important updated information that may not be available on the internet. Several documents and reports have therefore been received from the various respondents. It is also important to mention that there have taken place conversations with employees and manger in the cafeteria at UiS with purpose to obtain information about amount of waste disposal. The respondents informed us that they were highly satisfied with routines

and amount of food waste which according to them was minimal. Therefore, this is omitted in the thesis.

Secondary data

The work on the master thesis started first with a literature study, used to obtain an overview over relevant topics, as well as to form an opinion on which professional journals might be useful to focus on. Oria, a search service provided by BIBSYS, was mainly used to collect information. All journals are sourced from well-known and trusted publishers such as Elsevier and Emerald. Other sources of information, as statistics, parliamentary reports and consultancy reports are obtained directly from Statistics Norway, Norwegian Central Bureau of Statics, Database for statistics on higher education, Parliament website, Deloitte report, Accenture report and several reports and facts where obtained from the university's respective websites (UiO, UiT, NTNU, NMBU and UiS). Books cited by the thesis are borrowed from the University Library in Stavanger, or from private collection.

Next phase of the literature search was to find sources that were considered relevant. The queries dealt with sustainability overall and how this have developed over time and could be implemented in accordance with NPO (Non-profit organizations) such as universities. Keywords used include: Sustainable, SD, green development, circular economy, SDG, Agenda 2030. But the search was not limited to these. As a method, a literature study involves a critical and systematic review of existing literature within a subject or field of study. To "filter out" relevant sources, the criteria mentioned in next paragraph in addition to chapter 3,4 were used (see Chapter 3,4). At the same time, simple inclusion criteria for the literary sources were defined. These were not definitive but served as a guide to which sources should be used. The inclusion criteria were that sources:

- should not be older than 20 years.
- must be reliable and have good validity.
- must be from reputable journals and databases.
- have a high reference frequency and citation index.
- had to deal with the sustainability or SD or support aspects the task is trying to convey.

3.4 Source evaluation criteria

Is the source updated, accurate and documented? Has the source been through peer review, and whether the text was written by a recognized author in his field of study? Lastly, is the source relevant for the theme? The challenge was to find reliable research within non-profit organization. We note that our analyze may not be generalizable to foreign industry, since many of the macro environment we use as a starting point for the PESTEL analysis does not have transfer value beyond Norway, for example, sociocultural factors. However, we believe that using sources from different countries and different universities can have a positive impact on the validity of the thesis, because one may subconsciously consider several factors we do not see in Norway. The task has nevertheless made a point of making sure that the sources are suitable - so that we can say with certainty that the theory fits or can be adapted to Norwegian conditions and the University of Stavanger.

3.5 Research in own organization

The dissertation's research has been associated with our own organization. Therefore, it is appropriate to elucidate certain conditions in order to provide the necessary credibility to the task. Studying part of own cultural circle can be easier than studying unknown surroundings. Knowing the "everyday language", the custom, and what the people in the organization are concerned about (Nielsen & Repstad, 1993). However, this can lead to an unfavorable research perspective, where one preferably analyzes and interprets the results in light of their own position and knowledge of the organization. According to Ry Nilsen (Nielsen & Repstad, 1993) it is difficult to obtain relevant data when one should initially consider it as an actor in the organization and thus be part of this dataset. Another challenge is how one as an observer will be influenced by own experiences, prejudices and opinions on the subject which is being investigated. It is therefore highly important how the researcher manages to stay neutral in his/her observations, and the extent to which the information provided by the respondents may be considered unfit.

3.6 Reliability and validity

Reliability:

The reliability depends on the measurement, consistency, accuracy and stability of the research. In order to perform a reliable study, the researcher should avoid being too subjective in their statements and assessments (Taherdoost, 2016). To increase the study's reliability, interview guide, together with an explanation and information about the theme of the thesis was sent in advance to each interviewee. Here the interviewees were given the opportunity to familiarize themselves and reflect upon the questions. The informants also answered many of the questions similarly, which strengthens the reliability. Because of the personal opinions and explanations about interesting solutions, there is no guarantee that the same information would have been shared if others had used the same interview guide that was made.

To ensure that all information was reported and processes correctly, the transcription have been written thoroughly. Relevant appendices have also been made available to the reader to strengthen the transparency of the research. Regarding the survey, there where over 504 respondents, which tells us that the reliability of the survey is consistent. As a quantitative method, one can measure the answers up against each other which represents the majority.

Validity:

The goal of the validity is related to the degree to which one can draw valid conclusions from the analyzes on the subject being investigated (Samset, 2014) The validity also says something about the validity of the questions. In this case, the interview objects were carefully selected, and the questions asked varied in relation to the current position the interview objects held. Each interview guide was different, however, some of the questions were repeated in all interviews. In the preparation of the interview guide, the questions have been divided into three and four parts, according to relevance in order to focus on the different research areas. The five interview guides consisted of 12-17 questions. This amount of question was necessary to shed light on topics. Nevertheless, the questions are considered to be sufficiently valid as they were prepared in line with selected theory. In addition, much of the literature is taken from books from library, online books, which are seen as reliable sources, as the sources can be traced back to the author and researcher.

The results of the survey include all answers of the 504 respondents and some tables vary in the number of respondents. Based on this, the research is valid and that the method made it possible to answer the overall problem The interview guide, survey and literature has been chosen carefully in the background of the research questions, which makes the questions relevant in relation to the issue.

3.7 Scope and limitations

There can be mentioned that the focus of this thesis has been to conduct a preparation for a sustainable strategy, and not an overall strategy. This means that the thesis is not a complete final strategy document but can be used as a input for a future sustainability strategy. The administration and board at UiS can potentially choose the parts of the thesis that they find relevant. In the internal analysis, the focus is placed on the buildings where the faculties are located at the Ullandhaug campus. In relation to buildings/areas at Ullandhaug, the canteens have been excluded, as it has been informed from the canteen manager that there was minimal food waste in this area.

At the same time, on the basis of the literature scope, it may also be significant details and perspectives that we have not had the opportunity to consider. Due to the huge amount of information available in databases and on the internet, it may be that some details (and perhaps essential) among the sources have not been captured. In other words, there are limitations to how many sources one can examine and how carefully the sources are being investigated.

In relation to limitations, Covid-19 has had an impact to the extent that there was no market to conduct the survey face to face, which in turn has affected the scope of respondents, especially students. The thesis does mention Covid-19 several times due to its influence, but the authors of this thesis have made the assumption that the situation might go back to normal in the scope of a year and the measures suggested are depending on that. Because who are we going to modernize and expand study and work areas for? How are we going to build a greener culture if there is no one at campus?

4.0 Data from survey

This section describes the findings from the survey. The empirical data is based on the three research questions that previously have been presented in the introductory section. A few of the survey questions have been excluded from this assembly, as it was not used in the internal analysis section. In our internal analysis, the empirical data is linked to theory from the theoretical section. The figure below shows a good response distribution between employees and students.

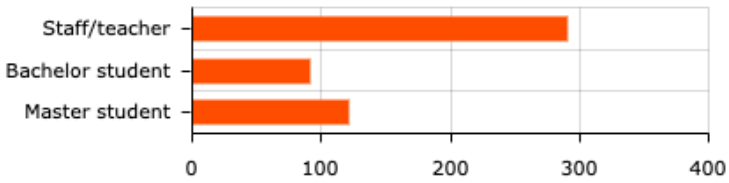
1.I am:

Number of respondents: 505

291 (57.6%): Staff/teacher

91 (18.1%): Bachelor student

122 (24.2%): Master student



3. How is your attitude towards a greener culture at university?

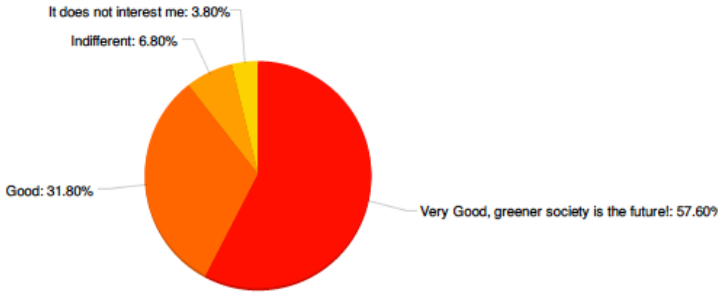
Number of respondents: 504

288 (57.6%): Very Good, greener society is the future!

159 (31.8%): Good

34 (6.8%): Indifferent

19 (3.8%): It does not interest me

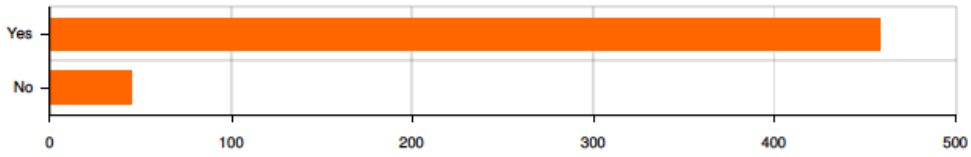


4. Is sustainability and the shift towards a greener society important to you? *

Number of respondents: 503

4 58 (91.1%): Yes

4 5 (8.9%): No



5. My concern towards environmental issues has grown considerably the last two years.

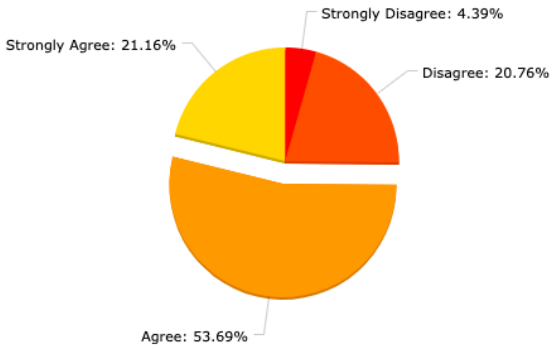
Number of respondents: 503

21 (4 .2%): Strongly Disagree

10 4 (20 .8%): Disagree

269 (53.8%): Agree

10 6 (21.2%): Strongly Agree



7. What should define sustainability at the University of Stavanger? (Choose three of the options below that you find most suitable). *

Number of respondents: 463

212 (4 5.8%): a. Digitalization

69 (14 .9%): b. Including (as many stakeholders as possible should be included in the decisions about changes that should take place)

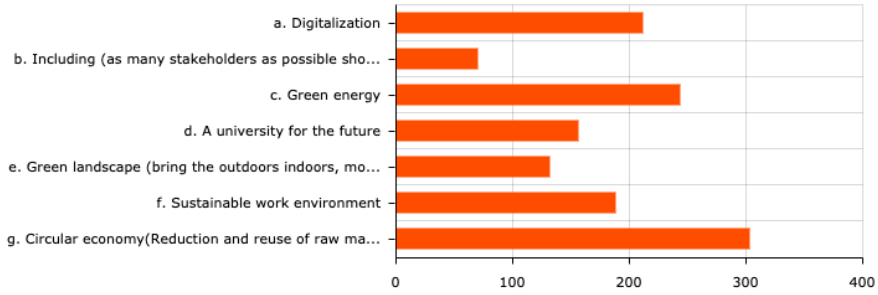
24 4 (52.7%): c. Green energy

156 (33.7%): d. A university for the future

132 (28.5%): e. Green landscape (bring the outdoors indoors, more plants that contribute to cleaner air etc.)

188 (4 0 .6%): f. Sustainable work environment

30 3 (65.4 %): g. Circular economy (Reduction and reuse of raw materials, emissions, waste and energy)

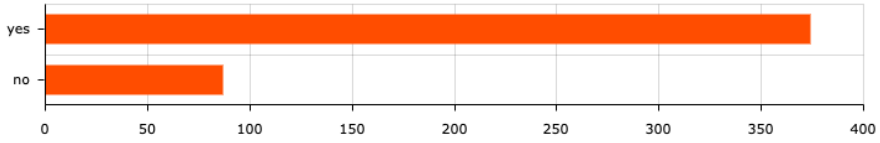


8. Campus areas around the different building are rarely used. Would you use it more if it was facilitated to sit outside for socializing/studying/meetings?

Number of respondents: 460

374 (81.3%): yes

86 (18.7%): no



9. What do you consider the most important pillars that UiS should prioritize in their mission to become more sustainable? (Here you can choose as many options as you like).

Number of respondents: 454

30 8 (67.8%): a. Greener energy (solar panels for instance)

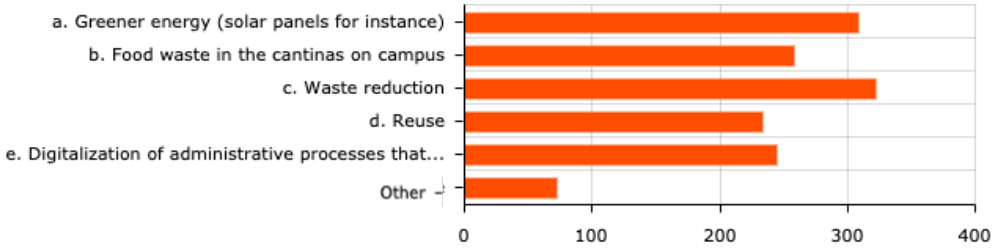
258 (56.8%): b. Food waste in the cantinas on campus

323 (71.1%): c. Waste reduction

234 (51.5%): d. Reuse

245 (54 .0 %): e. Digitalization of administrative processes that involve printing

72 (15.9%): Other



10. Do any of the following factors keep you from recycling on campus?

Please select all that apply

Number of respondents: 374

162 (4 3.3%): No bins available

132 (35.3%): Unsure if products can be recycled/lack of instructions

14 6 (39.0 %): Don´t know where to recycle

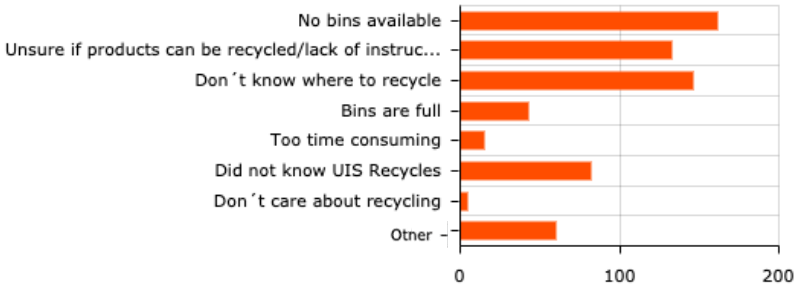
4 3 (11.5%): Bins are full

15 (4 .0 %): Too time consuming

82 (21.9%): Did not know UIS Recycles

5 (1.3%): Don´t care about recycling

60 (16.0 %): Other



11. What do you wish UiS had more of?

Number of respondents: 409

232 (56.7%): a. Social spaces or buildings

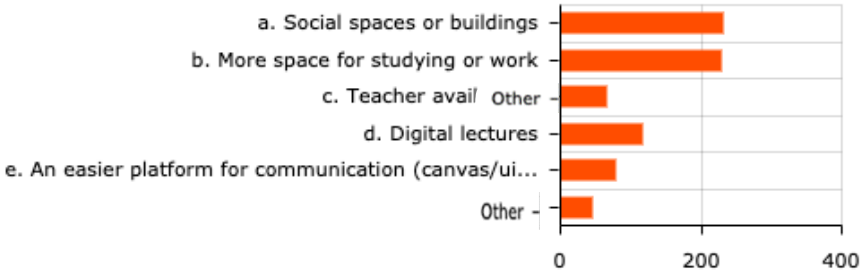
228 (55.7%): b. More space for studying or work

65 (15.9%): c. Teacher availability

116 (28.4 %): d. Digital lectures

78 (19.1%): e. An easier platform for communication (canvas/uis.no/mail)

4 5 (11.0 %): Other



12.For students: Do you believe that a clear commitment for sustainability would have a positive outcome for future number of applications at UiS?

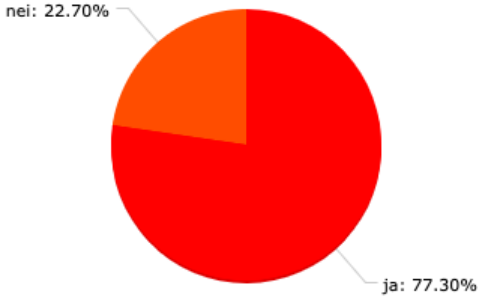
For staff/teachers: Do you believe that a clear commitment for sustainability would have an positive outcome for future recruitment of staff/teachers at UiS?

By clear commitment we mean committing and implementing different measures for sustainability.

Number of respondents: 370

286 (77.3%): Ja/yes

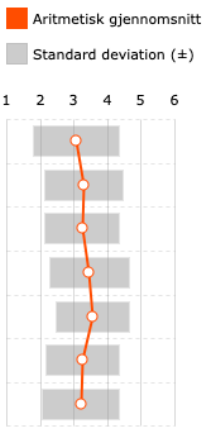
84 (22.7%): Nei/no



13. How would you characterise UiS's contribution to sustainability within these various categories? (1=Not good - 6= very good) *

Number of respondents: 441

	1. Not good (1)		2 (2)		3 (3)		4 (4)		5 (5)		6. Very good (6)			
	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%	Ø	±
Travel	65x	14,71	67x	15,16	158x	35,75	89x	20,14	49x	11,09	14x	3,17	3,07	1,29
Waste	32x	7,24	64x	14,48	162x	36,65	121x	27,38	50x	11,31	13x	2,94	3,30	1,16
Purchase of furniture/paper and ot...	29x	6,56	66x	14,93	185x	41,86	107x	24,21	42x	9,50	13x	2,94	3,24	1,12
Food and serving	32x	7,24	52x	11,76	135x	30,54	148x	33,48	58x	13,12	17x	3,85	3,45	1,19
Water consumption	17x	3,85	38x	8,60	167x	37,78	138x	31,22	65x	14,71	17x	3,85	3,56	1,08
Buildings and material use	28x	6,33	64x	14,48	174x	39,37	126x	28,51	41x	9,28	9x	2,04	3,26	1,08
Energy(electricity and heat)	39x	8,82	65x	14,71	174x	39,37	106x	23,98	47x	10,63	11x	2,49	3,20	1,16



14.Which mean of transport do you use most often to UIS?

