



Blueprint for responsible waste management at Copenhagen Business School

BA-BSEMO1014U

Supervisor: Claudia Eger

Nicolas Yanze Kontchou

Adrián Olenics

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Abstract

Copenhagen Business School approved their sustainable strategy in 2018, encouraging students and staff to come up with new initiatives. The purpose of the study is to find ways to improve the current waste management system at the university by reviewing an action research study done by Moreland and Melsop, applying Bourdieu's Outline of a Theory of Practice as well as Vargo and Lusch's Service-Dominant Logic, and as a result, designing a service blueprint. Focusing solely on CBS and using an interpretivist philosophy, the study collected the data through in-depth interviews and a survey in order to learn the perspectives of the users. Moreover, two experts' opinions shaped the recommendations on how to improve the waste management at CBS. The research project deconstructed the habitus of the users and found it exceptionally suitable for implementation of new initiatives. Furthermore, the aspect of co-creation was proven to be present during multiple stages of user service experience. Consequently, recommendations in form of five touchpoints were suggested. Zero waste model, sorting bins, web page, mentors and backstage processes were the touchpoints that could help the university become more sustainable. It was discovered that a link between habitus and praxis may be possible to fill with co-creation, serving as an inspiration for future studies within the field.

1 Introduction

Copenhagen Business School (CBS) is a century old higher educational institution, originally established in 1917 in Frederiksberg, Denmark. There are over 20.000 students, and 1.500 employees, making it one of the largest business schools in Europe. In October of 2018, senior management of Copenhagen Business School (CBS) has approved the framework for a sustainability strategy (Lykkegaard A. M., 2018). This can be seen as the first step towards a sustainable school but now it needs initiatives. Tore Klitgaard, Project Manager of Green Network and Architect at Estate Management at CBS said “Becoming sustainable is a common effort in which all students and staff have to help each other and thereby support the UN’s Sustainable Development Goals. By including everyone, we’ll make sure that everyone has ownership of the strategy.” (Lykkegaard A. M., 2018).

The strategy takes inspiration from the Rio Declaration for Environment and Development by being divided in the themes of society, environment and economics (Lykkegaard A. M., 2018). The framework put in place by CBS already includes 9 out of 17 UN SDGs that are most relevant for CBS, while the complete list of first initiatives and emissions goals for 2025 are to be released by the end of May 2019 (Lykkegaard A. M., 2018). There are already existing universities following a similar framework, such as University of California, whose goal is to become carbon neutral by 2025 and to provide scalable solutions in order to help California and the world to combat climate change (University of California, 2018). This university strives to achieve their goals by combining research and pilot projects, in order to work towards a more environmentally friendly campus (University of California, 2018).

As Quality Education, Responsible Consumption and Production as well as Climate Change are 3 out of 9 of the Sustainable Development Goals set out by the UN that CBS would like to address, the issue of waste is one that the university must take into consideration. Waste are the useless materials, by-products or leftovers that remain after something has been used (Cambridge English Dictionary, n.d.). Waste is not a barrier to a sustainable world that CBS faces alone. Denmark as a country produces some of the highest amounts of waste per capita

every year in the European Union (Eurostat, 2019). CBS being one of the major educational hotspots in Europe could be used as an opportunity not only to challenge the status-quo around waste but also to educate the future generations about it. (Bailey, Pena, & Tudor, 2015).

Different initiatives targeting the issues with management of waste have been tried out before the existence of the framework for sustainability strategy. Some were successful, such as the food waste boxes at the university canteen, Spisestuerne. This concept allows customers to fill up a box of leftovers from the day's lunch at a fixed price of 15 DKK (Lykkegaard A. M., 2019). The food waste boxes allowed the canteen at the main campus, Solberg Plads, to reduce the amount of uneaten food from 31,3 kg to 2,6 kg per day one year after its launch (Lykkegaard A. M., 2019). Only reducing food waste, however, does not make a university sustainable. In 2011, a trial was initiated to figure out if students of the university knew how to sort the litter that they threw away (Lykkegaard & Koors, 2017). The experiment consisted of 3 bins of different colors, each representing a certain type of litter: general waste, paper and plastic (Lykkegaard & Koors, 2017). Once the experiment was over, the bins were not removed and stayed on campus for six more years (Lykkegaard & Koors, 2017). This behavior made students and staff of the university believe that the sorted litter got recycled. However, the contents of the bins were disposed into a single general waste container, diminishing all the sorting efforts done by the students (Lykkegaard & Koors, 2017). It is only once the university newspaper, CBS Wire, carried out an investigation and wrote an article about it, that the litter bins were removed from campus. The experiment seemingly showed that students did not sort their litter, although, the underlying reasons for this result were very unclear (Lykkegaard & Koors, 2017).

One of the integral parts of waste management is consumption. One cannot exist without the other, they are the logical counterparts of each other. Following this logic, the paper will thoroughly explore the idea of consumption behavior. At CBS, Spisestuerne is the main place where consumption behavior can be influenced. If CBS were to forbid the use of plastic, Spisestuerne would therefore be the one having to deal with the implications of such restraint. Due to the limitations of time and finances, the researchers would not be able to carry out an

experiment or a pilot project. Thus, the researchers decided to focus on the deeper relationships within the service in order to design a blueprint that combines the possible initiatives worthy of implementing.

The goal of the paper is to analyze the current waste management situation, that including consumption behavior, aiming to provide suggestions that would help CBS reach the targets related to their sustainable strategy framework. This research project is inspired by already existing cases, such as University of California neutral carbon initiative, and a past project written by the researchers titled “A new generation of litter bins at CBS” (Olenics & Kontchou, 2019).

This leads to the research question of the paper:

How could CBS improve their waste management in order to be more sustainable?

The following sub-questions are going to help answer the research question:

- How are the stakeholders involved in the waste management of CBS?
- How would it be possible to influence users’ unconscious consumption behavior?
- How can the aspect of co-creation impact the behavior of the users?
- What processes should waste management initiatives follow in order to be successful?

2 Literature review

2.1 Action Research Study at The Ohio State University

Educational institutions across the globe begin to realize their duties and responsibilities to promote sustainable practices among students and academia (Zhang, Williams, Kemp, & Smith, 2011). To have a better idea of the implementation process of a revamped waste management system at an academic institution it is relevant to take a closer look at a study carried out by the students of The Ohio State University (Moreland & Melsop, 2014). It is an action research study that examined how effective four different design interventions were in encouraging students to compost and recycle at the residence hall of the university (Moreland & Melsop, 2014). Observations across campus that span for months propose that sorting of waste is guided by the automatic system of our intuition, instead of the reflective one (Moreland & Melsop, 2014). Consequently, the study took on approaches from social practice design and anthropology (Moreland & Melsop, 2014).

Ethnography, the first part of the study, discovered that many students dispose of litter unconsciously and usually go for the easiest way to get rid of their litter (Moreland & Melsop, 2014). Some of them do not want to be bothered with thinking about what things can be recycled so they dispose of everything in the general waste bin (Moreland & Melsop, 2014). There are also sociological aspects to it. Some of the students believe that their individual behavior will not make any significant environmental impact combined with the fact that they feel little social pressure to sort their waste (Moreland & Melsop, 2014). The ethnography's conclusions were that the students choose to sort waste when it is easy and convenient for them, when the recycling bin is the bin closest to them and when they are completely sure that the item they are disposing of is recyclable (Moreland & Melsop, 2014). The students choose not to sort waste if it is not convenient for them, when they are unsure whether the item is recyclable, if they feel that they are unable to make any significant impact and if there is little or no social pressure to recycle (Moreland & Melsop, 2014). In order to combat the challenge to reach better sorting levels four different interventions were implemented with

four separate groups, each one consisting of approximately 100 students and lasting 30 days (Moreland & Melsop, 2014).

The first intervention introduced a new waste collection infrastructure, the general waste bin in the common area was changed into recycling and the one in the bathroom was made into a compost bin, a bin of a smaller size was added to accommodate the general waste as well (Moreland & Melsop, 2014). The first intervention was used as a foundation for the three other interventions as it introduced the recycling and compost bin, which were not present before at all (Moreland & Melsop, 2014). The second intervention introduced education as a method to encourage students to recycle (Moreland & Melsop, 2014). Educational posters teaching about sustainability and the environmental impact of recycling were placed on doors around the residence hall (Moreland & Melsop, 2014). The third intervention then used social media to spread awareness about the impact of student's behavior and digital white boards for students to be able to ask questions and leave feedback about the sorting (Moreland & Melsop, 2014). The fourth and last intervention asked volunteering students to be Zero Waste Agents who would ensure that their fellow residents obeyed the new waste management system and create a sense of peer-pressure (Moreland & Melsop, 2014).

The study found that the fourth intervention, social influence, achieved the highest combined (recycling and compost) sorting accuracy of 85% (Moreland & Melsop, 2014). The first, foundational intervention achieved 82% of combined sorting accuracy and, surprisingly, the second and third interventions achieved 76% of combined sorting accuracy, marking a 6% decrease in comparison to the first intervention (Moreland & Melsop, 2014). An important thing to note is that the accuracy of sorting compost was significantly higher (92% on average) than of recycling (62% on average) (Moreland & Melsop, 2014). A survey was carried out both before and after the experiment and enquired into changes of students' perceptions regarding recycling and waste (Moreland & Melsop, 2014). The survey showed that students across the interventions found sorting of waste to be more rewarding and their actions to be more impactful post the experiment (Moreland & Melsop, 2014). The students in interventions one and four, allegedly tried harder during the experiment while the students

from interventions two and three did not show any considerable change of their efforts (Moreland & Melsop, 2014).

There are some rather interesting outcomes from the different approaches used in the study that raise questions and are worth mentioning. If the second intervention which focused on education achieved worse results than the baseline, is educating the students as important as we might think (Moreland & Melsop, 2014)? It would be relevant to argue that posters placed on doors do not grab student's attention and other forms of education could be more efficient. On the other hand, it has been noticed, that the students showed interest in having additional information on sustainability and recycling online (Moreland & Melsop, 2014). It could also be the case as the involvement of resident advisors responsible for the residences of students varied greatly across the groups (Moreland & Melsop, 2014). Nevertheless, it is a finding that has to be considered and reflected on in the research.

Another crucial question is the influence of social pressure on the behavior of students. The study concludes that social influence can have great effect on students' actions when it comes to sorting of waste (Moreland & Melsop, 2014). Peer pressure from someone that can relate to students and holds a lot of respect can greatly motivate students to take part in a new activity (Moreland & Melsop, 2014). This finding does not come as a surprise but should be taken into greater consideration when it comes to reorganization of the waste management system. At last, it is essential to find appropriate placement and size of bins based on university's material stream as well as to have simple and clear instructions (Moreland & Melsop, 2014). Supported by an easy and efficient infrastructure, it makes a great impact on sorting rates and students' awareness about sustainability (Moreland & Melsop, 2014). The findings from the study by Moreland and Melsop (2014) therefore bring relevant reflections and considerations that are vital for this research paper.

3 Analytical Strategy

3.1 Theory

The following section aims to provide the reader with an understanding of the aspects of waste management, outline of a Theory of Practice, co-creation, Poka-Yoke, as well as service ecology. Understanding of these ideas is vital in order to produce a thorough analysis. First three of the subsections also provide either practical examples or literature review in order to explain these concepts in the context of innovation.

3.1.1 Waste management

Waste management is a term that can have multiple meanings depending on the context it is used in. It is therefore useful to make concrete definitions and that serve as a base for this research project. First of all, waste management is a general term that describes the many aspects of waste handling such as disposal, sorting, storing, transportation, recycling and incinerating of waste. Waste is used as a term that describes the idea of waste in general and litter describes the smaller items used daily and disposed of by the users of the service. In case of this research, the users are the students, the academic and the administrative staff.

Waste disposal is the action or process of throwing away of litter by an individual, either into a litter bin, a waste container or on the ground (grass, sidewalk, etc.) (Cambridge English Dictionary, n.d.). Litter bins are the smaller receptacles used for the disposal of litter in public spaces, common areas and offices (Appendix A). Waste containers, on the other hand, are the larger receptacles used for the storing of waste for shorter periods of time until the waste gets picked up by a waste truck (Appendix B). Sorting of waste is the action of separating waste into different categories for it to undergo the process of recycling later on. Sorting of waste can happen at different points of waste's journey. Starting from the hands of the students, teachers, and citizens to the employees whose responsibility is the handling of waste at different organizations, to the workers of recycling centers where the sorted waste gets transformed into new materials. Recycling of waste is, consequently, the process of

transformation of used items and waste into the new materials that can be used for production of goods (Wynes & Nicholas, 2017). Recycling of materials is considered sustainable as it can result in up to 0,8 tones CO₂-equivalent emission reductions per year per person (Wynes & Nicholas, 2017). There are up to 16 categories of waste that Marius Pedersen, the waste company contracted by CBS, handles. The common categories being paper, plastic, metal, bio-waste, etc. (Marius Pedersen, n.d.). The waste that does not get sorted or is impossible to recycle undergoes incineration or ends up in landfill. Incineration is the process of burning of waste, usually at large facilities like the Amager Bakke (Amager Ressource Center, 2019).

Second of all, waste management is a term that touches upon the creation of litter itself. It is often forgotten but any kind of waste gets created because of some type of consumption. Consumption is an action of using up a certain resource or, more specific to this research, the action of purchase of products and services by the public (Cambridge English Dictionary, n.d.). Preventing consumption therefore equals prevention of waste. Very often, if not almost all the time, customers create waste at the moment they purchase a good or a service. The price of a bottle of water, for example, includes many hidden costs such as the cost of transportation and the cost of packaging. These costs do not only carry financial value but also the value of environmental impact (Wynes & Nicholas, 2017). Focusing on the aspect of waste and environmental impact, the bottle that the water comes in, becomes something that the customer has to deal with as soon as she or he is done with drinking the water. The customer can either reuse the bottle or has to find a litter bin in order to get rid of it. If, however, the customer found a water fountain nearby and used it instead of buying a bottle of water, the aforementioned situation and its implications could be avoided entirely. Consequently, this would prevent consumption, the creation of waste and the environmental impact as a result.

3.1.2 Outline of a Theory of Practice

Recycling is only one aspect solving the problem of waste production. In order to understand the bigger picture one needs to understand the primary source of the problem just mentioned.

Without consumption there is no production of waste! Consumption behavior, therefore, cannot be ignored.

Richard Wilk (2002) uses Pierre Bourdieu's *Outline of Theory of Practice* (1977) to demonstrate the possibility to trace ways for policies intervention. The interventions that could change people's habits and culture, and, most importantly, impact of their consumption behavior (Wilk, 2002). Additionally to Wilk's discussion around consumption practices it is important to work on and understand disposal practices. As mentioned earlier, "unwanted matter or material of any type, especially what is left after useful substance or parts have been removed" is the definition of waste (Cambridge English Dictionary, n.d.). Waste production is the direct consequence of consumption and one cannot be without the other; one can therefore assume that solution to environmental problems caused by consumption can also be interpreted as caused by waste (Wilk, 2002).

Following similar train of thought, Kevin Hetherington (2004) disputes the idea of waste as a closure and instead sees waste as something that has a "dynamic and performative role within consumption" (p. 159). Rolland Munro (2013), in similar thinking to Hetherington, proposes to restore waste back to its proper place: "We need to do more than refine waste products as recyclable, as if we could re-instate the marginalized, and excluded back to their proper place in society. We need to find ways, as well, to challenge how it is that systems of production outcast materials and morals as useless, outdated, or even immobile." (p. 225). Nevertheless, to understand Richard Wilk's (2002) thinking one needs first to understand Pierre Bourdieu's (1977) *Outline of a Theory of Practice*.

The French sociologist Pierre Bourdieu addressed the idea of social rules in his "Outline of a Theory of Practice" in 1977. His theory states that rigid rules do not determine the behavior of individuals but that this behavior exists on different levels (Bourdieu, 1977). Those levels are separated in the following three: the "Doxic", the "Doxa" and the "Habitus" (Bourdieu, 1977). The Doxic, the deepest level of unconscious is the first of the three (Bourdieu, 1977). Disgust and comfort are regulated by this level of unconscious behavioral habits (Bourdieu,

1977). In other words, this level is composed of feelings. The following level, called the Doxa, is composed of the taken-for-granted rules, the common sense which we never question (Bourdieu, 1977). The last level, defined by Bourdieu as the Habitus, is the whole realm of the unconscious, patterned set of rules and feelings that guide behavior (Bourdieu, 1977). The habitus is the level that is considered as non-static, where all rules or norms can be changed when they are debated, manipulated and argued (Bourdieu, 1977). However, this process can only be possible if a need is taken out of the habitus (Bourdieu, 1977).

Throughout history social rules, predispositions, common sense and embodied feelings were changed and evolved. These changes go from social revolution to smaller discoveries that change how the world is seen by individuals. Richard Wilk (2002) used the following example to illustrate the concept: “when a Jamaican needs rice and peas at a meal in order to feel full and satisfied, she is drawing on the bodily experience of doxa; needs are felt, not spoken. But when the same Jamaican sings a song about her national pride in rice and peas as the national dish of the country, need has moved from the realm of habitus into the conscious and contested area of discussion” (p. 10). Heterodoxy is the term that Bourdieu chose to define this area of discussion. Richard Wilk uses this aspect of heterodoxy in consumption behavior. The aspect of a need, where we can find the consumption behavior, can be taken out of the unconscious behavior from the habitus level into the heterodoxy level where such needs can be debated and questioned. The need that was taken out of the habitus into the heterodoxy is now evolving, and once the process is over it can be put back into the habitus and become a new unconscious behavior. Richard Wilk explains that the balance between two general processes are responsible of the rate of expansion of existing needs and the creations of new ones, he called those processes “Naturalization” and “Cultivation” (Consumption, human needs, and global environmental change, 2002).

Naturalization can be separated into submersive naturalization and repressive naturalization (Wilk, 2002). Submersive naturalization maintains the status-quo by keeping needs submerged in the habitus, where they are only partially accessible by continually asserting that existing order is natural (Wilk, 2002). Repressive naturalization pushes wants and

“desires” into the status of “needs”, or stigmatizing alternatives (Wilk, 2002). Both can be the results of embarrassing or shaming events as well as acts of aggression or violence (Wilk, 2002). The second process, cultivation, extends and expands needs in a new direction, bringing bodily experience into open discourse, display, debate and contention (Wilk, 2002). Cultivation takes its origin from Bourdieu’s (1977) concept of “praxis”, which the last is defined as “the improvisational and pragmatic action of everyday life faced with constant problem solving and changing technology” (Wilk, 2002, p. 11). Praxis tends to be part of already existing cultural rules (Wilk, 2002). However, those rules can gain new roles or standard understanding of it, by changing perspective of the usage of tools or challenging the common sense (Wilk, 2002). “In these cases, changing behavior involves more than choice and decision; it requires a change in the habitus. Accepted ways of doing things have to be discussed, adapted, and rationalized anew” (Wilk, 2002, p. 11). Richard Wilk (2002) tries to demonstrate in his paper the possibility to trace ways for policies’ intervention. The aforementioned interventions could lead individual’s habits and culture, and, most importantly, impact our current consumption behavior. According to Wilk, long term effective solution to environmental problems caused by consumption have to first take place at the level of perceived needs, and then eventually in daily practice (praxis).

3.1.3 Service-Dominant Logic

There is a common way of thinking about value which is mostly centered around goods. Goods and products are the easiest examples of something that possesses value, however, it is important to remember that services also provide value and at times even more so than products. “Evolving to a New Dominant Logic for Marketing” by Vargo and Lusch (2004) explains a new way of looking at the interaction and creation of value between firms and consumers. The economies of the world have moved from the Goods-Centered Model of Exchange, in which the firm creates all the value for the consumers, to the Service-Centered Model of Exchange, in which the consumer partakes in the process of creation of value or is able to influence it (Vargo & Lusch, 2004). This distinction is vital in the case of waste management as the users are the ones that both create and dispose of the litter and in turn, greatly contribute to the value creation process.

“The Customer is Always a Coproducer”, the sixth foundational premise of the article by Vargo and Lusch (2004), acts as a foundation for the theory of co-creation in this research. Important to mention is that Vargo and Lusch have since improved on the theory and reinterpreted some of the definitions and explanation from the original article in a new article, titled “Service-dominant logic: continuing the evolution” published in 2008. The term “co-producer” has been changed to “co-creator” as the original expression comes from the Goods-Dominant (G-D) logic lexicon (Vargo & Lusch, 2008). Products and goods are items that can provide services for and in conjunction with their users. Nevertheless, in order for these services to be delivered, the consumers must still know how to utilize, maintain and adapt the products to their own unique needs (Vargo & Lusch, 2004). In terms of waste management, the stakeholders need to know how to dispose of their litter correctly or how to prevent the creation of litter itself, that is, consumption. When customers use a product, they continue the processes of value creation and delivery and become a co-creator, at times being involved in the entire value and service chain (Vargo & Lusch, 2004). This concept is called Service Dominant (S-D) logic and focuses on service as an application of operant resources (skills and knowledge) that enable users to co-create value (Vargo & Lusch, 2004).

Co-creation touches many elements of our daily lives, from buying a cup of coffee to assembling newly purchased furniture (Edvardsson & Enquist, 2011). It often goes unnoticed how much thought and time goes into creation of these small elements of our daily lives, however, service innovation is more than just developing new and better propositions and configurations, it is about how consumers can utilize these new characteristics in specific ways in order to co-create value (Edvardsson & Enquist, 2011). Taking the example of IKEA, the so-called democratic design, developed by the company’s founder, was driven by a synthesis of three values: social (reaching out to the larger population), environmental (following stringent environmental guidelines) and customer value-in-use (Edvardsson & Enquist, 2011). IKEA also had to manage with the limited resources that were present in the poor district of Småland where the firm originated from (Edvardsson & Enquist, 2011). These drivers stimulated the creation of the innovative democratic design, the essence of which was

to enable consumers to be able to put the furniture together themselves (Edvardsson & Enquist, 2011). Consequently, the customers have turned to being co-creators of the value that IKEA delivers instead of receiving a pre-assembled piece of furniture. Thus, looking at it from the perspective of sustainability, one can argue that different aspects of co-creation are present whenever an organization tries to reach specific parts of the UN's framework of Sustainable Development Goals.