Number of respondents: 4 39

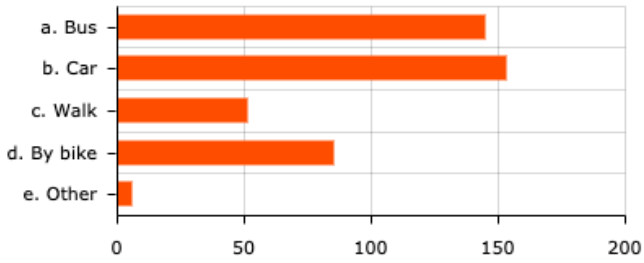
14 4 (32.8%): a. Bus

153 (34 .9%): b. Car

51 (11.6%): c. Walk

85 (19.4 %): d. By bike

6 (1.4 %): e. Other



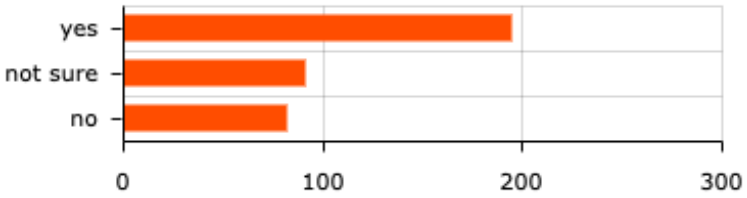
15. If you use a car frequently for transport to work, would you rather take the bus if this was free?

Number of respondents: 367

195 (53.1%): yes

90 (24.5%): not sure

82 (22.3%): no

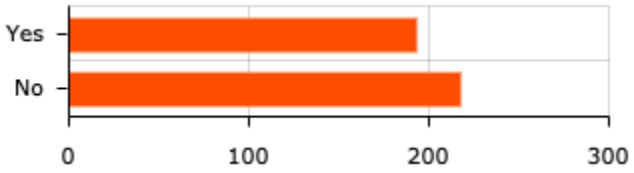


16. Do you find the amount of parking spaces at campus insufficient?

Number of respondents: 410

192 (46.8%): Yes

218 (53.2%): No



17. Do you buy bottled water on campus, or do you bring a bottle from home?

Number of respondents: 420

396 (94.3%): a. I bring my own bottle

24 (5,7%): b. I buy my water on campus

5.0 Analysis

We will in this chapter conduct the analysis needed to answer the research questions.

5.1 Internal analysis

5.1.1 Resource analysis

There is a need to address the aspect of competitive advantage. For resources to be competitive they need to be valuable, rear, hard to copy and have non-equal substitutes. Many of the resources especially the intellectual kind are valuable and possibly also rear. Since this thesis analyses the resources of a public university, given the nature of the organisation it is hard to classify their education or administrative activities as hard to copy, or rare, or not to have non-equal substitutes given that there are several universities that offer the same types of study programs. For now, one must conclude that UiS given their resources does not have an overall competitive advantage, but it is possible to obtain it in the future. More modern theory highlights the intellectual capacity as the true source of uniqueness, value and competitive advantage. In other words, UiS must exploit their intellectual capacity in the quest of obtaining competitive advantage in the future.

a. Physical resources

For this analysis the report from the building group, which is a part of the Campus development plan for UiS represent a critical source of secondary data (Gretland et al., (2019)). The main campus development plan is still in process, and it is a result of strong collaboration between Statsbygg and UiS.

The biggest physical resource for the university is the buildings and the area that surrounds the campus buildings, with main focus on the faculty buildings where students visit and stay most frequently. Some of the buildings, for instance Kjølv Egelands and Hagbard Line -Huset date back to the mid 70´s. The total campus area consists of around 270 000 m^2, but campus Ullandhaug which is the main target of this thesis is 116 000m^2. 90% of the total area is rented

from Statsbygg and is loctated only 5 km from city centre of Stavanger. The total building mass has undergone a thorough mapping by using multiMap. This tool has helped evaluate the technical state of the buildings and the possibilities and potential the representative buildings have for rebuild or further development. The evaluation scale is represented by state of level 0-3, where TG stands for “tilstands grad”, translated to English; condition degree.

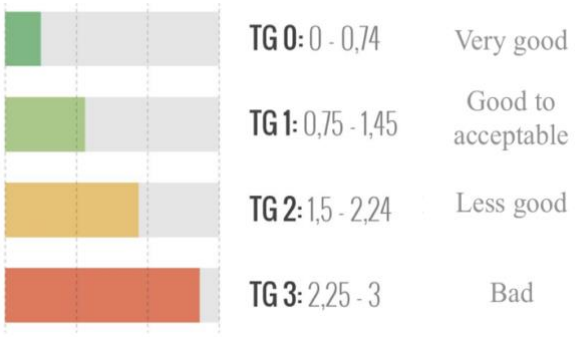


Table 2 Evaluation scale for buildings

Adapted and translated from building mass report.

The faculty buildings that will be focused upon are; Arne Rettedahls Hus (main bulding), Elise Ottesen-Jensens Hus (Business building), Ellen og Axel Lunds Hus (Hotel building), Ivar Langens Hus (building department attached to KE), Kjølv Egelands Hus (biggest building on campus), Hulda Garborgs Hus, Hagbard Line-Huset (teachers and humanism), Kjell Aarholms Hus (health-related studies). Beneath follows an assembly of selected parameters presented throughout the report; building year, overall weighted technical condition, adaptability, functionality, HVAC (heating, ventilation and air conditioning) and electrical power. They are colour coded according to their current degree of condition.

Table 3 Current degree of condition in UiS buildings. adapted from building report

Name of building	Building year	Overall weighted technical condition	Adaptability	Functionality	HVAC	Electrical Power
Arne Rettedals Hus	2006	1,09	1,31	1,25	1,0	1,6
Elise Ottesen Jensens Hus	2015	0,27	1,5	1,62	0,0	1,0
Ellen og Aksel Lunds Hus	1986	1,46	1,9	1,25	1,3	1,6
Hagbard Line Huset K-wing	1972	1,11	1,16	1,62	-	-
Hagbard Line Huset MG-wing	1980	2,17	1,24	1,62	2,1	3,0
Hagbard Line Huset A+U-wing	1972	2,04	1,18	1,62	1,8	2,6
Hulda Garborg Hus	1972	2,04	0,93	1,5	1,7	2,6
Hulda Garborg Hus N-wing	2019	0,04	0,93	1,5	-	-
Ivar Langens Hus	2014	0,57	1,18	0,85	1,3	1,0
Kjell Arholms Hus	1995	1,42	1,21	1,75	1,1	2,0
Kjølv Egelands Hus A-wing	1974-84	1,82	1,55	2,13	1,7	2,4
Kjølv Egelands Hus B-wing	1974-84	1,61	0,83	0,75	1,2	3,0
Kjølv Egelands Hus C-wing	1974-84	2,02	1,53	2	1,7	3,0
Kjølv Egelands Hus D-wing	1974-84	2,10	1,44	2,25	1,4	2,8
Kjølv Egelands Hus E-wing	1974-84	2,10	1,42	2,25	1,5	2,6
Kjølv Egelands Hus F-wing	1974-84	2,06	0,88	1,5	1,3	3,0
Total average		1,5	1,3	1,6	1,4	2,3

In an overall assessment of the buildings conditions in the report they describe the current situation as “maintenance delays in the public sector”. There is a high probability that these have not been unavoidable.

Electrical Power

Under the parameter “electrical power” there is a lot categorised as bad condition, and it is also the one that has the worst total condition degree of an average of 2,3. Kjølv Egelands Hus and Hagbard Line-Huset that are the oldest buildings have the worst results. The newest buildings as Elise Ottesens Jensens Hus and Ivar Langens Hus, score highest at the campus and are within the range “good”. It is therefore interesting and highly relevant to look closer at the power consumption at campus Ullandhaug as an area for further improvement and development regarding the quest to become more sustainable. Beneath is presented the table for yearly power consumption that the operations team from Statsbygg have compiled. Here we can see that Kjølv Egelands Hus has the highest total energy consumption, followed by Hagbard Line - Huset and Arne Rettedals Hus.

Table 4 Power consumption of UiS buildings, values obtained from building report.

	Heated areal (m^2)	Electricity (kWh)	Gas (kWh)	Energy consumption (kWh)	kWh/m^2
Kjølv Egelands Hus	43 048	8 523 745	1 152 451	9 676 196	225
Hagbard Line Huset	10 520	1 870 556	281 623	2 152 179	205
Ellen & Axel Lunds Hus	3 951	261 613	105 782	367 395	93
Kjell Arholms Hus	10 290	1 102 309	275 480	1 377 789	134
Hulda Garborgs Hus	7 116	869 868	190 510	1 060 378	149
Arne Retterdals Hus	12 801	1 687 815	342 687	2 030 502	159
Ivar Langes Hus	5 149	139 049	137 854	276 903	54
Elise Ottesen-Jensens Hus	5 149	248 246	137 854	386 100	75

From the survey there have been obtained information that elaborate further the issue and possibilities from student and staff perspective regarding energy sources. 53% of survey respondents think that green energy should contribute to define sustainability at UiS. This is directed as contribution to define what sustainability should mean for UiS, and could possibly play an important part of future marketing activities and reputation of the school. 68% of responders also said that greener energy should be an important pillar that UiS should prioritize in their quest to be more sustainable.

There has been done a lot of research in the field of solar energy, and much points to big possibilities to save power as well as expenses even in Nordic climate (Sintef, 2018). From interviews with Statsbygg, the possibility of participating in new project "JATAK" for mapping solar energy possibilities would be wise
to consider. With their expertise they can assist in mapping which roofs are suitable for adapting this panels (Statsbygg, 2020).

HVAC

According to operations manager in Statsbygg (L.I.Larsen, personal communication, 15.07.20) campus buildings have 95-100% waterborne heat, with exception of Hagbarg Line- Huset where only K-wing has it, and Hulda Garborg Hus where they have 25% installed waterborne heating. The waterborne heat system is a big part of the warmth system at campus. They are placed locally and connected by a ring line. Alone it is not sufficient enough to deliver heat to the whole campus, therefore t is combined with air conditioning, electrical panels and gas (Gretland, Framgard, Nordhus, Sokn, & Vebner, 2019).

In table 3 there is an interesting correlation between parameter "overall weighted technical condition" and "HVAC". As you can see, when parameter "overall weighted technical condition" is categorized by one of the green shades, parameter "HVAC" is also categorized in one of the green shades. This can be explained by better isolation, better windows etc. which make the difference between old and new buildings in how they store and release the heat. Between parameter "HVAC" and "Electrical Energy" there is no clear correlation, unless one also includes "overall weighted technical condition" to explain and support the analysis properly. The trend between the parameter "HVAC" and "Electrical Energy" arises when "HVAC" is in a shade of green, "Electrical energy" will be categorized green or yellow. But if "HVAC" is categorized yellow, "Electrical Energy" will be categorized red. We see exceptions to this trend in some wings at Kjølv Egelands Hus. In wing B and –F "HVAC" is a green shade, but "Electrical Energy" is still red. We need to look at the "overall weighted technical condition" for explanation. Even though there has been made improvements, the buildings are still old and the technical condition is the reason for the bad rating of "Electrical Energy".

Regulation of temperature especially in this building is challenging. According to survey respondents it is often too cold during the winter, which makes it uncomfortable to stay. In the majority of the interviews there has been pointed to the possibility of an energy central which

would obtain and store heat and cold through ground heat. The purpose of investing in an energy central is to reduce CO2 emissions, heat recovery and energy efficiency. In difference to today's solution with local warmth centrals that generate waterborne heating in combination with other solutions for heat and cold, this central would be able to supply all of campus.

Functionality

Thereafter the parameter "functionality" with an average of 1,6 comes in second worst, categorized as "less good". D- and E-wing at Kjølv Egelands Hus are categorized as the worst. But the rest of Kjølv Egelands Hus also scores low at functionality, except wing B which is the library. The library scores over all good on "adaptability", functionality and HVAC. It is worth mentioning that there have been done significant changes to the library wing the past years. This is an interesting finding that tells us that Kjølv Egelands Hus might be the first and foremost main target and priority regarding implementation of measures regarding sustainability. Kjølv Egelands Hus is as already mentioned one of the oldest but also the biggest of the buildings on campus. The different wings are placed as illustrated below.

Main functions for these areas are:

A: Lab, lecturing, cantina
B: Library
C: Lab, Ph.d, study area
D: Lab, workshop, study area
E: Lab, study area, offices
F: Tjodhallen, bookcafe

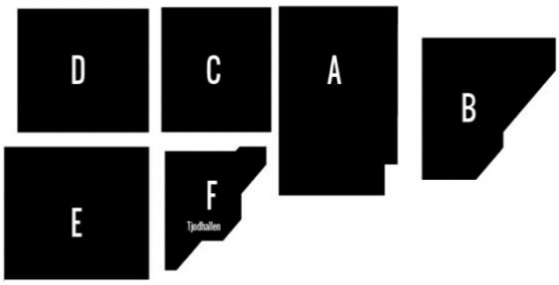


Figure 10 Buildings at UiS from building report

When presenting functionality, the report defines the term as how effective one can conduct core activity given the quality and quantity of facilities. The primary data of this thesis reveal that almost 60% of staff and students wish there were more social spaces and buildings, as well as more space for studying or work. While inspecting Kjølv Egeland Hus it is obvious that there is available area, it is therefore no immediate need to build more. One should instead explore the potential of the current buildings, in order to be utilized more sufficiently. Responses from the conducted interviews also reflect this idea of maximum exploitation of area. There is available space at campus, and through the ongoing semester UiS has done a great effort to

make the area around Tjodhallen (mainly wing E and F) more area sufficient. There are also now been put great effort during spring/summer months to modernise study areas in wing C which will help solve the problem with lack of space. There are also several places at the upper levels of Kjølv Egelands Hus where seating arrangements in the halls can be utilized or reorganized in a better matter. TEKNAT student areas that were refurbished in 2019 at wing E hold a very high standard and is a prime example in addition to the area around Tjodhallen on what would be appealing for students. There is a problem with heat in Kjølv Egelands Hus where the area is extremely cold during the winter, so temperature needs to be regulated in a better way in this old part of campus in order to be used. This has been discussed closer in the HVAC section above.

For the other buildings there is also a great potential for improvements. In Kjell Aarholms Hus there are study areas with no possibilities to connect to power. This were inspected during "exam spring season" and there were no students to be spotted at the location. When there is a lack of charging options for computers it will in the modern days we live in, be problematic to study continuous over a longer period of time. It would be wise to implement computer charging facilities.

There is also a great potential to utilize the outdoor spaces around campus in a much larger degree. In the survey a stunning 81,3% of the participants answered that they would gladly use facilities outside if it was organized for this purpose. Given the fact that Rogaland is one of the warmest regions in Norway there could be possibility for outdoor seating with benches and tables of different kind. There could be a variety of outdoor seating without a small "roof", some with a roof to shelter from rain, this could be used during spring, summer and early fall. Some places it could be possible to set up a permanent solution, greenhouses or conservatory garden for students and staff that could be heated with more modern source of electricity like for instance solar panels. From inspecting the Kjølv Egeland Hus and areas around there is great possibility for greenhouse and conservatory garden solutions in two areas on upper levels of wing E for staff and at two areas at the ground level of wing C for students. Utilizing outdoor space as a resource would help improve the functionality of the buildings, especially in wing E and D where this parameter is categorized negatively. Interview respondents stated that this could be a positive way to make better use of the existing area on campus.

Regarding the other buildings on campus there is great potential for outdoor seating solutions several places:

- Outside the cantina area at Kjell Aarholms Hus, possibility for 6 tables.
- At the green area at the backside of Hagbard Line Hus, 4-5 tables.
- At the green area between the football court and Kjell Aarholms Hus, 4-5 tables.
- At the green area outside Elise Ottesens Jensens Hus, 4-6 tables.
- At the green area in front of the library, 4-5 tables.

In addition to seating proposal there is also opportunities to utilize the big green area between SiS Sportssenter and Kitty Kjellands hus by for instance setting up volleyball net. According to interviews with representats from Statsbygg this would not be a problem. This area is often empty, and it could possibly bring more life to campus if there was possibilites for an active break for both students and staff that would like to engage in a game.

Adaptability

There is a need for more student dorms near campus. In order to decrease fuel intensive transport, and boost student community, what today serves as a massive parking lot at west side of the campus could be partially adapted to build more student dorms and potentially some kind of bigger gathering spot for students and student associations. It would contribute greatly to transforming Stavanger into an attractive student city.

According to survey there is a disunity regarding the issue if the amount of parking area on campus is insufficient. 46,8% answered “yes” while the slightly dominating 53,2% answered “no”. This tells us that there might be an even split between those who travel by bus and car amongst the respondents. At one site we have those who find it difficult getting a parking spot, at the other site we might have those who are satisfied with today's situation, or that commute by public transport.

It will become easier to implement such big changes when new buss collective axis is ready (Bymiljøpakken, 2018). If there could be possible to park while paying a fee, as well as public transport could be free through a potential collaboration between UiS, Kolumbus, and Stavanger municipality there would be several incentives to choose public transport instead. Information obtained from the sustainability survey shows that 32,8% commute by buss, 34,9% commute by car, 19,4% transport themselves by bike, and 11,6% walk. These results are good

and indicate that only 34,9% commute by car. But amongst those who transport themselves by car 53,1% answer that they would rather take the bus if it was free, while 24,5% are not sure. According to several of the interviewees it is stressed that UiS is the only university in the country that has free parking opportunities all over campus, which contributes to impact our habits negatively.

There should also be considered more bike parking opportunities around the campus to make up for lost parking space as well to encourage and enable secure bicycle storage. Finally, also adapt charging of electrical bicycles and scooters could be expedient. There are some opportunities to charge electrical vehicles, but it could be considered if it is expedient to expand the amount of charging stations.

b. Financial Resources

UiS has several areas where it is desirable to develop and modernize. But scarcity of financial resources, pressure on land and equipment, as well as capacity represent challenges in some areas. Norway differs from most other countries where not only primary and secondary schools are publicly funded, but also higher education. 80% of UiS funding per today come from Ministry of Research and Education and is dedicated for core activities (O. Ringdal, personal communication, 17.06.20). For the university to develop and increase its research activity, the institution depends on external funding, these make up the remaining 20%, a lot of these funding's come from The Research Council of Norway (O. Ringdal, personal communication, 17.06.20). As presented below, most of the university expenses go to labour costs. There is a surplus of 17,5 MNOK (Universitetet i Stavanger, 2019). This is a high amount of money but given that most of them are payments in advance for future activities in projects that are started, they are earmarked for another purpose. This means that UiS has to look for further fundings elsewhere in order to adapt sustainability measures.

Table 5 Economic development 2017-2019

Year	31.12.2017	31.12.2018	31.12.2019	Budget 2019
Total operating revenues	1 713 298	1 805 535	1 970 560	1 882 427
Sponsored and commission-based activity – BOA	251 846	256 229	310 161	278 036
Total operating costs	1 661 754	1 831 167	1 953 104	1 923 489
Total labor costs	1 116 243	1 208 067	1 297 663	1 325 987
Total other operating expenses including depreciation	545 510	623 101	655 441	597 503
Total investments	63 636	104 287	92 215	87 886
Share of operating costs of total operating revenues	97,0%	101,4%	99,1%	102,2%
Share of BOA in % of state funding	17,9%	16,5%	18,8%	18,0%
Share of labor costs of total operating revenues	65,2%	66,9%	65,9%	70,4%
Share other operating expenses of total operating revenues	31,8%	34,5%	33,3%	31,7%
Share of investments in total operating income	3,7%	5,8%	4,7%	4,7 %
Sum	-51 554	25 632	-17 456	41 062

Overconsumption (+)/Underconsumption (-)

With an increase in number of credits, exchange students, graduates within the standard timespan and doctoral students, it gives the university the possibility to receive more funding. UiS has high goals regarding those fields, as well as expanding the existing fields of external funding, especially from the RCN and the EU. Becoming a more attractive school will attract a higher quality of students, which again, more likely will complete their studies in normative time (SSB, 2019) This will contribute to higher funding from ME. Therefore, the school's vision for the future is not to have an increasing number of applicants, but a higher quality of those who apply (O. Ringdal, personal communication, 17.06.20).

Table 6 National standards for statistics on finishing degree in normative time

Year	2019	2013	2014	2015	2016	2017	2018	2019	Nat. avg. 2019
Proportion of students in a bachelor program who finish the degree at the normative time	42,70	42,33	41,91	41,46	45,07	43,50	41,49	48,14	48.83
Proportion of students in a master program who finish the degree at the normative time	52,95	48,05	53,29	49,64	48,88	50,79	53,98	52,63	54,59

NSD (2020) statistics show a positive trend for 2019 regarding the rate of bachelor student who finish in normative time with 48,14%, the UiS results are however slightly lower than the

national average of 48,83%. Master's degree students have had a stable increase toward 2018 with 53,98% students graduated on time, and slightly under the average in 2019 with 52,63%. This follow national trends with a spike of on normative time graduates in 2018. In comparison to national standards UiS positions slightly below. However, there is a national problem regarding only as little as around 50% of the students graduating within normative time. This problem needs to be looked upon from macro level (SSB, 2019). Can some of the reason for this statistic be explained by the fact that universities offer free education in Norway? Or that many choose to work in addition to fulltime studies? There is a commonly known problem that the monthly student loan is to scare to last for a whole month, so most student that live away from home must have a side job. In 2016 every third student had a side job (Keute, 2017) Statistics also show that older student are more likely to graduate beyond normal time because of responsibilities like for instance children. This can also have a correlation with the fact that today's society develops faster and requires that one has interdisciplinary knowledge. In fact, in 2017, a third of the population aged 16 and older had an education at university and college level, and the proportion is rising especially during Covid-19 epidemic.

ME has recently helped out by funding some rebuilding. According to Ringdal (O. Ringdal, personal communication, 17.06.20), in their application they argued that they want to use it for environment, sustainability purposes. But those are not the matters ME directly support, they support funding's that can develop better student environment, digitalization etc. UiS also newly received a funding of 6,2 MNOK and some of these funding's are going to a project for renewal of wardrobes and for bicycle parking. It seems like ME should recess their focus when it comes to criteria for what they want to fund, so it can in a broader perspective help schools reach their sustainability goals. The university also recently received 1 MNOK in support from the Government's crisis package no. 3, this will be used for improvement of student areas (Vartdal, 2020).

Another important matter is as already presented previously, UiS does not own their building, they rent them from Statsbygg. This makes it difficult to do bigger changes themselves, because because the landlord needs to be involved. According to director of organisation and infrastructure, Ole Ringdal (O. Ringdal, personal communication, 17.06.20), there are several ways of funding something like the new energy central which is calculated to cost around 90 million NOK. Since this will be a project UiS will do together with Statsbygg that is landlord, they can add it to the monthly rent, this way of financing is known as house-rent compensation.

There are more ways to relocate capital. If one chooses to reduce travel expenses through more frequent use of for instance technology, budgets that are normally used for travelling might be partially allocated to implement sustainability measures. In this way one can exploit existing funds in a better way. It is though challenging due to activities such as abroad studies, research mobility for Ph.D. students and publications with at least one international co-author that the university wants more of. According to information obtained in connection to the Eco-Lighthouse certification it is estimated that during 2018, UiS' employees had a total of 809 flights, divided into 243 in the Nordic region, 330 in Europe and 236 to other parts of the world. It is estimated that this gives a total of 1 589 077 kg CO2 emissions (Universitetet i Stavanger, 2019). Here a massive internal conflict of interest which needs a change of attitude on an international level takes place.

From this resource analysis it is clear that the university because of their structure as public organization are dependent to a great extent on grants from the government and future surpluses from projects. There are possibilities to allocate some of today's expenses as capital for sustainability measure implementation.

c. Human Resources

From the annual report for 2019 (Universitetet i Stavanger, 2019) total sickness absence for full-time employed men was 2.5%, and full-time employed women had a sickness absence of 5.27%. UiS has a total sickness absence of 3.5% for 2019, and the self-reported absence for 2019 was 0.66%.

UiS has since 2009 had employee surveys every second year, the newest survey is from 2019 and had a response rate of 84% which is significant (UiS, 2019). Job satisfaction has been marginally lower in 2019 than two years ago. When asked “Do you feel that your opportunities for participation are adequately taken care of at your department / unit?”, 62% Answered yes. This indicates that nearly 40% of the employees see themselves as resources that are not utilized sufficiently enough. Is it possible that some of these 40% would be interested in working more with sustainability related topics/research?
76% of the respondent's experience that their colleagues take responsibility for the development of the common work environment. This is a good indication for future success in implementing

new changes in the work environment. At the other side only 58% answered that the management handles change and restructuring in a good way. In addition, only 61% answer that the management clearly communicates the goals for the business. This may be a challenge for the organization and can indicate that the management needs further change management training to carry out the shift towards sustainability in a proper matter, with high quality information flow and with as little obstacles as possible using the right tools. There is an opportunity here to utilize intellectual resources within the organization without use of external consultants.

The vast majority of the employee's report that they find their work tasks meaningful. 65% respond that it is good for their future prospects to be in this organization. The survey does however not answer what the remaining 35% think of this matter. Why is it not good to be with UiS for their future prospects? Are these employees possibly thinking about turning somewhere else when the opportunity arises? There might be many reasons and explanations for this response rate. From the survey for this thesis, 77,5% of staff and students that responded believed that a clear commitment for sustainability would have a positive outcome for future number of student applications and staff recruitment at UiS. There was a unanimous agreement on this among the interview respondents. Maybe clear goals for a sustainable cultural change could contribute to a higher rate of people that would consider their future prospects at UiS as good. This thought will be further explored in the "organizational resource" section.

Students are also a resource that should be engaged in activities that are beneficial for the university, as well as for them. They might surprise contributing with for instance a unique set of skills, competency and ideas for innovation. According to the Norwegian database for statistics on HE, the students at UiS have the lowest nationwide student satisfaction regarding the quality of education with a score of 3,81 on a scale that goes from 1-5 (NSD, 2020) In the quest to increase the quality of education a potential solution can be to engage students more by offering internships, writing thesis on subjects UiS needs to increase their knowledge about, or possibilities for students to contribute on research projects and get credit for it as a part of their education.

UiS has in the first half of 2020 been working towards a new strategy. In this context, employees and students have been invited both through UiS website and through general meetings at the

university to contribute. This is a great way to practice "bottom-up" strategy, as well as giving ownership over processes at the workplace which can contribute to great motivation according to Herzberg's two-factor theory. A selected few students are also involved in the theme groups for the development of the new strategy.

From analysing human resources, there is potential intellectual resources that can be utilized within both staff and students. These should be utilized in a better matter, to increase the satisfaction of work- and study environment.

d. Organizational resources

Organizational culture, unity and reputation

In this part we will focus on those organizational resources that are most relevant for this thesis. The following questions were asked to identify attitudes among staff and students in order to map how suited they are as resources in relation to sustainability. How the attitudes at UiS is regarding sustainability can help figure out which measurements that can be possible to implement in the quest to achieve a more sustainable culture across staff and students. Even though the important findings are presented in the data section for further clearance we have analysed subcategories of respondents.

In total 57,7% of survey respondents have a very good attitude towards a greener culture at the university, 31,7% have a good attitude. That is a total of 89,4% positive answers. If we look closer at the distribution between categories staff/BSc/MSc;

- Staff/teacher: Very good attitude: 66,7%. Good attitude: 28,1%. In total 94,8% positive.
- BSc: Very good attitude: 47,8%. Good attitude: 38%. In total 85,8% positive.
- MSc: Very good attitude: 43,8%. Good attitude: 35,5%. In total 79,3% positive.

There is all over a high percentage of positive attitude. There is still a clear difference between staff and students, and even among bachelor and master students. The answers according to subcategories correlate with the next answers to the question about personal thoughts about the importance of the shift towards greener society. Surprisingly a greener culture appears to be of

greater importance for the more mature generations. Can it be particularly possible that university staff hold more sustainability related knowledge than other groups?

Is sustainability and the shift towards a greener society important to you? In total 91,1% answered yes.

- Staff 96,6% yes
- BSc: 83,7% yes
- MSc: 83,6% yes

We see that Bachelor and Master degree students have approximately same opinion regarding if a shift towards a greener society is important to them. Response rate for this was respectively 83,7% and 83,6%. Staff has also the highest amount of positively directed respondents, with around 12% points more than the students. Even though the results for all three subcategories are good and indicate that the green shift needs to be even more important for UiS as an organization. It goes against theory presented earlier in this thesis, the findings indicate that older generations indeed care more about sustainability than younger generations. Can this be explained by the age ranges and that older generations rather care more about the future of their children and grandchildren, and therefor think broader about the consequences of today's polluting activities? There are studies that show conflicting arguments whether younger or older people care most (Nervik, 2020) (Thingsted, 2019). And this is a matter that will be suggested for further research. But for now, we must conclude that this study indicates higher engagement regarding sustainability from staff. The engagement is still high for all the subcategories which is positive for UiS.

My concern towards environmental issues has grown considerably the last two years. In total 21,2% strongly agree, 53,7% agree. A total of 74,9%.

- Staff: Strongly agree: 19,10%. Agree:53,1%. 72,2% in total.
- BSc: Strongly agree: 22,83%. Agree: 56,5%. 79,33% in total.
- MSc: Strongly Agree 24,7%. Agree: 52,9%. 77,6% in total.

Here we can see that bachelor and master students have a higher score. This can be explained by factors like staff is usually older and have heard about challenges like global warming etc, frequently over a longer period than 2 years back.

In its entirety, the survey provides an understanding that sustainability is a matter for importance for both staff and students. In the two first questions we see that staff are more susceptible to provide positive answers to the questions. Even though the survey is voluntary and anonymous there might be that staff feels obligated in some way to represent the school very positive. But these might as well be sincere personal opinions. Staff had an age span on respondents between 27-71 years old. Bachelor students had an age span between 19-28 years old. And Master student had s age span between 23- 43 years old, it can be relevant to mention that the amount of student in their 40´s were few.

Regarding reuse of plastic bottles there was a surprising finding. It emerges in the survey that astonishing 94,5% of staff and student bring their own bottle instead of buying water at campus. This is a very satisfying score. At the other hand there were some concerning findings regarding waste disposal at campus. In the question you could select all the options that apply. 43.3% said they did not know where the disposal bins are. 35% said they were unsure if product could be recycled. This means that there is a need of better knowledge about recycling at UiS, and also a better visibility of the bins. According the respondents there are also too few stations for deposit off empty bottles. And the recycling stations should be placed especially close to where study areas are located. Staff often use plastic cutlery, this should be avoided.

What can be done to strengthen the organizational culture?

Strong organizational culture leads to unity. Unity is tremendously important in order to walk the same path in order to achieve the same goals. We already know from the thesis survey that the sustainability engagement is good, and we also know that young generations appreciate that the possible educational institution shares the same vision of the future as them, as already mentioned in the problem statement and several other places in the thesis. To stay relevant, and in the battle for the best students and staff, it can be crucial to share the same visions as well as lead the way for change. There is much that can be done as a culture-creating measure to increase engagement and strengthen knowledge around sustainability at the university. The survey shows that the employees are both more positive towards a shift towards a greener society and a greener culture at the university is more important to them than the students. Firstly, here the employees can emerge as role models for student both through integrating and promoting knowledge and norms through education. This can also help employees who have an interest in sustainability feel a greater drive for their work, experience it as more meaningful

to be at work. All in all, this can contribute to the employees feeling that their values are in line with the workplace and that it can therefore contribute to the employees wanting to stay in their positions instead for looking after new opportunities when their workplace sticks out in the crowd as an good example in the society. In fact, 40,6% respondents have answered that "sustainable work environment" should define Sustainability at the University of Stavanger.

Secondly, UiS got Eco-Lighthouse certified last year and arranged a "green day" in order to celebrate and mark sustainability at UiS. The event was according to schedules and activities very interesting, but a Facebook page for the event shows a severely small group of people attending, barely 50 out of a range of 12 000 students and around 2000 employees. This indicates that the audience is there, but the marketing of the event has to be better. There could be "sustainability theme nights" arranged every second month or so for both students and staff. UiS as a knowledge institution has the human resources in both academic staff, other employees and students to carry out such events. It will help to create and build interest and knowledge for the topic.

UiS have for decades had the reputation for being the main city to conduct a petroleum related degree due to the cities status as Oil capital. Therefor the focus on the sustainable matters have not been present in such ways that it might have been if Stavanger was not oil intensive. Due to the rise of environmental concerns it has become less popular, in fact there are several petroleum related degrees that are now announced at the universities webpages as "still study slots available" (UiS). The master's degree in environment and energy studies is also advertised with available slots. This can indicate that Stavanger is not a city popular to conduct these kinds of studies. There is now a dire need to rebrand the university for the future industries.

If UiS appears as a university with values that follow society's norms, perhaps even take the lead on it by improving knowledge about sustainability, modernizing its buildings and encourage to sustainable transport opportunities, but also by increasing the quality of education as mentioned in the section on human resources, this could help change what UiS stands for, and thus build a better reputation and brand name that moves away from fossil and polluting industries to a greener pasture. UiS needs a greater focus on how they can stand out among other providers.

Digitalization of processes

Ole Ringdal informs in an interview (O. Ringdal, personal communication, 17.06.20) that 80-90% of exam related processes are digitalized. But there is no track of digitalization within the administrative processes at UiS, therefore this matter is also hard to analyse. There is known that some administrative tasks have been made easier by gathering several services digitally on the platform "Student Expedition". From the sustainability survey 54% considered digitalization of administrative processes that involve printing as one of the most important pillars that UiS should prioritize in their mission to become more sustainable.

Challenges caused by the corona epidemic created a need to digitize lectures, due to foreign students who should have moved to Norway but are not able to until further, but also due to restrictions concerning infection control within a classroom.

e. Relational resources

To be able to operate, UiS is dependent on financial support from/through the following stakeholders:

Relation to students (consumer): The school is dependent on fresh access to new and highly qualified students as already mentioned several places in this thesis to generate income. Relation to students have been discussed also in human relations part.
Relation to staff and teachers (suppliers): Depends on these to be able to offer the administrative and knowledge intensive services. Relation to employees have been discussed also in human relations part.
Relation to ME: Dependent of funding from the Ministry as mentioned earlier in this thesis 80% of their income come from ME. Ensure good framework conditions and that land use is cost-effective. Ensure that political guidelines are followed. The government expects universities to have campus development plans. Supports strategic and professional priorities.
Relation to Statsbygg: They are responsible for construction and outdoor areas in such way that they are easily manageable and operational. They have to offer attractive premises for UiS in their quest to reach their goals. UiS is dependent on cooperation from landlord whenever they

want to conduct significant changes to the buildings. Through interviews with both parts simultaneously it is perceived that they have a good relationship.

UiS depends on the following stakeholders regarding regional development:

Rogaland County Council: In cooperation with UiS Rogaland County prepares new business plan that identifies regional competitive advantages and which industries have the greatest growth potential in the coming time (stavangerregion.no, 2020).

Relation to nearby municipalities:

Stavanger municipality has taken great interest in development of the university.

Stavanger municipality wants to establish as the country's best host municipality for students and have for over a decade worked purposefully to strengthen the offer in HE (Stavanger Kommune, 2019). Competition between regions is growing stronger, nationally and internationally. Stavanger is a young university town and has not built up a national reputation in the same way as the older university towns with long traditions. The city and the region do not reflect that Stavanger is a university city. It takes time and resources to build a reputation as an attractive university and student city (Stavanger Kommune, 2014). The vision for Stavanger municipality is to create the conditions for Stavanger to become an attractive city for education, development, research and innovation (Stavanger formannskap, 2020).

Back in 2011, Stavanger municipal committee decided that a report with goals and vision should be prepared regarding the university city of Stavanger (Stavanger Kommune, 2014), followed by special challenges that Stavanger has as a host city. Some of the challenges mention in the report is lack of student community and transport network. Work related to build a student city has been an ongoing process, where discussion of priority areas including measures for increased student well-being and profiling of the student city of Stavanger took place in 2019. In the report, they also inform that they strategically work to take into account the SDG´s, in particularly 9,11 and goal 17 (Stavanger formannskap, 2020). As the situation is today, the university is adapted to the political situation, following governments and municipalities for coming changes, we consider it likely that there will be close cooperation between UiS and Stavanger municipality in the foreseeable future that will have a great impact on the region.

Figure 11 SDG´s 9, 11 and 17

Relation to business community: The university today has a greater influence on what happens to the business community. In the past, it was the business community that largely controlled the university.

Relation to different networks:

There is no information to be traced from interviews or the internet as to whether UiS is involved in networks that deal with sustainability directly. However, they are engaged in networks that deal with innovation. Among other things, one group is led by UiS. The National Network for Innovation in the Public Sector (INNOFF) has been established to connect researchers and others who are interested in innovation in the public sector (Reilstad, 2019). The network already has more than 100 researchers, as well as key contacts from the administration. The University of Stavanger is also the only Norwegian member of the European consortium of Innovative Universities (ECIU) (uis.no, 2020).

According to several of the interviewees there is no point in joining a network without actively participating. It is necessary to engage in such networks to be able to reap the benefits. It could be beneficial for UiS to become member of the network: «Nordic Sustainable Campus Network». This network aims to share best practices in environmental and climate work at Nordic universities, strengthen the focus on sustainability in research and education, and integrate sustainability in the operation of buildings and campuses. Several of the schools that were presented in the comparative analysis are members of the network.