3.1.4 Poka-Yoke

Toyota is the place of origin of many aspects of the modern industrialization. One of those many concepts coming out of the Japanese firm is the concept of Poka-Yoke (Fitzsimmons & Fitzsimmons, 2011). One of the firms industrial engineers, Shigeo Shingo, observed that the errors often occurred because of interruptions in routine or lapses in attention of employees, not because of incompetence (Fitzsimmons & Fitzsimmons, 2011). Poka-Yoke is a Japanese saying that can be translated as a “fool proof” device, the principle of which is to prevent mistakes made by employees (Fitzsimmons & Fitzsimmons, 2011). This means that the purpose of this concept is to develop tools, products or systems that any employee is able to use without making a mistake (Fitzsimmons & Fitzsimmons, 2011).

Airlines switching from manual pre-flight calculation to software is an example of Poka-Yoke. If a value, entered by the pilot, such as the weight of passengers on the plane, is wrong, then the software will correct it. It was demonstrated that errors can have many different origins, some of which come from the service provider and some from the customers (Chase & Stewart, 1994). Different categories were developed by Chase and Stewart in 1994 (Appendix C). In case of the service provider, the 3 categories are Task, Treatment and Tangible, and in case of the customer, errors would be part of the categories of Preparation, Encounter and Resolution (Chase & Stewart, 1994). As mentioned in the previous section, the role of the customer as a co-creator is crucial (Vargo & Lusch, 2004). Similarly, the customers need necessary skills in order to avoid errors that could lead to failure of the service. An example of the category of Preparation is a medical survey a patient is required to fill out in order to ensure the ability for the doctor to make a correct diagnosis (Fitzsimmons

& Fitzsimmons, 2011). Frames at airports that delimit the size of handbags allowed on planes come from the Encounter category of Poka-Yoke (Fitzsimmons & Fitzsimmons, 2011). Resolution category, in turn, helps building customer's behavior as they exit the service (Fitzsimmons & Fitzsimmons, 2011). Litter bins located at the exits of public transport or fast food is an example of a Resolution category of Poka-Yoke devices (Fitzsimmons & Fitzsimmons, 2011).

3.1.5 Service ecology

Once the researchers gathered the data and additional materials it is necessary to structure that information. Service of waste management is very complex and designing an entire ecosystem proves to be impossible due to the limit of time. However, a service ecology map is going to be useful in the early phase of designing a project (Polaine, Løvlie, & Reason, 2013). It serves 3 main purposes:

1. To map service actors and stakeholders
2. To investigate relationships that are part of or affect the service
3. To generate new service concepts by reorganizing how actors work together

There are different tools that can support the process of ecology mapping. In order to map service actors and stakeholders one needs to understand who the stakeholders of the service are. According to Freeman (1984), a stakeholder in an organization is “any group or individual who can affect, or is affected by, the achievement of the organization's objectives” (p. 2). Freeman, Dmytriiev and Strand also outlined the existence of two types of stakeholders: the primary and secondary. The primary stakeholders have a direct contact with the firm whereas secondary stakeholders are in the environment of the business (Freeman, Dmytriiev, & Strand, 2017).

The mapping of the service is also the opportunity to investigate the possible relationships between the stakeholders and the service; What values is created? Who will benefit of the value created? Who is it meant for? Moreover, creation of shared value is another aspect that needs to be taken into consideration when one speaks about waste management. Michael

Porter and Mark Kramer (2011) define shared value as “policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economics and social conditions in the communities in which it operates. Shared value creation focuses on identifying and expanding the connections between societal and economic progress” (p. 66). By reducing packaging, Wal-Mart cut 100 millions of miles from their delivery trucks, which lowered the firms carbon emissions and saved \$200 millions in cost (Porter & Kramer, 2011). This example shows how a firm can improve on the sustainability aspects and attract environmentally-conscious customers while reaping financial benefits at the same time. By reconceiving products and markets, redefining productivity in the value chain and enabling local clusters, a firm can create new opportunities towards a shared value model (Porter & Kramer, 2011).

To return back to the mapping, it is important to define the boundaries of the map so one does not continue on forever. Some of this scope is defined by the project’s strategic goals, budget, sphere of influence, and so on, but the boundaries will also become clearer as one does the mapping exercise. The use of a stakeholder analysis grid is a tool that will remedy the need to define boundaries. The stakeholder analysis grid plots stakeholders on a graph according to their influence or interest within a project or service (Imperial College London, 2017). Four categories exist within this grid that a stakeholder can be a part of, “Low influence, less interested”, “High influence, less interested”, “Low influence, highly interested” and finally “High influence, highly interested” (Appendix D) (Imperial College London, 2017). The service ecology map, therefore, provides a “bird’s eye” view of the ecosystem that a service exists within (Polaine, Løvlie, & Reason, 2013).

Now that the ecosystem is defined it is time to align everything and map out the middle elements that will actually form the design of the service. This is called the service blueprint (Polaine, Løvlie, & Reason, 2013). The service blueprint will connect all the different touchpoints in a service as well as align the needs and wishes of the organization’s stakeholders (Polaine, Løvlie, & Reason, 2013). During the first versions of the blueprint, it was separated into two key elements: the customer service experience and the line of

visibility. In other terms, the frontstage and the backstage. A classic example of that concept of front- and backstage is a hotel stay. Guests rarely see the activities of the staff who clean and make the room, that is, the backstage. However, they do see the results of it, that is, the frontstage (Polaine, Løvlie, & Reason, 2013). This backstage can be brought frontstage in certain ways, such as the folded bed with some chocolate on it. This indicates that the room has been cleaned. Over time, the blueprint concept evolved into a comprehensive tool for placing the customer and service stakeholders at the heart of service design and innovation projects (Polaine, Løvlie, & Reason, 2013). A modern service blueprint is a map of:

- The user journey
- The touchpoints
- The backstage processes

Blueprints can either be used as analysis of an existing service or of an innovation of a service. In the first case, the blueprint can help not only by telling what is wrong, but also how to fix it. The other use helps developing a much more coherent proposition where you can see all the elements interlinked and work over time. Moreover, the act of sketching out the blueprint usually gives rise to other ideas and connections one would not have thought of otherwise (Polaine, Løvlie, & Reason, 2013). Whether one is looking to analyze an existing service or implement a service innovation or maybe even both, the first step is to establish the service experience over time. It is necessary to add the roles of the people involved in the service and the touchpoint channel. There is no strict guideline to a blueprint, all project should have their own relevant blueprint design (Polaine, Løvlie, & Reason, 2013). However, some typical phases are recurrent in representation of the service experience. The typical phases are:

- “Aware”, the point when the user first learns about the service;
- “Join”, the sign-up or registration phase;
- “Use”, the usual usage period of the service;
- “Develop”, the user’s expanding usage of the service;
- “Leave”, the point when the user finishes using the service, either for a single session or forever.

Each of those steps can be broken down into more detailed steps in order to be more specific about the project. Touchpoint channels address the question of how these phases are carried out. Each row of the blueprint represents a channel of touchpoints (Polaine, Løvlie, & Reason, 2013). The touchpoints can include people in form of staff or other stakeholders. The list of those channels can extend down as far as the project needs to. The numbers of row needed has to be adapted to the context of the project. Mapping out a service can quickly become complex and hard to comprehend. The idea of the blueprint is to capture the overall picture of the service concept as well as some of its specific details in order to outline the complexities of the service (Polaine, Løvlie, & Reason, 2013).

3.2 Methods

The goal of this project is to find ways to improve the CBS waste management system. In order to do that, one first needs to analyze the current situation and collect existing ideas and recommendations. This section will demonstrate how the authors have gathered, processed and analyzed the data to answer the goals and the research question of the project.

3.2.1 Philosophy and approach

The research paper was positioned in the realm of philosophy of interpretivism both ontologically and epistemologically, in which the reality is perceived as being multiple and socially constructed respectively (Lincoln & Guba, 1985). The researchers tried to put themselves in the shoes of the stakeholders in order to recognize the stakeholders' understanding of the current situation at CBS in regard to waste management and sustainability. It sought to discover and interpret the meanings and motives in the behavior of parties related to CBS, rather than generalizing to other universities or a wider population which can be seen as traits of interpretivist research (Hudson & Ozanne, 1988). This research project tries to tackle a relatively new problem of waste management at CBS, brought to brighter light due to the raising awareness of climate change, resource depletion and sustainability as a whole. The study therefore did not aim to generate a final and conclusive

answer to the research question but rather serve as a groundwork for future research and a guideline for implementation of future projects at CBS.

This research project is cross-sectional and analyses an occurrent phenomenon present at the time of the writing. It took on an explorative nature as there are no previous studies known to the writers that are similar and took place on the campuses of CBS. The only similar study is the one completed by the researchers themselves, titled “A new generation of litter bins at CBS” (Olenics & Kontchou, 2019). It, however, only addressed the issue of the litter bins, largely omitting consumption behavior (Olenics & Kontchou, 2019). The limitation of maximum length of 15 pages and two weeks to complete the research only allowed to scratch the surface of a multifaceted problem of waste and therefore served as a first insight for the current research project (Olenics & Kontchou, 2019).

This research project was undertaken with an inductive approach and incorporated a mixed method in order to first gather the data and then induce explanations that come from it. The strategies for data gathering were guided by the study’s research question and theoretical perspective. The qualitative data in form of interviews and quantitative data in form of a survey were collected at the same time. This design allowed to integrate the collected data in the findings section, synthesizing both types of data. As a result, the use of this method enabled the researchers to evaluate the topic in question from different levels of analysis and perspectives.

3.2.2 Secondary data

As a first but very important insight, the study makes use of the data from a previous project carried out by both of the writers (Olenics & Kontchou, 2019). The study aimed to describe and develop a more thorough understanding of the process of litter disposal at CBS (Olenics & Kontchou, 2019). It utilized some of the same theories present in this research, however, on a much smaller scale due to the fact that an observation served as the only source of data (Olenics & Kontchou, 2019).

Methodological choice for the data collection was the naturalistic, unstructured, qualitative observation (Veal & Darcy, 2014). The data was gathered through a one-time observation of the process of disposal of litter at CBS (Olenics & Kontchou, 2019). During lunch time, from 13:00 to 14:05, the researchers observed how the visitors at the Solbjerg Plads campus of CBS would dispose of litter into the bins, acting as incognito observers without intruding or influencing the situation in any way (Olenics & Kontchou, 2019). The exact place of the observation was in the common area on the 1st floor next to the canteen of the university, Spisestuerne (Olenics & Kontchou, 2019). The researchers were acting as students, pretending to be working on their computers in order not to gain any attention, observing what was happening in their foresight and taking notes (Olenics & Kontchou, 2019). This type of observation may raise ethical questions as none of the people knew that they were being observed, however, it was conducted in a public area and none of the identities were distinguished or revealed, providing anonymity for the people observed (Olenics & Kontchou, 2019). The stakeholders were only classified into three categories: students, teachers and employees (Olenics & Kontchou, 2019). The data was noted with the use of narrative record, hence the behavior of the stakeholders was recorded in the exact way that it occurred in the first place (Veal & Darcy, 2014).

Due to the previously mentioned limitations of the past research project under which this observation was undertaken, it was a one-time observation for just over an hour (Olenics & Kontchou, 2019). The span of this observation could be considered insufficient, however, at the time of the observation the setup of the waste management system in all common areas of CBS was identical, and the action of disposal of litter into a single type of litter bin was highly repetitive, thus, alternative outcomes of the situation were rather unlikely (Olenics & Kontchou, 2019). It isn't argued that the writers reached saturation of data, nevertheless, the results of the observation provided proof of concept and revealed some of its implications.

3.2.3 Primary qualitative data

Interview with a responsible party at CBS № 1

In order to find out the perspective of a party involved in the waste management at CBS on a daily basis, an in-depth interview was conducted. The in-depth interview had the purpose to understand the current CBS waste disposal system and to gain a better understanding of what is required to develop innovation in this area. The researchers tried to learn what happens going from the beginning of the value chain. From when a product is purchased at Spisestuerne to it ending up in a litter bin in a common area to, finally, the waste containers in the basement of the campus. At the end of the interview, the interviewee showed around the basement of CBS and explained many nuances in regard to the waste containers situated there. As a result, the interview provided the writers with a thorough understanding of the backstage of CBS' waste management system. The interviewee suggested other people to contact, including the expert in the waste management industry, and in this way, following the snowball approach, the first in-depth interview led to the other (Veal & Darcy, 2014).

Interview with a responsible party at CBS № 2

The topic of the second interview with a responsible party revolved mainly around the current efforts of CBS in regard to the sustainability strategy. The interviewee had fairly large power to influence the decision-making process at the university so the researchers also tried to discover what could prevent the introduction of a revamped waste management system and policies promoting less consumption. The interviewee provided the writers with some useful documents like the booklets of CBS Sustainability Strategy and CBS Strategy overall. This interview allowed to gain many insights into the biggest challenges that CBS is facing and into the oikos pilot project. It also increased the scope of understanding of the issue by gathering information from a different hierarchy level of the service.

Interview with a waste management expert

To gain a deep understanding of the waste management structure in the municipality of Frederiksberg and get valid suggestions of how to set up an effective infrastructure at CBS, an interview with a waste management expert was conducted. The topics of the interview

varied greatly, starting from policies on a country level, to the city of Frederiksberg and then to Copenhagen Business School. The researchers also inquired into the possible barriers to implementing a new infrastructure and main requirements for the new system from the point of view of a waste collecting firm. The interviewee provided a lot of insight into how CBS manages their waste as the interviewee interacts with both of the responsible parties at CBS multiple times a month.

Interview with a zero-waste expert

An interview with an expert that managed to set up a venue based on the zero-waste concept aimed to find out what takes to implement such an exceptional innovation. The researchers sought to discover the hurdles that the founder went through and how it was to deal with them. The topic of the interview was about the zero-waste policy at the firm as well as the advantages and disadvantages of a business model based on this concept. Lastly, the interviewee was asked whether, in their opinion, it was possible to implement a zero-waste policy at CBS and what would be the suggestions for it. As a result, the expert, by sharing gained knowledge and experience, took on a role of a consultant on how to approach and combat the issue of waste and consumption.

Design of the interviews

All of the previously mentioned interviews had the same structure and therefore carried a generalized design that is discussed as one in this subsection. The nuances that differ from interview to interview are discussed separately in the paragraph following the current one. The choice of a semi-structured type of in-depth interview was made in order for the interviews to be in a more of a conversational and informal format as none of the interviewees spoke English on a daily basis and so could find it a bit challenging to express themselves clearly (Veal & Darcy, 2014). A short list of questions was sent in advance before each interview, so that during the interview, the researchers can lead the interviewer further into the subjects needed to be addressed. In the second part of the interviews, a more improvised approach was taken depending on the flow of the interview. A great advantage of using qualitative in-person interviews is that this method allows to receive a precise response,

relative to the context of the conversation. The writers are also able to shape the interview and steer it towards the topic at interest in order to gain the deepest understanding of a certain concept (Bryman & Bell, 2015).

The main difference between the interviews was the location. The first interview was conducted in a group room on the CBS campus in order to ensure a neutral and quiet environment. The other interview with a responsible party at CBS had to be held in the common area next to the office of the interviewee due to the short time notice and unavailability of a meeting room. In regard to the expert interviews, the researchers had little influence over the choice of location, so it was selected by each of the interviewees. Luckily, both of the experts suggested a neutral and quiet environment, one being a meeting room at the municipality of Frederiksberg and the other being the private office of the zero-waste expert.

Data analysis, quality and limitations.

In order to make sense of the interviews, a manual narrative analysis was performed where the gathered perspectives and emergent themes from the interviews were analyzed for insights, compared, and then constructed into a synthesized interpretation presented in the findings (Miles & Huberman, 1994).

During three of the interviews, the interviewees felt rather comfortable and were able to answer the questions posed by the writers to the fullest. However, it should be taken into consideration that the setup of the interview with the second responsible party at CBS was a bit loud and distractive due to colleagues passing by and so decreased the quality of conversation. This made the interview more difficult to conduct as it distracted the interviewee and, at times, made forget some of the things that were meant to be said.

The interviews were recorded using two audio recorder devices to prevent a loss of the recording in case of data corruption. The collected data was then stored on a password-protected pen drive in a secure place. Moreover, short notes were taken. The full transcripts

of the interviews can be found in Appendices E, F, G, and H. During each interview, the interviewees were asked to thoroughly read the consent form and sign it if they agreed to what it states. A blank copy of the consent form can be found in Appendix I. To ensure confidentiality of the people interviewed, their names and positions are disguised both in the main body of the report and in the transcripts. At first, the researchers also intended to have an interview with the university canteen, Spisestuerne, but did not receive a positive reply. That puts a fairly large limitation on the extent of the research and is going to be discussed further in the limitations section.

3.2.4 Primary quantitative data

A survey in form of a questionnaire questions was conducted in order to try to understand the behavior of different stakeholders. It gathered information on whether the stakeholders know how to separate waste, what's their consumption, and if they are ready to invest more time and effort into it. The questionnaire also sought to evaluate the perceptions, attitudes and beliefs of the stakeholders towards waste management at CBS.

Target group

The stakeholders targeted are the students as well as the academic and administrative staff at CBS. The stakeholder group of students were limited to only the students attending CBS as the research project's scope lays only on CBS and no other university. The stakeholder group of teachers were also limited to only the ones that lecture at CBS due to the same reason.

In order to target the students, the survey was distributed through the writers' social media network. The links were posted in different groups on Facebook, from the group of the program of the researchers to the biggest Facebook group related to CBS called Copenhagen Business School Connect. The staff was approached via email and in-person. The emails were sent out to the teachers that the writers had some sort of personal experience or interaction with, that is, mostly the teachers that lecture one of courses that the writers had participated in. It is important to keep in mind that this could be seen as a limit to the randomness of the sample both on the students and staff side.

To try to reach a higher number of responses an incentive in form of a reusable travel mug and 10 coffees at Spisestuerne was offered as a gift to a randomly selected person that completed the questionnaire. Introducing a reward for completion of the survey created an incentive for those that might not be so interested in the topic of the survey and in turn, increased the randomness of the sample. It also allowed to reach a relatively large number of 102 responses all together. The sample size is not statistically significant enough to represent the whole body of students and staff in a perfect scenario (with the confidence level of 95% and 5% margin of error) as that requires close to 400 responses (Veal & Darcy, 2014). Nevertheless, if the margin of error was to be increased to 10%, with the confidence level remaining the same, 96 responses would be sufficient. Thus, the collected data still served as a very firm ground to the research and provided a deep insight into the behavior and attitude of the stakeholders.

Design of the questionnaire

The targeted stakeholders are the ones contributing the most to the creation of waste and consumption at CBS and so a well-designed questionnaire was vital to exploring the different behaviors of the stakeholders. The questionnaire design started with the research question in mind and the need for a better waste management at CBS. The current waste management and CBS' efforts to become more sustainable were first examined. The researchers then came up with questions that would help identify the current situation from the stakeholders' point of view as well as address the current need for improvement.

The three sections of the questionnaire gathered data on: demographics, consumption behavior at Spisestuerne and attitude towards sorting of waste of the different stakeholders. The demographics of the respondents was gathered in order to know which group of the stakeholders a certain respondent belonged to. It only asked the respondents' age and gender and no personal information in order to ensure anonymity of the replies. The second section focused on the consumption behavior and habits of the stakeholders during their visits to Spisestuerne. In this section the questions asked the stakeholders whether they go for the

environmentally sustainable or unsustainable options when consuming products purchased at Spisestuerne and whether they perceive Spisestuerne to be sustainable. The last section explored stakeholders' choices when it comes to the sorting of waste, their view towards disposal of waste and their opinion on current efforts of CBS to become more sustainable.

The questionnaire contained 14 closed-ended and 2 open-ended questions. The closed-ended questions were pre-coded where a range of answers is offered (Veal & Darcy, 2014). It may not be apparent right away how a question like "Which of the following do you use more often, plastic cutlery or metal cutlery?" relates to the research question, however, it represents the current consumption behavior of the stakeholders and in turn the awareness about the environmental impact of single-use plastic. As climate action and quality education are some of the SDGs that CBS focuses on, one question of this sort provides a glimpse into how much of the focus Spisestuerne and CBS puts into achieving the goals and whether there is a need for improvement. Furthermore, the questions that try to inquire about the opinions of the respondents utilized a 4-point Likert scale in order to provide a more relative notion of the stakeholders attitudes (Veal & Darcy, 2014). A 4-point scale is used to push the respondent to a certain tendency and not take a "middle ground" as the "middle ground" in most of such questions would mean, for example, that the respondent views CBS as neither sustainable nor unsustainable (Veal & Darcy, 2014).

Data analysis, validity and accuracy

The online platform Google Forms was used to structure the questionnaire and conduct the survey. The online platform made the survey easily accessible and easily shareable. The results of the survey were exported, and Microsoft Excel was utilized in order to analyze and display the gathered data graphically.

A questionnaire survey is one of the most appropriate ways of gathering the required data for this research because it provides a broad understanding of the stakeholders and a good idea of their point of view. Conducting interviews or focus-group interviews would provide a deeper knowledge about the stakeholders' behaviors but would give a very little

representation of the whole population of over 20.000 people. The data gathered through the survey is displayed mainly in a quantitative form but is qualitative in its nature as the questionnaire tried to investigate the behaviors and attitudes of different stakeholders.

It is also important to note that problems with validity and accuracy may arise (Veal & Darcy, 2014). There has been research that shows people's good incentives to sort waste and recycle but, in reality, their actions only increase the contamination rate of the recycling bins (Rolfes & Mas, 2019). A similar situation may happen to the responders of the online survey where they base their answers partly on wishful thinking and in this way provide inaccurate responses. In order to try to avoid this, the questions are designed in a way that tries not to confuse the respondents and make them answer the questionnaire truthfully. Although this kind of approach reduces the chance of inaccurate results, it is impossible to avoid it completely and so the data gathered will be viewed with a possible imprecision of information in mind.

3.2.5 Trustworthiness and authenticity of research

The use of validity and reliability in order to assess the quality of research is pertinent to positivist philosophy and is therefore not very relevant to this study (Veal & Darcy, 2014). The criteria that should be used in interpretivist research are trustworthiness and authenticity (Lincoln & Guba, 1985). Trustworthiness consists of four subcomponents: credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985).

To start with, the researchers tried to fulfill the credibility criterion by asking questions during the interviews and the survey in a way that tries not to influence the responses of the interviewees. This allowed for the answers to be constructed by the interviewees and questionnaire respondents themselves. The responses should therefore reflect the situation at the university rather accurately and so support the credibility of research (Lincoln & Guba, 1985). When it comes to transferability, as previously mentioned, the research solely focuses on CBS and does not try to generalize to a wider population (Veal & Darcy, 2014). Nevertheless, it can still give a representation of something that happens at other similar

educational institutions, if many probable differences are taken into account (Veal & Darcy, 2014).

In terms of confirmability, the writers tried to take a very neutral stance towards the findings in order not to influence the research (Lincoln & Guba, 1985). On the other hand, conducting an interpretative study without bias is extremely difficult as some of the interpretations come from the researchers themselves. Thus it should be remembered that it is impossible to avoid bias completely and at times can be against the principles of interpretive research (Burrell & Morgan, 1979). Lastly, to reflect on the aspect of dependability, this research project is cross-sectional and explores the situation at hand and in the process of change (Lincoln & Guba, 1985). For that reason, the findings from the interviews with responsible parties and the survey may differ if, for example, CBS was to implement a zero waste policy. The findings from the expert interviews, on the other hand, would stay relatively constant. Therefore, utilizing the written extensiveness of this project, other researchers would have enough information to replicate the study, and they would get similar findings if the perspectives of the parties about waste management at CBS and waste in general stay the same.

Authenticity in this research is fulfilled by assessing the range of the perspectives of all the stakeholders and parties that was possible to gather data from (Lincoln & Guba, 1985). The study is also of high relevance at the current time due to the raising issues in relation to resource depletion and climate change. In that sense, it tries to benefit the larger society and therefore fulfills the authenticity parameter to the fullest.

3.2.6 Limitations

As previously mentioned, unavailability of data from Spisestuerne was the largest limitation to this research project. The university canteen was contacted twice via email and responded with a negative answer both times, stating that they receive many inquiries from students on a daily basis and therefore do not have the resources to accommodate all those wishes. An interview with Spisestuerne would have shed light on many important aspects of consumption at the canteen. It would have aimed to discover the selection process of suppliers of the

products and their packaging, the current endeavor to reduce food waste, the influence on consumption behavior as well as the nuances of daily processes at the canteen. The researchers also spoke with another group of fellow students that carried out a research involving Spisestuerne earlier this year and learned that the group was not able to arrange an interview or gain access to any data either. For that reason, the writers decided not to reach out the third time and had to accept it as a limitation to the extent of the study. Therefore, the analysis of consumption behavior had to be based mainly on the data from the survey and from the interview with the zero-waste expert.

On the 2nd of May, two recycling stations were introduced on the Solbjerg Plads campus as part of a three-month pilot project by a student organization called oikos (Lykkegaard A. M., 2019). Observing the two new recycling stations and analyzing the findings could be greatly relevant to this research but proved to be impossible to undertake due to the time constraint – the launch of the bins happened on the 2nd of May and the deadline for the hand-in of this bachelor project was May 14th. However, the writers are in contact with the organization and try to contribute to the project with the knowledge they gained from this research. It is to be hoped that the findings of this research project will be able to assist the efforts of oikos, and in turn, the three-month pilot will be able to generate the results required by CBS for a campus-wide installation of new recycling bins.

4 Findings

The following part of the study is going to describe the raw data gathered during observation, survey and interviews conducted by the researchers.

4.1 Observation

The secondary data was gathered by the researchers themselves for a previous project titled “A new generation of litter bins at CBS” (Olenics & Kontchou, 2019). During the observation at the canteen, the researchers saw the availability of only one type of a litter bin (Appendix A). Those bins were meant only for general waste. It was observed that 2GO coffee cups with the plastic lids were disposed of in those bins, as well as plastic cutlery, plastic bottles with “pant”, leftover food and a notebook. Moreover, a metal fork was accidentally dropped into the bin by a student. The student, after little hesitation decided not to pick out the fork from the bin. It was also observed that once Spisestuerne ran out of metal forks, students were left with no other option than plastic forks. Some of the students took the metal knives with the plastic forks while others went for both a plastic fork and a knife as a solution. Around the time the canteen was closing, an employee went around and looked into the bins, taking out items such as “pant” plastic bottles. The observation notices many issues around the current bins at CBS and therefore will be analyzed thoroughly in the analysis. The full summary of the notes can be found in Appendix J.

4.2 Consumption behavior

The findings showed multiple characteristics among primary stakeholders. Vast majority of both students and staff members do buy products at Spisestuerne. 96,4% of students purchase goods at the CBS canteen and 94,7% of staff members demonstrate the same behavior (Appendix K).

Mostly, only certain types of single-use items are used. 2GO cups (Appendix L) and 2GO bakery paper bags (Appendix M) are two single-use items utilized the most by students. 76,3% of students use 2GO cups and 95% of the same population use 2GO bakery paper bags (Appendix K). 11,1% of the students use their own cups when buying beverages. It is also important to note that those are two items that are not reused by the majority of students asked; only 8,8% of students reuse their 2GO cups and none of the surveyed students reuse the 2GO bakery paper bags. On the other hand, 75% of students use tap water more often than 2GO bottled water, 68,8% use plates more often than to-go boxes and 75% use metal cutlery more often than plastic cutlery. It was also discovered that among the students, 57,5% do reuse a previously purchased 2GO water bottle. On the other hand, 38,8% do not reuse any of the following items: 2GO cups, 2GO bakery paper bags, 2GO water bottles, plastic cutlery or to-go boxes.

The findings among staff members are slightly different. Similarly to students, 2GO cups and 2GO bakery paper bags are two most used single-use items. 61,1% of staff use 2GO cups when buying beverages and 72,2% use 2GO bakery paper bags when buying bakeries (Appendix K). However, 27,8% of CBS staff members do use options other than 2GO cups or cups of their own. Again, similarly to students, 66,7% drink tap water, Moreover, 100% of staff use plates and metal cutlery! When it comes to reuse of items, 2GO water bottles are the only item that is reused, although by less than half of the staff. 55,6% of the staff questioned do not reuse any of the items proposed in the questionnaire.

When asked “I try my best to reduce the amount of waste I produce at Spisestuerne” the numbers differ between students and staff. The majority of students, 56,3%, generally do agree with the last statement mentioned (40% of students agree 16,3% strongly agree with the statement) (Appendix K). However, the agreement among staff is higher. 72,2% of the staff generally agree, out of which 33,3% strongly agree with the statement.

Both, students and staff, acknowledge the efforts made by Spisestuerne regarding the reduction of daily food waste. However, many think that more effort needs to be made (Appendix N):

- “the efforts on reducing food waste are noticeable but the usage of plastic could be a lot more controlled”
- “I like the fact that they try to avoid food waste However, I don’t have the impression that they try to reduce the use of plastic waste or paper bags.”
- “they’re great – but there are really easy ways to keep improving. Saw them throw out a full tray of bagels a few months ago”
- “They have taken some positive initiative with regards to food waste, but more initiatives are needed”

On some occasions, it is also mentioned that the availability of some single-use items pushes both students and staff to utilize them (Appendix N and O):

- “they are not trying very hard. It would be easier to reduce waste if it wasn’t an option to use 2GO cup. I always forget to bring my own.”
- “I think recent change to move the plastic cutlery was very good. Since the metal cutlery is more easily available, I think and hope people will start use them more.”
- “too little. The bottles and cups are a shame. Financial incentives for reuse needed.”
- “I believe that the provision of plates, glasses and cutlery contributes a lot to reducing overall waste produced. However, there are limited recycling and sorting of waste options provided in the canteen.”

The survey showed that the majority of students sort their waste at home: none out of the 6 categories of paper, carton, metal, glass, plastic and bio-waste is sorted by less than 50% of the students (Appendix K). Moreover, when stated “I know how to sort my waste properly” 84,4% of students generally agree, out of which, 44,6% strongly agree that they know how to sort their waste properly. 73,4% of all student questioned also generally agree with the statement “sorting waste is important to me”. Generally, when the students are asked “What

do you think of waste sorting efforts of CBS?”, disappointment is present in a great number of the answers (Appendix Q):

- “Horrible. Couldn’t be that hard to set up bins that enable sorting plastic to a start, then offer more options.”
- “It could be considerably better”
- “Could be improved, at the moment I do not even recall if CBS does sort its waste, which speaks for itself”

The findings show that the majority of staff members do sort paper, carton, glass and plastic on campus (78,9% sort paper, 52,6% sort carton, 63,2% sort glass and 57,9% sort plastic) (Appendix K). Only 31,6 % sort metal and a low number of 5,3% sort bio-waste. When stated “I know how to sort my waste properly”, 78,9% do generally agree and when stated “Sorting is important to me” 84,2% of staff members generally agree. More than half of the staff even strongly agrees with the statement “Sorting of waste is important to me”.

Furthermore, the findings show that staff members are satisfied with the sorting system that is available to them (Appendix R):

- “not bad, could be better with bio-waste”
- “they have improved radically over the last years. I don’t think it makes sense to add additional fractions.”

Zero waste expert noted the importance of teaching customers the skills regarding consumption behavior and sorting (Appendix G). Often, offering just a quality or responsible product is not enough; price still is the main criteria for customers. However, in reality, zero waste options tend to be cheaper for both the service provider and the customers in the long run. This economical advantage is often not obvious to the customers and needs to be articulated by the provider.

Waste management expert explained that sorting rules in Denmark are not always clear and so “people do not completely understand what is expected of them” (Appendix H). It is also

explained during this interview that most households in Copenhagen already have some sort of waste sorting system in place but that it is not the case for businesses. The waste management expert thinks that the unavailability of sorting can be discouraging to the students and staff.

4.3 Waste management backstage of CBS

In-depth interviews were used as tools to better understand the functioning of CBS current waste management system. The following findings were gathered:

There are 2 possible journeys for the litter collected at CBS:

- Litter collected in the general waste bins all around the common areas of the campus are gathered by a private cleaning company. This litter is not sorted by cleaning personnel at any point. The entirety of litter collected is brought to the basement and is stored in twenty seven 800 liter bins (Appendix S). They are then collected by the waste company called Marius Pedersen and will finish their journey in one of the major burning facilities in Denmark such as Amager Bakke (Marius Pedersen, n.d.).
- Litter collected in the office areas, however, has a different path. Some basic sorting is done by the academic and administrative staff. CBS staff members have some sorting infrastructure at their disposal. The litter collected is then brought down to the sorting bins in the basement of the campus (Appendix S). Usually there is no need for waste handling employees to do any additional sorting, but in case of major mistakes they would correct the error and put the item in the correct sorting bin.

The second possible journey comes for initiatives implemented between CBS and Frederiksberg Kommune (Appendix H). Frederiksberg Kommune has an agreement with public and private institutions where the municipality is responsible to promote and improve the sorting of waste around the city. Officials of the municipality are in constant contact with CBS in order to make sure the system that was put in place is working properly. Those officials also work with Spisestuerne and management personnel regarding the sustainable

strategy. CBS did some improvement in terms of recycling in the offices of academics and administrative staff (Appendix E). Frederiksberg Kommune officials, however, think that more effort needs to be done as essential parts of the system are yet to be fulfilled. Moreover, they show a strong opinion that the system needs to be improved on the core institutional level.

The following paragraph summarizes the interview with a responsible party at CBS - № 2 (Appendix F). After the first sustainable department named “Green Team” closed in 2014, a new momentum for sustainable strategy appeared. This new momentum has a goal to promote bottom up initiatives in order to reach a more sustainable campus at CBS. The initiatives are limited by a budget, however, any person can reach out to the CBS administration and share ideas on how to improve the campus. In regard to waste management, the main challenge is still behavior. Teaching people to have a responsible behavior regarding sorting waste is a complex hurdle to overcome. Additionally, few initiatives are in place regarding prevention of consumption. The absence of clear goals are the main reasons for it. 20% reduction of consumption is a goal that still needs to be approved by senior management. The manner to reach the set goals are still up to debate, and multiple ways to achieve targets are possible.

4.4 Initiatives for sustainable strategy

Enthusiasm about the matter and real concern was shared by all stakeholders of waste management service at CBS. From students to staff to the responsible parties at CBS, to the experts, all expressed their opinion and suggested possible initiatives. Following the same bottom-up philosophy as mentioned by the responsible party at CBS № 2, some suggestions were found within the collected data.

Open-ended questions of the survey revealed possible ideas regarding the customers’ perspective on the service. When asked “What do you think of Spisestuerne’s effort in reducing consumption and waste?” a recurrent answer shared by the customers is the issue of availability of single-use items. Many argue that having 2GO cups available to them with few

alternatives is a setback to a more responsible consumption behavior. In the case of students, some argue that, as long as the 2GO cups are the only option available, they are going to use those cups. Many see the possibility to bring their own cups, availability of ceramic mugs, or financial incentives to not use single-use cups, to be the possible alternatives (Appendix O):

- “They are not trying very hard. It would be easier to reduce waste if it wasn’t an option to use 2GO cups. I always forget to bring my own.”
- “(...) I also wish that you would pay a little less for bringing your own coffee cup. (...)”
- “(...) I don’t get why cups are not provided, I’m so sure a lot of people would use them, especially now in exam time when everybody is there ~12h a day anyway. The paper cups only last 2, maybe three rounds of coffee, so everybody just gets a new cup then...”
- “I would really appreciate if it was possible to take coffee in a mug (I know that KU offers that option) instead of buying single-use products. Similarly, it would be great if they had small metal spoons that could be use instead of the plastic one (for mixing Nescafé without taking plastic spoon or the “wood straw”). The same goes for the huge amount of plastic wrapping salads, vegetables and fruit etc.”

Staff showed similar concerns about single-use items, furthermore, explaining that alternatives available in the office spaces discourage them from using single-use items (Appendix P):

- “(...) I do think that they offer students the option of filling their own thermos, which is great. Personally I get coffee at the department using ceramic cup.”
- “I believe that the provision of plates, glasses and cutlery contributes a lot to reducing overall waste produced. However, there are limited recycling and sorting of waste options provided in the canteen.”

Spisestuerne initiatives to make plastic cutlery less available or harder to find was praised by many students. Some admitted that not having the option to use plastic cutlery changed their consumption behavior (Appendix O):

- “I think recent change to move the plastic cutlery was very good. Since the metal cutlery is not easily available, I think and hope people will start to use them more.”
- “I’ve noticed that it is easier to find the metal cutlery than plastic which makes me choose metal over plastic more than I would otherwise.”

When asked “What do you think of waste sorting efforts of CBS?” the answers are not as initiative-oriented as the similar question addressing Spisestuerne’s efforts. Most students do not come with a suggestion for a solution but more with remarks regarding the lack of infrastructure for them to sort (Appendix Q). On the other hand, staff members seem to be satisfied with the waste sorting options available to them. Although, some still think that improvement could be made regarding plastic and bio-waste, as bins for the latter are not available as of now (Appendix R).

Findings from the interview with a responsible party at CBS № 1 reveal some problems that CBS employees face on the daily basis. When asked “Is there anything you would like us to look into or figure out that could be of benefit to CBS?” an answer in three parts was given to the researchers. In order to have a more efficient waste management system: logistics, consumption and user behavior must be considered (Appendix E). Employees are facing architectural limitations concerning logistics of waste. Campus buildings were not built considering the necessary infrastructure needed in order to have an efficient waste sorting system for more than 20.000 individuals. In the future this needs to be taken into consideration when building a new educational structure. Today, the employees find it hard to make use of little available space in order to accommodate an effective waste collection system. Seeing the amount of waste produced on campus made some of the employees realize the necessity of a sustainable circular system and the necessity to put students’ consumption behavior into question. Finding ways to integrate the users in the sorting process by teaching them the right ways to sort would save time and financial resources. Users understanding what waste goes where has a significant impact down on employees and further on the recycling of waste.

Fortunately, students seem to have some basic knowledge on how to sort waste. Not having any infrastructure to use can be discouraging and having a sorting system in the common areas of the campus would be the first step forward (Appendix H). Waste management expert argues that implementing sorting bins in itself is not difficult. All it requires are bins for different categories of waste with clear and simple instructions. The process, however, does not stop there. In order to understand which categories are useful, some research needs to take place. According to the expert the best way to do it is by looking through bins in different parts of the campus and identifying the items and materials that are present in them. The categories of new sorting bins should therefore be based on the items and materials that appear most often in the general waste bins.

Expert suggests that it is also possible to determine the required categories for sorting by looking at the items available at the canteen (Appendix H). Moreover, connecting the people responsible for the supplying of Spisestuerne with the people that collect the waste would allow for both parties to understand the variety of materials used. By knowing the types of materials that the items at the canteen are made of, it would be possible to organize the waste sorting system well. This is where zero waste experts are challenging institutions to have courage to work on the supply chain and forbid the presence of items that create high amount of complex material to recycle (Appendix G). With Denmark's efficient firms that provide products with zero waste, there should not be many barriers to reduce waste in the value chain. With suppliers such as Grønfokus and their locally produced products, real work can be done on backstage by working on reducing overpacking (Appendix G). Limiting products to local producers is a key to having a lower environmental impact as it not only reduces packaging but also the transportation.

The overpackaging by suppliers is often overlooked but can, according to the zero-waste expert, have an impact down the value chain by not only reducing the amount of waste created but also by being financially beneficial (Appendix G). However, there tends to be a difficulty convincing both customers and institutions that a zero-waste model has a beneficial

economical aspect, due to the wrong, pre-existing ideas about it. In expert's opinion, CBS' main challenge to build a zero-waste model is having the courage to start. There are already many existing institutions applying this model and as many companies ready to support an institution such as CBS to switch to a zero waste model. Taking away some of the items and finding alternatives are not going to stop customers from coming to Spisestuerne. On the contrary, most of them are already well aware of the current impact of overconsumption and therefore just need tangible explanations of the impact of their own consumption on campus. This would not only be beneficial on the financial side but also create value to users who would know that they are part of a responsible institution.

5 Analysis and discussion

5.1 Stakeholders of waste management at CBS

Before starting to analyze the service or designing the blueprint, one needs to delimit the multiple possible actors that have a stake or interest in the matter of waste management at CBS. Understanding who is affected and who affects waste management at CBS is a crucial first step to better understand waste management at CBS. The writers are trying to understand what Freeman (1984) defined as “stakeholders” as well as their roles within the service of waste management at CBS.

20.000 students and 1.500 staff of CBS represent a big part of the stakeholders. Both students and staff are considered as primary stakeholders and, more precisely, are considered as the users of the service of waste management. 96,4% of students and 94,7% of staff buy products at Spisestuerne, therefore consume and create waste (Appendix K). Vargo and Lusch (2004) describe the importance of value co-creation in a service-dominant world. Due to the co-creation role of the users, it is crucial for them to possess the skills to sort litter correctly. CBS’ canteen, Spisestuerne, is also a primary stakeholder and has a role of supplier. Being one of the major platforms of consumption on CBS campus, with nearly all customers buying products there, Spisestuerne can also be portrayed as a major waste producer. Based on the idea of co-creation by Vargo and Lusch (2004), the service provider, in this case Spisestuerne, has the role of teaching customers the necessary skills and provide with proper tools in order to create the most value. Measures that promote reduction of consumption on campus would show how Spisestuerne can be affected by the waste management.

Another primary stakeholder is the senior management of CBS or CBS administration. They are the people responsible of key decision making as well as the strategy that the university wants to follow in the future. If CBS administration endeavors to put in place a sustainable strategy, they would also need to put in place measures to enable users with the necessary skills (Lykkegaard A. M., 2018). Additionally, Freeman (1984) describes employees as

primary stakeholders. The role of the waste handling employees was described by one of the interviewees as the responsible of the backstage and of the well-functioning of the service of waste management (Appendix E).

Freeman, Dmytriiev & Strand (2017) explain that the stakeholders who are not part of the firm but are part of the environment of a firm, are secondary stakeholders. One of the secondary stakeholders is the government. The government is the institution that implements guidelines on how waste has to be managed and which CBS must abide. There is the government of Denmark, which, puts country-wide guidelines on how waste has to be managed. However, in the case of this research project, Frederiksberg Kommune has the role of the government as they are the ones making sure that CBS abides the guidelines. Furthermore, Frederiksberg Kommune consult CBS on how to improve their sorting system (Appendix E and H). Oikos are considered by the researchers as a consumer advocate group as they encouraged CBS administration to try out a new sorting system with an aspiration to improve the waste management at CBS (Lykkegaard A. M., 2019). CBS Wire, the university newspaper, is another stakeholder that showed ability to affect the waste management at CBS by investigating into the older sorting bins. As previously mentioned, it was found that the contents of the bins did not get recycled for the past six years, urging the administration to remove the old bins off campus immediately (Lykkegaard & Koors, 2017). This makes them a secondary stakeholder in the form of media that can both be affected and affect the waste management situation. Special interest groups, in the form of external zero waste firms that are able to supply CBS with products based on a zero-waste model, are considered a secondary stakeholder as well due to their power as suppliers.

The number of stakeholders is significant, and this project has to prioritize those that can make the biggest impact on CBS. The researchers are going to use a stakeholder analysis grid in order to select the stakeholders that have the biggest impact on the waste management at CBS and to explain why they have such an impact (Appendix D) (Imperial College London, 2017).

Following both the application of the Outline of a Theory of Practice to influence consumption behavior by Wilk (2002) and the importance of customers as co-creators in the Service-Dominant Logic by Vargo and Lusch (2004), the four stakeholders that the researcher defined as primary were considered to have “high influence and high interest” in the service and have to be managed closely.