5.1.2 Value creation analysis

In this analysis one will map which activities do and do not create value as well as how they depend and influence each other, and most importantly strong and weak sides of the chain. A resource alone does usually not generate value but put together in order they generate a desirable service.

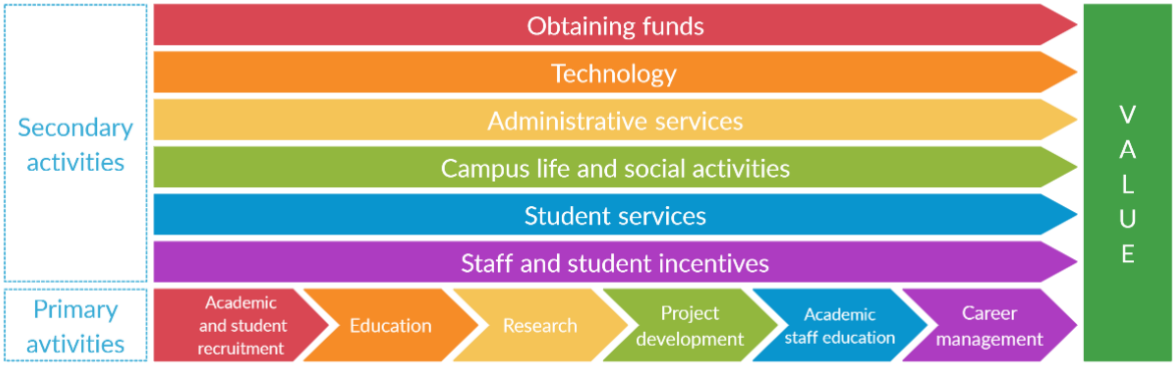


Figure 12 Primary and secondary activities. Inspired from Onzer

Secondary activities

The secondary categories must be in place for the primary categories to work better.

Creating funds:

There is first and foremost need of funding's to implement measures which can contribute to all research and academic activities. Thereafter loans are a necessary investment through Statsbygg for instance. This is the most vulnerable part that can quickly make up the weak joint of the value chain. When present it is a driving force for change. Without financial resources the sustainability journey won't go far, since all significantly big measures require substantial investment.

Technology:

Technology can lead to financial savings and is closely linked to the modernization of administrative systems. Adding new technology depends on availability of funds. There are possibilities to save expenses by spending less on job related travel by adapting online meetings. Corona epidemic might force the university to digitalize all lectures, this again requires adapting proper systems that can be expensive. In addition, UiS should take opportunity to exploit social channels and platforms to promote sustainable activity. Sustainability blogs, Facebook pages, Instagram, Twitter, sustainability dedicated web pages. These are great ways of marketing that can include both academic staff, administrative staff and students as intellectual resources. This will help to promote and create knowledge about the sustainability culture at the university without big investments for marketing.

Administrative services:

Digitization of administrative processes is in the long run timesaving for both students and employees. For instance, if you are lucky enough to get office on campus to write master thesis, there are several rounds of paperwork and stamps involves in addition to strict office hours to get a key to your office. The process adds no value and is inefficient.

Campus life and social activities:

With investments from funding's and for instance loans through Statsbygg it will be possible to modernize campus and area surrounding to become more sustainable. Centralizing more of student life and activities in new buildings on campus, at the expense of parking spaces is also a measure that should be considered in the quest to become greener. Sustainability is becoming a virtue which more people value higher. Primary and secondary data suggests strongly that adapting sustainable measures will help rebrand and change the reputation of the school. Eventually this will attract higher quality of students, and more funding.

Student services:

Such as SiS does not create much value regarding sustainability issues that are relevant for this thesis but are again very useful and can contribute to increase the student wellbeing. Student services through student organizations are of great importance but are beyond the scope of this thesis to elaborate about, due to our mission to focus on sustainability. Student organizations don’t influence and add a lot of value directly regarding sustainability.

Staff and student incentives:

Offer free public transport to and from campus as an incentive for sustainable transport. Incentives can be important for job satisfaction. But they can also come from a psychological perspective where the employee feels satisfied through the work that is done, conditions for this have to be facilitated by the management. Free public transport depends on financial resources and it also depends on willingness to cooperate and implement by Stavanger municipality and Kolumbus which is the regional bus company.

Primary activities

Academic and student recruitment:
Recruitment is directly related to secondary category “campus life and social activities”. Sustainable culture and reputation will be a magnet in relation to the recruitment of employees and students. Student well-being correlates directly with better student life. Green marketing will be important here, but also word of mouth.

Education:
As discussed earlier in the human resources/organizational resources part, merging sustainability into the education, but also improve study programs through internships, research possibilities etc in order to increase student satisfaction. Digitalization can help increase the quality and the all over experience of education and administrative processes that might occur.

Research:
With a better reputation, the university may have more exciting projects to work on, in a longer run this can contribute to attract high quality academic staff. Preferably more in the field of sustainability.

Project development:
Project development in form of project like for example Campus development and development of new strategies are crucial to keep up with the society and adjust operations at least according to norms and standards that are emerging. Not to mention keep track with CSR and government regulations. This has high value and, in this case, largely driven by need of funding's.

Academic Staff education:
Digitalization demands adaptability and off course to refresh knowledge. But this is not considered as a highly value creating activity regarding to sustainability. It can crossroad with building a greener culture, but this is addressed several other places in this thesis.

Career management:
Not a highly valuable activity in the context of sustainability.

5.1.3 Comparative analysis

UiO, UiB, UIT and NTNU are the most traditional universities and have several similarities to UiS. In terms of measures and contribution, to compare what universities have done in the aspect of climate- and environmental work. NMBU have also been included due to their profile in being the leading environmental university in Norway (NMBU).

Table 7 Comparative analysis

	UiB	**UiO**	**UiT**	**NMBU**	**NTNU**	**UiS**
Eco-lighthouse certificate	v	In prosess	In prosess	v	In prosess	v
Climate accounting	v	v	In prosess	v	v	-
Climate & environmental communication	v	v	-	v	v	-
Weekly study hours:						
2018	34	34,96	35,98	36,5	36,55	34,21
2019	34,91	33,61	35,76	37,91	35,95	34,09
Students satisfaction:						
2016	4,08	4,05	3,98	4,2	4,07	3,87
2017	3,98	4,06	4,01	4,24	4,05	3,88
2018	4,08	4,05	4	4,17	4,07	3,89
2019	4,12	4,1	4,05	4,3	4,13	3,81
Completed in time: (BSc)						
2016	34,81%	30,18%	42,32%	40,0%	46,8%	45,07%
2017	37,3%	30,18%	43,23%	44,04%	49,3%	43,5%
2018	35,32%	31,96%	44,4%	36,07%	48,9%	41,49%
2019	37,71%	34,61%	46,68%	36,6%	49,94%	48,14%
Completed in time: (MSc)						
2016	54,46%	43,55%	50,57%	56,97%	52,4%	48,88%
2017	54,02%	43,71%	54,9%	60,1%	53,2%	50,79%
2018	55, 65%	46,66%	50,78%	59,07%	53,6%	53,98%
2019	60,23%	47,86%	49,78%	61,28%	56,29%	52,63%
Application score						
2016	43,91	44,21	39,86	43,17	42,31	39,09
2017	44,04	44,45	39,87	43,97	42,84	38,7
2018	44,44	44,84	40,04	44,4	42,6	39,03
2019	44,65	45,29	40,46	45,02	43,62	39,75

Eco-Lighthouse certificate and climate accounting:

In the area of environment and climate work, UiB, UiO, NMBU and NTNU have come the furthest when it comes to strategy, environmental reports and action plans. This applies work in climate accounting that entails measurement within construction, waste, purchasing, transport and energy. Each of the universities does also have an action plan and goals for how the factors in the climate accounts can be reduced. On the other hand, UiS does not deliver any results within Environmental report (except what is presented through the eco-Lighthouse), climate account and climate and environmental communication to the public about the ongoing work.

Students time use:

This measurement deals with the number of hours per student spends on academic work, per institution for the years 2018-2019. When comparing the other universities, UiS is below number of hours a week for academic use, with an average of 34,2 hours. There might be a correlation between student´s time use and space for studying. The students study efforts are a very important indicator for the learning outcome, which further leads to quality in the education. In our survey, 70,5% of bachelor students as well as 79% (83 students) of master students answered that they wish UiS had "*more space for studying or work*". High study effort is a prerequisite for students to be left with a good learning outcome.

Students satisfaction:

This indicator tells us how the students perceive the satisfaction in quality of the studies, given a scale between one and five, where five is "very satisfied". When comparing all universities together, the average satisfaction was 4,06 in 2018. The study quality for UiS was ranked lowest of all the universities in the table and below the average, with a stable score of 3,8 through all years between 2016-2019.

Completed in time:

Regarding the indicator of students who have completed their studies within bachelor and master program, without any gap year or breaks, the bachelor program at UiS has had an increase of 6,65% at the end of 2019, with 48,14% of the students completing their program on time. This tells us that there are more students that finish their bachelor program in time, compared to the other universities, UiS shows good results in bachelor students completing in time. Although UiS shows an increase in the master's program, this is also happening linear at

the other universities, with 54% completing by 2018. NMBU is the only university that has almost 60% of their students finishing in time.

Energy:

UiB has for a long time desired to use solar panels. In January 2020, 466 panels were turned on at one of the faculty buildings at UiB. The university itself informs that they are very satisfied with the investment so far, where pressure from the students themselves has led to the completion of the project with solar panels. The panels are set up so that all electricity production goes internally into the building, which results in 100,000 kilowatt hours (UiB, 2020).

Procurement:

NMBU made an agreement with furniture company Møbel Meglerne for purchase of nicely used furniture at 30-70% off the new prices. This means that NMBU can buy furniture that appears to be very good and with insignificant wear. In the company's warehouse and workshop, worn parts are replaced, chairs are cleaned or reupholstered and tabletops are replaced if necessary. All environmental requirements for new furniture are also set here where they profile themselves with a large degree of reuse while the environment is taken care of (Kjøbli, 2015). UiO have reused old shelving by rebuilding them into various furniture and bookshelves. Last year, in collaboration with UIT, UiB and NTNU, a competition was announced for the repurchase and phasing out of used IT equipment. The goal was to extend the life of the equipment and reuse equipment (circular economy). UiB buys products that are eco- labeled (2019), where calculations of the climate footprint showed that this procurement reduced footprint by 9 tonnes of CO2 each year, by making this move. (In comparison, you use 1.4 tonnes of CO2 for a return trip Oslo - New York) (UiO, n.d.).

Travel/transport:

NMBU and UiO have started conducting online meeting, Skype for business, instead of physical meeting. Increased use of video conferencing has led to a reduction in the number of physical meetings for employees in the administration - and thus also a reduction in the number of trips (UiO, 2020). In addition, UiT, UiB, NTNU and UiO are also planning a new procurement of travel agency services, where environmental management at the supplier is emphasized. Among other things, this will increase attention to more frequent use of trains (Kjøbli, Miljøtiltak, 2015).

Knowledge and communication:

To make society understand and change unsustainable patterns of behavior and development, investing in knowledge is therefore highly important. NMBU, UiO and NTNU have created either dedicated webpages, Twitter account or dedicated space on the universities homepage to inform students and other stakeholders about their contribution to sustainability (UiO, 2020). UiB also have their own Twitter account called UiBGreen that contains almost 2000 followers, followed by a program "Day Zero" at the 2020 SDG Conference Bergen. 460 people participated divided on almost 30 workshops. UiB is the only university in Norway that has been ranged at the global "University Impact Rankings", which is based on the SDG´s. The ranking shows the strategic work UiB has done over several years that is connected to the sustainability area. This have also given the school even higher impact and motivation to reach the goal for 2030 in being climate neutral.

<u>What can UiS learn from the other universities</u>

UiS does not deliver any results within environmental report, environmental strategy, environmental communication, action plan and climate account. When comparing the various universities, several of the other schools have come further than UiS in the environment and climate area. UiS has potential for improvement where specific measures are needed.

Think long-term investment and consider solar panels:

Within the energy area, solar panels have long been in vogue, some of which should also be considered for UiS. This saves emissions to the environment and money when thinking long-term, which is very important when it comes to sustainability. UiB also informs with good feedback when it comes to investing in the solar panel.

Renew furniture through collaboration:

In the area of procurement, UiO, UIT, UiB, NTNU and NMBU show good initiatives that applies to the principle of CE. When making new action plan, it is a good idea to focus on the entire life cycle of a product (mention in CE). Cooperation between business and the public sector must be improved in relation to procurement enhancement. Also, by engaging the entire value chain, through B2B and B2C. Take NMBU for instance, in collaboration with another furniture company, the university gets almost 70% off new price of nicely used furniture. This does not need to be limited to only furniture, but also computers/IT and other equipment that

can be used even more to extend the lifetime of the product. In the sustainability survey for this thesis this was also commented when asking; What do you wish UiS had more of, "*Office furniture restoration and upcycling shop where you could fix and exchange furniture*" and "*give work opportunity for students and save the university costs of buying new furniture*". UiS currently has its own Byttebu/switching-booth, where students and staff can pick up and deliver used items, however, looking at the bigger picture, a collaboration could be highly useful for several parts.

Create a better communication platform, containing themes within sustainability:
When investigating the other universities and "sustainability", the results are tremendous, compared to UiS. Therefore, UiS should consider having their own homepage with information containing what individuals can contribute with, information of what UiS is working on toward the SDG´s, research within sustainability and what study programs that UiS offers that contains sustainability. This entails a better platform for environment and climate communication. Spread knowledge about sustainability on UiS´s contribution and everyone can keep track. The main importance is to spread knowledge of the importance within sustainability, and there are many ways that individuals and universities can contribute.

Make more use of online meetings/public transport for staff and students:
Travel/transport have for all universities been an ongoing issue, releasing a lot of emission and therefor action is needed. Something we can take with us further in terms of the virus pandemic is how feasible it is to reduce emission by using meetings/interviews online, instead of flights and fossil vehicles. This is also something NMBU and UiO in particular started with before the pandemic to reduce travel costs and unnecessary emissions, because digital meetings are possible. In our survey, several students and staff comment they wish UiS had "*good collective transport possibilities to and from UiS/bicycle lift up Ullandhaug hill like in Trondheim*. *Also electric car sharing for employees".*

5.2 External Analysis

5.2.1 PESTEL analysis

This analysis will shed light on the points we include in the SWOT analysis, as it highlights what factors that can be categorized as strengths, weaknesses and opportunities for the business in the given environment. We will address points within the various categories and assess whether changes are likely and to what extent they may have consequences for the University of Stavanger.

(P) Political factors

There are many political frameworks and conditions that must be followed. Political and strategic decisions at the institution itself or at the national level, will have an influence on direction the university takes.

EU and EEA-agreement:
Even though Norway is not a member of the EU, the country is largely influenced by EU policy, especially as a result of the EEA Agreement. EU is not a participant of Agenda 2030 and commits its member states only to policy areas common to the Union (KS, 2019). EU has for a long time had CE as a high priority within green strategy, called The European Green Deal and in March 2020 EU's action plan was presented (Stortinget, 2019). In Norway, the government is working on several processes that stem from EU's work on CE in general. Proposals for regulations and new policies must first be negotiated and investigated where Norway will determine the content of the policy needed to meet its objectives (EØS, 2020). It is therefore difficult to determine the significance for Norway and universities at this time, but it is likely that the work will require changes in Norwegian regulations. Norway´s own strategy toward CE, as mentioned earlier, will be launched at the end of 2020.

In the government´s long-term plan 2019-2028 (Meld. St.4) they express from a national perspective within research and higher education, what is important to prioritize within the sector the coming 10 years. With the following three overall goals; 1) Strengthened competitiveness and innovation capacity, 2) Meeting major societal challenges, and 3) Developing professional environments of outstanding quality (Kunnskapsdepartementet,

2020). Fundamental input factors here are also infrastructure and buildings. The pursuit of these goals will require joint efforts at all levels of government in the private sector, public sector and involvement of citizens (Utenriksdepartementet, 2020), thus, including University of Stavanger (KS, 2019). The fact that changes will apply, and the reality will look significantly different within the coming decades will greatly affect UiS on and off campus.

In Stavanger municipality's Climate and environmental plan 2018-2030 it is described challenges within climate and environment that must be solved in the time ahead. The plan for 2030 addresses various issues that are important for Stavanger to reduce in order to become a more sustainable society, and at the same time contribute to good management of raw materials, energy and materials in line with the principle of «circular economy» (Stavanger bystyre, 2018). One of the most important goals in the Climate and Environmental Plan is that climate emissions by 2030 will be reduced with 80%, compared to 2015. To realize the necessary goals, Stavanger will face a challenging period ahead to fulfill this ambition. In their "action plan 2018-2022" it is set 13 different categories with goals and measure parameters to measure how far they have come (Stavanger bystyre, 2018). Some of the priority is transport, energy and material use in buildings, consumption and recycling.

(E) Economic factors

The university is generally not a very sensitive industry toward economic changes as there will always be demand for higher education.

Cyclical fluctuation:
Due to the Covid-19 pandemic, change in the economic growth have rapidly changed. With strong influence of international economic developments and outbreak of the virus, the Norwegian economy is considerably weakened. Looking back, in 2019 Norway´s GDP was NOK 663 693per capita (SSB, 2020). Same year, Statistics Norway published a report and suggested that the Norwegian economy would be in a near cyclically neutral situation in the years to come. Calculations of the current situation in the Norwegian economy showed that level of activity in mainland GDP has reduced by 15% in April compared to February (SSB, 2020). Norway has now the highest registered unemployment rate in 75 years, where unemployment is projected to increase from 2.2% to 5.9% this year (Regjeringen, 2020). There has been a radical increase in unemployment due to the decline in the market, thus, more people

would want an education (Larsen, 2020). The labor market is perceived as uncertain for many, where application numbers for the university have had a positive impact. Experiences from previous crisis, such as the financial crisis in 2008 show that more people want to get an education when times are bad. The corona crisis is no exception. These are good opportunities for universities, because Norway needs well-educated people in all sectors in the years to come (Zondag, Hussain, & Skram, 2020). The Ministry of Education and Research (ME) has for 2020 has distributed funds to 70 new study places. Here, UiS has the flexibility to offer education within the mentioned subject areas in line with its own strategy.