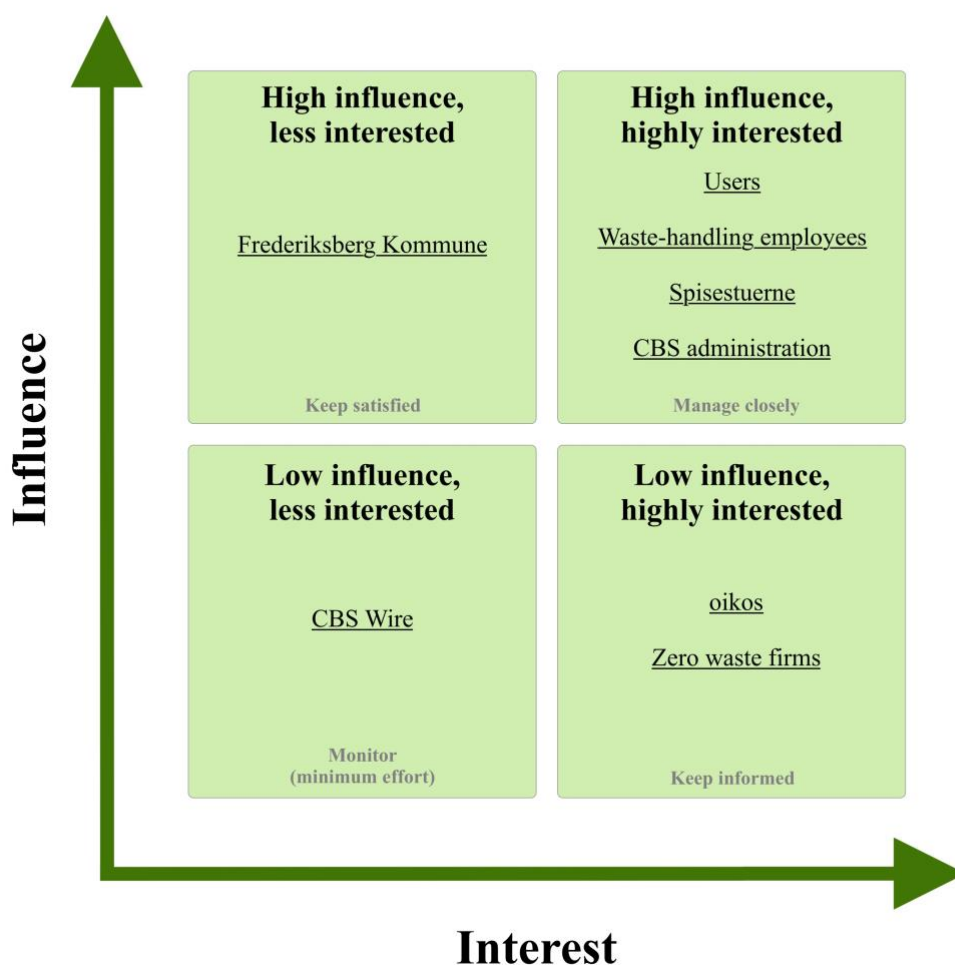
Users have a high influence by being the main producers of waste, if they are taught the proper skills needed as co-creators, and if they do effectively change their consumption behavior towards one that is more responsible, they will have an impact on the amount of daily waste produced. However, more on this is going to be discussed in the further parts of the analysis. The users answered in the questionnaire that sorting of waste was important to them, demonstrating their high interest in waste management (Appendix K). The supplier, Spisestuerne, has a high influence on waste management by being the highest in the value chain of consumption. Spisestuerne states on their website “Spisestuerne is owned and operated by CBS students. The strategic decisions are taken by the board of directors. They ensure smooth daily operations in agreement with our shareholder, CBS Students” (Spisestuerne, 2019). Due to no possibility to conduct an interview with the university canteen, the latter quote acts as main proof to the statement that Spisestuerne has the same high interest as their shareholders and customers, CBS students.

CBS administration has both a high influence and a high interest when it comes to waste management. It was shared by the responsible party at CBS № 2 that the role of the administration is to take decision on the budget and strategies to apply, making their influence rather high (Appendix F). By approving the sustainable strategy, the senior management of CBS demonstrates their aspirations for a sustainable campus as well as their high interest (Lykkegaard A. M., 2018). Waste handling employees have a high influence by being responsible of the well-functioning of the backstage level of the service. Past initiatives with sorting bins show that if the employees are not properly trained or do not have the tools to sort the waste, then the situation could lead to the failure of such initiatives (Appendix E). The interest of waste handling employees was proven in the interview by the responsible party

at CBS № 1, who stated that their mentality and enthusiasm regarding sorting of waste has changed and increased in the past years.

The secondary stakeholders are not considered as priority by the researchers either because they have too low of an influence or too low of an interest, or both. Frederiksberg Kommune has too low of an interest due to the fact that CBS is just one of the multiple institutions they have to take care of (Appendix H). Both oikos and external zero waste companies have a too low of an influence on the service by being one of many possible suppliers that Spisestuerne chooses from (Appendix F). CBS Wire has both too low of an influence and interest. The university's newspaper can in some cases influence the situation but there is little chance that their actions will have a broader impact on waste management at the university as a whole.

Stakeholder waste management grid



5.2 Current waste management situation

To explain the overall waste management situation at CBS, this section is going to be broken down into two parts. The first subsection focuses on the consumption behavior of students and staff as both purchase products from Spisestuerne. As a logical result of consumption, litter, or to be more precise, the disposal of litter, is going to be analyzed in the second part. Therefore, the second subsection analyses the disposal of litter by the students. The staff is not taken into consideration as the infrastructure for staff is different.

5.2.1 Consumption behavior

The current habitus

Consumption behavior represents the decisions and actions done by the customers that influence the amount of goods and services they consume. Due to the limitations of the research, it was not possible to gain any information on the amount of consumption that happens at Spisestuerne. Nevertheless, taking into consideration that there are over 20.000 students and 1.500, it is possible to assume that the amount of consumption taking place at the university canteen is grand. Together with this consumption comes waste. At times this waste is in form of unnecessary litter. The litter is unnecessary if it could have been avoided if the customer had chosen a different option. The simplest example of creation of unnecessary waste is using plastic cutlery instead of metal cutlery.

According to Wilk's reflections on Bourdieu's theories, the cycle of habitus and heterodoxy has increased greatly under modern conditions (Wilk, 2002). To analyze this phenomenon, it is useful to combine the findings of the survey for both students and staff and deconstruct them using the lens of habitus. 95% of the survey respondents state they buy products at Spisestuerne (Appendix K). Moreover, 68% use 2GO cups when buying beverages and 83% use 2GO paper bags when buying bakery. On the other hand, over 70% drink tap water instead of buying 2GO bottled water. Furthermore, over 50% of the stakeholders reuse the purchased 2GO water bottles instead of buying new ones. Another item that was reused by 6,8% of the

customers is the 2GO cup, while to-go box and plastic cutlery was only reused by 1 person out of 102.

When eating a meal, 68.8% of students use a plate and 75% use metal cutlery while the number is equal to 100% for staff in both cases. Surprisingly, 25% of students use a to-go box instead of using a plate and 22.5% use plastic cutlery. This could possibly be because of the easiness of disposing a to-go box and plastic cutlery, compared to a plate and metal cutlery, both of which have to be returned to the canteen. If one were to look at the answers to the 4-point Likert scale question “I try my best to reduce the amount of waste I produce at Spisestuerne”, 18,6% strongly agree and 38,2% agree with the statement. From these findings it can be inferred that some of the customers do understand the impact of overconsumption. Nonetheless, when it comes to 2GO cups and bakery paper bags the majority still chooses them, be it because of customers’ obliviousness or easiness and availability of these options. The habitus of a majority of the customers is therefore that they go for the easiest option whenever it is available. This finding is also supported by the results of the action research study at The Ohio State University. Why is it the case that the customers have gotten so used to making a choice based on the easiness of available options?

It can be speculated that repressive naturalization took place when to-go cups, boxes and plastic cutlery were introduced and not only at CBS but in the modern society. Their introduction provided a possibility to drink and eat wherever it is of comfort to the customer. One has to be more careful with the original ceramic options when in use and they are not as easy to bring somewhere and have to be returned afterwards. Wilk (2002) provides a very good example of that in his paper, a Maya man that has always used to walk barefoot went to school in a town nearby where everybody was wearing shoes. People would laugh at him for being barefooted, so he got into the habit of wearing shoes and now portrays walking barefoot to be unhealthy and disgusting. This provides an idea of where the customers’ needs might come from, but is it possible to revert them in order to reduce consumption and in turn be more sustainable? The zero-waste expert argues that simply removing the unsustainable options will push the customers of Spisestuerne to adapt and only utilize those that are

available (Appendix G). The possible solutions to the issue at hand are discussed more in-depth in the subsection 5.3.2.

Heterodoxy

Wilk (2002) states that consumption moves from habitus to heterodoxy when it is debated, contemplated upon and has to be justified. At this stage it is possible for consumption behavior to get challenged as the needs are contested. The analysis of the current habitus suggests that some of the customers already have an idea about the issue of consumption and that some discussion takes place, therefore the subject is at the level of heterodoxy. To gain a deeper understanding of the phenomena it is useful take a thorough look at the responses to the open-ended question “What do you think of Spisestuerne's efforts in reducing consumption and waste?” of the survey.

The answers to the open-ended question differ widely from positive to negative. Some of the responses from the staff members include: “They have taken some positive initiative with regards to food waste, but more initiatives are needed”, “Good efforts, however, much more can be done”, “To be honest I haven't noticed any special effort....” (Appendix P). The answers from students seem to be more extensive: “They're great - but there are really easy ways to keep improving. Saw them throw out a full tray of bagels a few months ago right as they were putting out the Food waste boxes! Really great to see the initiatives though, making plastic cutlery harder to find so you're more likely to use metal, etc.”, “They are not trying very hard. It would be easier to reduce waste if it wasn't an option to use 2go cups. I always forget to bring my own.”, “I honestly didn't notice any action taken by them except for offering plates and metal cutlery. They could do better to raise awareness regarding this issue. I have never even thought about it before.” (Appendix O).

Arguably, the answers to the open-ended questions show that the topic of consumption behavior is at the level of heterodoxy for many of the customers. However, the situation is most likely different for those that state that they do not notice much effort or furthermore have not even thought about it before. For them, the topic of consumption is not at the level

of heterodoxy and therefore, their habitus seems to be different than the majority's. Based on the answers to the survey, Spisestuerne already has some initiatives put in place that students notice, which brings a question. Is there any praxis that takes place that might be changing the customers' habitus?

Praxis and co-creation

Praxis is the process of practicing new actions or activities that eventually bring to the cultivation of new needs, that is, to a new habitus. It seems as if Spisestuerne has been successful in initiating praxis by constraining the use of plastic cutlery, for example. Responses from some of the students show that. "They've made plastic cutlery harder to get a hold of, so now I only use metal.", "I've noticed that it is easier to find the metal cutlery than plastic which makes me choose metal over plastic more than I would otherwise." This provides concrete proof that some students start to practice alternative behavior. Furthermore, Wilk (2002) describes this phenomena as rationalization of the accepted ways of doing things, which challenges the common sense and that is precisely what happens in the aforementioned example. As the student is restrained in the ability to take plastic cutlery, he or she is compelled to use the metal alternative instead. This brings to the speculation that praxis and co-creation may be correlated.

As previously stated, the results of the survey prove that unnecessary consumption takes place at Spisestuerne. How does co-creation impact that? This phenomenon may be seen as a bit of a paradox because there is value co-created by the stakeholders through prevention of waste creation or prevention of consumption. The created value is rather intangible but the action of not consuming anything also does not impact the environment and is therefore more sustainable than any other type of consumption (Black & Cherrier, 2010). However, in order to successfully reduce consumption, Spisestuerne has to stimulate awareness about consumption behavior, as one of the students argues. He or she suggests it in the answer to the open-ended question in relation to Spisestuerne's efforts in reducing consumption: "Actually it doesn't look like they are trying... Of course they have to offer the cups and bags, but little slogans/ ads/ information like "try to reuse the things or bring your own cup, or take

shortly a plate instead of the bag, would animate more people to do so. Additionally, if you take your own to go cup, you don't really get less paid or the process of putting it into the cashier machine is complicated/ takes long. As a suggestion, it could be shortly asked before the payment, if I took my own cup or not :)" (Appendix O).

The initiatives that spread awareness would therefore stimulate discussion (heterodoxy) and encourage the customer to practice (praxis) their skills and knowledge (operant resources) in order to be able to co-create the value that can be gained from preventing consumption. Cultivation of needs takes origin from the idea of praxis (practice). If the customers were to focus on preventing consumption on a daily basis, possibly this process would become automatic with time and cultivate a need (new habitus) for a sustainable option at Spisestuerne. This is the core aspect of praxis. However, a missing link seems to exist between the habitus and praxis in the theory proposed by Bourdieu (1977). How does one connect the habitus to praxis? This question is worth discussing in the conclusion.

5.2.2 Disposal of litter

The current habitus

There are many unconscious processes in human brain. Bourdieu (1977) argues that most of the actions we do in our daily lives are unconscious. A similar logic seems to be pertinent to the daily action of disposal of litter. In order to analyze this phenomenon, it is useful to look at it using the lens of habitus, one of the three unconscious levels of human behavior outlined by Bourdieu. According to the questionnaire, over 50% of the students already sort paper, carton, metal, glass, plastic and bio-waste at home (Appendix K). 36,1% strongly agree and 37,3% agree that sorting of waste is important to them. Moreover, 44.6% strongly agreed and 39.8%. agreed that they know how to sort their waste properly, leaving out only 15.6% of students that do not generally know how to sort waste correctly. It seems like the majority of student responded to the open question "What do you think of waste sorting efforts of CBS?" with some form of a disagreement. Some of those responses are "They are very limited", "I haven't noticed any waste sorting efforts", "They could improve it a lot" (Appendix Q). This brings to a conclusion that the current habitus of majority of students is that they already know

the positive impacts of recycling as well as possess some of the required skills in order to sort correctly.

Heterodoxy

Some of the students already discuss the issues considering the current waste disposal system and suggest possible improvements. Bourdieu (1977) defines this area of discussion around the status-quo as heterodoxy. It is difficult to answer concretely, what number of students actually think about their behavior when they dispose of their waste in a single general waste litter bin instead of sorting it. Do any of them feel guilty? Puzzled about their options? Or do most not think about it at all and do it unconsciously? By analyzing the responses to the open-ended question of “What do you think of waste sorting efforts of CBS?” in the survey, it is possible to assume that some of the students do question and discuss the current infrastructure on the campuses of CBS. One of the students reflects on this issue in-depth (Appendix Q).:

“From what I understand (but not sure if true...), some waste is sorted after it's taken out (even though there are no recycling bins). I think recycling in Denmark is actually really difficult (no pizza boxes in the cardboard bin, tetra-pak can't be recycled, I still don't know what kind of plastic I'm supposed to put in the plastic bin!) and putting out recycling bins at a university where people don't have the knowledge to sort things properly (and are usually too distracted to notice) may not be very practical. It sucks, but I do understand why it's difficult.”

The student touches upon many parts of the waste management, not only at CBS but Denmark overall, providing proof that the disposal of waste is at the level of heterodoxy for her or him. As previously said, it is a challenge to find out the actual number of students discussing the matter at hand. However, based on the responses to the open-ended question, it is possible to say that at least some contemplate on the issue, meaning that for them, it's at the heterodoxy level. This could be inferred from the fact that they provide similar answers to the latter one and thus prove some understanding of the phenomena. A point worth mentioning, though, is that the respondents that do not go so much in-depth may simply be unmotivated to provide an extensive answer. This would only support the claim that issue may be at the heterodoxy

level for a larger number of students than originally reported. Hence, what can stimulate heterodoxy in the students that do not question the status-quo?

Value co-creation

The value of a service is never only created by the company providing the service. The customers, by utilizing their knowledge and skills, contribute to the value creation process as well, especially when it comes to waste. Vargo & Lusch (2008) describe this phenomenon using the term of co-creation. It is argued that this concept is especially relevant in regard to waste management as the description of it appears throughout the collected data, however, it never actually gets discussed. First and foremost, the conducted observation displays how contributive are the actions of the stakeholders to the disposal of waste in the common areas of the university. During the observation it was recorded that the litter created by the stakeholders is disposed of by the stakeholders as well (Appendix J). Based on the interview with the responsible party at CBS № 1, the litter does not get sorted at any other part of its journey but instead gets incinerated at one of the facilities around Copenhagen (Appendix E).

The current infrastructure at CBS therefore acts as a constraint for students' ability to sort litter on the university campus. Thus, the value is created by the stakeholders but makes a negative impact on the carbon footprint of CBS. As previously mentioned, recycling of materials can result in up to 0,8 tones CO₂-equivalent emission reductions per year per person (Wynes & Nicholas, 2017). By not sorting the litter in order for it to get recycled, the possibility of co-creation of value by the stakeholders is diminished in the context of environmental impact and sustainability. Now that it is known that the possible value of co-creation by the stakeholders is diminished, how can it be created, simultaneously instigating heterodoxy? The possible solutions to it are suggested in the subsection 5.3.2.

5.3 Service blueprint of waste management at CBS

Now that the current situation has been analyzed, it is useful to create recommendations on how to improve the waste management situation at CBS in order to fulfill the goal of this research project. The service blueprint is used to synthesize the possible solutions in a form of touchpoints that could improve the current system at CBS and transform it towards a more responsible model. As mentioned earlier, one cannot speak about waste without considering consumption. The researchers are therefore not only implementing the waste management aspect but also consumption behavior throughout the service experience process.

5.3.1 Users' service experience

Polaine, Løvlie & Reason (2013) explain the necessity to establish a service experience over time, the duration of the whole interaction with the service. Four stages of the service experience will be presented in the blueprint. The first is "Awareness". The data collected shows that the awareness of bins available is limited to general bins that do not get sorted (Appendix J). All of the users are aware that waste can be sorted either because they do sort at home or have some sorting options in their offices (Appendix K). The second stage starts the moment the users start their "Consumption", that is, as soon as they enter Spisestuerne and purchase a product. The data gathered shows that nearly all the users purchase items at Spisestuerne. Moreover, it shows the extensive usage of single-use items such as 2GO cups and 2GO bakery bags. The third stage is "Sorting". This represents the moment the users are disposing of the litter produced after their consumption. As just mentioned, currently the choice is limited by the only option of general waste bins, contents of which do not get recycled (Appendix J). The last stage is the moment the users leave the service for a single session and is named "Post-event". Currently, no follow up is made and there are no initiatives aimed at improving the skills of the user for the next session with the service.

5.3.2 New touchpoints

Now that the service experience over time is defined, it is useful to go through touchpoint channels that would help to improve certain stages of the service by utilizing the application of Bourdieu's Outline of a Theory of Practice and the concept of Service-Dominant Logic.

Zero waste model at Spisestuerne

Porter & Kramer (2011) describe the benefits and advantages that a firm can have by creating shared value. They argue that a company can, with policies and operating practices, not only create economical value for the firm but also value for social conditions in the communities. The previously mentioned example of Wal-Mart illustrates this creation of shared value rather well. When it comes to CBS, more than 95% of all customers answer that they buy products at Spisestuerne, many of whom state that Spisestuerne could do more effort in regard to reducing consumption. Waste being the outcome of consumption shows the relation between Spisestuerne and the waste production at CBS. Without working towards a more responsible consumption behavior at Spisestuerne, one can do only so much regarding responsible waste management.

Applying a zero-waste model at Spisestuerne would be a touchpoint improving the current state of waste management service at CBS by putting into question customers' habitus and creating a discussion in the heterodoxy. This could start with implementation of initiatives to stop the usage of plastic and single-use items: from plastic straws to 2GO cups passing to the packaging of pepper, salt, sugar down to the toothpicks. This would mean that CBS would have to come up with alternatives, however, a lot of inspiration can be found in the examples of other institutions. The giant fast food chain McDonalds only provides paper straws instead of plastic straws in the UK (BBC News, 2018). More locally, Copenhagen University offers ceramic mugs to students. The zero-waste expert emphasizes that this effort is not only limited to the relation between CBS and customers but extends to the relation between CBS and suppliers. According to the zero-waste expert, consuming local products would reduce a lot of packaging. Moreover, there are multiple efficient zero waste firms that would be ready to support an institution such as CBS (Appendix G). These types of initiatives would allow CBS

to create shared value. By reducing the amount of packaging CBS would also reduce the financial cost and create value for many customers that would like to see more sustainable behavior.

Sorting bins

To establish a responsible waste management system, CBS has to implement a sorting system. It would be too complex and resource-demanding to ask waste handling employees to sort the general bins present on campus. The new bins should, in order to be efficient, have a more practical design than the previous bins (Appendix A and T). The combination of Poka-Yoke methods, as well as the theories used throughout the analysis can help understand what characteristics new sorting bins should feature. Knowing that CBS employees have no direct interaction with the customers, it is important that bins provide the clear and simple instruction, enabling necessary skills to sort waste properly. Both the responsible party at CBS № 1 and the waste management expert stated that there was an improvement on the backstage sorting of waste, and now relatively few things still have to be fixed (Appendix E and H). Looking at possible mistakes that employees can do is arguably not the priority. On the other hand, customers having to face bins on their own has previously shown a tendency of errors. It is therefore crucial to work on the customers preparation, encounter and resolution errors. Past bins designs were not successful in making users understand their role in the transaction, follow the instructions or learn from the experience.

As of today, simply by giving the option of sorting with simple instructions, CBS would make users understand their role in the transaction. This was proven in the study at the Ohio State University. The past sorting bins (Appendix T) were an improvement compared to general waste bins, but they failed changing the customers habitus and teaching the skills that would make customers great co-creators. The usage of broad words such as “plastic only” or “paper only” could have led customer to misunderstand what was expected from them. Using Poka-Yoke methods, advice from the zero-waste expert (Appendix G) and findings from the Ohio State University study, one can comprehend that new sorting bins would need clear and simple instruction to follow. Implementing illustrations of relatable objects to the users could

reduce the amount of errors. For this to happen, the designer of the bins would have to contact Spisestuerne and understand what items customers dispose of. This kind of design would answer both categories of preparation and encounter of the customer errors mentioned in Poka-Yoke methods. The last category, resolution of errors, has proven to be an inefficient solution to implement on the bins as the instructions would only become too complex for the users. However, it was also proposed by Moreland and Melsop (2014) that having a platform with additional information regarding waste was useful to the users. Adding a link to the website or a QR-code that would lead to supplementary instructions could solve the “encounter” errors that some users could be facing when unsure which category of litter an item belongs to. Many of the aforementioned points were taken into consideration by oikos in the new sorting bins and now, only time will tell us the efficiency of these implementations in the context of CBS (Appendix U).