Research:
Many countries are now seeing changes in the way they approach education and research. Due to the Covid-19 pandemic, research may be suffering to some extent, there is however still no reason to expect lasting negative effects in this sector (Regjeringen, 2020). The big challenge for the universities is to appear attractive in a research and educational environment where the rules of the industry continuously change. Universities must more than ever compete for students, for employees and for public funds.

For the University of Stavanger, research activity and new initiatives takes place in connection with program areas for research. Financial support is received through individual projects, research centers and doctoral degree programs that UiS offers. To attract the most ambitious students, employees, UiS should therefore seize the opportunity to exploit and develop strong links between education and research that involve as earlier mentioned students in the research activities. This can be seen in the context of a growing interest in national and international innovation strategies as a tool to meet current global, financial and political demands and changes.

(S) Social factors

Norms and society are changing:
The population in Norway continues to increase, counting 5.3 million people at the beginning of 2020 (SSB, 2020). Based on changes in society over the last 20 years, such as norms and trends, it is realistic to believe that these changes have affected new generations to a greater extent now than before. Generation Z is perceived as socially tolerant, globally connected and environmentally conscious. They are more concerned with values and social responsibility.

Society and people are becoming more aware of a change in the younger generation and the social norms are changing. A survey conducted by Norad shows that one in three young people between the age of 18 and 29 has changed their eating habits in the past year to contribute to a more sustainable city and local community. One in two young people has also changed their habits related to waste management (Norad, 2018). This is due to the increased knowledge and commitment from young people towards the environment (NHO, 2019). Such signals from the population give reason to expect that universities will meet increased demands on the environment in the future. For this particular reason, it is important that the university is sending out signals that sustainability is valued and desired. University has great potential to influence behavior even further, reach out with more information and knowledge toward desired and right direction.

Educational consciousness:

Increased awareness of having an education, do also have an influencing factor for the university. Throughout the last decade, there has been a strong increase in the proportion of young people taking higher education (FHI, 2018). Particularly this year, much can be explained due to the corona situation where people have seen the importance of having a good education when times at the job market is difficult. With a record number of applicants to universities with an 8.7% increase than the year before gives universities more competitiveness and a fight for the best students. Toward sustainability, subjects such as renewable energy are in vogue, where many young people today are concerned about the environment and see that renewable energy can have a competitive advantage up against oil and gas. People are constantly educating themselves, because they want to be relevant and up to date with new information in society. For UiS, increase in applications has been significant, which indicates that the university is consolidating its position as an attractive study place for both international, national and local admissions. Never before has UiS had so many applicants as this year. Within the renewable and environmental studies offered by UiS, good numbers are shown. In the future, students in these educations can contribute with concrete solutions regardless of energy source.

(T) Technological factors

Digitalization:

Digitalization is using technology to simplify, innovate and improve processes and services (2018-2019). In today's society new, better and more advanced technology is being developed at a rapid pace, and the requirements toward organizations are becoming even higher. Norway is at the forefront in the adaptability of technology, nevertheless, there remains some major challenges that involves ethical, legal and safety areas based on the main overall goals in long-term plan for research and higher education 2019-2028. It is informed that digitalization shall support the overall goals in the UH-sector. Further, ME informs, in order for universities to utilize the potential that lies in technology, it is prerequisite that the sector is equipped to meet digital challenges that will occur in the future, the use of technology is included into all administrative and professional activities, and that raise in focus on digitalization will contribute to more interaction and knowledge. Digitalization as an input factor for the overall goals would entail universities to collaborate in different sectors in finding new and creative ideas for better solutions.

In order for UiS to achieve its goals and become a more attractive and sustainable university, it is important for the university to focus on digitalization. With technological development, the opportunity is there to do tasks more efficiently, cost-effective and eco-efficient, such as making better organizational measures, alternative online classes or MOOC (Massive Open Online Courses). Offering lectures online will make it eco-friendlier and reduce traveling for the student and employees. It may as well attract strong candidates that would not consider moving to Stavanger. It is thus important for the university to keep up with the digital changes. Seize the opportunities and take advantage of the benefits of technology to ensure good solutions with benefit for students, work, buildings, society and environment.

(E) Environmental factors

Factors within the environment that have influence on the surroundings of the university are becoming more important. This includes recycling procedures, carbon footprint, climate, sustainability and waste disposal. These are climate factors that are highly important due to the consequences that changes trends, habits and choices, regulations and policies. For instance, renewable energy and digitalization would not be as important if it weren't for the consequence of the environment as well as for the people growing up in the future. The importance for good procedures, recycling, waste disposal and measurements of carbon footprint are therefore important for everyone and affects everyone. Pressure to make environmentally conscious choices, due to the major consequences we face, is therefore greater than they were before. For universities, this is one of the most important factors to include in new strategies. Measure carbon footprint and waste, in addition to find solutions and action plans to decrease in these areas. Environmental factors effect and overlap all the other factors in PESTEL, in one way or another, due to the consequence of climate, climate change and pollution.

(L) Legal factors

Paris agreement:
In 2015, the first international law binding agreement that obliges all countries that join the agreement to implement climate measures was adopted through the Paris Agreement (MET, 2020). The key instruments for achieving these goals are innovation, research and education. Universities therefore have a key role to play in the follow-up of the joint global promises for a better future (Kunnskapsdepartementet, 2020). UiS contributes majorly when it comes to research and innovation in the areas of offshore technology, energy efficiency and smart cities. However, UiS must balance between keeping up the pressure in its oil and gas investment because the leading politicians set the guidelines this way.

UH-law:
The quality reform for higher education was implemented in 2003 and NOKUT was established. NOKUT is the governments national body and administers regulations within accreditation, guidance and external quality toward the universities within given regulatory requirements. Such as open research, dissemination responsibility, teaching, exams and

groundbreaking work in the field of innovation. The UH-law that was adopted in 2005 has been criticized for being too complicated and should be simplified (Mørland, 2019). Even if the UH-law have been revised several times, many of the regulations within the law have been outdated and are not fully equipped for the societal changes. The committee consisting of ME and NOKUT will therefore propose new regulations in 2020. The Ministry of Education will further evaluate the committee´s consultation statements and proposals for new changes in UH-law (Kunnskapsdepartementet, 2020). One of the main purposes for the change in regulations within research and higher education is to "*contribute to an environmentally, socially, economically sustainable development*" (Kunnskapsdepartementet, 2020). Toward universities, this may have a greater impact to the extent that it is easier to follow change in regulations, as well as keep up to date with new and fore coming regulations.

Climate change act:

Norway is among the countries in the world that release the most CO2 in relation to population. If all people on earth were to have the same consumption as the average inhabitant of Norway, we would need 3.6 planets equivalent to earth. Through a new climate change act in Norway, the targets for 2030 and 2050 have been legislated, which came into force in 2018. With this, Norway have committed itself to reduce national greenhouse gas emissions by at least 40% compared to 1990 levels, and 80-90% compared to 2050. In order to get an overview of what the emissions go to, and thus facilitate reduction of emissions, several organizations get Eco-Lighthouse certificate. This is Norway´s most used certificate for businesses and industries that would like to document its environmental and social responsibility, UiS got their certificate accepted in 2019. However, UiS must to an even greater extent take responsibility concerning reducing CO2 emission. The University of Stavanger therefore need to consider their overall goals in their new strategy plan and be prepared for environmental impacts in form of change in laws, regulation and demand for reduction of indirect and direct CO2 emissions

Summary PESTEL

Table 8 Summary PESTEL analysis

Factor	*Categories/Critical area*	*Opportunity*	*Threat*
(P)	Governments priority in innovation, research & education	X	
	New policies will be negotiated through EEA-agreement	X	
	Coming strategy in CE, launching end of 2020	X	
(E)	Norwegian economy weakened	X	X
	Labor market perceived as uncertain	X	
	Changing rules for research		X
(S)	Change in habits related to food and waste		X
	Increased knowledge and commitment		X
	Renewable energy are in vogue	X	
(T)	More advanced technology in rapid pace		X
	Focus on digitalization	X	
	Collaboration over different sectors	X	
(E)	Source and action plan to reduce emission	X	
	Climate account/Eco-lighthouse certificate	X	
	Reduce of critical environment factor	X	
(L)	Pressure in oil and gas investment		X
	New regulation equipped for societal changes	X	
	Environmental impacts in form of change in laws	X	

By looking at the different macro factors, we see that there are several factors that affect UiS, both indirect and direct. All the factors within PESTEL also have several categories in common which overlap each other. Currently, all universities are affected by Covid-19 in general and alongside Norway and the rest of the world. The labor market is perceived as uncertain for many, therefore opens up for opportunities for universities, because people seek education when times are hard. Norway needs well-educated people in all sectors in the years to come for future solution and challenges. The big challenge for the universities is to appear attractive in a research and educational environment where the rules of the game continuously change. In order to attract good teachers, researchers and students, the university must be competitive on quality in education, research, and innovation. Branding will become increasingly important as

the competition for the best resources intensifies. As UiS is state-owned, it is the Ministry of Education that sets the requirements for the school. On the other hand, UiS has the authority in several areas to decide for itself what to do. The policies are changing towards sustainability, with influence from the environment and the social factors, hence changing norms, knowledge and commitment of the younger generation. This also goes beyond research and development of the school, thereby affects how many projects are supported in the field of sustainable development resulting in more economic support. The main goal here is that sustainability is important for everyone and influence all part of the PESTEL factor.

5.3 S- SWOT analysis

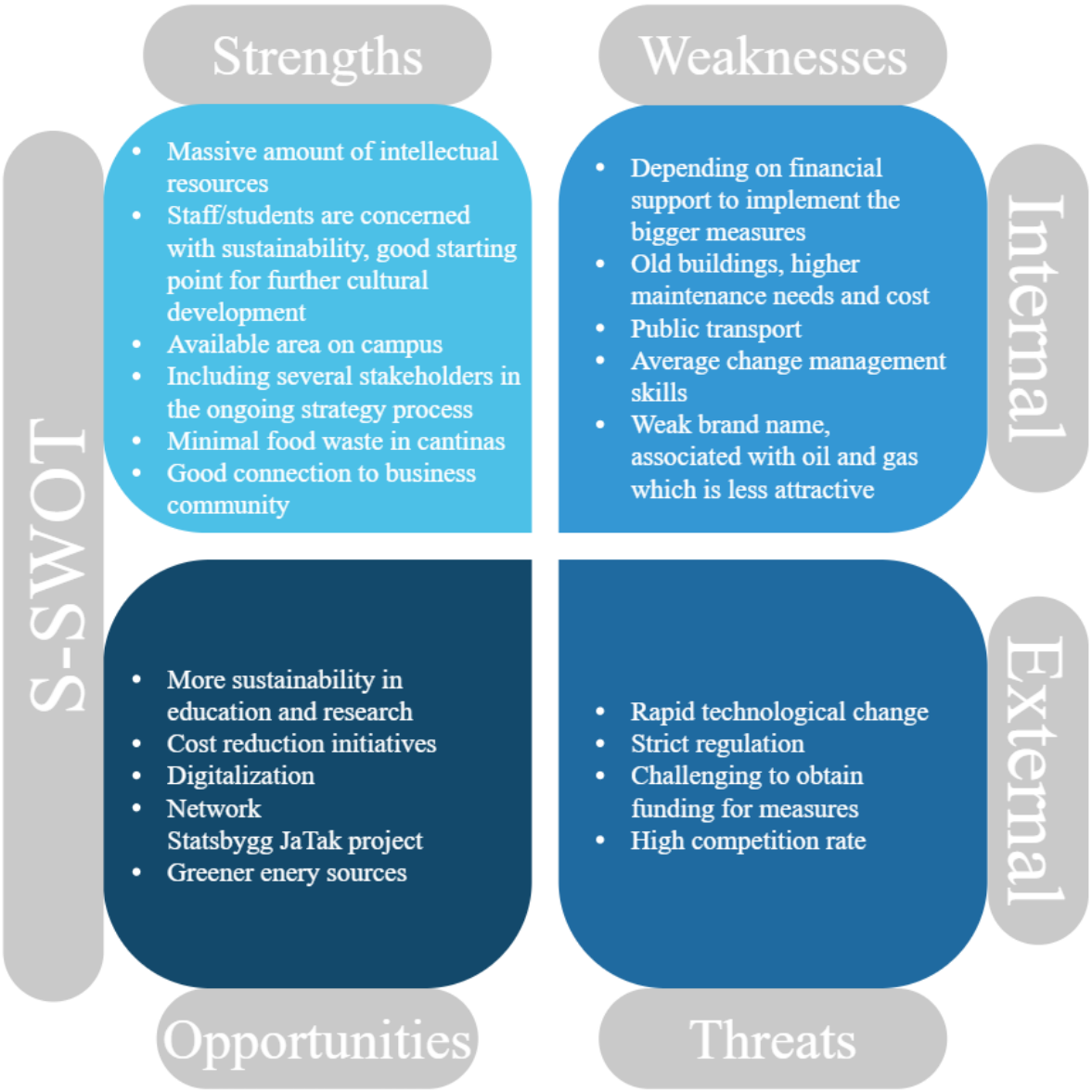


Figure 13 S-Swot analysis

Summary S-SWOT:

S-SWOT addresses both internal and external factors in a sustainable perspective toward UiS. The factors mentioned above are conditions that apply specifically to the University of Stavanger. We see that by taking advantage of its internal strength such as most staff and students are open for more cultural sustainability development, the opportunity for change in the educational environment and cost reduction (reduce travel) initiatives would therefore be favorable. The weaknesses, such as management skills would then be improved when the opportunities toward change are being addressed.

The S-SWOT also invites internal and external stakeholders to contribute to more collaboration. For instance, by collaborating and including more of its stakeholders (strength) to minimize the weakness of public transport, it would lead to a strong network (opportunity): county municipality, Stavanger municipality and Columbus. This would be encouraging for all stakeholders included. More precisely, each factor within the internal and external are in one way or another dependent on exploitation of UiS´s strength. Therefore, the internal strengths of UiS must be used in order to exploit the opportunities and eliminate its weaknesses, in order to avoid external threats.

6.0 Discussion and conclusions for research topics

In this section a further discussion is necessary to conduct, and a conclusion will be presented for research question 1 and 2. Both research questions have answers rooted in the analysis section where also a lot of discussion takes place due to the nature given the strategical internal and external analysis. Research question 3 is presented as a conclusion with a small discussion where the main discussion has taken place within the analysis section due to the convenience of having it assembled because to the size and nature of this thesis.

Research Question 1. What should sustainability mean for UiS?

What role should the University of Stavanger take in the years to come? What should be the most important ambitions? How shall the University meet the challenges in Norway and the world? This will be revealed through formulating what sustainability should mean for UiS. Through introductory conversations with John Viflot, strategic director at UiS, interesting challenges were revealed. Goals, value, vision and focus areas are presented beneath and main emphasis for what sustainability should mean for UiS is reflected in the four values.

Goals:

All Strategies need goals that describe why one should do something and how. Therefore, there have been formulated 3 strong strategic goals that suite UiS and their current challenges that threatens them as an organization.

1. The number of applicants at the university as well as the quality of the applicants has had a downward trend, this development is desired to be reversed by making the university more attractive. Research shows that especially newer generations who are going to study are more concerned with sustainability and the environment. For applicants with strong academic results who choose a school according to attributes, it will be crucial to be competitive with other universities and colleges that are concerned with implementing sustainable solutions. For this reason, one should reflect the values that future generations have. It is assumed that a shift where effort is being invested towards a sustainable university will increase the all over brand value.

2. The university has never previously had sustainability as part of its strategy, although this has now become a natural part of most organizations' CSR. This is probably due to the nature of public organizations. It is highly relevant that this is implemented for social and competitive reasons in the new comprehensive strategy for the university that is currently being compiled. As a public institution, the UN's sustainability goals should be implemented in line with what the Norwegian authorities have committed themselves to.

3. Long-term savings in energy consumption by switching to more renewable and clean energy sources.

Vision

In the years to come it is tremendously important that UiS has a clear pathway they want to walk, persistently. The vision that is proposed must therefore be focused, inspiring and give direction to the entire organization. It is hard to formulate a vision that gives a competitive advantage within the educational field, but it should clearly motivate for strategic action.

In this thesis we suggest the following formulation of vision:

"UiS shall be a future-oriented university that always adapts to the worldview in terms of the current educational needs, but also lead the way with a strong focus on sustainable environment and development throughout the university".

The vision is highly inspiring by promoting ambitious goals, as well as it gives clear direction. This vision is considered to have an appealing effect and motivate potential new students to apply. For existing students and employees, it can bring pride and stimulate effort.

Values

From the theory chapter we know that values, whether we already possess them or if they are goals that we work towards, are what gives us moral direction in our decision making and lay foundation on how we should behave. It is therefore extremely important that this take place in the organization as well as it is possible for employees to identify with the values that have been chosen for the company. It is crucial in the task of building a sustainable culture, that the values reflect what the organization is working towards.

According to the survey respondents that are staff and student at UiS, sustainable work environment, green energy, circular economy and digitalization are the 4 main pillars that should define the most what sustainability should mean for UiS. These are here chosen and adapted as values:

- **Sustainable culture**: In order to be able to adapt in pace with new trends and technology, it is necessary to involve knowledge from both staff and students. If UiS want a university for the future, they must know what the students and staff want.

Management must facilitate building of a sustainable culture across departments and faculties where many stakeholders are involved.

- **Green energy**: Shifting the energy source from today's source to more sustainable possibilities is crucial and outmost necessary to follow the vision.
- **Circular Economy**: In order to become green UiS will work towards becoming circular. This is a long journey, but the most important thing is to simply start reducing and reusing waste, energy, emissions, and raw materials.
- **Digitalization:** Utilize technology in such ways that will benefit the organization. Strive to digitize a big portion of present meeting activities, streamline administrative processes as well as exams and most education material.

Given the described goal, vision and values it is advisable for UiS to have following focus-areas:

Innovation in infrastructure and culture:
How to organize things at the university, we can become more environmentally friendly to help stop climate change (sustainability goals 9 and 13). Sustainability should also be adapted further as a part of the education and utilized in a way that enhances the quality of the all over education (sustainability goal 4). This is directly connected with establishing and building a culture of green sustainability, as one e must manage the change process in attitudes positively among the individuals and in groups.

Sustainable buildings:
Many of the buildings are old, demolishing the entire campus and building new ones is neither sustainable nor financially possible. However, is it possible to make existing buildings more climate-friendly by introducing various measures, including conversion to cleaner and more renewable energy, as well as better space utilization (Sustainability goals 7 and 11).