Web page

Moreland & Melsop (2014) describe the importance of a web page where customers could gain access to supplementary information. The supplementary information which includes complete instructions should be on a separate webpage due to the necessity of simple instructions on the bins. Both the waste management expert and zero waste expert agree that too complex instructions would only confuse the users of sorting bins. However, the instructions must be relevant enough (Appendix G and H).

Furthermore, on this web page users should be able to find additional details on the sorting process, alternatives to single-use items and statistics of CBS’ efforts in combatting waste. Such platform could diminish customer errors over time and give them the opportunity to improve their skills needed as a co-creator. This would ensure that future sessions in front of the sorting bin are carried out correctly. This same web page does not need to be limited to waste management but could cover the entire sustainable strategy of the university. CBS could also use this tool as a suggestion platform for the users to be able to propose their ideas for new projects.

Mentors

Moreland and Melsop study (2014) suggest the efficiency of peer pressure in improving the rate of sorting accuracy. Volunteering students were assigned the task to play the role of zero waste agents that would ensure that their fellow dorm residents obeyed the new waste management system and in turn created a sense of peer-pressure. Similar successful social influence can be found at CBS. If a waste handling employee notices that items in the sorting bins at the offices are not sorted correctly then they go to the office where the litter comes from and remind the staff how to sort properly (Appendix E). This social influence has had some positive results with nearly no repeated mistakes from staff members that were visited by one of the waste handling employees (Appendix E). Frederiksberg Kommune officials also create a sense of social influence by regularly visiting CBS and making sure that the system works properly (Appendix E and H). This led to a significant improvement by the university in the past 2 years. If one were to look at the social influence through the lens of the Outline of a Theory of Practice, users' skills are improved by questioning behavior if a mistake was detected, and, in turn, this enables praxis.

The fourth touchpoint would be to create peer-pressure with the help of student mentors. Mentors at CBS are enrolled students that welcome new incoming students and provide help throughout first year of education. In other words, they are one of the first face-to-face contacts that a student has with CBS. Every single program at CBS has an intro week organized by these mentors where students stay in an environment outside of campus in order to get to know their future classmates. CBS could use this opportunity to introduce incoming students to the waste management system of the university. This sense of peer-pressure could also be induced during the first year of school by reminding students about vital nuances of the sorting system and responsible consumption behavior.

Backstage of waste management at CBS

Wilk (2002) demonstrates in his paper that Bourdieu's Outline of Theory of Practice (1977) could lead the way for initiatives that would impact today's consumption behavior. According to Wilk, challenging and questioning the habitus through heterodoxy is a key point required

to change users consumption towards being more responsible. Both the zero waste expert and the waste management expert explained the importance to understand the constituents of litter. The first explains that it is important to understand the value chain of the waste in order to know where the products come from and how the unnecessary litter associated with them could be prevented (Appendix G). The other argues that one needs to analyze the waste to better understand both the consumption and the sorting behavior of users (Appendix H). In other words, the experts actually describe Wilk's ideas to look into the habitus of customers and to challenge the behavior found up the value chain.

A backstage touchpoint is necessary in order to continuously put into question users' habitus. If new sorting bins were to be implemented, it is vital to analyze the litter collected in them. If a non-recyclable item is found or an item that confuses the users, both Spisestuerne and the waste collection company should either decide to remove this item or look for alternatives. Moreover, if the sorting accuracy is alarming, measures should be taken to improve the skills and knowledge of the users. This sort of behavior is already present with waste handling employees as while taking out the sorted litter from the offices, they make sure that no litter is in the wrong category (Appendix E). In the case of offices, the employees go back to the office with low sorting accuracy and explain to the users how to improve on it. This exact procedure would be extremely complex and resource consuming if taken to bins in common areas of the campus. However, employees can take notes of items that were sorted incorrectly most often and report the results each quarter or semester.

Waste management blueprint

	Awareness	Consumption	Sorting	Post-event
User	<p>User is aware that there are general waste litter bins</p>	<p>User buys and consumes products from Spicesueme</p>	<p>User disposes his or her litter into the bins</p>	<p>User finishes the interaction</p>
Channels		<p>Reduces amount of waste produced due to consumption. Puts into question consumption behavior</p>		
Zero waste model				
Sorting bins			<p>Provides user with the tools to sort the litter properly</p>	
Web page	<p>Provides user with information about responsible practices</p>		<p>Provides additional instructions on the sorting of litter</p>	<p>Suggest alternatives to prevent creation of litter</p>
Mentors	<p>Social influence and peer-pressure on the user</p>			
Backstage				
Employees		<p>Report on the results</p>	<p>Examine the accuracy of sorted litter</p>	<p>Pick up the litter</p>
CBS administration		<p>Discuss alternatives to prevent creation of litter</p>		

6 Conclusion

How could CBS improve their waste management in order to be more sustainable?

CBS will have to put in place initiatives that challenge the current habitus of students and staff by questioning their unconscious behavior and practicing the skills necessary for the well-functioning of a responsible waste management system.

The current habitus of majority of students in relation to consumption displays that both students and staff decide to go for the easiest options when they are available, disregarding the more sustainable alternatives that might be more difficult to use. It is surprising, as many of the customers seem to be familiar with the efforts of Spisestuerne to reduce consumption and therefore know the adverse environmental impacts that come with the use of unsustainable options. Nevertheless, the university canteen has been successful in challenging the current habitus of some of the students by implementing new initiatives and encouraging praxis of responsible behavior. Moreover, co-creation seems to correlate with the concept of praxis as it teaches the customers the needed skills and knowledge required to be able to practice a certain behavior.

When it comes to sorting of waste, the current habitus of majority of students indicates that the students are already familiar with the positive environmental effects that come with recycling. They also possess some of the required skills in order to sort litter correctly, however, are constrained in doing it at CBS due to the unavailability of sorting bins. For some of the students, based on the discussion that exists around the latter, the unavailability issue is at the heterodoxy level. That does not come as a surprise due to the fact that the value co-created by the students during litter disposal only negatively impacts the environment and therefore gets completely diminished.

The biggest challenge of the research process was interpreting the large amount of collected data. The information collected during the interviews proved to be very useful and allowed for the researchers to gain a deep insight into issues regarding waste and consumption behavior. However, much of the data was not utilized nor analyzed to the fullest due to the limitation of the length of the research project. The other challenge was the unavailability of data from Spisestuerne, although, the realization of the size of gathered data makes researchers reconsider the extensiveness of their original intentions for the project.

Implementing a zero-waste model at Spisestuerne would be the first step to reduce consumption behavior on CBS' campus. Such initiatives would put into question the habitus of customers by challenging their consumption behavior in the heterodoxy. In order to make effective use of created litter, CBS needs to put in place sorting bins with clear and simple instructions. These would ensure that the users possess necessary skills to sort litter properly. Secondly, a web page could provide additional details on the sorting process as well as alternatives to single-use items and statistics on CBS' sorting efforts. Such platform could diminish customer errors over time and provide them with an opportunity to improve their skills needed as a co-creator. This would furthermore improve the future user interactions with the sorting bins. Thirdly, social influence has proven to be an effective tool to improve the daily practices of sorting litter. In the case of CBS, student mentors would be in a perfect position to create peer-pressure by reminding students to practice responsible behavior. It would make sense for this kind of social influence to take place during the intro weeks as well as throughout the first school year. In the backstage of the service, it would be useful for waste handling employees to analyze the accuracy of sorting and to report their findings. This would allow CBS to continuously put into question users' habitus and introduce initiatives that improve the waste management system.

An important finding worth highlighting is the realization that both the experts and the responsible parties at CBS often describe the aspects of the theories, such as habitus and co-creation but never mention the names of the concepts per se. This, together with little availability of similar studies, conveys that the field of research is rather fragmented.

Furthermore, while analyzing the service the researchers noticed that the link between habitus and praxis seems to be missing. How does one connect habitus to praxis? Co-creation seems to fill that link quite well. Customer has to be taught right skills and knowledge in order to enable them to create value, that is, to practice their skills! Be that as it may, proof to this phenomenon can only exist in the world outside of a speculated discussion, thus serving as an inspiration for future studies.

The study's purpose was to suggest recommendations in order for the university to have a more sustainable waste management system. However, limits imposed on the researchers leave a door open for further studies. It would be of great interest to explore the aspect of co-creation as a link between habitus and praxis. Moreover, prototyping new relevant sorting bins and methods to influence consumption behavior as well as testing them out at the grounds of CBS would be the next step following the end of this study. This research project therefore serves as groundwork for implementation of pilot projects and further research in the field of waste management and consumption behavior at Copenhagen Business School.

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Appendixes

Appendix A: Current Litter bins



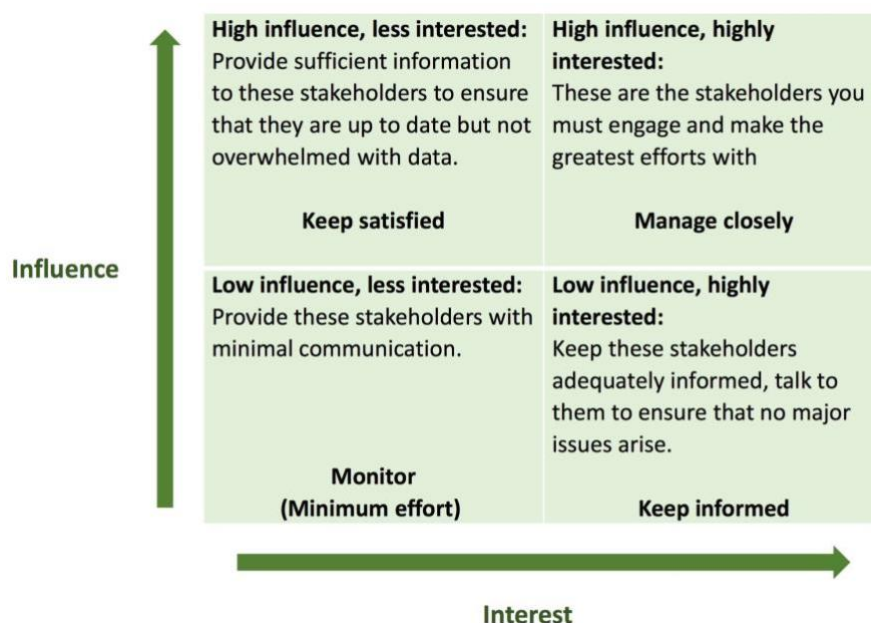
Appendix B: General waste containers at CBS



Appendix C: Categories of server and customers errors

Server Errors	Customer Errors
<i>Task:</i> <ul style="list-style-type: none"> • Doing work incorrectly • Doing work not required • Doing work in the wrong order • Doing work too slowly 	<i>Preparation:</i> <ul style="list-style-type: none"> • Failure to bring necessary materials • Failure to understand role in transaction • Failure to engage the correct service
<i>Treatment:</i> <ul style="list-style-type: none"> • Failure to acknowledge the customer • Failure to listen to the customer • Failure to react appropriately 	<i>Encounter:</i> <ul style="list-style-type: none"> • Failure to remember steps in process • Failure to follow system flow • Failure to specify desires sufficiently
<i>Tangible:</i> <ul style="list-style-type: none"> • Failure to clean facilities • Failure to provide clean uniforms • Failure to control environmental factors • Failure to proofread documents 	<i>Resolution:</i> <ul style="list-style-type: none"> • Failure to follow instructions • Failure to signal service failure • Failure to learn from experience • Failure to adjust expectations • Failure to execute post-encounter action

Appendix D: Stakeholder Analysis Grid



Appendix E: Interview with a responsible party at CBS № 1

The purpose of this interview is to understand how the system of waste management works at CBS. The researchers want to understand the back stage process of the service of waste disposal.

2:35 What is the journey of litter once it's thrown into a bin on CBS campus?

Litter collected at CBS can have 2 different journey. The general waste collected by the private cleaning company only have one type of bin to be collected in. this waste is brought to the municipality general waste and ends up in one of the major burning facility in Denmark, such as Amager Bakke. The other possible journey for litter is the one collected in the office areas. Some basic sorting is already conducted by both academic and administrative employees. Those waste are then brought to sorting bins in the basement. Usually no supplementary sorting needs to be done. The results with the second possible journey of waste saw some improvement over time and showed good results. If we see any mistakes in the sorting one employee will go back to the source of the mistake and remind the person concerned, but usually the person is either new or the person is retiring and needs to empty the entire office.

6:30 What are the requirements by Frederiksberg Kommune imposed on CBS regarding waste disposal?

Frederiksberg Kommune has agreement with public and private institutions and are responsible to push level of waste sorting. Constant in contact with CBS to make sure the concept is still working probably. Today there is an agenda in place where sorting is a priority. Close work with municipality official and a really pragmatic approach. Is work is still with the lower level of the institution where the limit of the competence and power was reached. Frederiksberg Kommune started to work with the responsible party at CBS. They are going to decide how the future of suitability in CBS is going towards. Working in collaboration with

oikos to come up with pragmatic way of day to day sorting. Spisetuerne is sorting their own waste and they also work closely with Frederiksberg Kommune in order to reduce their waste as much as possible.

10:30 In October 2018 the senior management of CBS has approved the framework for a sustainability strategy. What projects are planned, regarding waste management, in order for CBS to reach their sustainability strategy?

Some collaboration with student association is in place regarding pragmatic way to sort day to day the general waste .

15:50 7 years ago an experiment was put in place at CBS. The goal of the experiment was to find out if students were sorting their waste. What were the results of this experiment? (Is it possible to gain access to the document describing it?)

There was an issue with the past experiences due to an insufficient training of the personnel on how to sort litter properly. We have now a new generation of staff better trained and more enthusiastic about sorting and responsible waste management.

17:30 Is there anything you would like us to look into or figure out that could be of benefit to CBS ?

Architecture needs to be more practical for logistic in the future. We also need to think as a group and work in a close circle, students could really help if they would sort properly. Consumer behavior contribution

Appendix F: Interview with a responsible party at CBS № 2

The purpose of the interview was to have an overview of CBS' sustainable strategy . The following data was collected.

Interviewed start to talk

Background story in 2012 there was a green team that was closed in 2014 and now there is a momentum again. The campus director, me and OIKOS had a meeting on what to do, it was decided that we wanted to increase focus on sustainability, she (campus director) wanted to push bottom up initiative, wants to help people that have ideas to be able to do it.

The 2 page brochure is the bottom down initiatives that makes sense to CBS with goals per initiative. There is a baseline and we want to do things to reach our goals. The next document is going to be shown to the director today at 12 (12th April 2019).

2:30 Why was the green team close down?

It was not prioritize and I heard that all kind of rumors but it seems like there was a lot of eagerness to do something but the initiatives were not integrated in the organization. Especially when you do waste management you need to make sure that all the guys around the waste management do agree on the stuff you need to do. The story of garbage sorting in the hall, as far I understand, was that it was not sorted right and we left people to sort it down at the basement and it was all thrown in the general waste. It was sad but the learning from that is that the team just put the bins without telling anyone and it was not really adopted into the organization. That's my main mission here is to try to understand the organization and work with the organization. In the next document we are going to try to have 100% diversion of the waste in 2020 which means that we would have 20% of general waste left, today it's around 35%.

4:35 What do you mean with 35%?

If you take all the waste at CBS sorted in fraction today we have 35% of the total waste going to the general waste. The rest gets recycled, the goal is to get the most sorted waste possible. Those are the last figure I saw. We started to sort the waste here (in the office) as a pilot

project but we do not do that in the hall. Spisetuerne has their own sorting system. The biggest amount of waste is sorted.

6:10 What are the biggest challenges to the waste sorting?

The behavior is the biggest challenge. To make people sort is hard, we are still learning how to sort and do not do it right. The purpose of a pilot project is to be able to upscale it on all CBS. oikos is making a project in the CBS canteen that launch the 2nd of May. Their idea is that communication is going to help people to sort properly, so they are going to put some nice signs on top of the bins. We are quite pessimistic on the outcome but we are going to do an analyses of the trash to see if it is sorted right. It is an experiment so if it does not work we will change the communication in a 3 month period of the pilot project. If it works out that would be the light out of the tunnel in regards of sorting waste.

9:55 How do you plan to spread all this awareness about waste management or how to sort? What's the plan? What kind of tools do you use?

One of the problem when people do not sort right, they pollute the bins in the basement and you ruin the chain if it is all polluted my might arm the system more. We need people to bring the trash down and I foresee that it would be part of the cleaning contract that the personnel would do it. The business case is that more you sort cheaper it would be because general waste is the more expensive one to get rid of.

12:10 How much does CBS look into consumption behaviour?

Next step would be the oikos campaign and they want to do a kick start campaign the 2nd of May in the canteen and connected with a small conference. They are really good in the communication part I am responsible of the machinery trying to figure out what we need to do. We definitely need to something about the communication. It is about behavioural change and there is no doubt that the communication is one of the means.

17:40 When are the goals for 2020 going to be released and what are they?

We want to reduce the consumption by 20% but it has not been approved yet. Food waste is a good case about it, but we also have to consider paper waste. How to print less? This is a change of culture. We do not have the answer yet. We also have to reduce the use of single plastics, we need some alternative. Water tanks in the bathrooms are present around the campus, but does it really work? is it visible? I had a talk with some students about it and they feel that it is not nice to out some water coming from the bathroom in your bottle. It feels awkward and does not feel clean. We have to work on that. I am so happy about the plastic waste that I am eager to buy some plastic bottles and this thinking is wrong. Reducing consumption behaviour is just conceptual and does not have anything concrete, we are talking about if we want to put a policies in place, if it is going to be more like instigating procedures, teaching people not to print so much and come up with a system that promotes that. We aware that we have to do something about the consumption but it is still in the making.

Interesting case at CBS, furniture we buy is called holmriis, they buy old furniture and they upcycle it and then resell them. There is a legal issue here because as a public institution we cannot be stuff and then just give it away with this model it is possible go give it back to the same supplier. Circular economy is legal problem in public institutions, basically I am not allowed to buy a big expensive table and the next day give it to my grandmother, we therefore have to throw out all old furniture to not risk those kinds of behaviour. We also have a depot where people can just use for internal reason at CBS.

25:00 CBS quote you saying that there were 9 goals that you focused on and you mentioned earlier about 14, why is that?

I upgraded it a little. The things is that it might be back a t 9 or 10 again, I try to broad it up in case or research.

26:35 when you talk about initiatives, where do they come from? Are any student open to come with ideas?

This is part of the document I am going to try to get approved by 1200 today, by 24th of April if approved they will be available. We were thinking of ways to make it easy to come with initiatives, bottom up initiatives. At the moment I have a budget for projects and people can come up to me and explain their ideas. How can we do that on a bigger scale, so that that everyone knows that there is a communication platform open for ideas. This one of the challenges here. Today if you see something not working, such as a light bowl, you can reach out on an app and just write the issue and they would care of it. I would like to implement something similar for sustainability. The new app is called daluxx and is available on the app store. There is also a portfolio management system, all project about campus is approved by the campus director; it used to be every year and now it is every quarter and you can do it as a user of the campus. Most of people are not aware of that possibility and some communication is needed. There is a template to follow, we want to have a business case about sustainability, following the triple bottom line; economy, social and environmental.

31:45 What about partnership with other universities?

Yes, we just attend a meeting with DTU, KU, Aarhus university and Roskilde. There was a letter writing to all the leader of the greater universities about the role we have in society. This letter was signed by around 600 researchers. CO2 emission was the main subject of the letter. In that sense we also try to figure out how to measure. To come up with a way to compare with each other, it is called **grønresgebe (3:18)** green calculation.

34:05 what is the relation between the administration of CBS and the Administration of Spisetuerne? Who comes up with the policies/initiatives at spisetuerne?

We have a contract with them, we can define if there is something we want them to apply it should be applied but the latest initiatives came from their part. They are owned by CBS

student , so there might have been some pressure in this part. You should contact CBS student to have some information or contact Lars Winter.

37:25 What do you want us to look into for our project?

We do not have any strategy concerning reduction of waste, I would love to have some ideas on how to reduce those problems.

Appendix G: Interview with the zero waste expert

The purpose of the interview was to grasp the zero waste model, to apply it on CBS and to understand the benefits of such a model. The following data was collected.

00:30 What inspired you to found your company?

Main motivation was to change the consumption behavior by adding some tools to consume more responsibly, Change that it is necessary.

04:20 What were the biggest challenges of starting a zero waste business?

No specific big challenges, customers based and banks were supportive, there was a need to change towards a cooperative bank such as Merkur Bank. Crowdfunding was a tool that gave lots of energy and hope for the project. We are still not in zero waste consumption and there is still a big gap between writing thinking and acting. Just needs to convince people that it is easy to reduce waste and can also be beneficial economically.

07:09 How did you market yourself?

Social media was the only an main marketing tools with Instagram and Facebook. Open to new ways to send the message. Teaching customer how to behave is not done enough, the

price is the key customer seem to look at the price first and not necessary at the quality, after some time people notice them self the benefits to follow a model of waste reduction.

09:20 How are your products supplied?

Grønfokus is the main supplier of organic food. The organic food logistic is really helpful in Denmark with companies focused in organic food and then there are 25 other supplier from Europe only. Most of products come in paper bags but there is still some struggles with plastic bags. The problem is not only between the shop and the customer but also between the shop and the supplier which is the next battle. If you want to work with a zero waste model you need to work with the value chain and know where your products are coming from. Having a circular economy is one the ideas that is tried to be put in place but more distance you add with the supplier more packaging you need. Fruit and vegetables are delivered in boxes no packaging.

12:20 What could be challenging for an institutions such as CBS when trying to reduce overpackaging?

There are no challenges for CBS to reduce overpackaging CBS needs to start now. Do not think too much the main challenge would be to have the courage to start. They are already other institutions applying this model, it's up to CBS they are existing companies to support. It's up to the top managing to say stop to plastic take away cups for instance, it is however still important to come up with alternatives easy to use and understand. It is sometimes a simple step to stay stop, student won't stop come and study with there are no plastic straws and cups. It is important to reach to customer the reasons of such policies, explain to them like to kids if necessary. "We can serve you as many coffee that you want but one use cup are not an option anymore". Everyone is aware about the current state and would understand.

23:15 What are the benefits of the business that follow zero waste policies

Following zero waste business model is a collective involvement, Create shared value. Need to take care of the students for them to be proud of the institution.

Appendix H: Interview with the waste management expert

The purpose of the interview was to gain a good understanding of waste management and recycling within Frederiksberg as well as at CBS.

00:05 - What is your role at Frederiksberg Kommune?

I'm employee at the Frederiksberg municipality and my role is to encourage and follow up that the private companies are doing recycling and manage their waste in a way that: things are going to recycling and the things that can't be recycled are sent to the right management. Because there are two aspects to it, there is waste that can be recycled and things that can't at the moment. I'm responsible from small companies to the big schools as long as they are private areas.

01:05 - Would CBS be considered private?

Yes, it's a company.

01:10 - But it's under the jurisdiction of..?

It's in my portfolio of companies and in that hand by seeing what is private and what is public you have places where people live, households, and then you have institutes or schools that are funded or run by the public administration (like for example the municipality here) then we have it in our portfolio but you have CBS, like a private company like a hairdresser because it's run by the state in that hand, it's not run by the municipality (of Frederiksberg) so you have to distinguish whether it's run by the municipality or is it not?

02:20 - What are Frederiksberg Kommune goals in regards to sorting of waste at private institutions?

The municipality makes a waste and resource plan and the one we have right now is extended for the next two years as well. But this one is mostly for the households. Where you have to find the answer is actually in the national strategies for waste. It's coming directly from the ministry of environment and they had like overall goal, at minimum for 2018 for the service sector for 70% of recycling. That was the overall effect of the strategy that was made 7 years ago and at that moment recycling level was 53%. At the same time they had a goal for recycling of organic waste of 70% and the expected result was going to be 60% last year. I don't know what the result is but the thing is that a lot of the recycling, also in the private has been going very slowly. and the hand is that until now we have been responsible for the citizens' recycling level and from the government level it has been for the private area. So it's national standards that it's going to be follow up.

The EU is soon to start measuring the waste in another way. It should be called municipality waste and look at how much is recycled. The municipality waste will include the waste from the area of municipality, no matter if it's households or private. The measurement of the total amount of waste vs the amount of waste recycled is a measurement that is going to be done in every municipality. That's a switch, until now it has been divided into two, the municipality has been responsible for the households and the government has been responsible for the private sector. Why is it then that we have a service for waste management as my position? It's actually because we have all the information about the level of waste and recycling and how it is done in the private sector. And the municipality could see that the levels were just too low. And so they decided that they want to improve both in regards to the households and in the private sector. So they created positions for two employees that would work in the two sectors. The employees have a more guiding and encouraging approach instead of being the "local authorities".

07:45 - So earlier you said that citizens are slow to adapt recycling, why do you think that is the case?

When I said that it actually included the private sector also. If you are a private company, you have to organize the waste management system yourself, totally, because the legislation in Denmark is made in a way that the owner of the business has the responsibility to manage the waste him/herself. The general waste that gets incinerated gets collected by the municipality. For the recyclables, on the other hand, there are 3 ways to do it. The company can buy service from the municipality, they can bring the waste to the recycling station (genbrugsstation) themselves, or they can find a private company who will come and collect it. And the barriers that they have to sit down, look at their own waste management, that they need to call and get an offer (price), will I have enough space in the backyard, should I spend my time going to the recycling station? All these things just disappear in the daily life of a company.

If you are big company, some actually manage to do it because otherwise they will drown in waste. They also know that over time it's beneficial. But a lot of companies don't have the time and resources.

From my own experience, a lot of the company owners have information and do it based on how the former owner did it. So they just use the same containers that the previous owner had without thinking too much about it, even though, the previous owners might have not been doing it in the correct way. Some of them, however, have been able to catch up on what the rules are about sorting, recycling and so on.

There is also the third group of companies who rent offices in a certain building and are welcome as long as they pay the rent but on the other hand should nearly just stay away from the waste management because the building doesn't want too much noise or management problems.

So the companies are in many different situations. A lot of companies don't know what is expected to be sorted. I find a lot of companies who say, for example, that they don't sort organic waste because they don't have so much of it, it's not needed, even though they are selling coffee on a daily basis! So there is sometimes a bit of a strange disconnection between own reality check on what they are actually doing and then what is expected.

Some of the rules in Denmark are not very clear, in a way that people are not able to understand what is expected of them because when you have a text in the legislation saying “First of all, you should sort your waste. Second of all you should sort your waste and make “ It’s written in a way as examples in the rules but it’s understood as a list of things but And because the national authorities did not include organic waste as an example but said, overall, that the waste has to be sorted, then it’s not understood. So people do not understand because they do not mention organic waste. “Oh, because they didn’t mention it then I should not sort it”. They don’t understand the overall, general “sort your waste”. So there is a lot of confusion about what is meant. But if you read it, it’s really clear actually, but many people never read it because they never find it. So that different approach, you don’t know how to organize it, you don’t put your time into it, you don’t see what is the real message in the legislation and that people many times copy from the former owner. They both copy the good things and the bad things actually. “Oh, you didn’t sort it, then I don’t sort it”. So it’s not just one answer.

14:30 - When did EU start to count the waste differently? When was that exactly?

I cannot remember the year but it will come in the future years. In the next coming years.

14:50 – But you are already implementing it?

No, we haven’t implemented it in that way but we already knew because 10 years ago the municipality also had another role in the management of waste in Denmark. Just a small sentence that all the information about that if the company wanted to collect waste from another private company, they should actually sign up at the municipality before they were allowed to do that. And at the same time they had to send information directly to the municipality about how much waste they had collected, now all that data is going to the national database at the national authorities. We can still get the info about the municipality and about the collected amount of waste but that 10 years ago setup and even more is that we could easily see at that time that okay, “What is the level of collected waste for recycling?”.

16:05 – So you said that some private companies already do recycle, why do you think they decide to do it? Why do you think that they do it?

In different ways, some of it is just their approach to life, it’s because they know and they want to do it. It’s not that somebody came and said it to them. It’s also in some hand that

people know that “Okay, I should not throw my waste on the ground” and then if they have the conversation with people about “how do I get rid of my waste?” then it can be another former owner who says “Oh, if you have metal you can use the metal container. Oh, I have metal, I can place it there”. It’s a kind of copy effect. It’s also companies where we have been on visit and talked with them and it’s quite by a talk but it becomes easy for them to adapt and get started in waste management. But a lot of them it’s about their own way of thinking.

17:48 – What is the talk that you just mentioned that you have with the companies? Do you come to the companies and talk with them?

I go out and kind of “knock the door”, both if we can see that we have in our mind that “okay, that kind of company will have waste that has to be sorted”, it can be from the doctors, it can be from the coffeeshops, it can be from the restaurants, supermarkets and all these companies that we continuously have contact with. But it’s also that we get questions from companies who actually have “okay, I’m moving into this place now, what can I do? How can I organize it?” and then I talk with them, I go and meet them, can also be from the house where they have their company. “Okay, we actually have some problem. We don’t understand why we have all that waste all the time and we don’t understand why cardboard is going to the waste that is going to be incinerated and, what is happening here? We can’t control it anymore, we can’t understand it.” So they also call for help and then we also have connection to the companies and say “okay, we can see that there is something... what have you in mind, when you run your business and what have you thought about with your waste” and they reply with “oh, now, okay, I also knew that it didn’t work but I didn’t know what to do” and then we have a conversation about it and then they start to understand better how they can organize it ‘oh, okay, now it makes sense, now I can do it” and then we can lower the amount of stress in the waste management.

20:00 - Do they have to pay for this service?

No, the consulting service or the advising is for free. It’s already paid. The way that we are collecting the waste is that the guiding is for free. You have to remember that nothing is free though but it’s just not paid directly.

20:48 – What policies and targets are in place in order to reduce waste in the area of Frederiksberg Kommune?

We have the overall plan for waste and resources and it's the plan that the municipality has to follow and reach. It's made in the way that we have both short term goals and we also have long term. Even though we are both the owner of an incinerator and that we collect waste, we still want the amount (of waste) to be lowered so it's not just "here is a lot of waste, it's good that you burn it". No, we try to hold it back also, and we do it in a way that we encourage people to be more aware and we deliver containers for the households so they have the right amount of containers so they really can do the sorting of the waste. So that's also why we continuously look into the overall situation of the city, so we know where we need to have more containers for sorting. – **23:00**

24:15 - To answer the question, there is both national politics about the waste management in general to the municipalities, and it's also coming from the EU, and it's coming from the state of Denmark, and then it goes to current level where the action has to be done, for the waste management and the target is described in the plan also. Every municipality has to make such plan.

25:00 – About preventing waste has been a little more complex. "Okay, who should run that task?". In many cases it has been "a thing you can do", the most important is that the waste is sorted and not sent for incinerating but this preventing part has been more on the national level. And in a more freeway if you, kind of, want to do it. It's not that you need to do it. And there has been a discussion forth and back because it's also about how you pay for it, who is the responsible for doing it? And who is the responsible for guiding people? But we have been looking at, maybe that thinking will change because we can see that there have been some outspoken words in different ways that say "Okay, it's not just something you can put on the side and say, okay, maybe I do it, if I want to because it's another important aspect of the waste are".

26:37 - What are your responsibilities when you come for a visit at CBS?

My responsibility is to, first of all, inform CBS about the fact that there is actually a duty that you have to sort your waste, it's not a thing that you can decide whether you want to do or not. It's a thing you have to do. Now you have to find out what is the way to do it and that's

by a guiding service. It's also about understanding why is there a barrier? Because one thing is to say "You have to do it" and then you can come back after a month or two and nothing happened. It's like, now we are just back at the start so it's important to understand what is it that happened, why does it not work, why is it not done? And it can be quite complex to see how it works. Because it can be a thing about design, "we haven't decided on a correct design for the container for the public areas". Another thing they can say is "Is it something that CBS should actually work with?". Because now you mention *the responsible party at CBS*. That person is actually in the management part, that person relies on the CBS making it a priority also. Then it's about what the strategy is for CBS to actually do this, like they decide to do good education, they also have to decide to do good management of waste. And then it goes to the next situation, "What is then good management of waste?" Is it to make it easy to get rid of the waste or is it to make sure that it gets sorted in a correct way, or combine both?. But then it's about who should do it? Who should have the real life responsibility to make sure that it will happen? - It's a thing that CBS has to decide. I can only encourage to it. The local internal decision is CBS' responsibility. So in some hand it makes sense to talk with "the responsible party at CBS", in some hand it makes sense to talk with somebody else. Because it is about the one that has the possibility to actually influence it at CBS. Is it from the students who actually for good way of being able to sort the waste or is it the pressure on the school or is there the head of CBS that says "Okay, no matter what, I want this. I want it". ... I have tried to talk to people at different levels at CBS. At the same time I could see that even when I go to the high level, they also have stopping blocks. They go and stop, they go and stop. And it links back to our guiding service. Because if you look back to other companies, they have their own environmental department who would work with it. So who is it at CBS that can actually make it happen? Who is the responsible for environment?

33:00 - Could you name a more concrete example of "stopping blocks" that you mentioned? It could be the design of the container, of sorting in the office, saying, okay, now we have agreed on that sorting is a thing we are going to do, now we have to implement it. So now the implementing part but somebody says to you "Yeah yeah, I understand that you are going to sort the waste, but I don't like the color of the bin you are coming with" or it has the wrong

design. “As long as it’s not the right one, I can’t sort. And so what is it actually about? Is about making an improvement fast and implementing it and then we can choose better design and so on or is it a convenient way to stop the sorting process by saying “it has the wrong colour” or “I don’t like the place you placing the container”? So it’s actually a stopping block for making an improvement and it’s also about what amount of different (materials) should I sort? Because often people think “Oh I have to have 10 bins now”. No, no, no, no, it’s not what it is, you have to do a research, you take a little tour, once a day, it could be for a week, and then you take a look on what kind of waste it is that people throw out. And then if you see that there are three different things they are throwing out, it can be organic waste, it can be plastic, and it can be the general waste that has to be incinerated, then you can start with three different bins. That’s it, that’s the answer. And if you then have more specialized waste from a coffee machine or whatever, then it’s on daily basis but you have another place for it. And then you have it for paper, it’s in the copy room, maybe. If you think “oh, I always have to find space for 10 different bins” of course you will “oh, there is not enough space”, and then you can come with the color, with the wrong design. If you want to stop the process and you have the kind of power to do it then you can stop that process many times. Then it’s important to have people that say that it’s not about sorting or not sorting, it’s about how much we are going to sort, because you can’t stop it in that way, it’s not possible. And then in that way you need a manager who has set the direction and said “we are going this way”.

37:13 – How are CBS’ efforts in terms of waste management from your point of view?

I will cut it in two different ways. One of them is the professional area and by that I mean the area where the employees work and do their job. There they have done management of waste that is from the offices and so on. They haven’t fulfilled all the key things that they have to do, because there is still a lot with the organic waste, but for paper and plastic and metal and part of the organic waste is done. But still you find areas where the employees work but you can be confused where they have been able to take all the organic waste from the professional areas. All the coffee machines placed around offices, what happens to the leftovers from making coffee? Do they make sure that they have a collecting system? And I’m not sure they have.

However, a big leak comes from the public area. So if you are in the education rooms, if you are in auditoriums, if you are in the area for the canteen then you will most of the time not see sorting of waste. I'm not saying it's the easiest part but at the moment it's not possible to try, at least. Because if you come as a student, there is no container you can sort waste in. So that's back to an old talk, should you start to have a bin so you can sort it or are you first starting to have the bin when people are asking for it? And if nobody is asking for it then you will never have the bin. In that way you have to build the system before they start to use it, because how will they use the system that does not exist? And it's about trying to figure out what kind of materials is it that are thrown out and build the system based on that. Of course you can over time improve it, but it's a starting point. Some of the things with waste management is that you have to get started and then get rolling, improving and getting better. At least you have to start.

In the professional areas there is still possibilities to improve on different aspects of waste sorting, especially with the plastic. I'm not sure that there is a lot of plastic sorting in the professional areas. It would be a good thing to have a closer look at whether they have in the back of the canteen the possibility to sort, also on a busy day, a working day. In that hand, the thing to do is to go and speak with them. And say, what kind of waste do you have and what would make it easy for you to sort during your working day?

It will take time but otherwise you cannot make sure that you will have the support from the employees because if they get a system that is too complicated to use then that will also be a "stopping block". But there are still things to be done.

43:05 - In what areas could the waste management at CBS be improved?

This question has been partly covered but I will still say something about the part of the mixed waste that is collected. A starting thing to do would be to do research, not on paper research but going in real, take a look with your own eyes and check what is thrown out here. Both in the public area, in the classrooms, auditoriums, in the back of the canteen, offices. Check what is thrown out and then, okay, you need these three bins or you need this kind of service to get this improved. It's just to get on, get your shoes on and then get out and see it, it's not

about paper research. It's real life observation... when you are at CBS, we sort our waste. When you enter the front door at CBS, you enter a building where the waste gets sorted. We have good education and we sort our waste. And when you leave again, it's your responsibility to actually follow what is then expected from you.

45:50 – How are the results different between households and private companies?

If the mentality is different when people are at home, how does it translate into private companies?

I would actually think that it's kind of the same because people are kind of used to sort at home and then when they show up at CBS and then they see that they cannot sort they can be filled with disappointment. Because, okay, now I have to go against what I'm doing at home. And I'm not able to bring home my waste where I can sort it. So now I have to go against what I actually already do at home. So it's about having kind of the same sorting system. We can find some inspiration from what we do at home and bring to CBS or a private company also. Because remember that CBS also consists of citizens. It's people, CBS is people and there should not be any difference. The difference between the households and the big companies like CBS is in the back, it's the collecting part that is privatized, it's not the sorting.

48:00 – What kind of resources will an improvement at CBS require?

At least two things, an improvement of the sorting part. To do the observation and figure out what should be in place and then back to the preventing part, it's about seeing what CBS is actually throwing out. A lot of the materials that go through the flow at CBS are not made for recycling. You have to go back and look at the part where the materials come from. Is it a thing that people give CBS as a gift when they are buying service from, maybe, if you take the coffee machines in the canteen, for example, these cardboard cups that are used for that machine. Who decides the design of them? Who decides that they are made of certain materials? Is it possible for it to actually be recycled or are they from the very beginning made to be burnt/incinerated? It's also about new furniture, other new things. Can they be returned

for a fix up to where you bought it? Will they be able to help you repair it? And if you need to get rid of it can you give it to someone else or are you able to sell it instead of just throwing it out? All these things are part of trying to understand the material flow through the organization. That is part of looking at how CBS buys stuff for the organization/ Who is buying it? Why they are buying it in that way? How can they change the way they buy? What about all the trading contracts that CBS makes and that CBS has to follow? How can you request more materials that are actually made for being used for more long term or are easier to either repair or reuse again? Instead of accepting the status quo it is worth challenging it. Do I have to buy these materials or can I actually ask for something else? Having a reusable coffee cup is a good example. Just imagine if you have a morning coffee, lunch coffee and afternoon coffee, if you are a long time at CBS. Maybe three cups per student per day! At least! And it's every day! And then you can find other things. I'd say take a look at the buying part and why do we get these materials into the school and then follow where they go. Because if you take a look at the waste in the containers in the common areas, they contain many many things.

The main thing is making it possible for people to sort because if the system doesn't exist then what should they do?

There is a big flow of people visiting, both students and guests. The guests may only come for one lecture and then you never see them again. There could be a professor coming from outside who is doing some kind of talk and then you never see them again. So it's about having a simple system, so people can easily understand where to throw their waste.

So remember both parts, the buying and the preventing part. And even if there are situations when you didn't do the best buying with the best products that I could actually disassemble and so on. Then at least try to stop it and when something gets broken see if you can repair it and have a service with the companies who can maintain it. Or you have your own service, internal service that can maintain. It's even better to fix it and keep using it for a long time. Because when it gets broken, where does it go? Africa? China? South Europe? Denmark? Waste is a world trading market.

...

59:20 – Do you by chance know if it's possible to recycle the cups at CBS?

It actually depends what it's made of, but at the moment, most of it is going to be sent to the incinerator. But it's a good thing to take a closer look at because it's about what's made of but also whether it's empty. It's an ongoing discussion with the cardboard from pizza boxes. In many situations people say that you have to throw the pizza box for incinerating because it can't be dirty. But if the cardboard with a few drops of oil and you throw it away in the cardboard container it's actually not a problem. The problem is if you have the box full of salad and all different kinds of dressing on the cardboard. Then it's not "clean", then it goes to incinerating. But if people did the sorting of organic waste, they could have taken the salad and the leftover pizza and throw out as organic waste. Afterwards you can look at it and check whether it's really dirty or not. And if it's really dirty then you can throw it out for incinerating and if it's not so dirty then you can throw it to the cardboard. The Danish State Authorities have actually earlier done a project whether having small leftovers actually causes a problem at the recycling facility. They have actually said that it's not a problem.

This is about taking a look how it is possible to have this clean waste without a half a cup of coffee and so on and what is the material. And in that hand I would actually say if you can make a collaboration between the one collecting the waste and ask, "What is your demand? What kind of quality do you need? What kind of criteria do you demand me to follow?". Now if we are CBS, we have this demand from the collector, then we can go to the people that are buying and say "I have these demands, who can sell me a product that can fulfil these demands so I can give it to the collector?". Now you have actually tried to connect the buying part, the using part and the collecting. Trying to make these connections is important. But if you try it could be difficult. I'm not saying it's impossible, the correct people have just not spoken with each other. So it's about taking the person that's responsible for the buying, speak with the daily users and then call the waste collector to a meeting.

Appendix I: Consent form for interviews

Consent form

- ☐ I _____, agree to participate in the “Responsible Waste Management at CBS” research study.
- ☐ I am participating voluntarily.
- ☐ I understand that I may cease to take part in the study at any time without giving any reason.
- ☐ The purpose and nature of the study has been explained to me in writing and I have had any questions answered to my satisfaction.
- ☐ I understand that participation involves taking part in an interview with the researchers.
- ☐ I give permission for my interview to be audio-recorded.
- ☐ I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.
- ☐ I understand that all information I provide for this study will be treated confidentially.
- ☐ I understand that disguised extracts from my interview may be quoted.
- ☐ I understand that in any report on the results of this research my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.

Researchers

Interviewee

Date: _____

Date: _____

Signature: _____

Signature: _____

Adrian Olenics & Nicolas Yanze Kontchou

Name: _____

Appendix J: Observation

13:00-14:05, Saturday 16th of march 2019

Canteen, Solbjerg Plads 3, Copenhagen Business School, Frederiksberg, Denmark

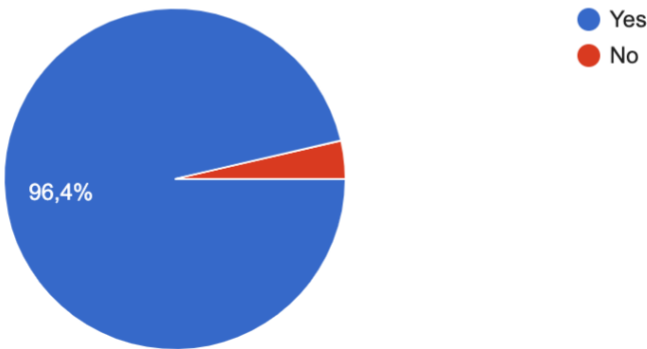
- There are is only one type of bin for general waste into which all the litter is thrown (will refer to it as “the bin”)
- Consumers throw away 2GO coffee cups and plates with plastic lids into the bin
- Consumers throw away plastic cutlery and plastic bottles (even with “pant”) into the bin
- Consumers throw away leftover food into the bin
- One student threw away a notebook into the bin
- One student was throwing away leftover food and accidentally dropped a metal fork into the bin but decided not to reach for it
- Around 13:34 students started coming out of Spisestuerne with plastic forks but metal knives. Spisestuerne has ran out of clean metal forks so the stakeholders had no choice but to use the plastic ones.
- Around closing time of 14:00 (Spisestuerne closes 1st floor at 14:00 on the weekend) one of the employees of Spisestuerne went around and looked at the surface of the bins. If she found plastic bottles with “pant” in it then she picked them out of the bin.

Appendix K: Survey questionnaire

Spisestuerne (CBS canteen) - student

Do you buy products at Spisetuerne?