Circular economy:
How can we maximize the value of our resources by thinking of responsible consumption at all levels? In this process, all students, teachers and other stakeholders should be included (sustainability goals 12 and 17).

Research question 2. Can circular economy be integrated into UiS´s new sustainability strategy?

Given today's linear economy, a purely circular economy market it is not possible to establish right away. The government will however come up with a new strategy at the end of the year concerning circular economy. As there are no specific requirements for a circular society for today, it is however, important that changes conducted today must have well thought out plans for the years to come. The population is growing, and the university is being expanded and enlarged. As mentioned earlier, as consumption and population keeps growing, we would need two planets to sustain the lifestyle we have today by 2030, if nothing changes. In the future we will experience a shortage of resources in several areas. It is therefore tremendously important to use the resources one already possesses to ensure value creation and sustainability in the long run.

Following the seven principles (categories) that involve in circular economy, there are measures that can be improved and adapted today, to be ready for changes in the coming decade. Question 13 from the survey was inspired by the seven principles. The average answer was indifferent/medium in most of the categories, which is not satisfactory. If the university wants to build up its reputation, they should not settle for medium and must excel at this.

Although a full transition to a circular market will not take place as of today, there are still important steps that can be taken for the university of the future, to perform better and be more circular. For UiS, it will be important to place special emphasis on the aforementioned 5 P´s in their decision-making processes, by being future-oriented and think long-term when making plans. If, for example, new products are to be purchased in the field of computers or furniture, it should be thought through whether these are products that can be recycled, melted down, used again, etc, so that the lifetime of the product is extended further. UiS needs to set its own requirements based on being circular, everything that comes in and is used at the university, must have a well-thought-out plan for how it will be used at a later date. This applies to building materials, wood, and various furniture.

Research Question 3. What measures should UiS implement?

In this section specific measures that have been suggested throughout internal and external analysis are assembled for the readers convenience. They are based on the goals, values, and resources that the school has or must obtain. Sustainability depends on the total picture of both big and small measures that can be implemented in the quest to become sustainable. The measures suggested range all from massive long-time investments that are dependent on cooperation of partners, to simple attitude-dependent measures that are a part of a cultural shift. Clear goals for a sustainable cultural change could contribute to a higher rate of people that would consider their future prospects at UiS as high. According to primary and secondary data both university students and staff take great interest in sustainability topics and look at them as an integrated part of their life and their values. Therefore, the university would benefit from adapting same set of values. As Sun Tzu stressed, having full knowledge of internal resources, strengths and weaknesses as the foremost important pillars to winning the war. There has been conducted a thorough S-SWOT analysis that enlightens strengths, weaknesses, opportunities and threats. The measures suggested below are also based on the mapped elements of the S-SWOT.

1.Sustainability through education and research

- 40% of the employees see themselves as resources that are not utilized sufficiently enough. It is therefore advisable to integrate sustainability in the operation in research and education, employees can work more with sustainability related topics/research.
- Employees should emerge as role models for student both through integrating and promoting knowledge and norms through education.
- Students can also be valuable resource and should be engaged in activities that are beneficial for the university as well as them. Engaging students more by offering internships, writing thesis on subjects that UiS needs to increase their knowledge about, or possibilities for students to contribute on research projects and get credit for it as a part of their education. To attract the most ambitious students and employees, UIS should emphasize the opportunity to exploit and develop strong links between education and research that involve students in the research.
- According to employees the management needs more management training to carry out the shift towards sustainability in a proper matter, with high quality information flow and with

as little obstacles as possible using the right tools. There is a great opportunity here to utilize in house intellectual resources within the organization without external consultants.

- Get hold of good projects internationally and nationally. This will contribute positively to the reputation of the school. Take advantage of innovation opportunities through R&D funding's or innovative solutions.
- Strengthen the focus and knowledge on sustainability by actively participating in the network "Nordic Sustainable Campus Network".

2.Buildings and Energy

In this section, proposals are mainly regarding utilizing existing space better as well as energy efficiency.

- New energy central that is already discussed by UiS and Statsbygg is highly relevant, and according to existing documents a very good way to efficiently transport heat, cold and different energy.
- Solar panels have received positive feedback at UiB as well as globally and should be investigated if it is a good option for UiS. Participating in Statsbyggs project JaTak should therefore be initiated.
- Utilize outdoor space by putting out benches and tables preferably with a roof over, refers here to the relevant section (Functionality-buildings) earlier in the thesis for further information. As well as greenhouse or conservatory gardens in the outside areas in Kjølv Egelands Hus that has separate areas for teachers and students. And encourage outdoor activities by setting up, for example, volleyball nets in green areas that are not utilized today.
- Upgrade older buildings where you experience thermal leakage through old isolation, windows, etc.
- Reduce amount of parking spots between SiS Sportssenter and existing student buildings to build more student dorms and gathering spot for students and student associations, it will help form a vibrant campus.
- Turn off lights in rooms when not in use, or switch to sensor-powered lighting. Graded lighting in areas that are not actively used to maximum capacity around the clock, such as the library.

3.Building a sustainable culture

- Every second month conduct “sustainability night” with different themes. It would be a great opportunity to create an arena to bring awareness to general knowledge about sustainability, as well as presenting measures at campus, campaigns etc which all will contribute to build a shared sustainability value-base.
- Sustainability themed Campaigns to increase environmental awareness among staff and students by for instance competitions where one must track the largest amount of bicycled km´s.
- Rental of city bikes, and scooters that have the right range. Also, more parking for this kind of transport.
- Reduce business related travel to a minimum, conduct digital meetings when possible. This will save a lot of funding's that have been dedicated to travel but can be allocated to for instance adapting sustainable measures. also promote such an attitude externally.
- Bike parking opportunities to make up for lost parking space, enable secure bicycle storage.
- In office and student areas that have a dishwasher, it can be a solution to have two laminated paper cards attached with a magnet that can be hung on the machine to indicate whether the content is clean or dirty in the machine so that you do not have to start a clean machine several times. Anyone who chooses to turn on the machine can put on the "clean" sign. The one that starts putting in dirty kitchen utensils can put on the “dirty” sign. This will in small steps contribute to water and energy efficiency.

4.Communication of sustainability

- Rebrand UiS as a sustainable agent in social media and dedicated website. Here the school can post everything relevant that happens in relation to sustainability at UiS. This measure is one of the less costly and can engage both academic staff, students and other employees, one could look towards the UiT webpage for sustainability as a reference. It will contribute greatly to awareness if the school's agenda become more sustainable by actively showing commitment, courage and dedication. This will also be a great way to market UiS to new generations of students.
- The marketing of events needs to be more dedicated by using the right channels by knowing the recipient. Word of mouth. Initiate contests to create awareness.
- Information availability about the situation regarding sustainability should be transparent for both students and employees online, for instance environmental accounting that is

created in conjunction with Eco-Lighthouse certification. This would be a good tool to raise awareness around the situation and possibly boost for action.

5.Waste and re-use

- Waste disposal needs to be more visible. Students and staff must be informed where bins for disposal of residual waste, paper, food and bottles are placed.
- It could be considered to add food waste disposal with a lid to prevent odor spread also in library due to a lot of students spending majority of their day here, and it is not sufficient for them to walk all the way to the main cantina to recycle.
- Employees and students can bring a food container from home that can be reused instead of being offered a disposable container in canteens where food is sold per hectogram.
- Reuse and renew furniture and digital equipment.

6.Incentives for both students and staff

- Free public transport.
- Discounted prices on bicycles.

7.0 Conclusion for the main research objective:

The main research objective of this thesis was to develop preparatory work needed to assemble a sustainability strategy for UiS. For the inpatient reader we will serve the answer right away. We were able to develop what we would consider a solid foundation for what sustainability should mean for UiS emphasizing values as green energy, sustainability-oriented culture, digitalization and circular economy. Further, yes, circular economy is possible to start working towards integrating right away in the new sustainability strategy, it is not possible to achieve sustainability right away. Becoming sustainable is a process that will take years of data collection and yearly assessments and must in case be central in all decision-making taking place on campus. At last, we formulated measures that are fair and possible to integrate concerning following areas: sustainability through education and research, buildings and energy, building a sustainable culture, communication of sustainability, waste and re-use, and incentives for both students and staff. The biggest investments are potentially those related to adapting new energy solution in the buildings and free public transport. We also believe that

there is a clear correlation between vision and values for UiS and the measures suggested. The analysis in this thesis and the answers for the three research questions lay a solid foundation as preparatory work needed to assemble a sustainable strategy.

Sustainability has had a long journey from promoting the highest sustainable economic growth, employment and a rising standard of living in member countries in the 60´s and has evolved into today's concept which is aimed to encourage saving our planet. This shift is also reflected by the change from profit in the original 3P´s model to prosperity in the newer 5P´s model. For decades the importance of sustainable development has been stressed, all the way from the Brundtland rapport, through several Rio Earth Summits, and now in the 2030 agenda. For the future UiS must focus on implementing the measures that have been suggested. Through highly valid obtained answers from our survey, interviews and secondary sources there is a massive concern and interest among employees and students for a greener future. Meaning that UiS will benefit in the long run in adapting these measures, thus the investment might be expensive. There will be necessary involving all relevant stakeholders, partners and governing bodies to make this happened, and close collaboration will be key for success.

Sustainability is becoming a virtue which more people value higher. Primary and secondary data suggests strongly that adapting sustainable measures will help rebrand and change the reputation of the school. Eventually this will attract more highly qualified students, and more funding.

8.0 Further research

- Theory states that the younger generation is leaning more towards the greener shift, however, in our survey we find this to be wrong. The more mature respondents show greater interest in sustainability. It would be interesting to explore more closely what part of the generation is the most interested in greener shift?
- There could be done further research if energy central is the best way, or if there are other solutions that could be better.
- Regarding Circular Economy there should be discussed how the reorganization towards a circular economy at UiS can be used to pave the way for better, structural changes around how we live our lives on this planet.

9.0 References

Adam, S., Bucker, C., Desguin, S., Vaage, N., & Saebi, T. (2017, Jan 31). *Taking Part in the Circular Economy: Four Ways to Designing Circular Business Models.* Retrieved from SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2908107

Adams, K., Thorpe, A., & Osmani, M. (2017, Feb). *Circular economy in construction: current awareness, challenges and enablers*. Retrieved from Researchgate: https://www.researchgate.net/publication/313872330_Circular_economy_in_construction_current_awareness_challenges_and_enablers

Austmo, L. B. (2019, 05 02). *Nord må bestemme seg for å satse på sirkulærøkonomi*. Retrieved from universitetsavisa.no: https://www.universitetsavisa.no/ytring/2019/05/02/Nord-m%C3%A5-bestemme-seg-for-%C3%A5-satse-p%C3%A5-sirkul%C3%A6r%C3%B8konomi-18945588.ece

Öncer, A. Z. (2018). Redesigning value chain for higher education and for analysis prosess . *IMPACT: International Journal of Research in Business Management*, 15-26.

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 3-10.

Barron, L., & Gauntlett, E. (2002, April). *WACOSS Housing and Sustainable Communities Indicators Project.* Retrieved from Regional Institute AU: http://www.regional.org.au/au/soc/2002/4/barron_gauntlett.htm

Barth, C. (2020, 04 14). *Norge har mye å hente på å bli et ledende land i utviklingen av et sirkulært samfunn*. Retrieved from frifagbevegelse.no: https://frifagbevegelse.no/debatt/norge-har-mye-a-hente-pa-a-bli-et-ledende-land-i-utviklingen-av-et-sirkulart-samfunn-skriver-cathrine-barth-6.490.686212.a6936f76c1

Boström, M. (2012). A missing Pillar? Challenges in theorizing and practicing social sustainability. *Sustainability: Science, Practice, and Policy, Vol 8*(1), 1-13.

Bougroug, A., & Sletten, P. (2020, April 07). *Nåsituasjonen i norsk økonomi Anslag for aktivitetsnivået ved utgangen av mars 2020.* Retrieved from ssb.no/Nasjonalregnskap: https://www.ssb.no/nasjonalregnskap-og-konjunkturer/artikler-og-publikasjoner/_attachment/417638?_ts=17158473978

Boye, E. (2019). Sirkulær framtid- om skiftet fra lineær til sirkulær økonomi. *Framtiden i våre hender*. (A. B. Riise, Ed.) Oslo, Norway. Retrieved from Sirkulær framtid – om skiftet fra lineær til sirkulær økonomi: https://www.framtiden.no/aktuelle-rapporter/874-sirkulaer-framtid-om-skiftet-fra-lineaer-til-sirkulaer-okonomi/file.html

Brown, B. J., Hanson, M. E., Liverman, D. M., & Merideth, J. (1987, Nov). Global Sustainability: toward definition. (6), pp. 713-719. Retrieved from Environmental management: https://link.springer.com/article/10.1007/BF01867238

Brown, K., & Rasmussen, K. (2019, July 9). *The sustainable development goals in 2019.* Retrieved from UN Foundation: https://unfoundation.org/blog/post/the-sustainable-development-goals-in-2019-people-planet-prosperity-in-focus/

Bugge, H. C. (2002). *Prosus.org.* Retrieved from Sustainable Development – the Challenge for Norway: http://www.prosus.org/publikasjoner/Boeker/relizing_rio_kapitelvis/04_preface.pdf

Burford, G., Hoover, E., Velasco, I., Janouskova, S., Jimenes, A., Piggot, G., . . . Harder, M. K. (2013, jULY). Bringing the "missing pillar" into Sustainable Development Goals: Toward iNTERSUBJECTIVE vALUES-bASED iNDICATORS. *Sustainability*(5), 3035-3059. Retrieved from https://www.researchgate.net/publication/259004918_Bringing_the_Missing_Pillar_into_Sustainable_Development_Goals_Towards_Intersubjective_Values-Based_Indicators

Bymiljøpakken. (2018, 9). *Bymiljøpakken er 30 milliarder kroner til vei, buss og sykkelveier fram til 2033.* Retrieved from bymiljopakken.no: https://bymiljopakken.no/om-oss/

Cambridge Dictionary. (n.d.). *Cambridge University Press*. Retrieved from Cambridge Dictionary: https://dictionary.cambridge.org/dictionary/english/sustainability

Cameron, A., Metternicht, G., & Wiedmann, T. (2018, May 08). *SpringerLink.* Retrieved from Initial progress in implementing the Sustainable Development Goals (SDGs): a review of evidence from countries: https://link.springer.com/article/10.1007/s11625-018-0572-3

Cashman, A., Koh, S. C., Liu, Z., & Birkin, F. (2007, Feb 13). *Wiley InterScience.* Retrieved from New Sustainable Business Models in China: https://onlinelibrary.wiley.com/doi/pdf/10.1002/bse.568

Circular Norway. (n.d.). *Sirkulærøkonomi*. Retrieved from circularnorway.no: https://www.circularnorway.no/circularnorway

Clift, R. (2004). *Metrics for supply chain sustainability*. (Springer-Verlag Berlin Heidelberg) Retrieved from Springer Link: https://link.springer.com/chapter/10.1007/978-3-662-10270-1_15

Closs, D. J., Meacham, N., & Speier, C. (2011, Feb). *Sustainability to Support End-to-End Value Chains: The Role of Supply Chain Management.* Retrieved from Researchgate: https://www.researchgate.net/publication/226322150_Sustainability_to_Support_End-to-End_Value_Chains_The_Role_of_Supply_Chain_Management

Crowther, G., & Gilman, T. (2014). *Towards the Circular Economy: Accelerating the scale-up across global supply chains.* World Economic Forum, Switzerland, Geneva. Retrieved from http://www3.weforum.org/docs/WEF_ENV_TowardsCircularEconomy_Report_2014.pdf

Cummings, S. (1993). Long range planning. Great Britain: Pergamon Press LTD.

Dalland, O. (2012). *Metode og oppgaveskriving* (Vol. 5 utg). Oslo, Norge: Gyldendal akademisk.