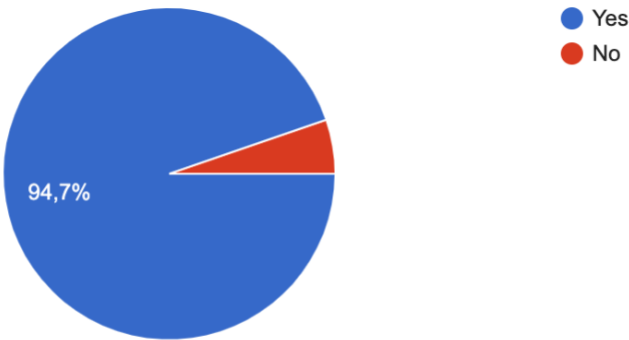
83 réponses



Spisestuerne (CBS canteen) - staff

Do you buy products at Spisetuerne?

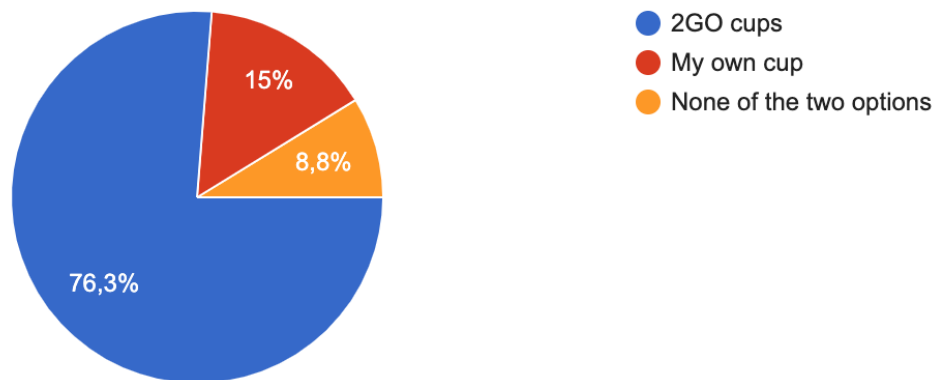
19 réponses



Spisestuerne (CBS canteen) - student

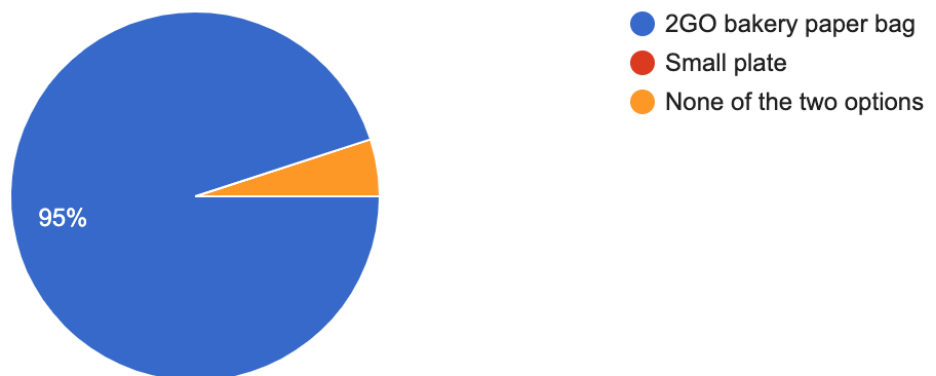
When buying beverages, which do you use more often?

80 réponses



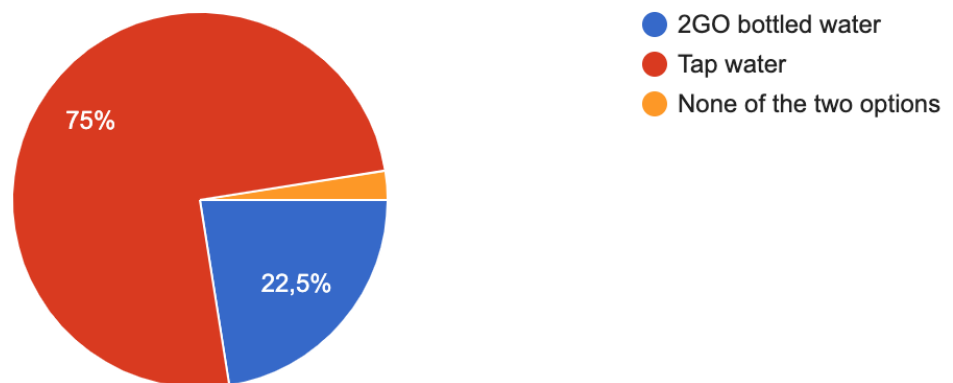
When buying bakeries, which do you use more often?

80 réponses



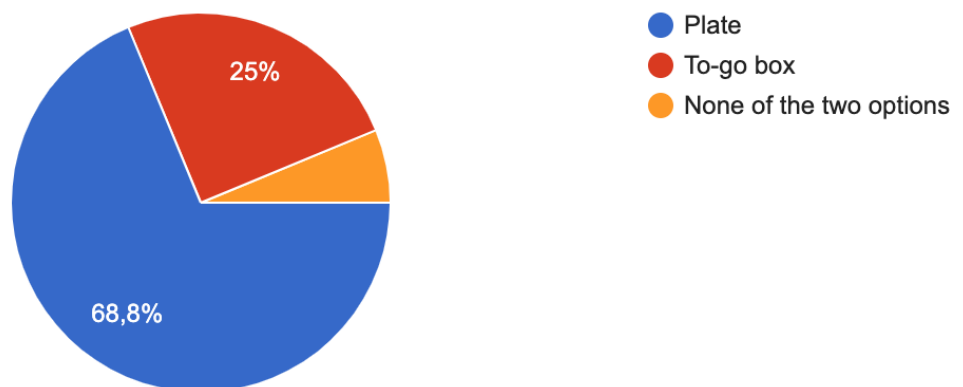
Which of the following do you drink more often?

80 réponses



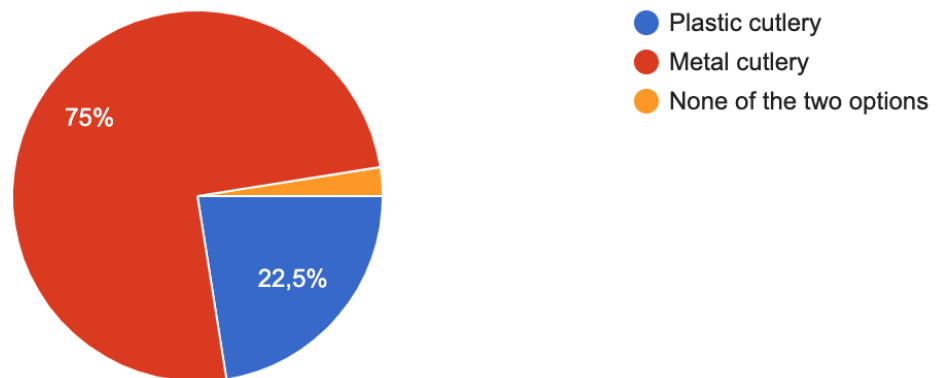
When eating a meal, which do you use more often?

80 réponses



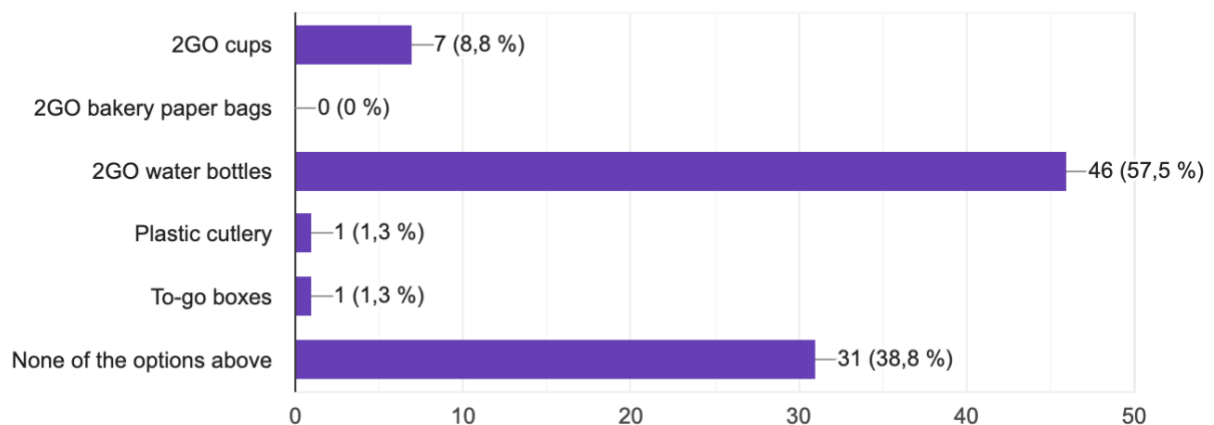
Which of the following do you use more often?

80 réponses



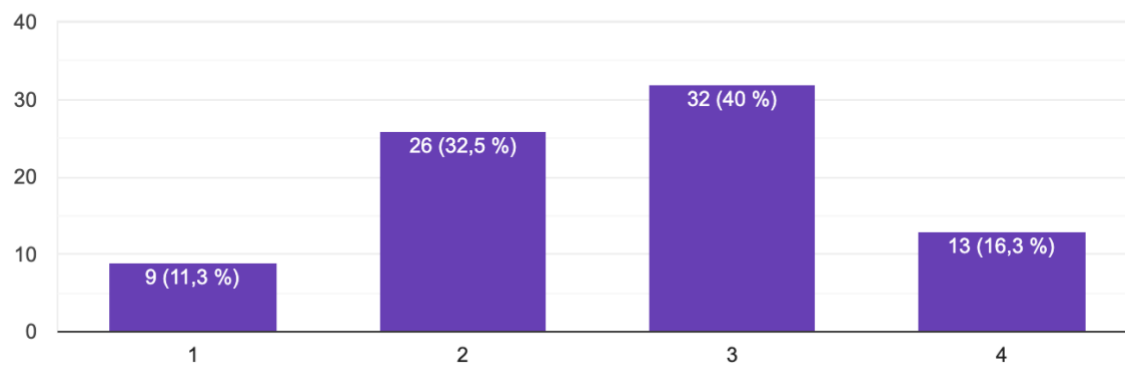
Which one of the following do you reuse?

80 réponses



I try my best to reduce the amount of waste I produce at Spisestuerne

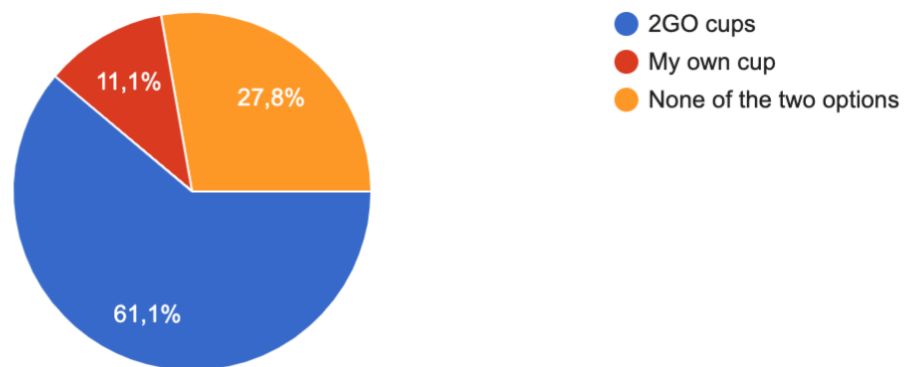
80 réponses



Spisestuerne (CBS canteen) - staff

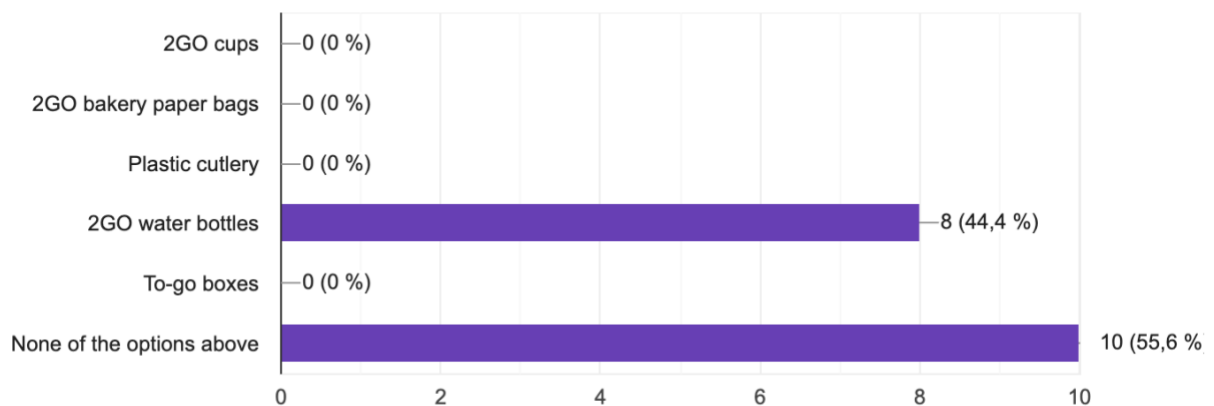
When buying beverages, which do you use more often?

18 réponses



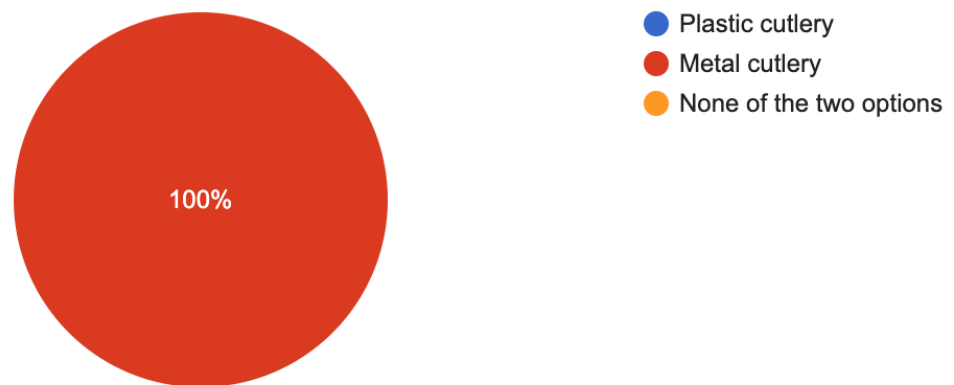
Which one of the following do you reuse?

18 réponses



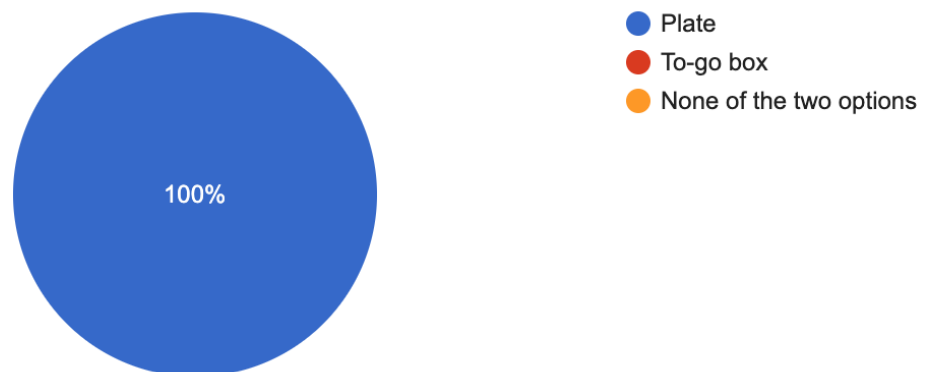
Which of the following do you use more often?

18 réponses



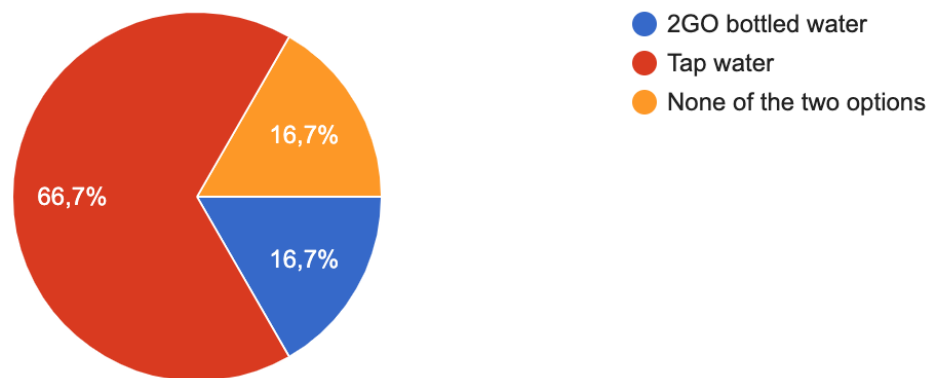
When eating a meal, which do you use more often?

18 réponses



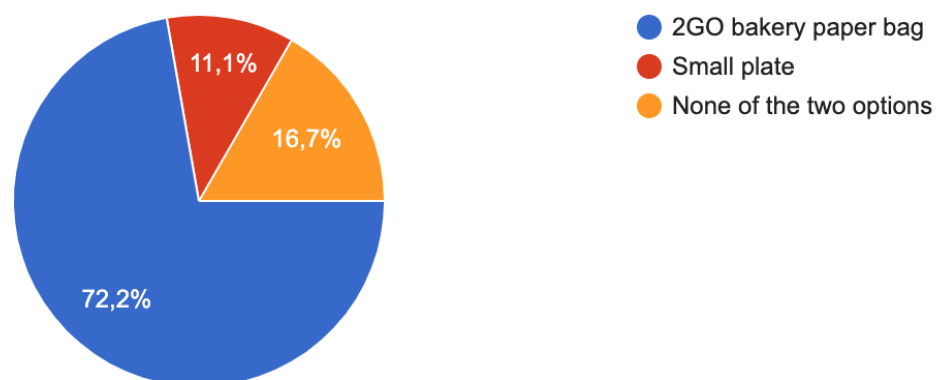
Which of the following do you drink more often?

18 réponses



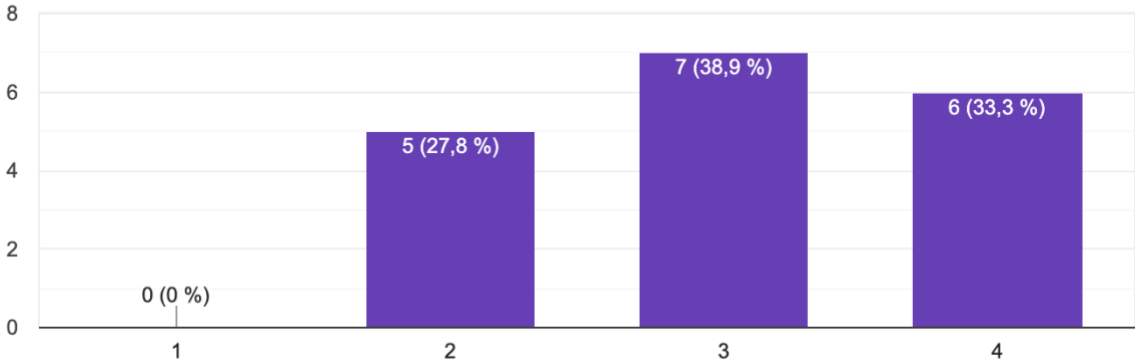
When buying bakeries, which do you use more often?

18 réponses



I try my best to reduce the amount of waste I produce at Spisestuerne

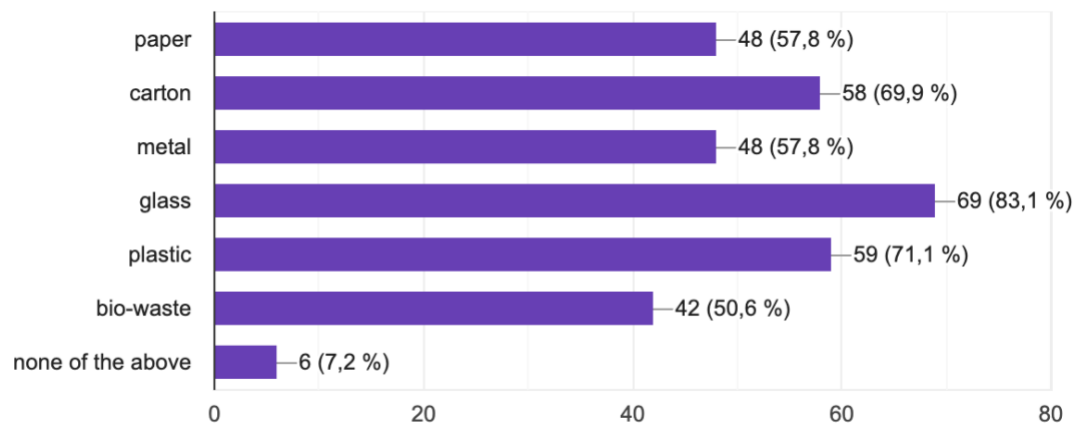
18 réponses



Sorting of waste - student

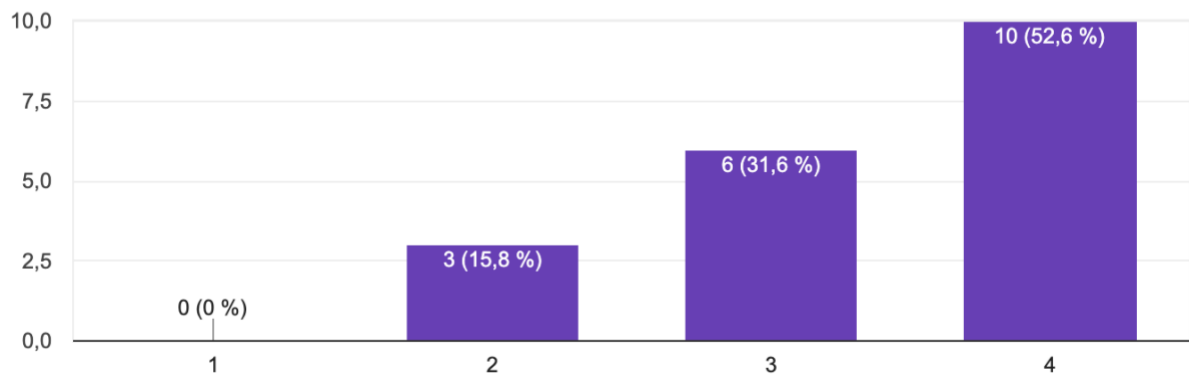
Which of the following items do you sort at home?

83 réponses



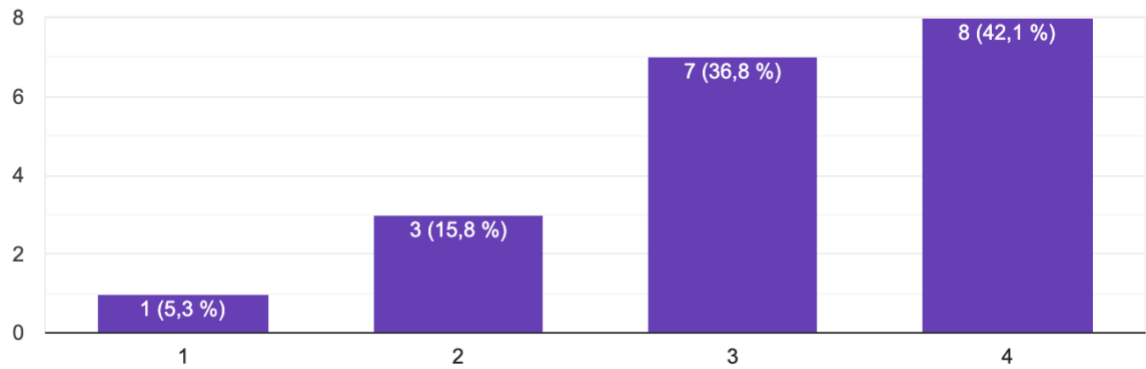
Sorting of waste is important to me

19 réponses



I know how to sort my waste properly

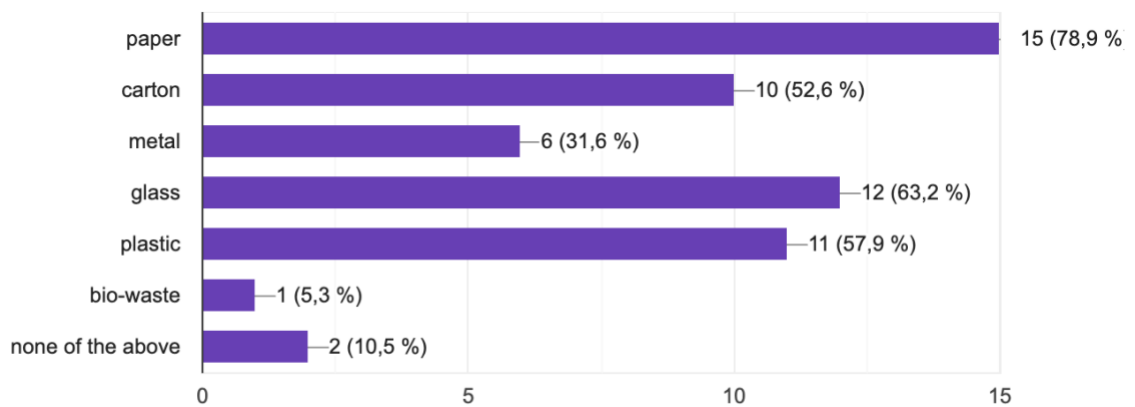
19 réponses



Sorting of waste - staff

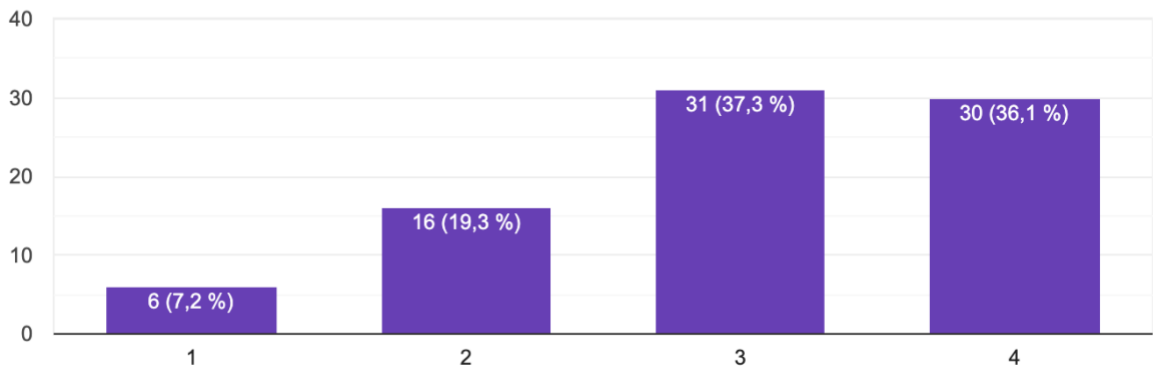
Which of the following items do you sort?

19 réponses



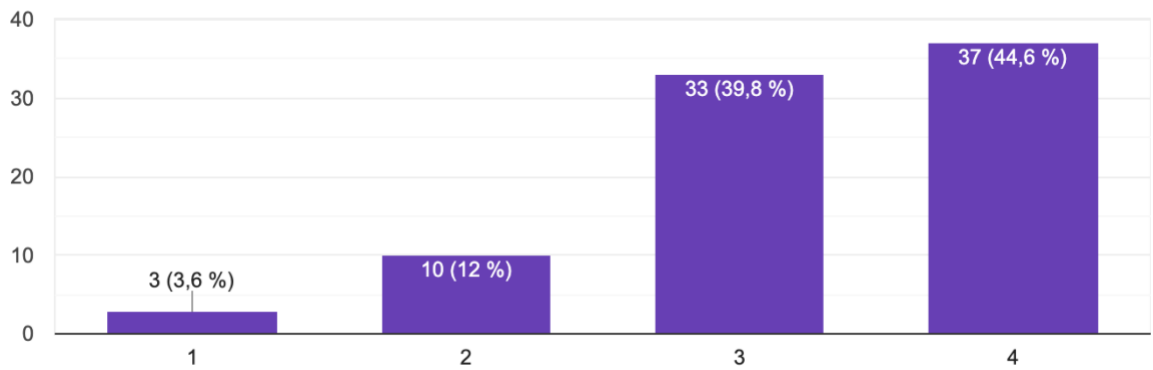
Sorting of waste is important to me

83 réponses



I know how to sort my waste properly

83 réponses



Appendix L: 2GO cups



Appendix M: 2GO Bakery paper bags



Appendix N: 2GO bottled water



Appendix O: Open-ended question, efforts of Spisestuerne (students)

What do you think of Spisestuerne's efforts in reducing consumption and waste?

They are pretty bad
They are not doing enough.
nice
The waste food box initiative is nice
Not very existing
The efforts on reducing food waste are noticeable but the usage of plastic could be a lot more controlled
They are not trying very hard. It would be easier to reduce waste if it wasn't an option to use 2go cups. I always forget to bring my own.
Bad

I think recent change to move the plastic cutlery was very good. Since the metal cutlery is nor easily available, I think and hope people will start to use them more.
No plastic cutlery
I like the initiative of reducing food waste
I would't be familiar with their efforts
I like the fact that they try to avoid food waste by selling the food for 15kr twice a day. Howerer, i dont have the impression that they try to reduce the use of plastic waste or paper bags...
Poor
Could be better
Very bad
Making it cheaper to buy coffee without the to go cups is nice. : -)
I haven't noticed a deliberate effort
Good that they are making initiatives
bad
I really like the We Hate Foodwaste boxes you can get 15 min before closing every day. I use that a lot, almost every time I'm at school. But I think the time should be increased to 30 minutes before closing time, to eliminate the waste even more. I also wish there could be recycle bins or that the salads/dishes in the fridges could be as a bar, not in single-use plastic containers. I also wish that you would pay a little less for bringing your own coffee cup. Now, it's indifferent if I use my 10 cup-coffee-card or bring my own mug, which demotivates me to bring my own. You should also be encouraged to bring your own boxes to the We Hate Foodwaste thing.
I think they also exert some effort considering they patronize the "stop food waste" campagne.
Bad - no steps
Ved ikke
Meh

dont know
Ikke rigtig det store
I would say it is average
Especially for coffee I think the option of reusing could be promoted better
Good job in reducing food waste, needs improvement for other waste
I
Good
Den er fin
Fint
Fine
Very poor...
Good.
Don't really know
Havn't noticed then
They've made plastic cutlery harder to get a hold of, so no I only use metal.
Have never thought about it
Good
I didn't know they were doing anything to reduce consumption and waste.
..
I've noticed that it is easier to find the metal cutlery than plastic which makes me choose metal over plastic more than I would otherwise.
non existant
I don't know much about their effort to be honest
I have only been at CBS for less than a year, I haven't noticed any changes
Limited
We need garbage cans for plasticbottles!!
I wasn't aware they make an effort
really low. they even throw food away in the end of each day

I don't think they're trying hard enough to reduce waste.
They have napkins made from the paper waste
They could do more to increase the awareness
I think it's great
Pretty good
Trying but not too hard
I think they're doing well, but the fact that there are still paper cups with plastic lids available is a problem.
.
I honestly didn't notice any action taken by them except for offering plates and metal cutlery. They could do better to raise awareness regarding this issue. I have never even thought about it before.
Great! Love that they have moved the plastic cutlery to make it less "available".
Great, as an institution they need to lead by example
Environmentally oriented. More could be done
It is very nice that they are including recycled products, i.e. recycled cups and napkins. The option to use metal cutlery is nice since it is washable.
They're great - but there are really easy ways to keep improving. Saw them throw out a full tray of bagels a few months ago right as they were putting out the Food waste boxes! Really great to see the initiatives though, making plastic cutlery harder to find so you're more likely to use metal, etc.
I really like the programme that gives away leftovers. I noticed that they also have recycled napkins.
It is clear that they are putting a lot of commitment in it. For example, I really like the anti-waste box initiative that is available everyday right before the canteen closes. I also noticed that they have just introduced recycled paper towels.

I really like that they do foodwaste but I don't why the fuck they don't have any normal cups to get your coffee in (except in PH). They have glasses (in GH at least) so I don't get why cups are not provided, I'm so sure a lot of people would use them, especially now in exam time when everybody is there ~12h a day anyway. The paper cups only last 2, maybe three rounds of coffee, so everybody just gets a new cup then...
I think they are starting to make big steps, such as the cheap meal boxes after lunch and dinner.
Not thought through. Great that they killed plastic cutlery but please then offer alternatives (or make metal cutlery available after shop opening hours). Great with the foodwaste boxes as well
Could do more but it's ok
Weak
Could be improved
N/A
bad
Not that good. I would really appreciate if it was possible to take coffee in a mug (I know that KU offers that option) instead of buying single-use-products. Similarly, it would be great if they had small metal spoons that I could use instead of the plastic one (for mixing Nescafé without taking plastic spoon or the "wood straw"). The same goes for the huge amount of plastic wrapping sallads, vegetables and fruits etc.
Actually it doesn't look like they are trying... Of course they have to offer the cups and bags, but little slogans/ ads/ information like "try to reuse the things or bring your own cup, or take shortly a plate instead of the bag, would animate more people to do so. Additionally, if you take your own to go cup, you don't really get less paid or the process of putting it into the cashier machine is complicated/ takes long. As a suggestion, it could be shortly asked before the payment, if I took my own cup or not :)

Appendix P: Open-ended question, efforts of Spisestuerne (staff)

could do more effort
good effort, hope it continues!
They have taken some positive initiative with regards to food waste, but more initiatives are needed
Honestly haven't noticed other than the food waste scheme which seems more of a cash grab than a actual meaningful attempt to reduce waste.
I know very little about it
I am not aware of the efforts that they are making. I do think that they offer students the option of filling their own thermos, which is great. Personally I get coffee at the department using a ceramic cup.
I believe that the provision of plates, glasses and cutlery contributes a lot to reducing overall waste produced. However, there are limited recycling and sorting of waste options provided in the canteen.
..
Too little. The bottles and cups are a shame. Financial incentives for reuse needed.
Good initiative
A very good effort
Good efforts, however, much more can be done.
They have 'trøtte bananer' (price discrimination) and when you arrive late, there is hardly any food left - so I guess that they are seeking to meet the demand with the available capacity (yield management - remember: the right price, at the right time, to the right people – and hence making the most of a limited resource. :-) of cause you remember that....
To be honest I haven't noticed any special effort....
I don't know
Not enough info to form an opinion
Didn't know it made an effort

N/A
I like the initiative where you can buy leftover food cheap between 14-14.15.

Appendix Q: Open-ended question, efforts of CBS (students)

They are horrible as they only have containers for general waste
They could do more
dont know
Nothing
Not good
I'm not aware of any
I haven't noticed any waste sorting efforts.
Bad
it's ok but could be done more
Not optimal
I know that they used to have different bins but probably students were not educated well to help CBS accomplish this goal
I wouldn't be familiar with their efforts
I haven't seen anything like it for a while. And i read in the Wire student paper that the previous bins with notes for plastic, paper etc all was put in one box in the end of the day because students didn't care, so it was a big mess and not sorted anyway. That was a bad surprise to get that info a few years ago!
Good idea with that many people
Bad
There is none
It could be considerably better
Not many opportunities to sort waste
Dont know
not good enough

I think the top of the organisation should give WAY more emphasis (that is resources, that is money) to offices like PRME or other organisations/departments who could work towards a more green campus. Right now, it isn't a priority. But there is good emphasis on many other things. It could just be great with recycle bins, not have single-use plastic, skip the lids to the coffee mugs and offer a discount or a price incentive to bring your own tupperware or mugs.
Not really into practice.
NOT much sorting
Kunne være endnu bedre
Could be improved
non existing
Fint
More could be done about reducing usage of plastic
I am not aware of the particular efforts
could be improved, at the moment I do not even recall if CBS does sort its waste, which speaks for itself
0
Bad
Godt
nice
Could be improved
Poor
I don't know how it can be improved since most trash is used napkins and used plastic cutlery
Good
Havn't noticed them
They could be better.
I don't know about them
Good

I didn't know that CBS were doing anything about waste sorting, but I think they should definitely do something, especially with all the plastic waste.
.
I haven't noticed that many waste sorting bins at CBS
no options to do so, or at least not visible enough
I don't know much of their effort to be honest
Hard to find bins for sorting at CBS
Not enough
non-existing
That they don't make an effort as far as I know?
really low effort
Extremely poor
Trash bins are for all waste nor for particular
Nice
They could do more to increase awareness
I'm not really sure there are any, and if there are I haven't noticed them. But I think it would be great if they did sort waste
No comment
Don't know about iy
They are very limited
.
I think they could improve on that especially with regards to bio waste as they have lots of food that's thrown away
Not good
Mediocre
Didn't really notice. Dont know if they do it
There is not really any waste sorting. The exam hall at Amager has abit.
I don't think that there is an effort at all.

From what I understand (but not sure if true...), some waste is sorted after it's taken out (even though there are no recycling bins). I think recycling in Denmark is actually really difficult (no pizza boxes in the cardboard bin, tetra-pak can't be recycled, I still don't know what kind of plastic I'm supposed to put in the plastic bin!) and putting out recycling bins at a university where people don't have the knowledge to sort things properly (and are usually too distracted to notice) may not be very practical. It sucks, but I do understand why it's difficult.
They could improve it a lot
I generally see one trash can for all the trash but I do notice some e-waste bins for batteries at Dalgas Have.
I do not think they are doing enough. I have seen realities in which the waste sorting is managed better. Basically everyone can throw away anything in just one type of container, so it seems like they are not sorting the litter properly.
Are there any waste sorting efforts at CBS? If yes I haven't noticed
I think CBS tried with the different bins, but it is not working. They could do more
Not nearly enough is done there.
I don't know much about it
Weak
Not aware of it
They are improving and getting better
bad
Horrible. Couldn't be that hard to set up bins that enable sorting plastic for a start, then offer more options.
I am not sure but I think it is often not really possible to sort it.

Appendix R: Open-ended question, efforts of CBS (staff)

appreciate the effort in office but not in public places
not bad, could be better with bio-waste

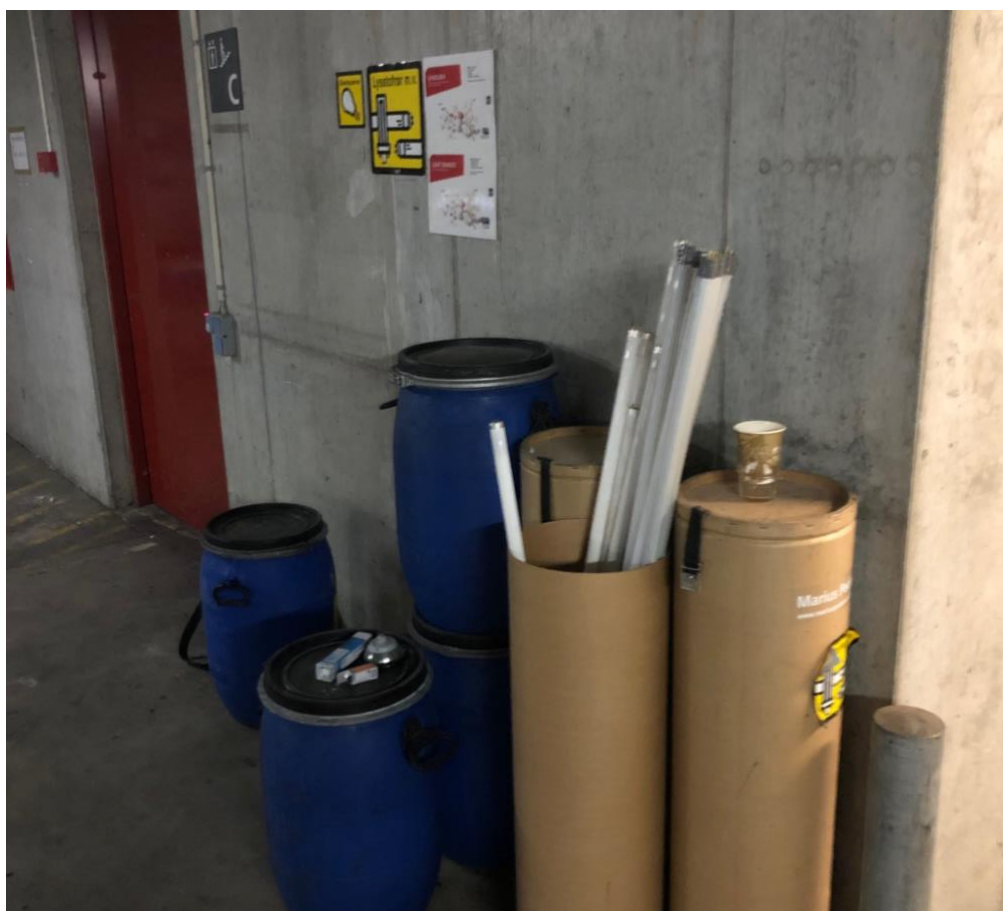
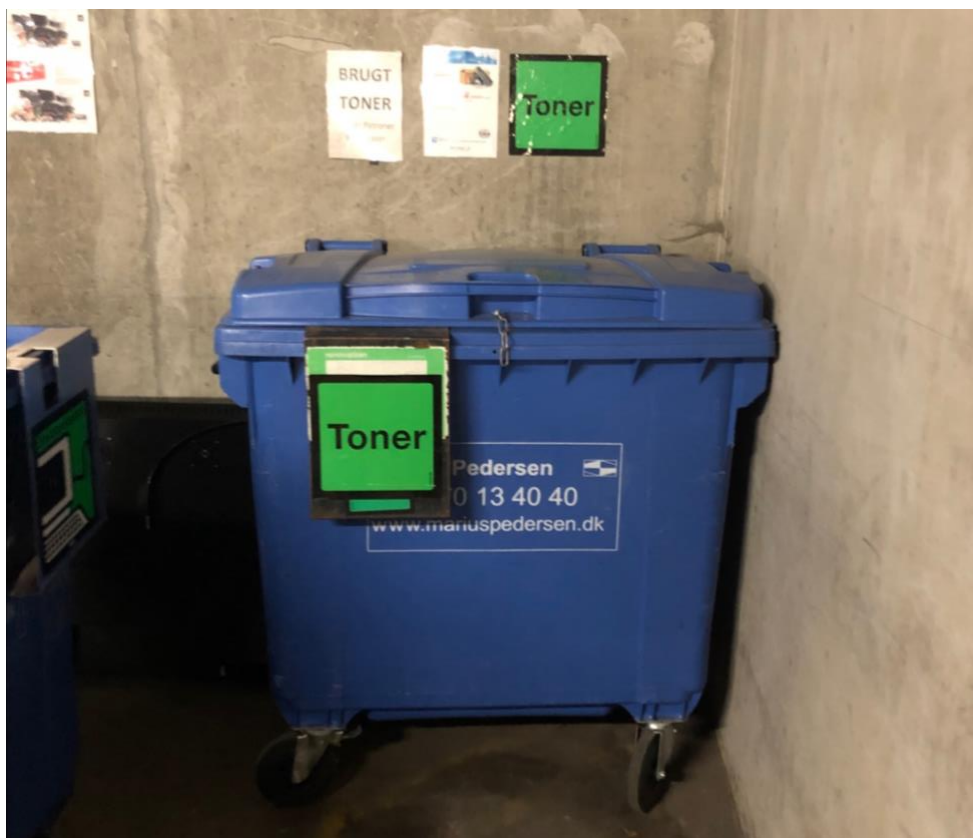
Waste sorting is ironically hidden from students and staff where the waste is sorted centrally. This obviously makes it easier for people, but as far as I'm aware there are still fractions that are not being properly sorted.
Almost nonexistent- only paper and cardboard
Good idea, but the primary focus has been on the student side e.g. there are few sorting opportunities available for the academic staff
At the department we could sort bio waste, I don't think we do that yet.
There are limited waste sorting options provided, starting with the bins around campus that do not separate between different waste types.
...
Too little. More needed to send a strong signal
splendid idea
Ok but need more improvement
I think we can do more in terms of sorting out recyclable plastic.
They have improved radically over the last years. I dont think it makes sense to add additional fractions.
Same as the above answer. CBS is lacking water stations / taps where you can fill your water bottle which makes difficult to reuse bottles.
I don't know
Well, there is only one basket in the kitchen, i.e. no sorting, so there is room for improvement
Dont Think anything about it
N/A
No sure how they are done
Really bad

Appendix S: Basement sorting bins









Appendix T: Past experience bins



Appendix U: oikos new sorting bins