Deloitte. (n.d.). *Sirkulær økonomi*. Retrieved June 2020, from Sirkulærøkonomi: https://www2.deloitte.com/no/no/pages/strategy-operations/articles/sirkulaer-okonomi.html

Diesendorf, M. (2000, Jan). *Sustainability and sustainable development.* Retrieved from Researchgate: https://www.researchgate.net/publication/307957424_Sustainability_and_sustainable_development/stats

Dyllick, T., & Hockerts, K. (2002, March). *Beyond the Business Case for Corporate Sustainability.* Retrieved from Researchgate: https://www.researchgate.net/publication/36386947_Beyond_the_Business_Case_for_Corporate_Sustainability

Elkington, J. (1998). *Partnerships from Cannibals with Forks:*. Retrieved from ufersa.edu.br/: http://www2.ufersa.edu.br/portal/view/uploads/setores/65/Triple%20bottom%20line%20in%2021%20century.pdf

EllenMcArthur.com. (n.d.). *Schools of Thought Several authors have contributed to refining and developing the circular economy concept*. Retrieved from ellenmcarthur.com: https://www.ellenmacarthurfoundation.org/circular-economy/concept/schools-of-thought

Energi og Klima. (2020, 03 19). *Europa skal omstilles til en sirkulær økonomi – henger Norge med?* Retrieved from energiogklima.no: https://energiogklima.no/kommentar/europa-skal-omstilles-til-en-sirkulaer-okonomi-henger-norge-med/

European Commission. (n.d.). *2015*. Retrieved from europa.eu: https://ec.europa.eu/eurostat/statistics-explained/index.php/SDG_-_Introduction
EØS. (2020, May 04). *Handlingsplan for sirkulær økonomi.* Retrieved from Regjeringen.no: https://www.regjeringen.no/no/sub/eos-notatbasen/notatene/2020/jan/veikart-for-sirkular-okonomi-2019/id2691183/
FHI. (2018, 03 14). *https://www.fhi.no/nettpub/hin/befolkning/befolkningen/*. Retrieved from fhi.no: https://www.fhi.no/nettpub/hin/befolkning/befolkningen/
Finkbeiner, M., Schau, E. m., Lehmann, A., & Traverso, M. (2010, Oct 22). Towards Life Cycle Sustainability Assessment. *Sustainability*(2), pp. 3309-3390.
Fjeldstad, Ø., & Lunnan, R. (2014). *Strategi.* Bergen: Fagbokforlaget.
FN. (2020, Jan 28). *FNs bærekraftsmål*. Retrieved from FN-SAMBANDET: https://www.fn.no/Om-FN/FNs-baerekraftsmaal
FN-sambandet. (2019, Jan 15). *Bærekraftig Utvikling*. Retrieved from Hva er bærekraftig utvikling?: https://www.fn.no/tema/fattigdom/Baerekraftig-utvikling
Forbrukerrådet. (2019, 04). *Sirkulær økonomi, rådgivningsroboter og Consumer Market Scoreboard*. Retrieved from forbrukerradet.no: https://fil.forbrukerradet.no/wp-content/uploads/2019/05/forbrukertrendrapport.pdf
Forskningsrådet. (2019). *Statsbudsjettet for 2020 – Tildelingsbrev for Direktoratet for internasjonalisering og kvalitetsutvikling i høyere utdanning (Diku).* Allocation letter, Det kongelige kunnsskapsdepartement, Avdeling for eierskap i høyere utdanning og forskning.
Galli, A., Wiedmann, T., Ercin, E., Knoblauch, D., Ewing, B., & Giljum, S. (2012). *Integrating Ecological, Carbon and Water footprint into a "Footprint Family" of indicators: Definition and role in tracking human pressure on the planet.* Retrieved from Elsevier: https://d1wqtxts1xzle7.cloudfront.net/51832619/Integrating_Ecological_Carbon_and_Water_20170217-10463-1bhvpac.pdf?1487319956=&response-content-disposition=inline%3B+filename%3DIntegrating_Ecological_Carbon_and_Water.pdf&Expires=1594045035&Signature=Lfs-OS
Gray, R. (2010, 01). *Is accounting for sustainability actually accounting for sustainability...and how would we know? An exploration of narratives of organisations and the planet*. Retrieved from Researchgate: https://www.researchgate.net/publication/46492886_Is_accounting_for_sustainability_actually_accounting_for_sustainabilityand_how_would_we_know_An_exploration_of_narratives_of_organisations_and_the_planet
Gretland, S., Framgard, L., Nordhus, J. K., Sokn, G. A., & Vebner, T. (2019). *Campusutviklingsplan for Universtitetet i Stavanger.* Retrieved from uis.no: https://www.uis.no/getfile.php/13508669/Vedlegg/UiS%20campusplan%20rapport%20bygningsmasse.pdf
Griessler, E., & Littig, B. (2005, Feb 1). Social Sustainability: a catchword between political pragmatism and social theory. *Sustainable Development*(Vol.8), 65-76.
Helsedirektoratet. (2020, April 07). *Samfunnsøkonomisk vurdering av smitteverntiltak – covid-19.* Retrieved from Helsedirektoratet.no: https://www.helsedirektoratet.no/rapporter/samfunnsokonomisk-vurdering-av-smitteverntiltak-covid-19/Samfunns%C3%B8konomiske%20virkninger%20smitteverntiltak%20covid-19.pdf/_/attachment/inline/cf0faf7e-1789-4183-968b-7f230d20b63f:5a06ef046ea00a0ec3881f42eae
Huan, H. (2012, February). *An empirical analysis of the strategic management of competetive advantage: a case study of higher technical and vocational education in Taiwan*.

(Victoria University) Retrieved from Semanticscholar: https://pdfs.semanticscholar.org/e425/2ea92765a08d38d55f15705d51f39d233491.pdf

IKEA. (n.d.). *Our vision and business idea*. Retrieved from ikea.com: https://www.ikea.com/ms/en_JP/about_ikea/the_ikea_way/our_business_idea/index.html

Isbrekken, A. T. (2020, 01 30). *Dette betyr frihandelsavtalen for Norge*. Retrieved from forskning.no: https://forskning.no/eu-norsk-utenrikspolitisk-institutt-partner/dette-betyr-frihandelsavtalene-for-norge/1629872

Jari, K.-o., Ontto, J. P., Vehmas, J., & Luukkanen, J. (2013, Nov 21). *Relationships of the dimensions of sustainability as measured by the sustainable society index framework.* Retrieved from Taylor & Francis Online: https://www.tandfonline.com/doi/full/10.1080/13504509.2013.860056

Johannessen, A., Tufte, P., & Kristoffersen, L. (2006). *Introduksjon til samfunnsvitenskapelig metode 3. utg.* Oslo: Abstrakt forlag.

Kaufmann, G., & Kaufmann, A. (2009). *Psykologi i organisasjon og ledelse* (Vol. 4). Bergen, Norway: Fagbokforlaget Vigmostad & Bjørke.

Keute, A.-L. (2017, 08 21). *For mye betalt arbeid går på bekostning av studietiden.* Retrieved from ssb.no: https://www.ssb.no/utdanning/artikler-og-publikasjoner/for-mye-betalt-arbeid-gar-pa-bekostning-av-studietiden

Kjøbli, L. M. (2015, 10 12). *Avtale om kjøp av pent brukte møbler*. Retrieved from nmbu.no: https://www.nmbu.no/om/miljoarbeidet/innkjop-berekraft/node/24518

Kjøbli, L. M. (2015, 03 12). *Miljøtiltak*. Retrieved from nmbu.no: https://www.nmbu.no/om/miljoarbeidet/miljotiltak

Kjørstad, E. (2020, 01 27). *Mange land i Europa er på god vei til å kvitte seg med kullkraft*. Retrieved from forskning.no: https://forskning.no/energi-klima/mange-land-i-europa-er-pa-god-vei-til-a-kvitte-seg-med-kullkraft/1625642

Klima og Miljødepartementet. (n.d.). *Prop. 1 S (2018–2019)*. Retrieved from regjeringen.no: https://www.regjeringen.no/no/dokumenter/prop.-1-s-20182019/id2613447/sec2

Kok, L., Wurpel, G., & Wolde, T. (2013, April 15). *Unleashing the Power of the Circular Economy*. IMSA Amsterdam for Circle Economy. Retrieved from Unleashing the Power of the Circular Economi.

Krausman, F., Ginrich, S., Eisenmenger, N., Erb, K.-H., Haberl, H., & Kowalski, M. F. (2009). *ELSEVIER*. (Elsevier B.V) Retrieved from Growth in global materials use, GDP and population during the 20th century: https://elearning.ec.unipi.it/pluginfile.php/134768/mod_page/content/35/EE-Krausmann_etal_MatsGDPPop_20thC-2009.pdf

KS. (2019, Nov 11). *KS.* Retrieved from Bærekraftsmålene: https://www.ks.no/fagomrader/samfunnsutvikling/barekraft/barekraftsmalene/

KS. (2019). *På gang i EØS: Hva har EU og EØS med kommunesektoren å gjøre?* Retrieved from KS: https://www.ks.no/globalassets/fagomrader/internasjonale-prosjekter/Pa-gang-i-EU-og-EOS-2019.pdf

KS. (2020, May 26). *KS.* Retrieved from Kommunesektorens løft for bærekraft: https://www.ks.no/fagomrader/samfunnsutvikling/barekraft/kommunesektorens-loft-for-barekraft/

Kumar, A. D. (2011, July 5). *Emerald Insight*. Retrieved from Emergence of open educational resources (OER) in India and its impact on lifelong learning: https://www.emerald.com/insight/content/doi/10.1108/07419051111163848/full/html?casa_token=DmDdWdfHsjEAAAAA:itAG2OTK6AR49yBjc5rSDnII8SZcNdKWBIG6uXVv3sFx0fNydKfN3uuCzTiiGLhLfZn6cHEJ6nHC4ADbNctS7d5YyJtQlobMahuhQk0KTk0df1N4_ko

Kunnskapsdepartementet. (2020, 01 02). *Langtidsplan for forskning og høyere utdanning*. Retrieved from regjeringen.no: https://www.regjeringen.no/no/tema/forskning/innsiktsartikler/langtidsplan-for-forskning-og-hoyere-utdanning2/id2615974/

Kunnskapsdepartementet. (2020, 03). *Ny lov om universiteter og høyskoler.* Retrieved from regjeringen.no: https://www.regjeringen.no/contentassets/0b5db1762235468781c22a8c604e051e/ny-lov-om-universiteter-og-hoyskoler.pdf

Kunnskapsdepartementet. (2020, 02 13). *Ny lov om universiteter og høyskoler*. Retrieved from regjeringen.no: https://www.regjeringen.no/no/dokumenter/nou-2020-3/id2690294/

Kunnskapsdepartementet. (n.y). *Digitaliseringsstrategi for universitets- og høyskolesektoren.* Retrieved from Digitaliseringsstrategi for universitets- og høyskolesektoren: https://www.regjeringen.no/no/dokumenter/digitaliseringsstrategi-for-universitets--og-hoyskolesektoren---/id2571085/?ch=7

Larsen, H. (2020, 04 23). *Flere søker masterutdanninger*. Retrieved from khrono.no: https://khrono.no/flere-soker-masterutdanninger/482072

Lehtonen, M. (2004, June). The environmental-social interface of sustainable development: Capabilities, social capital, institutions. *Ecological Economics, 49*(2), 199-214.

Lélé, S. M. (1991, June). Sustainable development: A critical review. *World Development, Volume 19*(Issue 6), pp. 607-621. Retrieved from ScienceDirect: https://www.sciencedirect.com/science/article/abs/pii/0305750X9190197P

Macmillan, H., & Tampoe, M. (2000). *Strategic Management.* New York: Oxford University Press Inc.

Mathooko, F., & Ogutu, M. (2015, March 10). *Esmerald Insight*. (I. J. Management, Producer) Retrieved from "Porter's five competitive forces framework and other factors that influence the choice of response strategies adopted by public universities in Kenya: http://dx.doi.org/10.1108/IJEM-12-2013-0187

Mørland, T. (2019, 07 02). *Regelverket for universiteter og høyskoler må forenkles*. Retrieved from nokut.no: https://www.nokut.no/nokut-bloggen/regelverket-for-universiteter-og-hoyskoler-ma-forenkles/

McDonalds. (n.d.). *MCDONALD'S MISSION AND VISION STATEMENT ANALYSIS*. Retrieved from https://mission-statement.com/mcdonalds/

Mensah, J., & Casadevall, S. R. (2019, Sep 08). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. (Volume 5, Issue 1).

Mensah, J., & Casadevall, S. R. (2019, May 26). *Taylor Francis Online.* Retrieved from Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review: https://www.tandfonline.com/doi/full/10.1080/23311886.2019.1653531

MET. (2020, 04 27). *Hva er Parisavtalen?* Retrieved from met.no: https://www.met.no/vaer-og-klima/klimasvar/hva-er-parisavtalen

Miljødirektoratet. (n.d.). *Hva er sirkulærøkonomi?* Retrieved from miljodirektoratet.no: https://www.miljodirektoratet.no/ansvarsomrader/avfall/sirkular-okonomi/

Nervik, S. (2020, 02 19). *Stikk i strid med inntrykket som har festet seg i offentligheten: Det er etterkrigsbarna, og ikke dagens unge, som lever mest miljø- og klimavennlig.* Retrieved from nettavisen.no: https://www.nettavisen.no/okonomi/ny-studie-besteforeldrene-langt-mer-miljovennlige-enn-ungdommen/3423925521.html

NHO. (2019, 03 25). *2 av 3 forbrukere er blitt mer miljøbevisste*. Retrieved from nhosh.no: https://www.nhosh.no/bransjer/handel2/nyheter/2019/2-av-3-forbrukere-er-blitt-mer-miljobevisste/

Nielsen, J. C., & Repstad, P. (1993). Fra nærhet til distanse og tilbake igjen. In P. Repstad, *Dugnadsånd og forsvarsverker : tverretatlig samarbeid i teori og praksis* (pp. 348-349). Oslo: TANO.

NMBU. (n.d.). *Miljø, klima og energi.* Retrieved from nmbu.no: https://www.nmbu.no/tema/miljo

Norad. (2018, 10 26). *4 av 5 nordmenn vil endre hverdagsvaner for miljøet*. Retrieved from norad.no: https://norad.no/aktuelt/nyheter/2018/4-av-5-nordmenn-vil-endre-hverdagsvaner-for-miljoet/

Norsk Gjenvinning. (n.d.). *Sirkulærøkonomi - reell bærekraftig utvikling*. Retrieved from Norsk Gjenvinning: https://www.nggroup.no/baerekraft/sirkulaeroekonomi/mer-om-sirkulaeroekonomi-reell-baerekraftig-utvikling/

NSD. (2020, 03 05). *Nasjonale Styringsparametre.* Retrieved from https://dbh.nsd.uib.no/styringsdata/virksomhetsmaal_2013.action?undermeny=virksomhetsmaal_2013&sektorKode=0&valgtArstall=2019&ValgtinstDetail=1160&fbclid=IwAR0tza9cKv8hQkymmrBGv6u1Mtp4tkG6ApomasO2OISl-Mi0T4lYAwp1m3U

Nygaard, A. (2019). Grønn Markedsføringsledelse. In A. Nygaard, *Grønn Markedsførsingsledelse* (p. 108). Bergen: Fagbokforlaget.

OECD. (n.d.). *Convention on the Organisation for Economic Co-operation and Development*. Retrieved from OECD: https://www.oecd.org/general/conventionontheorganisationforeconomicco-operationanddevelopment.htm

Olbergsveen, H. R. (2019, 02 25). *Statssekretærer på studietur om sirkulær økonomi*. Retrieved from regjeringen.no: https://www.regjeringen.no/no/aktuelt/studietur_okonomi/id2630254/

Oneworldcentre. (n.d.). *The UN SDGs*. Retrieved from Oneworldcentre: http://www.oneworldcentre.org.au/global-goals/agenda-2030-and-the-sdgs/

Parris, T. M., Leiserowitz, A., & Kates, R. W. (2005, April). What is Sustainable Development? Goals, Indicators, Values, and Practice. *Environment Science and Policy for Sustainable Development, Vol 47*(3), 8- 21.

Perera, R. (2017). *The PESTLE Analysis.* Retrieved from The PESTLE Analysis: https://books.google.no/books?id=ZWpLDwAAQBAJ&printsec=frontcover&dq=pestel+analysis&hl=no&sa=X&ved=0ahUKEwjEouPxpuXoAhUkxaYKHdO7CBQQ6AEIKDAA#v=onepage&q=pestel%20analysis&f=false

Regjeringen. (2020, May 12). *Nøkkeltall i revidert nasjonalbudsjettet 2020.* Retrieved from Regjeringen: https://www.regjeringen.no/no/aktuelt/nokkeltall-i-revidert-nasjonalbudsjettet-2020/id2701786/

regjeringen.no. (n.d.). *Sirkulær Økonomi*. Retrieved from regjeringen.no: https://www.regjeringen.no/no/tema/klima-og-miljo/forurensning/sirkular-okonomi/id2700997/

Reilstad, K. (2019, 04 02). *UiS leder nasjonalt nettverk for innovasjon i offentlig sektor*. Retrieved from uis.no: https://www.uis.no/det-samfunnsvitenskapelige-fakultet/uis-leder-nasjonalt-nettverk-for-innovasjon-i-offentlig-sektor-article132377-8104.html

Roos, G., Krogh, G. v., Roos, J., & Boldt-Christmas, L. (2014). *Strategi- en innføring* (Vol. 6). Bergen, Norge: Fagbokforlaget Vigmostad og Bjørke.

Roos, G., Pike, S., & Fernström, L. (2005). *Managing intellectual capital in practice.* Oxford: Elsevier ltd.

Samset, K. F. (2014). *Evaluering av prosjekter: vurdering av suksess.* Bergen: Fagbokforlaget.
Schaefer, A., & Crane, A. (2005, June 1). Addressing Sustainability and Consumption. *Volume: 25*(issue: 1,), p: 76-92.
Sikdar, S. k. (2003, Aug). Sustainable Development and Sustainability Metrics. *Office of Research and Development, Vol. 49*(No. 8), pp. 1928-1932. Retrieved from AUChE Journal.
Sikdar, S. K., Sengupta, D., & Mukherjee, R. (2016, Nov 21). *Measuring Progress Towards Sustainability: A Treatise for Engineers.* Retrieved 2020, from Google Books: https://books.google.no/books?id=cxeRDQAAQBAJ&dq=batter-ham+(2003)+sustainability&hl=no&source=gbs_navlinks_s
Sintef. (2018, 3 16). *How well do solar cells really work in the Nordic climate?* Retrieved from sintef.no: https://www.sintef.no/en/latest-news/how-well-do-solar-cells-really-work-in-the-nordic-climate/
Solvang, A. (2019, March 12). *Europabanken*. Retrieved from Rapport: Muligheter og utfordringer knyttet til sirkulærøkonomi: https://europabanken.no/praksis/rapport-muligheter-og-utfordringer-knyttet-til-sirkulaerokonomi
SSB. (2019, 06 07). *Halvparten av bachelorstudentene fullfører ikke på normert tid.* Retrieved from ssb.no: https://www.ssb.no/utdanning/artikler-og-publikasjoner/halvparten-av-bachelorstudentene-fullforer-ikke-pa-normert-tid
SSB. (2020, 02 27). *Befolkning*. Retrieved from ssb.no: https://www.ssb.no/befolkning/statistikker/folkemengde/aar-per-1-januar
SSB. (2020, July 8). *Bruttonasjonalprodukt.* Retrieved from Statistics Norway: https://www.ssb.no/nasjonalregnskap-og-konjunkturer/faktaside
SSB. (2020, April 24). *Stopp for norsk økonomi.* Retrieved from Statistisk sentralbyrå: https://www.ssb.no/nasjonalregnskap-og-konjunkturer/artikler-og-publikasjoner/brastopp-for-norsk-okonomi
Statsbygg. (2020, 01 09). *Statsbygg kartlegger solcelletak.* Retrieved from statsbygg.no: https://www.statsbygg.no/Nytt-fra-Statsbygg/Nyheter/2020/statsbygg-kartlegger-solcelletak/
Stavanger bystyre. (2018, 11 26). *Klima og Miljløplan 2018-2030.* Retrieved from stavanger.kommune.no: https://www.stavanger.kommune.no/siteassets/renovasjon-klima-og-miljo/miljo-og-klima/klima--og-miljoplan-2018-2030.pdf
Stavanger formannskap. (2020, 03 19). *Kunnskapsbyen Stavanger- status og revidering av arbeidet.* Retrieved from https://static1.squarespace.com/static/562e5acbe4b04051efbc535b/t/5ea8080a7189b11145fe4e9e/1588070413212/Kunnskapsbyen+Stavanger-+status+og+revidering+av+arbeidet.pdf
Stavanger Kommune. (2014, 01). *Melding om universitetsbyen Stavanger.* Retrieved from stavanger.kommune.no: https://www.stavanger.kommune.no/siteassets/naring-og-arbeidsliv/planer-og-dokumenter/universitetsbymeldingen.pdf
Stavanger Kommune. (2019, 06 26). *Slik skaper vi kunnskapsbyen*. Retrieved from stavanger.kommune.no: https://www.stavanger.kommune.no/naring-og-arbeidsliv/kunnskapsbyenStavanger/slik-skaper-vi-kunnskapsbyen/
stavangerregion.no. (2020, 03 17). *Rogaland fylkeskommune utvikler smart spesialiseringsstrategi*. Retrieved from stavangerregion.no: https://stavangerregion.no/2020/03/17/rogaland-fylkeskommune-utvikler-smart-spesialiseringsstrategi/

Stoddart, H., Bottero, M., Cornforth, J., Dodds, F., Lingan, J., Schneegerber, K., . . . White, R. (2011). A Pocket Guide to Sustainable Development Governance. *Stakeholde Forum 2011*.

Store norske leksikon. (2020, March 25). *Sirkulærøkonomi.* Retrieved from SNL: https://snl.no/sirkul%C3%A6r_%C3%B8konomi

Stortinget. (2019, 09 19). *EU/EØS-arbeidet*. Retrieved from stortinget.no: https://www.stortinget.no/no/Stortinget-og-demokratiet/Arbeidet/EUEOS-arbeid/

Stortinget. (2019, Sept 19). *EU/EØS-Arbeidet.* Retrieved from Stortinget: https://www.stortinget.no/no/Stortinget-og-demokratiet/Arbeidet/EUEOS-arbeid/

Taherdoost, H. (2016). *Validity and Reliability of the Research Instrument; How to Test the Validation of a Questionnaire/Survey in a Research* . Switzerland: Helvetic Editions LTD.

Thagaard, T. (2002). *Systematiskk og innlevelse- en innføring i kvalitativ metode.* Fagbokforlaget.

The two factor theory of Herzberg. (n.d.). Retrieved from bilingualonline.net: http://bilingualonline.net/contents/Turabo/MANA501/mana501/3_week/3_1_4.html

Thingsted, A. S. (2019, 05 22). *Derfor gjør de unge klimaopprør*. Retrieved from forskning.no: https://forskning.no/barn-og-ungdom-klima-media/derfor-gjor-de-unge-klimaoppror/1338089?fbclid=IwAR2VmW4wCka5bk9Q8vZavTe0dHkuOtuRSXrzclhCUlYzrMU41qXwvIjDS_o

UiB. (2020, 02 24). *Første solcelleanlegg på campus*. Retrieved from uib.no: https://www.uib.no/aktuelt/133992/f%C3%B8rste-solcelleanlegg-p%C3%A5-campus

UiO. (2020, 03 02). *Klimatiltak for ansatte ved MI*. Retrieved from mn.uio.no: https://www.mn.uio.no/math/om/miljo/

UiO. (n.d.). *Vi driver UiO så grønt som mulig*. Retrieved from uio.no: https://www.uio.no/om/strategi/berekraftsmal/drift/

UiS. (2019, 05 09). *Medarbeiderundersøkelsen 2019.* Retrieved from uis.no: https://www.uis.no/getfile.php/13507739/Postjournaler/48_19.pdf

UiS. (n.d.). *Ledige Studieplasser*. Retrieved from uis.no: https://www.uis.no/studietilbud/soeke-studieplass-ved-uis/soeking-og-opptak/restplasser/

uis.no. (2020, 10 02). *Om Universitetet i Stavanger*. Retrieved from uis.no: https://www.uis.no/om-uis/?fbclid=IwAR2Vv9iOLCWhQRdY0rj26ZuHW0kuXKsXO1RmlXcqHdKYYfPUyttYNRWVnhU

UNEP. (2012). *Annual Report 2011.* UNEP Division of Communications and Public Information. UNON/Publishing Section Services/Nairobi: United Nations Environment Programme.

UNiDAYS. (2019, March 11). *Three questions brands should ask before speaking out on social issues*. Retrieved from GENZINSIGHTS: https://www.genzinsights.com/three-questions-brands-should-ask-before-speaking-out-on-social-issues

United Nations. (2002, Sept 04). *United Nations Digital Library.* Retrieved from Report of the World Summit on Sustainable Development : https://digitallibrary.un.org/record/478154#record-files-collapse-header

United Nations. (2012, June 22). Retrieved from United Nations Conference on Sustainable Development, Rio+20: https://sustainabledevelopment.un.org/rio20

United Nations. (2015). *Sustainable Development Goals*. Retrieved from Summit Charts New Era of Sustainable Development: https://www.un.org/sustainabledevelopment/blog/2015/09/summit-charts-new-era-of-

sustainable-development-world-leaders-to-gavel-universal-agenda-to-transform-our-world-for-people-and-planet/
United Nations. (2015). *United Nations.* Retrieved from Transforming our world: the 2030 Agenda for Sustainable Development: https://sustainabledevelopment.un.org/post2015/transformingourworld
United Nations. (2019, Sept). *United Nations.* Retrieved from SDG Summit- The Sustainable Development Goals Summit: https://sustainabledevelopment.un.org/content/documents/24711SDG_Summit.pdf
United Nations; Accenture Strategy. (2019). *A decade to deliver, A call to business action.* Retrieved from cloudfront.net: https://d306pr3pise04h.cloudfront.net/docs/publications%2F2019-UNGC-Accenture-CEO-Study.pdf
Universitetet i Stavanger. (2019). *Årsrapport 2019-2020.* Retrieved from uis.no: https://www.uis.no/getfile.php/13560070/Vedlegg/Årsrapport%20UiS%202019-2020.pdf?fbclid=IwAR0VQ3ot18jQ4CmuxGKNY7bWekaeZoTlQsCDxhxE7ZpnsbHmxMK70MfD-fQ
Universitetet i Stavanger. (2019, 05 06). *Campusutviklingsplan for Universitetet i Stavanger.* Retrieved from uis.no: https://www.uis.no/getfile.php/13508666/Vedlegg/Campus%20UiS_Tema_Universitetsgruppa_til%20høring.pdf
Universitetet i Stavanger. (2020, Jan 21). *UiS skal få ny strategisk plan*. Retrieved from UIS: https://student.uis.no/aktuelt/uis-skal-fa-ny-strategisk-plan-article138131-16658.html
Utenriksdepartementet. (2020, May 18). *2030-agendaen med bærekraftsmålene.* Retrieved from Regjeringen.no: https://www.regjeringen.no/no/tema/utenrikssaker/utviklingssamarbeid/bkm_agenda2030/id2510974/
Valavanidis, A. (2018, July). *Concept and Practice of the Circular Economy.* Retrieved from Researchgate: https://www.researchgate.net/publication/326625684_Concept_and_Practice_of_the_Circular_Economy#fullTextFileContent
Vartdal, R. (2020, 06 29). *Desse 11 institusjonane får pengar til å oppgradere bygg*. Retrieved from khrono.no: https://khrono.no/desse-11-institusjonane-far-pengar-til-a-oppgradere-bygg/499988?fbclid=IwAR1aQkGRbMujtfiGMxkc-pdlkQT11qfIl3HkE4prlMIMiK4fKQ-1cZuTbow
WCED. (1987). *WCED.* Retrieved from Report of the World Commission on Environment and Development: Our Common Future: https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf
Wernerfelt, B. (1984). A Resource- Based View of the Firm. *Strategic Management Journal*, 171-180.
Wijkman, A., & Skånberg, K. (2015, April). *The Circular Economy and Benefits for Society.* Retrieved from http://wijkman.se/wp-content/uploads/2015/05/The-Circular-Economy-and-Benefits-for-Society.pdf
Zondag, M. H., Hussain, H., & Skram, O. W. (2020, 04 24). *Rekordhøy søking til høyere utdanning: En av ti søkere vil bli sykepleiere.* Retrieved from nrk.no: https://www.nrk.no/norge/rekordhoy-soking-til-hoyere-utdanning_-en-av-ti-sokere-vil-bli-sykepleiere-1.14993864

APPENDIX

Appendix A Interviewguide Harald R

Generelle om UiS og bærekraft

1. Hvordan føler du at UiS stiller i forhold til andre universiteter og høyskoler når det gjelder bærekraft?
2. Hva gjør UiS per i dag for å være bærekraftige?
3. Hva er UiS sin holdning til bærekraftig kultur?
4. Er UiS Lean nok med fokus på digitalisering av gamle prosesser?

Bærekraftige bygg

5. Er bærekraft (og da modernisering av bygg) en viktig faktor for å tiltrekke seg nye/flere studenter og ansatte?
6. Hva kan gjøres med byggene på campus for å gjøre dem mer bærekraftig, og vil det være utfordrende?
7. Vil det være enkelt å kunne adaptere feks. Solcellepaneler? Hvor er det mulig å gjøre dette, hvilke bygninger er enkle for et slik tiltak?

Økonomiske midler og forhold til byggherrer

8. Er det økonomisk gjennomførbart, eventuelt hvor får man midler fra?
9. Hvordan er UiS sitt forhold til Statsbygg og andre instanser som har ansvar for utbygging/bygg/tilførsel av kapital til slik aktivitet?

Klyngeaktivitet

10. Flere universiteter er med i «Nordic Sustainable Campus Network» eller lignende nettverk i utlandet. Hvorfor er ikke UiS med? Hadde det vært nyttig?

Appendix B, Interviewguide Ole R

Personlig bakgrunn:

1. Hva er din ekspertise område ved universitetet og hvordan er dette tilknyttet bærekrafts problemene?
2. Hvordan forholder du deg til bærekraft?

Bærekraft:

3. Hvilke tiltak ser du for deg UiS kan innføre for å bli mer bærekraftig?
4. Hvor stor andel av prosesser ved universitetet antar du er digitalisert? Ca. Tall i%
5. Hva gjør UiS per I dag for å være bærekraftige?
6. Hvordan bærer merkenavnet til UiS seg? Hva er UiS sin holdning til bærekraftig kultur?
7. Tror du at bærekraft vil bidra til å gjøre UiS om til en mer attraktiv jobb og studiested?

Sirkulærøkonomi

8. Hvor kjent er du med konseptet sirkulærøkonomi (hvordan vil du definere det)
9. Hvordan er UiS sitt forhold til sirkulærøkonomi?

Økonomi:

10. Er det budsjettert penger til et grønt skifte?--> Hvilke utsikter for kapital har UiS for å kunne innføre endringer.
11. Hvor kan man søke om midler eller få sponsorer fra til å gjennomføre et grønt skifte?
12. UiS tilpasse seg den nye generasjonen, mer digitalt -->merkes dette I form av innkjøp
13. Hvor mye støtte fikk Uis med søkertallet, studieplasser)- feks hvilke endringer har uis gjort, merker de mer av egne valg?) innen egne valg av politiske faktorer
14. Hvilke utsikter for kapital har UiS for å kunne innføre endringer.
15. UiS sitt forhold til Statsbygg og andre instanser som har ansvar for utbygging/bygg eller for tillførsel av kapital --> Kommune/fylke/Stat, Nasjonale instanser for utdannsles og bygg.

Appendix C Interviewguide Frode A

Personlig bakgrunn:

1. Hva er din ekspertise område ved universitetet og hvordan er dette potensielt tilknyttet bærekrafts målene?
2. Hvordan forholder du deg til bærekraft?

Bærekraft og bygg:

3. Hva gjør UiS per i dag for å være bærekraftige?
4. Hvilke tiltak ser du for deg UiS kan innføre for å bli mer bærekraftig?
5. Kan du fortelle om energisentralen og hvilken type energi den skal lagre?
    a. Hvor langt i prosessen er dere kommet med energisentralen? (år og tiltak)
6. Er det aktuelt med å montere solcellepaneler over hele campus?
    a. Er UiS i en prosess hvor de har vurdert dette?
7. Hvordan ser dere på energisentralen i forhold til solcellepaneler, er begge like aktuelle tiltak?
8. I hvilken grad er disse tiltakene gjennomførbare, praktisk og økonomisk? Estimert kostnad?
9. Kunne du fortalt litt om resirkuleringssystemet som er på UiS innen: avfall og mat. Er det noe som kan gjøres i forhold til dette med tanke på bærekraft?
10. Tror du at tydelig fokus på bærekraft vil bidra til å gjøre UiS om til et mer attraktivt jobb og studiested?
11. Er den nye campusutviklingsplanen bærekraftig? Er det noe spesielt i denne planen som skiller seg ut?

12. Vi ser potensiale i å utnytte hage/grøntområdene bedre ved de forskjellige fakultetene ved å sette ut benker, eller til eksempel sette opp volleyballnett. Er dette gjennomførbart?
13. Hvilken nytte har miljøfyrtårnsertifiseringen hatt for UiS, og hva måtte til for å bli sertifisert?

Sirkulærøkonomi

14. Hvor kjent er du med konseptet sirkulærøkonomi?
15. Hvordan er UiS sitt forhold til sirkulærøkonomi?

Økonomi:

16. Hvilke utsikter for kapital har UiS for å kunne innføre endringer?
17. Hvordan er forholdet mellom UiS og Statsbygg samt andre instanser som har ansvar for utbygging/bygg eller for tilførsel av kapital (Kommune/fylke/Stat, Nasjonale instanser for utdannelse og bygg?)

Appendix D Interviewguide Rune D

Personlig bakgrunn:

1. Hva er din ekspertise område og hvordan er dette tilknyttet bærekrafts problemene?

2. Hvordan forholder du deg til bærekraft?

Bærekraft:

3. Hva gjør UiS per i dag for å være bærekraftige?
4. Hvordan tenker du at UiS presterer med tanke på innovasjon og bærekraft?
5. Hvilke tiltak ser du for deg UiS kan innføre for å bli mer bærekraftig?
6. Har du gjennom dette programmet fått verdifulle innspill som kan hjelpe UiS?
7. Tror du at bærekraft vil bidra til å gjøre UiS om til et mer attraktivt jobb- og studiested?
8. Hvordan bærer merkenavnet til UiS seg? Hva er UiS sin holdning til bærekraftig kultur?
9. Vil det være vanskelig å gjennomføre tiltak som vil gjøre UiS grønnere, både økonomisk og organisatorisk?

Sirkulærøkonomi

10. Hvor kjent er du med konseptet sirkulærøkonomi?
11. Hvordan anser du UiS sitt forhold til sirkulærøkonomi?
12. Ser du forbedringspotensialer (grønn energi, matavfall, avfallsreduksjon, gjenbruk, digitalisering, annet)?

Appendix E, Interviewguide Klaus M

Personlig bakgrunn:

1. Hva er ditt ekspertiseområde og hvordan er dette tilknyttet bærekrafts problemene?
2. Hvordan forholder du deg til bærekraft?
3. Du tok over rollen som rektor for ikke lenge siden, hva har du lagt merke til er behovet på UiS ved utarbeidelse av ny strategi kontra den tidligere strategien?

Bærekraft

4. Hva gjør UiS per i dag for å være bærekraftige?
5. Hvilke tiltak ser du for deg UiS kan innføre for å bli mer bærekraftig?
6. Hvordan bærer merkenavnet til UiS seg? Hva er UiS sin holdning til bærekraftig kultur?
7. Hvilke tiltak må til for å etablere en bærekraftig kultur for fremtiden ved UiS?
8. Vi ser potensiale i å utnytte hage/grøntområdene bedre ved de forskjellige fakultetene ved å sette ut benker, eller til eksempel sette opp volleyballnett. Er dette gjennomførbart?
9. Hva tenker du om avfallshåndtering per i dag ved UiS?
10. Tror du at tydelig fokus på bærekraft vil bidra til å gjøre UiS om til et mer attraktivt jobb og studiested?
11. Ville det vært mulig å få til gratis buss for alle studenter og ansatte?
12. Vil det være utfordrende å gjøre UiS grønnere fra et praktisk og økonomisk perspektiv?

Sirkulærøkonomi

13. Hvor kjent er du med konseptet sirkulærøkonomi (hvordan vil du definere det)?
14. Hvordan er UiS sitt forhold til sirkulærøkonomi?
15. Ser du forbedringspotensialer? (grønn energi, matavfall, avfallsreduksjon, gjenbruk, digitalisering, annet)

Appendix F Survey

Thank you for taking the time to answer.
This survey will take approximately 4 minutes to finish containing 17 questions. The purpose of this survey is to explore what sustainability at the University of Stavanger can be in the nearest future.

1. I am: *
Staff/ teacher
bachelor student
master student

2. **How old are you? ***

3. How is your attitude towards a greener culture at university?
Very good, greener society is the future!
Good
Indifferent
It does not interest me

4. Is sustainability and the shift towards a greener society important to you? * (yes/no)
5. My concern towards environmental issues has grown considerably the last two years.
Strongly agree
Disagree
Agree
Strongly agree

6. Would you say that it is easy to implement changes that can make UiS greener? (yes/no)

7. What should define sustainability at the University of Stavanger?
(Choose three of the options below that you find most suitable). *
a. Digitalization
b. Including (as many stakeholders as possible should be included in the decisions about changes that should take place)
c. green energy
d. a university for the future
e. green landscape
f. sustainable work environment
circular economy (reduction and reuse of raw materials, emission, waste and energy)

8. Campus areas around the different building are rarely used. Would you use it more if it was facilitated to sit outside for socializing/studying/meetings?
(yes/no)

9. What do you consider the most important pillars that UiS should prioritize in their mission to become more sustainable? (Here you can choose as many options as you like).
a. greener energy (solar panels for instance)
b. food waste in the cantinas on campus
c. waste reduction
d. reuse
e. digitalization of administrative processes that involve printing
f. other (please specify)

10. Do any of the following factors keep you from recycling on campus? Please select all that apply
-No bins available
- Unsure if products can be recycled/lack of instructions
-Don´t know where to recycle
-Bins are full
-Too time consuming

-Did not know UiS recycles
-Don´t care about recycling
-Other (please specify)

11. What do you wish UiS had more of?

12.For students: Do you believe that a clear commitment for sustainability would have a positive outcome for future number of applications at UiS?
For staff/teachers: Do you believe that a clear commitment for sustainability would have an positive outcome for future recruitment of staff/teachers at UiS?
By clear commitment we mean committing and implementing different measures for sustainability.(yes/no)

13. How would you characterise UiS's contribution to sustainability within these various categories?
(1=Not good - 6= very good) *
Travel, waste, purchase furniture, food and service, buildings and material use, energy (electricity and heat)

14.Which mean of transport do you use most often to UiS?

15. If you use a car frequently for transport to work, would you rather take the bus if this was free?

16. Do you find the amount of parking spaces at campus insufficient?

17. Do you buy bottled water on campus, or do you bring a bottle from home?

Mail for å kontakte deg om du vil være med i trekning av gavekort på 500 NOK:
