

Optimization suggestions for reusable cup systems for event planners

A study of how consumer behavior and systems thinking can improve sustainability for reusable cups at events



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Abstract:

Background: Reusable cups are assessed to be a more sustainable alternative to single-use cups at events. The basis of this claim has primarily concerned to studies on its environmental footprint and that it is necessary for the alternative to be used a sufficient number of times in order for it to become more sustainable. Literature on how consumers can contribute to the system is limited and this forms the basis of this thesis.

Methods: Interviews with experts in the field of study, interviews with participants at the event to identify consumer behavior, and observations at an event to identify external subsystems to the reusable cup system that can impact the opportunity to change consumer behaviour.

Conclusion: In order for the reusable cups to be a more sustainable alternative than single-use cups at events optimizations of the system is required so it can effectively change the behavior of consumers and increase the return rate of the reusable cups.

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Preface

This thesis have been conducted during the final semester of the master program Environmental Management and Sustainability Science at Aalborg University.

The supervisor for this thesis is Karla Kornelia Smink. During the course of this thesis the author has worked at the Danish sustainability agency Worldperfect. Since they are the sustainability operators at the DGI L2022 event, it was an obvious opportunity to gather data during the event on consumer behavior and the system of reusable cups.

The definition of sustainability used in this thesis is defined by World Commission [1987]: *"Meeting the needs and aspiration of the present generation without compromising the ability of future generations to meet their needs"*.

List of abbreviations

Abbreviation	Description
SUP	Single-use plastic
LCA	Life-Cycle Assessment
DGI	Danish Gymnastics and Sports Associations
L2022	National gathering 2022
SSBC	The Stage Model of Self-regulated Behavioural Change

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When people are gathered at events, a great amount of waste is generated, according to Worldperfect [2018], Yoo and Cho [2021] and Abdulredha et al. [2020]. Some of this waste is typically generated by single-use plastic (SUP) cups [Worldperfect, 2018]. In recent years, event planners have had an increased focus on limiting this waste and identifying potential solutions to reducing and handling it [Wentz, 2021]. As a result, single-use plastics (SUPs), can be replaced with alternatives such as paper, bamboo, or biodegradable plastics. However, these are only rarely sustainable alternatives, as they are still made for single-use and consequently demand heavy resources in the production phase and are difficult to dispose of [Plastic Change, 2020]. In addition to this, the increased interest in sustainability has then caused event planners to turn towards the use of cups that are reusable [Wentz, 2021; Plastic Change, 2020]. In this regard, reusable cups have proven a prominent alternative to both single-use plastics and other single-use alternatives [Lewis et al., 2021]. This can also be recognized in the waste framework developed by the EU Waste Framework Directive. The Directive has two key objectives which are (1) to prevent and reduce negative impacts that are caused by the generation and management of waste and (2) to improve the efficiency of resources [European Commission, n.d.]. Here, a waste hierarchy, as seen in figure 1.1, is presented by the EU Commission that can be applied in waste management.



Figure 1.1. EU's Waste Hierarchy [European Commission, 2008]

In figure 1.1, prevention of waste is the preferred option as this applies to measures that are taken before a material or product has become waste. In situations where it is not possible to prevent waste, preparing for reuse is the best option. Reuse means that the product is used again for the same purpose. In this regard, preparing for reuse means checking, cleaning, or repairing the product so it can be reused again [European Commission, 2008]. Followed by reuse are recycling and composting which are waste materials that are reprocessed into new products that can either be produced into the same or another product. After recycling, recovery means finding a way that the waste material can serve a useful purpose by replacing other material's functions. For instance, this could be energy recovery by incineration [European Commission, 2008, 2012]. The least preferred option is the disposal of waste. Here, the waste materials are disposed of and typically handled by landfilling [European Commission, 2008]. Taking reusable cups into account according to the waste hierarchy, then these are a preferred option to SUP cups. Also, Plastic Change [2020] finds that implementing reusable cups that can be washed and reused at events, can reduce not only the number of cups but also decrease the environmental footprint if implemented correctly. Considering several different studies, Plastic Change [2020] argues that using reusable cups at events is in fact a more sustainable solution than using single-use cups. This thesis aims to investigate that claim. More specifically, the thesis seeks to answer the following research question:

How can consumer behaviour impact the system of reusable cups at events? And on this basis, how can event planners optimize the system of reusable cups for future events?

The background of the development of this research question will be elaborated in the following sections and a description of the research design will be done in chapter 3.

Preliminary Research 2

This chapter aims to cover background information to the statement that Plastic Change [2020] derived in the introduction. It is therefore the purpose to investigate whether reusable cups are actually a more sustainable alternative than single-use cups at events.

2.1 State of the art: Reusable cups

This section establishes the current state of research in regard to reusable cups by examining current and relevant studies of the subject matter with special regard to life cycle assessments and the context of events.

2.1.1 LCA studies of reusable cups

As the purpose of this thesis is to investigate the claim that reusable cups are more sustainable than single-use cups, it is of relevance to look into previously conducted life cycle assessments (LCAs) done on the subject. LCA is an environmental management tool that can identify potential environmental impacts of a product or service throughout its life-cycle [Danish Standards Foundation, 2008]. By comparing studies that identify the environmental impacts of both reusable and single-use cups, it is possible to determine which one is the theoretically better choice in terms of specific sustainability measures ¹. The proceedings of how the state of the art is conducted can be read in chapter 5 section 5.1.

Lewis et al. [2021] has published a report which compares single-use cups and their alternatives by means of LCA. The report summarises current knowledge on the environmental performance of various single-use and reusable cups with the purpose of providing policy-makers with essential background knowledge for taking action and regulating the use of the cups [Lewis et al., 2021]. The approach of the report was to carry out a meta-analysis on the basis of other studies that have conducted LCAs on the different cups. In each of the studies, the break-even points between the given reusable cup and its single-use counterpart had been identified. The Break-even point refers to the specific number of times a reusable cup must be used in order to break even in terms of environmental impacts compared to a single-use cup. In other words, the break-even point is the point where the two cups have the same environmental impact Lewis et al. [2021]. The report finds that the number of uses needed to reach the break-even point varied from 10-670 depending on the materials used, end-of-life assumptions (i.e the proceeding of the cup once it has reached its end-of-life), and particularly washing assumptions (i.e.

¹E.g. assess carbon footprint or impacts of different materials [Laura, 2020]

the circumstances of how it is washed), which was interpreted as a part of the consumer behaviour Lewis et al. [2021]. In regard to washing assumptions, Lewis et al. [2021] points out that multiple studies find that hand-washing is preferred over dish-washing, while only one suggested the opposite. These results were determined by efficiency factors of the appliances used for washing, such as energy consumption, loading, water use, water temperature, and the source of energy. Another factor related to consumer behaviour, is that the environmental impact of reusable cups is also determined by the number of reuses Lewis et al. [2021]. The significance of the number of reuses applies to both consumer-owned cups as well as non-consumer-owned (e.g. takeaway cups). Moreover, when using non-consumer-owned reusable cups losses may be greater due to the additional steps within the system of returning them and quality control of them also affects their environmental impact. Thus, the conclusion of the report, and hence the advice for policy-makers is that consumer behaviour does play a role, and even a major part, in determining the actual impact of reusable cups Lewis et al. [2021].

Another relevant study that has addressed single-use versus reusable products is Fetner and Miller [2021]. Similar to Lewis et al. [2021], the study concerns environmental payback periods², yet focuses not only on cups but also on alternatives to kitchenware products made out of single-use plastics generally. In the study, Fetner and Miller [2021] makes the claim that many consumers are transitioning from using single-use products to reusable products based on the assumption that the latter has a smaller environmental impact. However, the study finds that reusable products are typically made from more intensive materials and that environmental impacts are attached to them in the use-phase because they are washed and reused before they reach their end-of-life. This contrasts with single-use products which do not have any environmental impact in their use-phase, as they are simply disposed of when they reach their end-of-life, that is after they have been used. A part of the study focused particularly on the use-phase concerning the washing behaviour of reusable coffee cups (two single-use and three reusable cups) [Fetner and Miller, 2021]. Here, it was found that the environmental impact of reusable cups is larger if they are washed after every single use. On the other hand, if the cups are not washed after every use but rinsed or reused e.g. for a second cup of coffee for the same person before they are washed, the reusable alternative is even more favourable than the single-use one. Yet, it should be noted that the latter may potentially foster unhygienic situations and consequently is not always feasible [Fetner and Miller, 2021]. However, the same behavioural logic could also be applied to single-use cups. By using the single-use item twice, the environmental impact of it would be halved, and thereby make a difficult case for the reusable cups as alternatives to single-use cups.

Similar to Lewis et al. [2021] and Fetner and Miller [2021], Changwichan and Gheewala [2020] mention that e.g. losing, damaging, or breaking a reusable cup before its break-even point has been reached will increase its environmental impact. They point out that environmentally concerned consumers are prone to using a cup several times or keep one with them but that this is not necessarily a benefit. For instance, consumers may damage the cups as a result of careless handling (especially during washing), or they may get bored with their product and want to change the cup after using it for a while. Such factors all play an important part in the lifespan of reusable cups and may have an effect on

²Another term for break-even point as defined above

how many times the cups are used, and consequently, affect the long-term environmental impact [Changwichan and Gheewala, 2020].

In sum, current LCA-research has found that reusable cups can serve as a more sustainable solution to single-use cups, provided that they are handled correctly under the right circumstances and given that behavioural patterns of the users are taken into account.

2.1.2 Reusable cups in the context of events

Having established the current state of research on the environmental impact of reusable cups, the thesis will now contextualise this knowledge by examining the literature that investigates the usage of reusable cups in the context of events. However, it emerges that this specific topic is only rarely touched upon in literature.

Šuškevičė and Kruopienė [2020] also states that there currently is a lack of studies concerned to reusable cup damage and losses at events. This study investigates the return rates of reusable cups for three different reuse models for events. (1) reusable cups with a one-time fee, (2) reusable cups with a deposit scheme, and (3) reusable cups and single-use cups with a deposit scheme. The findings of this study show that having a deposit scheme attached to the cups showed less damage and losses of the cups. The best performing reuse model according to Šuškevičė and Kruopienė [2020] is the second reuse model whereas the third model was right after. To this, Šuškevičė and Kruopienė [2020] explains that even though the two models are close in terms of return rates it can be questioned that a model such as the third one should be avoided as it turns to the use of disposable cups. Here, it was evident that only the most thoughtful participants tends to use reusable cups whereas the rest would be more prone to use the disposable cups. The conclusion of the study is that the reuse rate relies on the reuse model applied and communication of it to the participants at the event [Šuškevičė and Kruopienė, 2020].

Cottafava et al. [2021] briefly mention events in their report but only in terms of best practices concerning washing options of the reusable cups. Here, they investigate the different environmental performances for onsite hand-washing, onsite washing with commercial washing machines, and offsite washing with industrial washing machines. In this regard, they find that offsite washing, an alternative to onsite washing, must not exceed a distance of 350 kilometers to the facility in order to be the best option in terms of environmental impacts compared to single-use systems. Interestingly, onsite hand-washing of the reusable cups was not preferable to e.g. single-use cups made of cardboard [Cottafava et al., 2021].

de Sadeleer and Lyng [2022] scrutinises the fact that reuse-systems at events often have a deposit scheme or a one-time fee on the cups or service. They find that having such a scheme may highly affect consumer behaviour, and therefore eventually influence the return rate of the cups both positively and negatively. The article does not outline any suggestions regarding how to implement such a scheme successfully but suggests that future research should seek to investigate how different types of schemes can affect the return rate for the reusable cups-systems positively [de Sadeleer and Lyng, 2022].

To sum up the state of the art, current research has already investigated when reusable cups are theoretically more advantageous than single-use cups from an environmental impact

perspective. However, as has just been illustrated, previous studies have primarily focused on reusable cups in a general setting and not in the specific context of events. Hence, while studies on reusable cups in the context of events are limited, they all suggest that further research should be done on consumer behaviour at events. Given that the purpose of this thesis is to investigate precisely reusable cups in an event-context, preliminary research has been conducted to get a better idea of current practices, challenges, and considerations of using reusable cups at events.

2.2 Preliminary research

To gather information about the challenges and considerations that come when working with sustainability at events, three interviews with relevant actors working with sustainability at events have been conducted. The purpose of the interviews is to gather knowledge about reusable cups at events, that has not been covered by the current literature on the subject. In the interviews, the respondents tell about their work with sustainability at events and explain how they have implemented reusable cups at these events, including the challenges that they have met throughout the implementation. The interviews can be found in full length in Appendix A to C. When interpreting the interviews, it became evident that the themes of the answers overlapped. Hence, the following subsections will explain these themes relating to reusable cups, and focus on the challenges and considerations in relation to implementing them. The themes concern consumer behaviour since it is stated in the current literature that there is a lack of research in this field. For each theme, both quotes on challenges and considerations as well as relevant literature providing relevant inputs to the themes are included.

The temporality of events

The first theme concerns events as a temporary place and what this brings of opportunities to events in relation to sustainability. In the interview, Stephansen [2022] mentions that:

"The temporality of Roskilde Festival means that we can do things significantly different from year to year as long as we set ourselves for it" (Translated from Interview with Sanne Stephansen, ll. 16-19)

This is consistent with what Dijkstra and Boonstra [2021] describe in their publication; namely that events are flexible in their structure. Due to the temporality, events can be a safe place to experiment with innovations, such as the reusable cups, as they function as a kind of trial for technical, economical, and social systems [Dijkstra and Boonstra, 2021].

Another thing about temporality that is derived from the interview with Stephansen [2022] and also Timmermann [2022], is the resource-use that events create.

"We gather 130,000 people in eight days. That has a huge impact." (Translated from Interview with Sanne Stephansen, ll. 31-32)

"We are mass consumers when we attend events" (Translated from Interview with Liv Timmermann, ll. 16-17)

These quotes agree with what can be derived from a report by Worldperfect [2018] about a closed plastic cycle at the festival NorthSide, which finds that events are mass consumers of plastic-packaging because events are a temporary space where guests consume a huge amount of food and drinks within a short period of time. In the report, the solution to the mass consumption of plastic-packaging is proper waste management systems that secure that the packaging used at the festivals is recycled and used for new plastic-packaging products [Bioøkonomipanel, 2017]. From the interviews, it emerges that the temporality

simultaneously invites opportunities in the form of flexibility in structure for new systems as well as urges innovations, and at the same time also poses challenges, as events involve a huge amount of guests, which leads to mass consumption of plastic-packaging.

Society

Throughout the interviews, challenges within society concerning cultural behaviour, green transition, and the era of sustainability that we live in, were addressed. Stephansen [2022] describes that:

"Once we are done with the festival, you can see the 'use-and-throwaway'-culture that are part of our society in the festival area and the camping sites"
(Translated from Interview with Liv Timmermann, ll. 35-38)

Here, the term 'throwaway culture' is emphasized and it is considered a big part of how materials are handled by the consumer after it is used. In their article, Gregson et al. [2007] find that throwaway culture can be seen as indicative of the absence of care. The term is derived from the presumption that once a thing is no longer needed, it is tossed without a second thought to the fact that it is not compliant with the waste streams [Gregson et al., 2007]. While this can be seen as a challenge for events, given that they generate a lot of waste, it may also be seen as an opportunity for specific products to be accommodated to challenging throwaway culture. For instance, disposable plastic cups have been the usual choice of beverage cups for events, and using them generates a lot of waste, but accommodating cups to being reused rather than thrown away, cups may be used as an opportunity rather than a challenge [Wentz, 2021].

Another quote describing cultural behaviour that relates to the throwaway culture is by Timmermann [2022]. She mentions that Danes have a tradition of throwing their beer at events and football in particular. While she finds that this is rather unorthodox, she also makes a parallel to English football culture which may be just as intense but does not have this tradition. Therefore, she believes that the tradition is a habit that the Danish audiences have acquired at some point [Interview with Liv Timmermann, ll. 216-222]. Here, it should be noted that reusable cups are quite new to the event industry, and hence, the beer cups thrown at events have traditionally been disposable cups. The disposable cups have different specifications than those made for reuse, which is harder in their structure and can therefore pose a security risk when thrown into a crowd. Consequently, Danish stadiums and large venues have not adopted reusable cups for their events [Interview with Liv Timmermann, ll. 211-216].

The quotes and the interviews generally indicate that a change in cultural behaviour is needed for the reusable cups to succeed in the events industry. Stephansen [2022] believes that this change is going to be difficult. According to her, turning into a more sustainable society will require that people change their behaviour and do things differently (ll. 103-109).

Moreover, event planners attempt to capitalize on the societal interest in sustainability. For instance, Pedersen [2022] mentions that the DGI L2022 event has chosen to invest in

specific types of plates (made from bagasse), even though they are more expensive than conventional ones, the organisers believe that conventional plates do not harmonize with the era of sustainable development that we live in [Interview with Linda Pedersen, ll. 137-144]. This is also the case for reusable cups compared to the conventional single-use cups [Timmermann, 2022].

In sum, the second theme regarding society deals with the cultural behaviour of the guests attending the events. The respondents find that the current behaviour needs to change in order for greener innovations to succeed. At the same time, the public interest in sustainability causes event planners to think of new and more sustainable solutions. The challenge of consumer behaviour can perhaps be met with new solutions that make it easier to change the habits and traditions amongst the use and throwaway culture.

Structure of the event

The structure of the event is important for reusable cups since there are two options for events - it is either closed or open. But for either constellation planning needs to be done in order to secure the best possible playing field for the alternative. This comes clear when talking with both Linda and Sanne that works respectively with the DGI L2022 event and Roskilde Festival. The DGI L2022 event is an open event whereas Roskilde Festival is a closed event. When Linda was asked in the interview whether there have been thought of any possible complications with the collection of drinking cups, she responded that the collection containers will be situated in many different places and corresponding communication of the collection containers should be applied. The challenge here arises due to the DGI L2022 event being an open event and therefore it operates in a huge geographical area. This means that there can only be set up a certain amount of collection bins where the reusable cups can be collected [Interview with Linda Pedersen, ll. 235-245]. The challenge, in this case, is that people can take the reusable cups anywhere that they want and this limits the possibility to monitor the cups. As a solution, Linda further describes that a deposit system could help to motivate people to bring back the cups [Interview with Linda Pedersen, ll. 249-255]. In Roskilde, the festival operates differently. This is a closed event where the festival areas are closed off by fences. Stephansen [2022] describes in her interview that:

"What we can do, is that we can create a closed system, an area that is limited which we have more or less control over. Here, we can try some things (innovations, ed.), which is what we want" (Translated from Interview with Sanne Stephansen, ll. 42-45)

Innovations have a big opportunity in the setting of an event. When having a closed event gives the opportunity to try out these innovations and develop a system around them that can help maintain the innovation. This is something that Dijkstra and Boonstra [2021] mentions in their publication about experimenting with innovations at events and that they are flexible. Events being flexible means that the logistics, structures, and systems of an event are usually built up from the bottom each time they take place. This gives a unique opportunity to experiment on terms that are made for specific innovations to thrive

as much as possible either if these are technical, economic, or social systems Dijkstra and Boonstra [2021].

Timmermann [2022] mentions another important challenge with the implementation of reusable cups at events and that is:

"It poses quite big challenges in relation to your planning, so you almost have to start with this when designing the area" (Translated from Interview with Liv Timmermann, ll. 71-74)

Here, Liv implies that when designing the event area, planners are supposed to think of how the logistics behind the reusable cups should be designed. This can for example be; where do consumers get their cups? How and where do they return their cups? These are valid questions that planners could ask themselves when designing event areas.

The structure of the event can have significant importance for the implementation of the reusable cups. There are challenges to the implementation of reusable cups in open events since there is less control and monitoring of the cups that can end up all over the place. The strength of the closed events is that they are areas that can be controlled and where the areas can be designed to fit in the system of reusable cups.

Logistics

This theme has some comparable features with the structure of the event and also the partnerships and suppliers. In this case, the term will be used for how the reusable cups work in practice and mainly how these are collected. What challenges can be seen in relation to the collection of the cups and what opportunities are there? All of the respondents agree that the task of implementing reusable cups and the system around is difficult in terms of logistics [Stephansen, 2022; Pedersen, 2022; Timmermann, 2022]. Pedersen [2022] elaborates on this and say that a challenge is that it would be 100 times easier to use SUP cups, which can just be thrown away and not have the whole handling task of getting it collected and returned [Interview with Linda Pedersen, ll. 126-130]. Timmermann [2022] mentions that the task of logistics for the reusable cups is more complicated than what event planners are used to in this sector. The opportunity that arises within the logistics is something that Stephansen [2022] comments on. She says that:

"(...) it (a challenge with reusable cups, ed.) is about getting the logistics running, it's about getting a look at the collection, i.e. the collection efficiency of the cups is insanely necessary for it to also be a good environmental case and then it's also about continuing to make the solution more efficient" (Translated from Interview with Sanne Stephansen, ll. 112-116)

The challenge here is mainly concerned with the collection of the reusable cups and how it is important to work on the efficiency rate of the collection. With that remark, it is relevant to remember that the system concerned to the reusable cups is still in its early stages. It has been clarified that reusable cups have a less environmental impact and that

they are only more sustainable after each use after the break-even point. This creates an opportunity for event planners to keep on developing the system behind it to make the alternative an even better solution to conventional SUP cups.

Spill

This theme only appeared in the interview with Sanne. Stephansen [2022] points out that there were some incidents of spill in 2019 at Roskilde Festival due to damage on the reusable cups when transported and also cases where the design of the cups did that some of the cups were stuck together. She also explains that some of the cups that were found around the camping sites were damaged due to mistreatment by the festival guests (Translated from Interview with Sanne Stephansen, ll. 180-187). Although there seem to be some challenges connected to spills in both the underlying processes and also the behaviour of the festival guests, Sanne is still confident that there is a solution to reduce it. She explains that there will always be spills one way or another and the solution is to continuously work to reduce this potential spill [Interview with Sanne Stephansen, ll. 190-192]. In her interview she also gives an example of what can be done, e.g. having a deposit solution:

"(...) when you look at deposits in general, we are so lucky that there is actually somebody whose primary purpose in being with us is to collect deposits (reusable cups, ed.)" (Translated from Interview with Sanne Stephansen, ll. 195-197)

Here, Sanne talks about people that arrive at the festival with the purpose to collect certain items, and in this case, it could be the reusable cups when they are either sorted into the wrong waste fraction or laying on the ground. Opportunities within this theme can be recognised with what Sanne said in the interview with the design of the reusable cups to fit better into transport and also that the behaviour of consumers at the event should be investigated further. Sanne believes that if they keep on informing and telling why it is important to return the cups after use, it will be more and more successful [Interview with Sanne Stephansen, ll. 187-190].

Behaviour of the consumers at the event

The theme about behaviour concerns to how the consumers participating at the events behave towards the reusable cups and how it is possible for event planners to impact the behaviour of the consumers in order for the initiative to become more sustainable in the end. Sanne mentions in her interview that:

"When it comes to behaviour within the green transition, such as minimizing resources, inspiring people or pushing them towards sorting more on the site, then you can say that there are some systemic and structural issues that we need to work on much more. That is, how easy and intuitive we make it for people to sort their waste" (Translated from Interview with Sanne Stephansen, ll. 246-252)

All of the respondents had similar comments to the work that should be done towards impacting the behaviour of the consumers in order to have a more successful system surrounding the reusable cups. The similarities were especially evident for the ambition to make the system easy and intuitive for the consumers. As Sanne also mentions "it should be easy to do the right thing" [Interview with Sanne Stephansen, ll. 263-264]. Linda explains that the main challenge concerned to behaviour is the returning of used cups. She explains that at the DGI L2022 event there are going to be a deposit on each of the reusable cups and that this can possibly help to motivate people towards returning the cups. Here, Liv also explains that the challenges is recognise where to put the containers where the cups can be collected and also how these are communicated to the consumers. She elaborates that there is a challenge in making the consumers understand that the reusable cups are not something that you buy but you borrow it instead and it is very important for the system and the sustainability behind the initiative that these are returned and collected again for later use [Interview with Liv Timmermann, ll. 197-202]. In section 2.2 there were identified challenges and opportunities with open and closed events. In terms of behaviour, Linda comments that open events have a harder time controlling where the consumers are taking the cups [Interview with Linda Pedersen, ll. 247-249]. This is easier for closed events. Sanne explains in her interview that in closed events there are opportunities to try out new things. She gives an example of this by talking about camping equipment for the camping sites at Roskilde Festival:

"(...) we have worked for a long time on a rental solution for camping equipment. There you really push behaviour by saying "leave it at home, you only need to use it for eight days, you only need the right of use for a limited period, so let us choose some better products that you can then buy access to for a limited period" (Translated from Interview with Sanne Stephansen, ll. 264-270)

She then adds:

"So the way we work with behaviour is to put it out there and make our audience participants and get them engaged in the transitions that we need to get going" (Translated from Interview with Sanne Stephansen, ll. 287-290)

Here Sanne gives an example of the opportunities that there with a closed environment where the event managers have control and where they can possibly impact the behaviour of the consumers in that environment. In the example there were used camping equipment for rental. This could also apply to reusable cups which is in theory rentals as well. So the challenge is then to find a way to make the consumers return the cups at a higher rate.

Communication

The last theme that was identified throughout the interviews involves the communication of the system. Every respondent addressed the importance of communicating the initiative of reusable cups and the whole system surrounding it to the consumers at the events. The challenge here is to make it clear for the consumers so they understand what is being

done and why it is being done [Stephansen, 2022; Pedersen, 2022; Timmermann, 2022]. Another important aspect of the communication is addressed by Linda who determines the importance of the communication of signs that are attached to the different waste fractions need to be recognizable for consumers in order to secure proper waste handling [Interview with Linda Pedersen, ll. 235-238].

2.2.1 Summary of the preliminary research

In the state of the art concerned to reusable cups at events, it was concluded that there is a lack of research done on consumer behaviour at events. It was therefore the purpose of the preliminary research interviews to develop an understanding of the current practices towards the implementation of reusable cups with a focus on consumer behaviour. Different themes were identified throughout the interviews that concerned to this matter. The themes that are presented above are included in this thesis as they address challenges that can be concerned to consumer behaviour. Other factors that are identified throughout the interviews are:

- Motivation to implement reusable cups at events
- Political factors that impacts the implementation
- Partnerships and suppliers
- Product uncertainties
- Sparring
- Economics

It is chosen not to include these themes as they are more concerned to event planners rather than consumer behaviour at events. This does not mean that the themes are irrelevant but as the current literature on reusable cups at events outlines, there is a lack of research on consumer behaviour.

2.3 Part conclusion

From a theoretical standpoint, reusable cups can be concluded as a better alternative than single-use cups in terms of environmental impacts. However, in order for the cups to be more beneficial in terms of environmental impacts, they have to be used a specific number of times. In studies concerned to reusable cups at events, the focus has primarily been on best practices in terms of washing options for the cups as well as deposit schemes. Šuškevičė and Kruopienė [2020] mentions a bit about the importance of reuse models applied at the events and communication of it to consumers, but it was not investigated from a consumer perspective. It is interpreted from the state of the art that there is a lack of scientific research on consumer behaviour. To develop a better understanding of what is currently done at events in terms of reusable cups, three interviews were conducted. Here the respondents mention several themes that can be concerned with consumer behaviour at events. The main challenge that was identified that can be connected to consumer behaviour is to find a way to make participants of events return their cups and as this can result in reusable cups being a more sustainable option than single-use cups. What also emerges from the interviews, is that each of the different themes that appear is a part of a so-called "system" that concerns reusable cups. Hence, it seems relevant to consider reusable cups at events as a system.

In the next chapter, the research design of the thesis will be presented and here the purpose is to explain how this study can contribute to the field of research concerning this area.

Research design 3

There seems to be a knowledge gap between the theory on reusable cups and the practical use of it at events. This thesis seeks to investigate what may potentially be the issues and how it may – from a theoretical point of view – be solved in the future. Based on the state of the art and the preliminary research interviews it is evident that an investigation of consumer behaviour can be relevant in order to secure the implementation of reusable cups as a more sustainable alternative to single-use cups. On this basis the thesis aims to answer the following research question:

How can consumer behaviour impact the system of reusable cups at events? And on this basis, how can event planners optimize the system of reusable cups for future events?

This thesis aims to contribute to research on how to implement reusable cups at events in order to make them a more sustainable alternative than single-use cups. This is done by investigating consumer behaviour and how this can affect the system of reusable cups. This thesis will therefore not concern with any issues that there may be from an event planner's perspective when implementing reusable cups.

The research question will be answered by using theories on systems thinking and behavioural change. These will be explained further in the following section. In order to investigate how consumer behaviour can impact the system of reusable cups, interviews of consumers at the DGI L2022 event will be used. Here, observations of the system of reusable cups at the DGI L2022 event will be used in order to identify what practical issues there may be attached to the reusable cups system. Based on the findings from the interviews of the consumers and observations of the system, suggestions for event planners on how to optimize the system of reusable cups, through changes in consumer behaviour for future events, will be conveyed. In figure 3.1 a flow-diagram is illustrated to show an overview of the research design for this thesis.

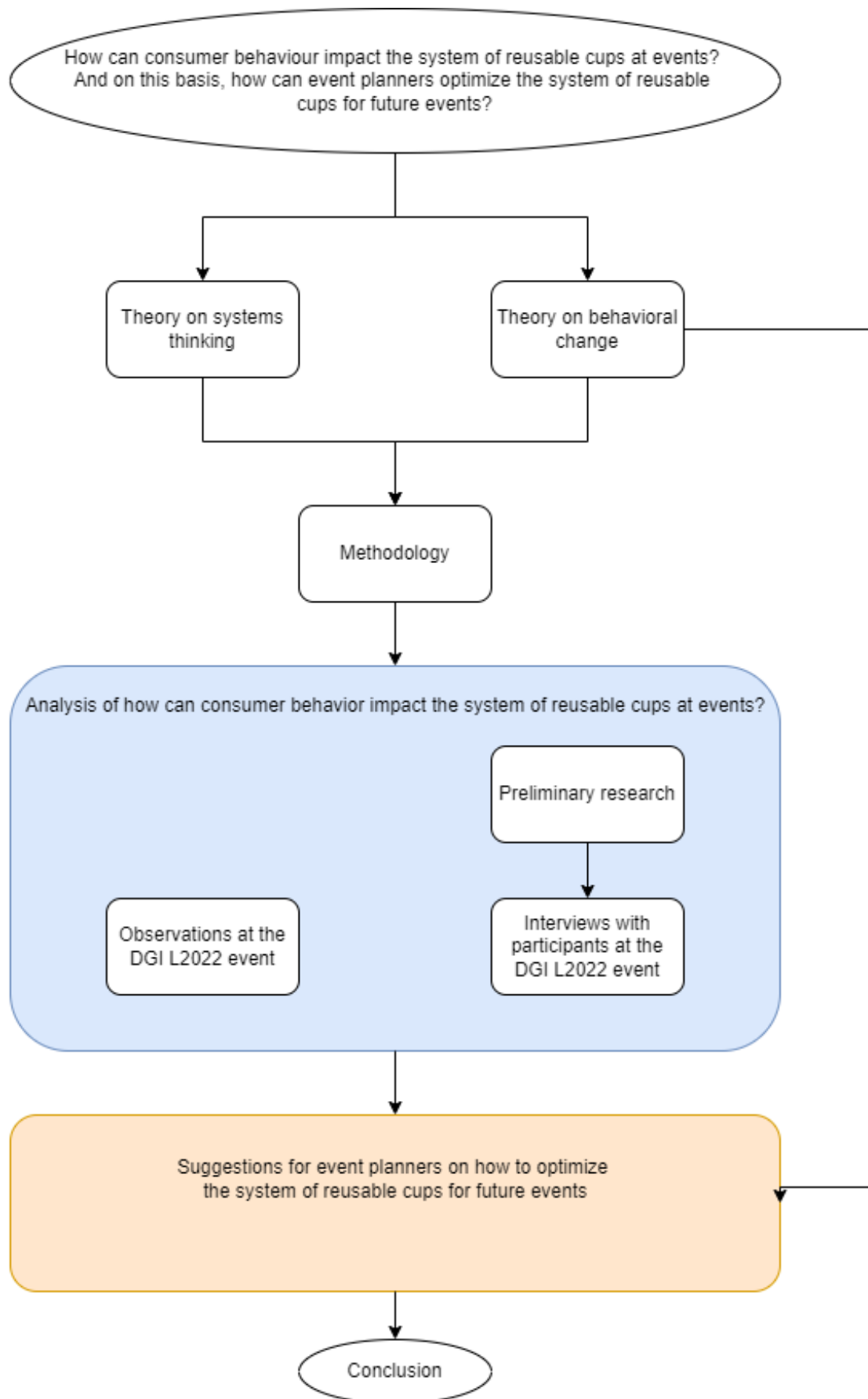


Figure 3.1. An overview of the research design for this thesis

This chapter concerns the theoretical framework that will be applied in the analysis. Here, the approaches of systems thinking and thoughts behind behavioural change will be scrutinised respectively. For both frameworks, a definition will firstly be provided after which an explanatory part in which relevant theories and concepts are objectively presented will follow and finally, the frameworks are contextualised with the context of reusable cups at events.

4.1 Systems thinking

This section investigates theories and concepts surrounding systems thinking and how this is relevant in the investigation of reusable cups at events.

4.1.1 Definition of system thinking

For the specific focus of this thesis, the definition of systems thinking as proposed by Mobus [2022] is used. His publication draws a lot of perspectives on what a system is, and hence incorporates several different aspects as to what is relevant and crucial for a system. Moreover, Mobus is very systematic in his approach to systems thinking and include both topics and subtopics in this regard, in contrast to other publications which have a less scientific and detail-oriented approach. Because of this level of detail and consideration, the definition of systems thinking as proposed by Mobus has been chosen for the purpose of this thesis.

According to Mobus, systems operate in every instance that there is, and hence that *"everything in the universe is a system of one kind or another"* [Mobus, 2022] (pp. 134). Mobus argues that systems are composed of several subsystems that affect one another, which then again consist of even further subsystems that similarly have an interplay. Thus, the whole system exists only as a result of the subsystems. Hence, describing these subsystems and their respective components are important for understanding and explaining the totality of the system [Mobus, 2022] (pp. 96). [Mobus, 2022] describe the subsystems as components within the system; what is interesting about this, is those complex systems are found to consist of numerous components and each of these components has unique *personalities* [Mobus, 2022]. What is meant by personalities is that each of the components within the system may have various interactions with their boundaries and corresponding components. This is an important part of understanding the system [Mobus, 2022]. In order to understand a system it is important; (1) to "know" what components the system consists of, (2) to know how the different components within the system interact with each other, and (3) to fully comprehend how these components

interact compared to the whole system. Building an understanding of a system is complex in itself, for which reason it is not only relevant to analyze the system in its own right, but also its components, and furthermore, test the behaviour of the system. In this case, the behaviour must be understood as what the system is most likely to do under observed conditions [Mobus, 2022]. Depending on how the system behaves, the connected subsystems operate according to that. Hence, knowing the internal processes is crucial to understanding the system.

However, in the case that knowledge about the internal processes of the system is unavailable, analysing external processes that may impact the system can be used to understand it. This type of analysis is called "*black box analysis*" Mobus [2022]. Black box analysis is based on observations of the system and how external subsystems can impact the studied system. To explain this, Mobus [2022] uses the example of a study on cheetahs. Here, the objective was for the biologists to find out how it is possible for the cheetah to run at such high speed. This question was answered through observations of the cheetah, e.g. what it ate to consume enough calories and gain enough strength to be able to run at high speed. What the example of cheetahs shows, is that information on the internal system can be gained without observing the actual internal system, but that some of this insight can be gained by observing the external subsystems instead, and even more interestingly, that external processes can impact the internal system.

Mobus [2022] furthermore outlines that an important feature of system thinking is that it can be understood by others by using some kind of *model language*. This model language will be further described in the following section using another practitioner who engages with this practice.

4.1.2 Interpretations of systems models

In 2015, Wujec [2015] gave a TED talk that focused on systems thinking and the communication of them. Wujec [2015] demonstrated systems thinking through the example of making toasts. The purpose of this example was to illustrate that different people would explain and communicate the practice of making toasts in different ways, as they perceive it differently. In the talk, Wujec [2015] speaks of examples of workshop cases in which people have been asked to explain and map out the process of making toasts. When doing so, the attendees of the workshop expressed different perceptions of the process, and also illustrated it in various ways. Moreover, the level of detail that the system was illustrated with also greatly varied. Some of the mappings of the systems models of making toast are shown in figure 4.1 and 4.2.

On the one hand, the drawings show that the comprehension of the complexity of the system of making toasts is very different from one human to another, and transferred, that the complexity of systems on a general level, varies depending on the eyes of the beholders. On the other hand, Wujec [2015] explained that even though all of the mappings were different from each other they all shared some characteristics. These characteristics are called nodes and links and are visualised in figure 4.1 and 4.2 as icons and symbols as well as numbers and arrows respectively. The nodes represent tangible objects such as products or people, while the links represent the connections between the nodes. It is the combination of links and nodes that makes it possible for us to induce a meaning from the

systems model and makes us understand how it works. In other words, the combination of links and nodes that each of the workshop participants has drawn is a visualisation of their private mental model of the system. To this, Wujec [2015] adds that the complexity of the systems model can be measured on the number of nodes represented in the visualisation. An illustration with only a few nodes can make the process appear trivial, yet make it easy to comprehend, whereas many nodes may generate a better idea of the complexity of the system but also make it difficult to understand. Ultimately, the purpose of the exercise was to show how complex systems could be broken down into simple, easily-understood systems [Wujec, 2015].

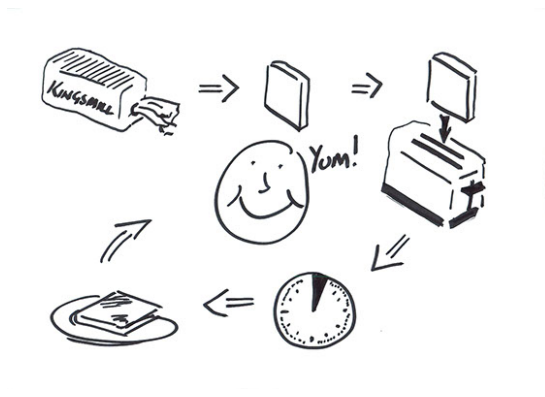


Figure 4.1. A systems model from a workshop by Wujec [2015].



Figure 4.2. Another systems model from a workshop by Wujec [2015].

The fact that the example above illustrates an everyday task and yet is comprehended in a different way serves to illustrate that even simple tasks may be understood in different ways. Hence, activities that do not concern an everyday activity may be even more difficult to illustrate - but also even more important to illustrate using the right nodes and links Wujec [2015].

4.1.3 Contextualizing systems thinking with reusable cups at events

The theory on systems thinking, derived by Mobus [2022] is relevant to the thesis, as it seeks to investigate and optimise a system. It is noted that in order to understand a system, it is critical to describe the subsystems and how these interact with each other which also applies to understanding the system of reusable cups. In this regard, both the overall system, its subsystems, and how these interact with each other to make the system will be considered in the analysis. Similarly, the argument that the system may be affected by external factors, and the notion of black box analysis prove useful in investigating how and which external systems and subsystems may impact the system of reusable cups.

The points that Wujec [2015] makes throughout the TED talk are relevant for this thesis, as they illustrate the importance of effectively communicating the systems model. While the system in itself may be complex, it should be easy to understand for those who need to. The same thing applies to the system of reusable cups. which is complex in terms of components and subsystems, yet should be simplistically communicated, according to Wujec [2015]. Therefore, when visualising the reusable cup system to the consumers,

the communication and illustration must likewise be simple; something that will be into consideration in the analysis.

The idea of communicating a system in a certain way can also be seen as a means to impact behavioural change.

4.2 Behavioural change

As has been illustrated previously, reusable cups can serve as a good alternative to single-use cups but may be challenged by behavioural complications when used at events. Therefore, it is relevant to delve deeper into how the behaviour of event attendees can be altered. Theories on how to do so, will be explored in the following sections.

4.2.1 Definition of behavioural change

Simply put, behavioural change refers to changing the behaviour of others. Celestine [2021] defines it as altering habits and behaviours for the long term. It can therefore be used in a number of contexts, whereof increasing sustainability efforts are one of them. In the context of sustainability, an attempt of behavioural change can be exemplified as *"efforts to make people routinely recycle paper and glass"* according to Windahl et al. [2008](pp. 127).

The Stage Model of Self-regulated Behavioural Change (SSBC) as presented by Bamberg [2013] proves useful in determining psychological factors that may influence consumer behaviour and how to change it. According to the model, which is shown in figure 4.3 below, behavioural change occurs in four stages: predecisional, preactional, actional, and postactional. By making stage-specific decisions on each stage, an individual progresses through the stages and eventually acquires a new behaviour.

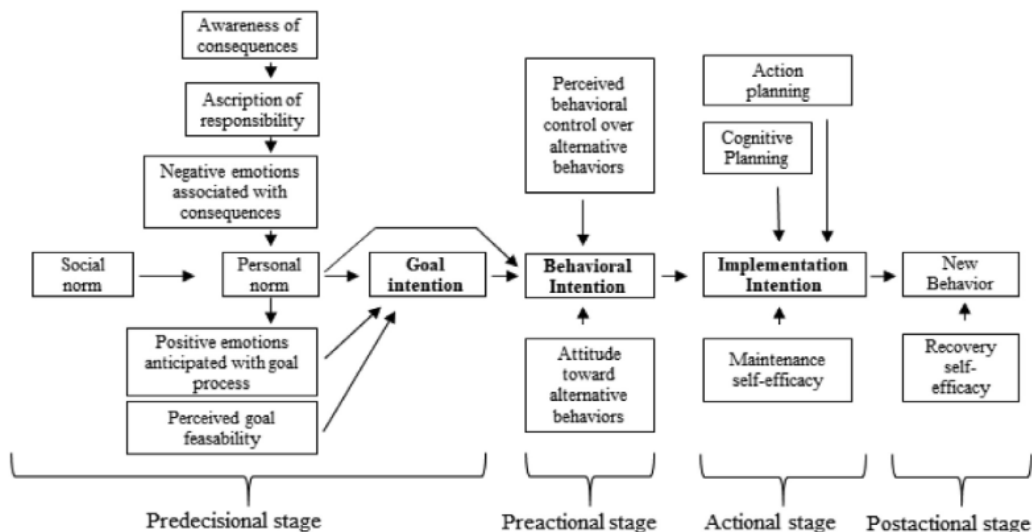


Figure 4.3. The stage model of self-regulated behavioural change, adopted by Bamberg [2013][Keller et al., 2021].

The predecisional stage is the first stage and describes the individual's self-commitment

to a specific behavioural goal. It is the knowledge of and associations with the specific goal that decides the determination of the individual to pursue the desired change of behaviour [Bamberg, 2013]. Bamberg [2013] argues that 'personal norms' can be impacted by 'awareness of consequences', which causes 'ascription of responsibility' which then leads to 'negative emotions associated with consequences' and through that eventually affect the 'personal norm', as can be seen in Figure 4.3. In other words, an individual becomes aware that their current behaviour may have harmful consequences and thereby accepts responsibility for causing this harm, which will create a state of self-awareness. This state of self-awareness can contribute to raising the individual's obligation to behave in line with the social standard or norm. The 'social norm' may also cause personal concerns of the individual, because the person becomes aware of what others may think about the personal norms of the individual. Just like awareness of consequences, the fear of social disapproval caused by social norms may also lead to a change in the personal norm. The personal norm acquired by the combination of social norms and awareness of consequences then leads to 'positive emotions' that are anticipated with the goal. For instance, the satisfaction or pride that the individual connects with the goal. Nevertheless, the change of behaviour toward a specific goal all comes down to whether the individual finds the goal 'feasible' to do, which is illustrated in the bottom of 4.3 [Bamberg, 2013]. Together, the factors of this stage form the goal intention and mark the transition to the preactional stage.

In the second - preactional - stage, the actions that can be done to achieve the intended goal that was developed in the first stage are dealt with. Here, the purpose is to pick the most suitable behavioural strategy. This is done by reflecting on the pros and cons of the different behavioural strategies that the individual can approach. The goal is to form an individual's self-commitment toward one behavioural strategy and thereby their behavioural intention.

After the second stage, the actional stage is considered. In this stage, the goal is to implement the chosen behavioural strategy that will initiate the action. Here, factors of action and cognitive planning, as well as maintenance self-efficacy, impact the formation of an implementation intention. 'Action planning' refers to situations and sequences of actions that are necessary to implement the intended new behaviour. 'Cognitive planning' refers to the ability of the individual to imagine scenarios in which it is not possible to the necessary action to facilitate the intended behaviour, and in that case, develop strategies that can cope with such challenges. 'Maintenance self-efficacy' refers to the confidence and self-commitment of the individual to maintain the newly acquired behaviour. When this is done and the implementation intention has been addressed, the postactional stage is considered.

Here, evaluation of the individual's choice of action is evaluated by the individual itself in order to decide whether further action is required to fulfill the intention. This is done by comparing the desired intention with the achieved outcomes. Moreover, a second task is connected to this stage, namely the 'recovery self-efficacy', which refers to the ability to sustain the newly acquired behaviour. Here, the struggle for temptation towards relapsing into the old behaviour is addressed [Bamberg, 2013].

Keller et al. [2021] uses the SSBC specifically for investigating the consumer behaviour toward reusable cups. By contextualising three alternative behaviours to using single-use

cups, namely *using a refundable cup*¹, *bringing one's own cup*, and lastly, *reducing one's consumption* of e.g. hot beverages on the go, [Keller et al., 2021] derive a number of recommendations for stakeholders as to how psychological factors can affect behavioural change. Firstly, in the aim to reduce single-use cups, stakeholders should aim their campaigns towards the stage that the consumers are in [Keller et al., 2021]. Secondly, investigating social norms can be an effective tool in changing consumer behaviour towards single-use cups [Keller et al., 2021]. Also, stakeholders should enable consumers who already own a reusable cup to use the alternative in their everyday routines. Finally, it is important to recognise the consumer need on a larger scale, in order to incorporate the changes into their personal lives [Keller et al., 2021]. Keller et al. [2021] also point out that future research on the subject needs to address how stakeholders can promote behavioural alternatives such as the ones that were presented in their work [Keller et al., 2021].

van der Haar and Zeinstra [2019] similarly underline that the stage of motivation in which the consumers find themselves have an impact on the level of behavioural change. By investigating the app 'Too Good To Go', they argue that such an app does lead to food waste reduction as the left-over food is not thrown away but picked up by consumers, but that the level of behavioural change among the consumers varies. While the behavioural change among the new users was remarkable, as these are users that are not normally aware of their food waste and have just recently started engaging with such practices, the level among the long-term users is small. This is a result of the fact that these are already highly aware, motivated, and dedicated towards reducing food waste, and hence not much has changed in their behavioural patterns. Hence, van der Haar and Zeinstra [2019] show that only a little or no behavioural change is gained by reaching out to educated consumers. On the other hand, van der Haar and Zeinstra [2019] illustrate that there is a big potential in raising the behavioural change if stakeholders attempt to reach consumers that are currently unaware of and less engaged in food waste reduction and the possible solutions to it [van der Haar and Zeinstra, 2019]. Therefore, if the purpose is to change the behaviour, managers should reach out to consumers that are less informed and engaged about the benefits of their behaviour [van der Haar and Zeinstra, 2019].

4.2.2 Contextualizing behavioural change with reusable cups

The SSBC-model and its different stages as presented by Bamberg [2013] may be applied to the context of reusable cups with advantage. In the first stage, the goal intention of the consumers at the event should be to return the cup, so that it can remain within the system. In this event setting, the second stage refers to the possibilities that are presented for the consumer to return the cup back into the system. When the consumers have made up their mind regarding which return system to utilize in order to keep up the reusable system, they go on to the next stage which is concerned with actually returning the cup. After returning the cup, the user can evaluate their action in the fourth stage and thereby decide whether their action meets their expectation. In the chapter 7, this contextualisation will be used to explain and analyse the behaviour of the consumers as well as the choices they make.

Using the strategies proposed by Keller et al. [2021], it is the purpose of the stakeholders

¹See [Keller et al., 2021] for an explanation of the system, pp. 1684

to ensure that the consumers go through the stages in the way that was just mentioned. As suggested, they should do so by aiming their campaign and communication toward the stage that the consumers are in. In this context, it should thus be investigated in which part of the reusable cups system the event planners should intervene in order to optimize the system and change the behaviour of the consumers. The analysis in chapter 7 will seek to do just this.

Finally, contextualising the argument of van der Haar and Zeinstra [2019], it is likely that people who are already aware of the environmental consequences of single-use cups in an event setting, will contribute to the reusable system in a favorable way as they have an interest in it - as was the case of the Too Good To Go-users. Also, it should be noted that in order to reach its full potential, the system must be made available and communicated to consumers that are not yet aware of the sustainable solution. Whether this is the case, and how the consumers actually contribute to the system will be contemplated in the analysis in chapter 7.

Before turning to the analysis in which these theories and conceptualisations will be applied, the thesis will firstly go through the methodology.

In this chapter the methods for qualitative data collection throughout the thesis will be described.

5.1 Literature research

By conducting a state of the art on the current literature that can be linked to the field of reusable cups the aim was to identify a knowledge gap within the research to which this thesis could contribute to. The state of the art in this thesis had the aim to cover valuable information surrounding reusable cups. It was primarily aimed at finding studies concerning LCAs that could explain what the most sustainable option is between reusable cups versus single-use cups. The selection of literature had several criteria. In order to find relevant literature concerning the matter, the following keywords were used:

- LCA
- Reusable cups
- Single-use cups

Since the state of the art aimed to discover the current literature that is on the subject, the literature that was searched for also needed to be conducted in recent years. The validity of the literature was secured by only using peer-reviewed publications.

It was quickly discovered that the literature concerning this matter also described a use phase in which the reusable cups had the potential to both increase and decrease their environmental impact due to the number of times it was used. This resulted in discoveries of literature that also concerned with the use phase for reusable cups at. That is why there was also attached the keyword *behaviour* to the previously mentioned search criteria. In the articles, there were searched for cross-references that could also describe the subject. These also had to meet the criteria. In the end, it was the aim to connect the reusable cups to events. Here, the literature was very limited.

Literature research was also performed when investigating relevant theories that could be applied for analysis and discussion of collected data concerned the subject. Here, relevant publications were picked from keywords like:

- Systems thinking
- behavioural change

A textbook was used to describe systems thinking as this publication gave a lot of information on the subject and covered many different perspectives on what a system

consists of. behavioural change theories such as the SSBC were found as a reference in a study concerned with behavioural change in relation to reusable cups.

5.2 Interviews

In this section, the methodological considerations and procedure of the preliminary research interviews will be presented as well as the interviews conducted at the DGI L2022 event. Semi-structured interviews were used in both instances since it was desirable that the respondents could give perspectives on topics that were not initially planned for because it gives the possibility for the interviewer to ask clarifying questions and the respondent to elaborate on these perspectives. The questions for the interviews are designed with inspiration from Kvale and Brinkmann [2009], whose planning phase forms the framework for a structured approach, to ensure a connection from the project's original ideas to the use of the interview material in the preliminary research. The stages of planning semi-structured interviews that Kvale and Brinkmann [2009] are describing are: thematizing, designing, interviewing, transcribing, interpreting, verifying, and reporting. In the following sections the different stages will be described accordingly to the two interview processes; the preliminary research interviews and the interviews with participants at the DGI L2022 event. A short explanation of the different stages is written in table 5.2

Stages of semistructured interviews	Explanation of the stages
Thematizing	In the first stage it is clarified what the "whats and whys" are. This means what the goals were with the conducted interviews.
Designing	The second stage is the planning and design of the interview questions.
Interviewing	The third stage concerns how the interview is conducted with a focal point in stages one and two.
Transcribing	The fourth stage is the transcription of audio material into text. \cite{Kvale} further describes that transcription of the interviews can contribute to a better understanding of the interview by processing it from audio to text and at the same time it will also contribute to further analysis of the material
Interpreting	In the fifth stage, the interviews are treated and analyzed on the basis of the goals of the interviews mentioned in the first stage.
Verifying	In the sixth stage, verification, an assessment of the interviews generalizability, reliability, and validity will be made.
Reporting	The seventh stage includes considerations of how the results of the study should be communicated as well as considerations on how this is done in an ethical and scientific way.

Table 5.1. The seven stages of semi-structured interviews according to Kvale and Brinkmann [2009].

5.2.1 Preliminary research interviews

The interviews for the preliminary research prior to the development of the problem formulation of this report were done in late May and at the beginning of June 2022. The respondents are shown in figure 5.1. A deeper understanding of the respondents can be read at the beginning of each transcription in appendix A to C.

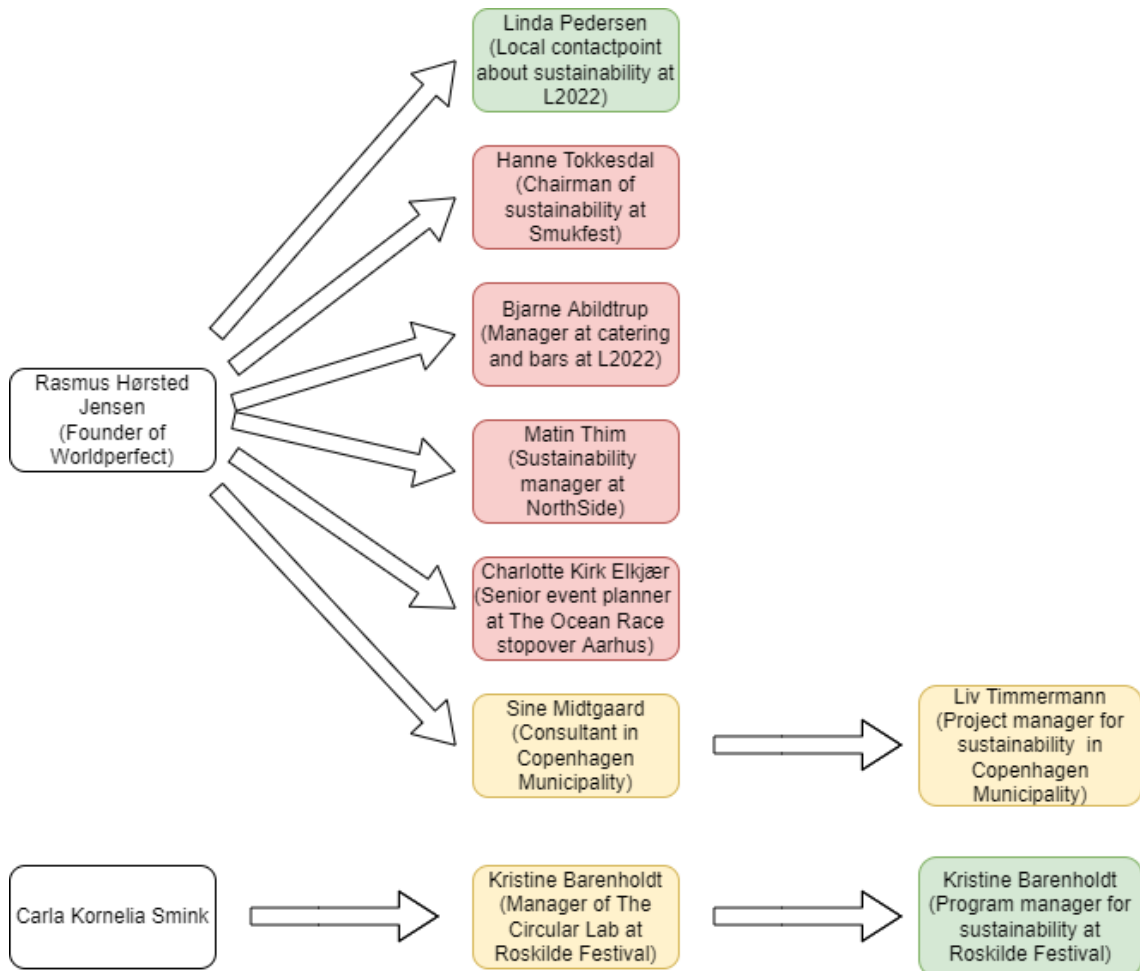


Figure 5.1. An overview of the respondents of the preliminary research interviews. White boxes are reference persons that suggested contact with specific respondents. Red boxes are respondents that did not answer the request for an interview. Yellow boxes are respondents who referenced the interview request to other respondents. Green boxes are the respondents that were interviewed.

1. In this case the goals were to get an understanding of how different planners are handling the sustainable effort of introducing reusable cups at events as well as why they are doing it. This was done to gather knowledge around the subject of matter that current literature didn't cover and also to get an idea of what the challenges are when implementing reusable cups.
2. As mentioned previously, semi-structured interviews were done and there were also developed an interview guide in order to address the desired subject of matter mentioned in the first stage. These questions are presented in table 5.2. It was the intent to construct the questions so that they appear neutral for the respondent so it does

not lead up to a specific answer. The reason why this was done was that the research does not seek any specific challenges but it rather wants to identify any challenges that may be connected to the implementation of reusable drinking cups. The questions that are presented in table 5.2 were not specifically asked in the order that appears in the table. They were asked accordingly to the nature of the conversation between the interviewer and respondent. The reason why the interview guide was conducted in the first place was merely to ensure that specific areas were addressed during the interview.

Questions	Reasoning
What is your role in the organisation?	To get an understanding of the position of the respondent in their organisation.
What is the organisations motivation to work with sustainability?	To get an understanding of why the organisation works with sustainability and what the motives and ambition are with their work.
How do your organisation work with sustainability at your events?	To get information about their work with sustainability at their events. How they address the social, environmental, and economic impacts of events.
What are the biggest challenges to work with sustainability at events in general?	This was to get an idea of the challenges that can be connected to sustainability management of events.
What considerations have your organisation had when implementing a new product (drinking cups) instead of a conventional one (for example SUP cups)	This was to address reusable drinking cups specifically and also to gain information about why they choose reusable drinking cups rather than conventional ones.

Table 5.2. Questions and reasoning behind them for the preliminary research interviews.

- Each of the interviews was conducted through online meetings. The interviews were conducted as a conversation where the interviewer asks questions from the prepared interview guide, after which the respondent can answer the question. During the interviews, each respondent elaborated and gave more answers than were initially planned for which contributed to relevant inputs. The interviews were recorded with the consent of the respondents and there were also explained to the respondents what their answers would be used for.
- With the recorded interviews from stage three, the fourth stage includes the transcription of the recorded material. This was done to get a proper overview of the data that was acquired throughout the interviews. The transcriptions of the interview are presented in appendix A to C.
- Most often, a qualitative thematic method is used for data processing, where interview data is coded by themes or keywords [Hua, 2016]. This technique was also used here, where each transcript is reviewed to identify quotes that concern challenges when implementing reusable cups at events. The identified quotes will subsequently be divided according to the respective themes to which they belong to be able to distinguish and compare the different points and opinions from the respondents that

then can be used to assess the challenges connected to the reusable cups. These challenges that were coupled into themes can be seen in section 2.2

6. In terms of verification of the interviews done at the L2022 event an assessment of interviews validity, reliability, and generalization will be made. Here too the method guide from Aarhus University [2022] and Creswell [2014] was used. This can be read in the critical review of the methods used in chapter 10.
7. It is important to ensure that the transcript adheres to the exact statement of the respondents so that the respondents' answers are not interpreted wrongly. This helps to ensure the reliability of the report's content. The dissemination of the results takes place throughout the preliminary research, analysis, discussion, and conclusion of this thesis.

5.2.2 Interviews at the DGI L2022 event

In this section, the interviews that were conducted at the DGI L2022 event will be accounted for. It was chosen to collect this kind of data based on the research question in chapter 3. To get knowledge about how the sustainable initiative of reusable cups was working in practice and also how the behaviour of participants can help the sustainable initiative to become more successful, participants at the event were interviewed. It was deemed necessary that participants at the event were interviewed since they are one of the key actors when it comes to securing the system.

1. The goal of the interviews was to gain information about what the participants thought of the reusable cups at the event and also to investigate how participants would be keener to adapt to the initiative in the future. The reason why this was done, was that this can potentially help to maintain the system of reusable cups for future purposes. Another reason to do interviews with participants is to investigate what the differences are from what was planned for the system with the reusable cups compared to how it works in practice.
2. The questions that were developed prior to the interviews were aimed at letting the respondents address their opinions on the reusable cups that were present at the event. This was done by asking what the respondents "think" and what their "opinions" are on different subjects concerning reusable cups. The reason why the questions were aimed at the respondent's thoughts and opinions can be connected to the SSBC mentioned in chapter 4. The purpose here was to identify what can influence the participants to change their behaviour towards returning their reusable cups and in that way help to maintain the system of reusable cups at the event.

As mentioned about the questions for the preliminary research interviews, the questions at the DGI L2022 event were conducted to secure that specific areas were elaborated on during the interview, which is why an interview guide also was constructed. The questions that were asked were aimed to be open so that the respondents could give any input that they wanted. This was to get as many answers as possible since every input has relevance in terms of investigating how the implementation of

reusable drinking cups can be more successful in the future. The questions that were asked and the reasoning behind them are shown in table 5.3.

Questions	Why
What do you think when you hear the term "reusable cups"?	To get an idea of what the respondents' thoughts are on the sustainable initiative.
What do you think works well with the reusable cups? And what doesn't?	To find out what works well within the system and what doesn't.
How many times have you used the reusable cups?	To find out how much each respondent is using them and how they have used them.
What do you think about the sorting of the reusable cups?	To get an idea of whether it was easy or not to sort or return the reusable cups.
What do you think about paying an extra fee for the reusable cups?	To get an idea of what the respondents attitude were towards paying an extra fee for the reusable cups.

Table 5.3. Questions and reasoning behind them for the interviews at the L2022 event.

- Each of the interviews that were conducted at the L2022 event was done face to face. The interviews were planned as a conversation where the interviewer would first introduce the subject and reasoning behind the interview and also ask for permission to use the interview data for the report. After that, the first question that is presented in the interview guide in table 5.3 was asked. After the first question, the interviewer explained to the respondents about the whole system concerning reusable cups. This illustration is shown in chapter 6. This was to get all of the respondents on the same page and also tell them why this specific sustainable initiative is a point of interest for sustainable development within the event industry. After that, the questions from the interview guide were asked randomly according to the nature of the conversation. Due to the openness of the question, the respondents gave multiple thoughts and opinions on the subject, and the interviewer could then ask follow-up questions to their answers. This has given many new insights into what can be done in the future to maintain the system of reusable cups at events from a consumer's perspective. During the interview, the interviewer took notes since it was deemed impossible to record all of the interviews due to complications with noise from people around the area and also the wind.
- Since the interviews were not recorded and already written as closely as possible to the answers of the respondents a transcription of the interviews was not carried out. It is deemed possible to get a good overview of the interview data with the notes written from the interviews. An example of the notes taken from one of the interviews is given in Appendix D.
- The way that the results from the interview data are interpreted is through identified themes that relate to the consumer's thoughts and opinions on the system of reusable cups at events. This can be read in chapter 7. The interview data will also be used in a suggestion to how event managers in the future can optimize the sustainable initiative of reusable cups into a system in which participants will be more prone to maintain the system. This can be read in section 9.

6. In terms of verification of the interviews done at the L2022 event an assessment of interviews validity, reliability, and generalization will be made. Here too the method guide from Aarhus University [2022] and Creswell [2014] was used. This can be read in the critical review of the methods used in chapter 10.
7. The dissemination of the results takes place throughout the analysis, suggestion, and conclusion of this thesis. The respondents in these chapters are anonymous since the aim is not to identify specific consumer behaviour profiles but to get a general idea of the issues that can be connected to reusable cups from a consumer perspective.

5.3 Observations at DGI L2022

During chapter 4 about systems thinking it was derived that in order to understand the system it is necessary to describe the subsystems that it consists of and how these interact. The system in question for this thesis is the reusable cups that are present at the event DGI L2022. It was mentioned during section 4.1 that external processes can impact the behaviour of the system in terms of how it works in practice and what may impact it in both negative and positive ways. It was pointed out that a *black box analysis* could help to provide valuable information about the system through observing how the system works in context with limited intrusion [Mobus, 2022]. As stated in the preface of this thesis, there was an opportunity to investigate and observe consumer behaviour at the DGI L2022 event. This section aims to describe what and how the observation was done.

According to Creswell [2014], this type of observation can be called a qualitative observation. The aim of the research follows the ideas of qualitative observations with field research where notes are taken on the behaviour and activities of an individual (in this case a system) at the research site. The notes that were taken during the observation of the system were done in an unstructured way as it was deemed as the best solution to capture any single factor that could describe the behaviour of the system. Creswell [2014] describes multiple types of observation in which the chosen type for this method was to act as a participant at the event with the role of observant as secondary. The advantage of this type according to Creswell [2014] is that unusual aspects can be recognised during the observation. In terms of this observation, it means something that is not initially planned for the system. The limitation of the type is though, that the researcher may not have good attending or observing skills [Creswell, 2014]. This limitation is deemed irrelevant for the cause of conducting observation as the purpose of doing this is to gather as much information about the system's external behaviour as possible. The limitation only means that there may be instances that are not fully accounted for in the notes. Throughout the observation, there were taken pictures of instances that can be used to describe how the system has functioned and how external impact has affected it. The findings from the observation is analysed and described in the chapter 8.

The target audience that the communication product was aimed at were participants that were passing by the location where the sign was installed. Here, the target audience was preferred to be participants rather than people that worked at the event due to the investigation of behaviour change should be concerned to the ones that were using the reusable cups. The observations was conducted throughout the whole event and in different location.

The communication product

6

As mentioned in 5 about the interviews done at the DGI L2022 event, a communication product was chosen to present to the participants that were interviewed in order to get a reaction and also to construct the right setting for the interview to the participants. In this section it is the purpose to introduce this communication product, why it was developed, and how it was conducted. The communication product can be seen in figure 6.1.

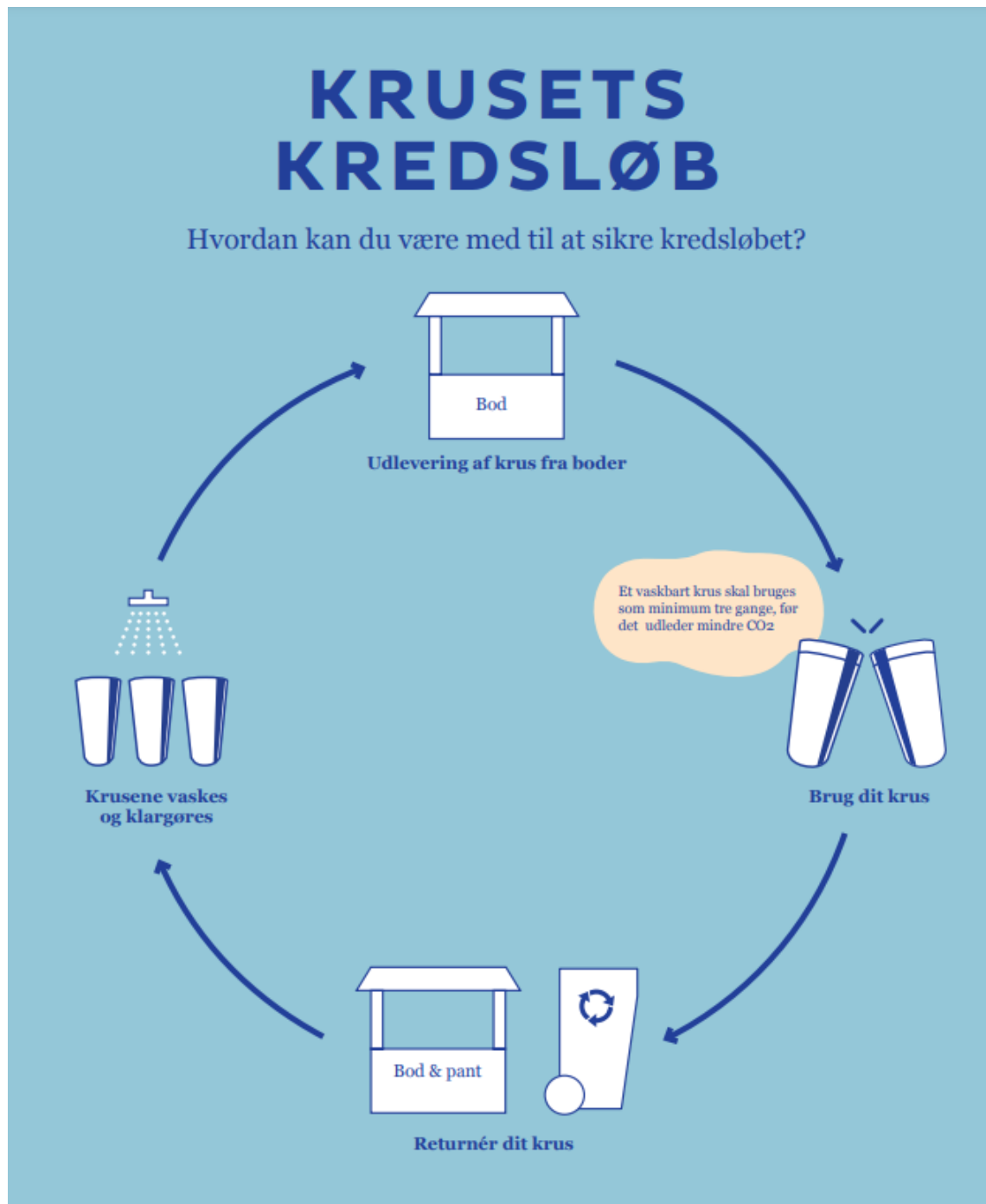
6.1 Introduction to the communication product

The reason why the communication product is illustrated with the reusable cup system is due to the fact that the sustainability event planners Stephansen [2022] and Timmermann [2022] from Roskilde Festival and Copenhagen Municipality respectively said, that there should be a focus on helping the participants at events in understanding the system of the reusable drinking cups in order for it to work as intended. This was done by designing a sign that illustrated the reusable cup system called "Krusets Kredsløb" (Translated: The cycle of the cups). As the thesis aims to investigate the gap between theory and practice in terms of reusable cups at events with a focus on behavioural change, the communication product aimed to explain the system in theory and thereby develop a conversation with the participants about how it actually was working in practice. Another function of the communication product was also to create awareness about the sustainable initiative of reusable cups as an alternative beverage container.

6.1.1 Development of the communication product

The communication product was developed with inspiration from the theories presented in chapter 4 on both systems thinking and behavioural change. Here, Mobus [2022] described that in order to understand the system of reusable cups, it is necessary to understand the subsystems and how these interact. To this, the development of the communication product took inspiration from figure 6.2 by Worldperfect [2018]. The communication product used for this thesis is developed with consultation from Worldperfect and is therefore highly similar to this illustration. The difference between the two is that this thesis aims to investigate the behaviour of participants, which is why two of the nodes in the system are concerned to the use-phase of the reusable cups. The two other nodes concern practical information about what is being done with the cups from a general perspective and also where the cups can be acquired. The purpose of only having four subsystems presented in the illustration is to make it simple and easy for the participants to understand as mentioned by Wujec [2015] in chapter 4 in section 4.1.2. The aim was also to reach out to those consumers who either were not aware of the initiative, did not

know what to do with their cups, or did not know that this was a more sustainable solution than single-use cups as mentioned in the study by van der Haar and Zeinstra [2019]. Many subsystems were not presented in the communication product but this was deemed as irrelevant information for the consumer and to investigate their behaviour.



Worldperfect har i samarbejde med en specialestuderende fra Aalborg Universitet startet en undersøgelse af, hvordan man kan implementere vaskbare krus til events. Landsstævnet 2022 bliver brugt som kontekst til at undersøge, hvordan gæsters adfærd kan være med til at sikre kredsløbet for de vaskbare krus, så de bliver genbrugt flest mulige gange og derved mindske miljøaftrykket.

Figure 6.1. An illustration communication product used in this thesis.

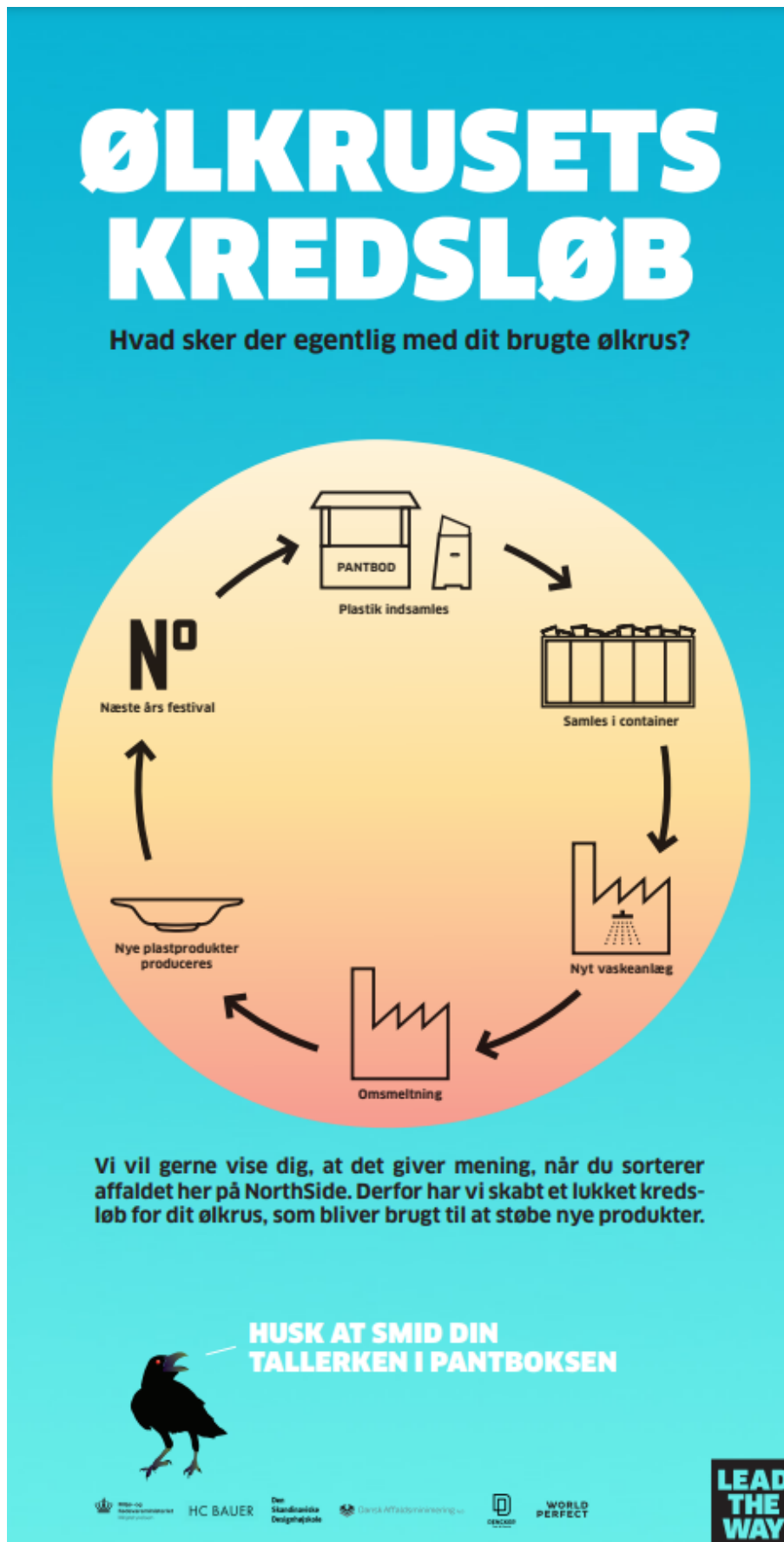


Figure 6.2. An illustration of the cycle of the cups at NorthSide [Worldperfect, 2018].

6.1.2 explanation of the communication product

6.1 illustrates generally how a system for reusable cups is working. Knowledge of how it works is gathered from the articles in the state of the art and the preliminary research interviews in chapter 2. For this illustration, the emphasis is on the consumer (use-phase) and the correlating subsystems that keeps the cups in circulation. Going from the top, the consumer can acquire a reusable cup from a stand at an event. From here the cup gets used and when it has been used an adequate amount of times, the consumer can return it to specific locations. Here the illustrations were meant to match the options that are typically presented for the consumers at events such as collection bins, bars, and deposit stands. From here the cups get collected and washed in order to rotate back into the stands and that completes one circulation of the product. The text that is connected to "Brug dit krus" (Translated: Use your cup) explains that one cup should be used a minimum of three times before it emits less CO₂. This fact is based on the interview with Timmermann [2022] (ll. 147-148). The short text on the bottom of the sign says:

"Worldperfect has, in collaboration with a thesis student from Aalborg University started an investigation into how to implement reusable cups for events. The Landsstævne 2022 is used as a context to examine how participants' behaviour can help ensure the circulation of the reusable cups so that they are reused as many times as possible and thereby reduce the environmental footprint."

The reason to have this short text at the bottom of the sign about the thesis and the reasoning why the thesis is being done was to create seriousness behind the initiative.

Analysis of consumer behaviour

7

Using the chosen theories and methods for this thesis the purpose of this chapter is to investigate the first part of the research question in chapter 3: *How can consumer behaviour impact the system of reusable cups at events?*.

The empirical data that is used in this chapter is acquired from the interviews done at the DGI L2022 event at the end of June. Here, the aim is to present relevant inputs gained from the interviews in order to identify how the system is functioning from a consumer perspective and what could make them change their behaviour towards adapting to the system. The structure of this analysis will be according to the questions asked during the interview. Lastly, a section will sum up the whole analysis concerned to the interviews. When respondents are referenced during this section, they will be presented as "R1 or R2" etc.

7.1 Associations with reusable cups

This section wants to identify what the participants at the event associate with reusable cups. The question derived from the predecisional stage in the SSBC that is mentioned in section 4.2. This was to identify the knowledge and emotions the respondents have towards reusable cups.

The interviews show that there are many different results to what the respondents think of when they hear the term "reusable cups". Two respondents have not really given it any thought as to what it is and why it is even implemented. R4 and R14 said that they have seen them before at other events where it have seemed to work alright but they didn't know what it was good for. R8 and R9 think that it is a good idea to implement, but this answer was a result of what was explained about the cups when the interviewer presented the communication product. It is therefore evident from the results of the interviews that some of the respondents from the interviews have next to no knowledge about reusable cups and why they are implemented. This is something that has to change in order to change the behaviour of the consumers. What was derived from the SSBC is that in order to have a specific intention towards a goal, and in this case returning reusable cups, an individual must have some sort of knowledge and self-commitment in order to change their behaviour. As the respondents have no knowledge of the reusable cups it is therefore not possible to change their behaviour towards how they are using the cups as they have no knowledge of it yet. The task is then to identify what can be done in order to give the relevant knowledge that can create self-commitment for the consumers. This is something that will be elaborated further upon in section 7.2 in relation to what didn't work as intended for the consumers with the reusable cups.

R13 had not yet noticed the reusable cups at the event but thinks that it sounds like a good initiative to implement. They mention that people are used to just throwing away their cups after they have been used and that reusing the cups at the event only followed the trend of reusing. In this regard, the trend that the R13 refers to is that some people are using thermos bottles which they can reuse as much as they like. In relation to this Keller et al. [2021] outlines that social norms can be an effective tool to change behaviour. With people slowly using more and more reusable products in their everyday life this can possibly affect the system of reusable cups to both make people more aware of it and also make people more prone to make the system thrive at the events. Another thing that can be related to social norms is mentioned by R6 and R12 who both say that people will slowly get used to this kind of system as they keep getting more exposed to it at events. R12 then elaborates, that when new municipal programs for sorting waste, people also have to get used to that, and from their experience, this is something that also just needs time to become a habit for people. This is a good example of how social norms, in this case, municipal programs for sorting waste, can impact an individual's personal norms in terms of handling waste.

Several respondents¹ show other associations and knowledge towards reusable cups. They think that the initiative is a smart and proactive solution, that is better than SUP cups and that it is important that the event tries to make a difference to support the sustainable agenda. Here, the respondents show positive associations and extended knowledge about the initiative. In terms of the SBCC, these respondents skip their intention with the goal as they have already developed a personal norm towards the reusable cups. The next task for these respondents is then to consider their behavioural intention and pick the most suitable option for them to return their cups to the system.

Part conclusion

Back in section 4.2, Keller et al. [2021] explains that stakeholders should aim their campaigns towards which stage in the SSBC the consumers are in. In order to create behavioural change, the consumers must have knowledge or associations with the targeted campaign. For consumers that have no knowledge about the reusable cups, event planners must consider how to extend knowledge for the consumers at the predecisional stage. At the same time, there can also be a focus on the social norms that then can impact the individuals' personal norms and ultimately create an intention towards contributing to the reusable cup system at events in a positive way. Times, where the predecisional stage does not matter as much, is for consumers that already have a positive personal norm towards the reusable cup system. Here, another focus for the event planners should be to evaluate the possibilities for consumers to actually return their cups e.g. collection bins or return schemes at bars.

¹R10, R11, and R12

7.2 Functionality of the system from a consumer perspective

As presented with the question for the interviews at the DGI L2022 event in chapter 5 section 5.2.2, the aim was to identify what works well within the system at what doesn't. As the respondents got presented with how the system of the reusable cups works in theory prior to the actual interview by the communication product they pointed out several examples of what was good and what didn't work so well.

R1 and R2 pointed out that were challenges with reusable cups when it came to refilling the cups after the first use when being in larger groups. They mentioned that due to the COVID-19 virus people have become more aware of germs and it could therefore be hard to track the specific cups when handed to the bars. Recalling the findings by Fetner and Miller [2021] who comments on the environmental advantage it creates when a reusable cup is used twice in a row without being washed. It is also mentioned that it may be unhygienic as it was also posed by R1 and R2. This is something that is an advantage for single-use cups, where hygienic complications can be secured by disposing of the cups after use [Fetner and Miller, 2021]. It can be assumed that there is a clash between washing every cup after every use to secure proper hygiene or trying to use a cup more than once in order to provide a larger environmental benefit. In order to find a solution to this, both parameters must be considered. If the scenario is to wash the reusable cups after every use to secure proper hygiene, then various options of washing should be considered. As mentioned in chapter 2 section 2.1, Cottafava et al. [2021] assessed different ways of washing reusable cups. Here it was unfavorable in terms of environmental impact to wash the cups onsite by hand-washing and to wash them offsite exceeding 350 kilometers compared to single-use cups. The best option for washing was offsite washing within a distance of 350 kilometers together with the option of commercial washing of the reusable cups onsite [Cottafava et al., 2021]. Solutions in terms of washing options will then be first of all to consider whether it is possible to provide commercial washing machines at the event to wash the reusable cups to also secure security of supply as mentioned by Pedersen [2022] (ll 130-133). Having an onsite washing option for the cups can mean that the event is not reliant on suppliers that need to transport all of the cups from the event when they need to be washed and then delivered back when they are needed again since they already got the number of cups that they need at their disposal. Having an offsite supplier that takes care of washing the cups, may imply that the event needs to order more cups at their disposal in order to meet the demand of the consumers while some of the cups are being washed. Going back to the clash between washing the cup after use and using the cup multiple times before it has to get washed, R10 mentioned an idea that consumers could label their cups in order to identify which one belongs to them. This could then be a solution to identify which cup belongs to who and this could potentially accommodate issues with hygiene.

Another issue with reusable cups that was mentioned by R2 was that they were experiencing difficulties with carrying around the cups at the event. They elaborated that when they used the cup it worked well, but when they weren't it was unhandy and they didn't know what to do with it. As mentioned in the preliminary research interviews in section 2.2, the DGI L2022 event is an open event. This means that people can move all

over the place and in this regard they can bring the reusable cup anywhere that they please. In the case of R2, they mentioned that they left the cups by the side of the road so they could get picked up by someone who maybe knew where to return them. It is important to mention that they were influenced by alcohol at the time. This is a factor that will be touched upon later in section 7.4, about issues with sorting of waste. According to Pedersen [2022], it is not possible to set up containers all over the place at the DGI L2022 event. This is due to the huge geographical area in which the event operates. Recalling what was derived from the preliminary interviews with Stephansen [2022], Timmermann [2022], and the publication by Dijkstra and Boonstra [2021] about the structure of events is that closed events have an advantage of experimenting with new innovations where it is possible to design this closed space to handle this new innovation so it can thrive as much as possible. In this regard, the openness of the DGI L2022 event may have been a hindrance for the reusable cups to thrive as it seems that not enough collection containers for the cups are at disposal for the consumers. The lack of containers was also something that many other respondents agreed on and will be further elaborated on in section 7.4.

Communication of the more sustainable initiative was something that many respondents² commented on during the interviews. As was pointed out in the previous section 7.1, many of the respondents didn't have any particular thoughts about reusable cups or knew why they are implemented in the first place. The communication product that was explained to the respondents at the beginning of each interview was a way to help the consumers understand what is being done and why it is being done. To this, many respondents explained that it was very informative to hear this explanation, and also looking at the illustration of the cycle of the cups helped them to understand the initiative better. In this regard, they mention that, there is a lack of communication regarding the more sustainable initiative and that a focus on communicating it more to consumers could help them impact the system in a more constructive way. This consists well with what van der Haar and Zeinstra [2019] describes in their study, where consumers that have more knowledge about the consequences that a product can have are more prone to contribute to the system in a favorable way. In this case, it could mean that if the reusable cup system is communicated better and consumers are informed of the benefits from it, they will be more likely to adapt to it.

R11 pointed out during the interview that it was odd that the reusable cups were only meant for beers at the event. They furthermore comment that various food and drink stalls still served drinks where the cups were made of SUP. From this comment, it seems like two different systems are operating in terms of beverage cups. One system includes reusable cups and the other includes disposable cups. The issue here is that by having two different systems that operate within the same area, it can be difficult for the consumers with no knowledge of the sustainable initiative to recognise when to return the cup and when to dispose of the cup. To strengthen this, R8, who was also one of the respondents with no knowledge as to why reusable cups were implemented at the event, explained that they had trouble identifying the differences between the two products. Pedersen [2022] describes in the preliminary interview that reusable cups made of plastic consist of thicker plastic than SUP cups (ll. 156). This means that reusable cups are heavier than their single-use counterpart. It can be assumed that this is an easy way to distinguish between

²R3, R4, R5, R6, R7, and R11

the two systems but for consumers that do not know that both products are operating at the event or have any knowledge of how to distinguish between the two, it can be hard to make people adapt to the system of reusable cups.

Part conclusion

A clash between hygiene and environmental impact was posed by some of the respondents. Here, the most favorable option is onsite washing with commercial washing machines in terms of environmental impact and also to secure the security of supply for the event. It was also noted that a labeling system can be implemented for the cups in order for the consumers to identify their specific cups and also to use the cups more times before they have to be washed.

The difficulty of introducing reusable cups at open events was something that was identified throughout the interviews. It is not possible to set up collection bins all over the place so consumers don't always have a collection bin at their disposal when they want to return their cups. By having a closed event, it is easier to experiment and modify the space that reusable cups operate in and this can be an advantage for a novel innovation.

From the interviews, it is evident that respondents have a lack of knowledge about the reusable cups. They don't know that it is a more sustainable alternative than single-use cups and they believe that communication and information about the initiative to the consumers can create a positive impact on the system. This was also evident in two of the interviews where R8 and R9 thought it was a good implementation as a result of the explanation of the system prior to the questions. It can be difficult for some consumers to understand what to do in order to contribute to the reusable cup system if there are other systems such as SUP cups present at events as well. Here the issue is to distinguish between the two systems and thereby difficulties can arise with how the cups should be handled after use.

7.3 Consumer habits

In the previous section 7.2 it was briefly touched that using reusable cups multiple times before it is washed will result in a larger environmental benefit. This is also something that Fetner and Miller [2021] discovered in their publication. The results from this section are derived from the 3rd question in the interview mentioned in section 5.2.2 chapter 5. This investigation aims to gain knowledge on how much the respondents have used their cups and also how they have used them. It quickly became clear throughout the interviews that not all of the respondents had used the reusable cups yet. Some of the respondents say that they have not had the time yet to sit down and order a drink from the bars. Others said that they simply just had not used one yet. This is something that will be reflected on later in chapter 10 with a critical review of the method used to gather this information. The rest of the section will concern the respondents that have used the cups.

Many of the respondents³ bought a cup at the event and used it several times and then brought it back to their tents at the camping area. Here they rinsed the cups and reused them for drinks. In section 2.1 in chapter 2, Fetner and Miller [2021] explains that a

³R3-R7

quick rinsing of the cup have a lesser environmental impact than washing them. The respondents of this scenario were also some of the respondents that showed no knowledge of the initiative. Here it seems that even though they had no knowledge of the reusable cups they still utilized the fact that the cups seemed to be able to be used again. It was not questioned any further whether they would have done the same if the cups they had used were of SUP. Fetner and Miller [2021] argues that the same logic of rinsing the cups and reusing them by the same person could be applied to SUP cups as well.

In relation to this R17 also mentions that they had used the reusable cup many times. They bought a cup, used it at the event, and then kept it but they brought it back home to wash it so it could be used the following day. The respondent then elaborated that when asked about how it was washed, they said that it was hand-washed. This option to wash reusable cups by hand is one of the least favourable ways to wash as was explained by Cottafava et al. [2021] and in section 7.2. Timmermann [2022] furthermore describes in the preliminary interviews that the consumers at events should not have the idea that the reusable cups are something that they should keep and bring back to their homes (ll. 152-153). It is evident that the respondent in this instance does understand that it is a feature of the cups to get used more times. But the issue here is that they do not understand what the best options for washing are for the system to be more sustainable. In order to use best practice methods for washing the reusable cups, event planners need to inform the consumers about how these cups should be handled in order to have the least possible environmental footprint.

R10 and R12 commented that they typically used the cup once and after that, they returned it to collection bins. R11 said that they used the same cup the entire day and returned it by the end of the day. Here, a further explanation as to why they did that was not questioned as it seemed that they already knew how their systems works. These respondents were also the ones that showed some knowledge of the reusable cups and thereby it is evident that there is a clear link between the knowledge of the initiative and the habits of the consumers. In relation to the SSBC, it can be assumed that especially R11 has another goal intention than the rest of the respondents. Here, their intention is to keep their reusable cup as long as possible rather than return them after use.

Part conclusion

Throughout the results of consumer habits, it was evident that there are multiple ways that consumers use and handle the reusable cups. Not all respondents used the cups but those that used them either kept the cup after use and transported it somewhere else and others returned the cups directly after use. The first group hand-washed or rinsed the cups so that they could be used the next day. This is deemed as unfavorable handling of the cups as theory determines that onsite hand-washing has larger impacts on the environment than onsite commercial washing machines and offsite industrial washing machines that are within a distance of 350 kilometers. The latter group were also the group that was identified as having more knowledge about the reusable cups and were, therefore, more prone to use the system that was provided by the event. The opportunity here lies in communicating to the consumers that the reusable cups should remain in the system that is planned by the specific event in order to have the least possible environmental impact.

7.4 Sorting of the reusable cups

In this section, the question of what the respondents thought of the sorting of the reusable cups at the event is investigated. Here, the aim was to identify whether the respondents find it easy or not to sort or return the reusable cups at the specific collection options. In this section, the SSBC will be applied again to investigate the results from the interview.

Many of the respondents are commenting on a lack of containers where the reusable cups can be collected. R1, R2, and R10 commented specifically that they thought that there overall weren't enough containers for reusable cups. R10 elaborates that they think that there should be even more containers since it is an open event. According to the SSBC, in order to change behaviour, the goal intention must be feasible. The goal intention for the consumers, in this case, could be to contribute to the system by returning their reusable cups to the collection containers. This can also affect the action planning of the consumers as a lack of containers limits the possibilities for the consumers to implement their desired action. With the lack of containers where reusable cups can be collected, the goal might seem infeasible for the consumers to carry out. In order to accommodate this challenge event planners should then place more containers that can collect the cups. But as was identified in section 7.2, open events can be a hindrance in terms of placing the right amount of collection containers as a larger geographical area needs to be covered and this is deemed as nearly impossible for event planners [Pedersen, 2022]. R5 mentions that they noticed many collection containers around the event that was for reusable cups but they commented that there was a lack of them at the camping site. This is also an example of an infeasible option to return the reusable cups even though the behavioural intention is to do so.

Some of the respondents⁴ didn't notice the various containers that were placed to specifically collect the reusable cups at the event. This can show that communication in the form of signs has not worked as intended. It can also show that the specific containers may not have been placed as strategically as planned. R9 furthermore describes that there was general confusion as to how to sort different waste types into their respective fractions. This is another reminder that the placement of specific containers for the collection of waste is important as it needs to be easy for the consumer to do the right thing as was mentioned by Stephansen [2022] in the preliminary research interview. This is also an example of how the attitude and perceived control over the behavioural intention can be impacted according to the SSBC. If the placement of containers is confusing for the consumers and it seems impossible to navigate which container the consumer should put their waste in, the opportunity to change the behaviour is poor.

R18 addresses that alcohol can possibly influence consumers in terms of decision-making and desire to return their cups after use. This was especially true in the case of R2 that was mentioned in section 7.2, where alcohol influenced the decision-making of the respondent. This can be related to cognitive planning according to the SSBC. Here, coping strategies should be developed when scenarios like the influence of alcohol limit the possibility of the desired behaviour. This can also be referred to as how the placement of collection containers for reusable cups is important and that it needs to be easy for the consumers

⁴R6, R7, R9, and R10

to use even when influenced by alcohol.

R18 also contributes with another perspective, that introducing a *how to sort waste* program in schools could be a useful way to make people learn the concept from an early age. Here, the pupils could be impacted by the social norms in the form of teaching how to waste handle different objects. This can then develop the pupils' personal norms in a way that creates positive associations towards the handling of e.g. reusable cups.

Lastly, what can be noticed throughout the interview results is that none of the respondents mentions anything about returning the reusable cups to the bars where they had acquired them in the first place. This shows that there have not been clear guidelines on the possible options consumers have to return their cups. This can possibly affect the behavioural intention consumers have towards the intended goal as derived from Bamberg [2013]. Here, the consumers perceived control over alternative behaviours is limited by only perceiving one option to return their cups after use while there has always been another option. By notifying consumers of the option to return their cups at the bars, the consumers have more options to choose from and can thereby decide which one suits them the most.

Part conclusion

Respondents mention that there was a lack of containers at the event. This exemplifies insufficient options to return the reusable cups and thereby a challenge to change the behaviour of the consumers.

In order to change consumer behaviour towards their intended goal, options for how the consumers can fulfill their behavioural intention must be presented. In this case, consumers must be informed that there is more than one option to choose from to return their reusable cups after use. In that regard, considerations regarding how the communication of signs inform the consumers as well as where the containers are placed in order to collect as many cups as possible should also be addressed. The solution to this has to be manageable for the consumers and the system has to be easy to use.

7.5 Deposit versus one-time fee options for reusable cups

This was something that de Sadeleer and Lyng [2022] mentions in their publication. Here, found that having either a deposit scheme or a one-time fee for reusable cups may affect the return rate of drinking cups positively and negatively. They furthermore outlined that there is a need for further research into this subject in order to find the best solution. This section aims to investigate what is most favorable from a consumer perspective and how this can help to change consumer behaviour towards returning reusable cups.

When the respondents were asked about the one-time fee that was present at the DGI L2022 event, half of the respondents⁵ mentioned that they thought that the one-time fee was reasonable. Some of these respondents⁶ then commented that they didn't know that there was a one-time fee for the reusable cups when buying a beer and some of them also thought there was an actual deposit scheme. They commented that this was something

⁵R1, R2, R8, R9, R11, R13, R14, R15, and R16

⁶R13-R16

that could be better communicated by the bars that sold drinks. This is something that Timmermann [2022] also comments on in the preliminary interviews. Here, she outlines that some people have the perception that when they pay for a drink that has a one-time fee, they also expect to get their money back when they return it. She then explains, that for event planners that have used these kinds of options, the experience is that people can get angry about the one-time fees because they don't get their money back. As a result of bad customer experiences, Timmermann [2022] explains that some event planners have tried to put in the one-time fee on the cups secretly. This means that the price of the products in the bar gets raised by a certain amount in order to cut expenses. R1 and R2 add that a raise of the one-time fee may make people feel more responsible for their cup and thereby take more care of it. R8 adds to that thought that a raise of the one-time fee could either make consumers take more care of it or get people to stop buying it. R8 added furthermore the idea that people could be able to buy the actual cup and then choose whether to take the cup back home or donate the cup to future events after the event was held.

The other half of the respondents⁷ that were questioned about the one-time fee directly said that they preferred a deposit scheme. Also, some of the respondents that thought the one-time fee was a reasonable option also mention that they prefer deposit schemes as the best option for reusable cups since they can get money back from the cups. Here, R5 and R10 proposed that having a deposit scheme, could help motivate people to return their cups more, and raising the deposit of the reusable cups could motivate people even more. R18 even suggested that there could be an experiment with raising the deposit to 100 DKK in order to see how protective people would become of them. Another experiment was pointed out by R12 who propose that instead of giving people money back from their cups, they could get a reward like a ticket they could turn in and get a drink or some food in exchange. By using a deposit scheme it can be assumed that this can affect the attitude towards an individual's behavioural intention by creating an incentive to return the reusable cups as it pays out the deposit that is linked to them.

In the preliminary research interviews, Timmermann [2022] mentions that having a one-time fee on the reusable cups can help the problem of financing the cups as well as transportation and washing of the cups (ll. 84-87). Pedersen [2022] mentions that it can be a difficult task for events to implement sustainable alternatives as these are often more costly than conventional options (ll. 125-130). Using a one-time fee on the reusable cups can then be more beneficial for the events as the initiative are more financially feasible.

Part conclusion

From the interviews, it is clear that if a one-time fee is chosen for the reusable cups this should be communicated especially since some consumers are already used to deposit schemes. The deposit scheme was much preferable to the respondents in this interview since they could get their money back. Having an incentive to return the reusable cup can be an effective tool in changing consumer behaviour.

⁷R3, R4, R5, R6, R7, R10, R12, R17, and R18

7.6 Summary of key parameters of consumer behaviour

Throughout this chapter, it has been identified how the system worked from a consumer perspective. By applying theories, literature, and preliminary research interviews to the results gained from the interviews at the DGI L2022 event several themes and opportunities for behavioural change that can impact the system were identified. These are listed below:

- Knowledge
- Social norms
- Hygiene vs. impact
- Open vs. closed events
- Communication
- System vs. system
- Consumer habits
- Lack of containers
- Strategic placement of containers
- Deposit vs. one-time fees

The purpose of listing these themes is to create an overview of what the respondents mentioned during the interview and thereby use this information to create recommendations for future optimization that can help event planners to implement the system of reusable cups at events. These recommendations will be discussed in chapter 9

Observations of the system at the DGI L2022 event

8

In regards to the reusable cups presented at the events, the external subsystem that Mobus [2022] speaks of in chapter 4 section 4.1, could in this case be the behaviour of consumers that impacts the behaviour of the system. In this chapter, it is also the purpose to investigate the first part of the research question: *How can consumer behaviour impact the system of reusable cups at events?*. Here, the observational notes that were taken at the DGI L2022 event will be analysed in order to show how the system functioned in practice and what external factors might have affected it. The structure of this analysis is developed by sections that concern themes that were observed during the DGI L2022 event. Here, the observations, as well as pictures of the situation, will be described.

8.1 Communication of the containers

During the observation of the reusable cup system at the DGI L2022 event, it was noticed that sometimes the reusable cups end up in the wrong waste fraction (the wrong containers). In picture 8.1 below, an example of this instance is shown.

On the right side of the container, a reusable cup can be seen in a container that contains different waste materials. Recalling the waste hierarchy developed by the EU Commission that was mentioned in 1, here the preferable options for waste handling were explained. As different waste materials were included in the container, that have different waste handling strategies, this can create challenges when the purpose of the reusable cups is to collect them in order for them to be reused again. To accommodate this challenge, the container needs to be manually sorted and this consumes time and resources. The preferable option next to reuse is to recycle the different materials that are present in the container. To manually sort the different waste materials in the container is also time and resource-consuming. This is something that is not always at disposal at events since they are temporal spaces where time and resources can be limited in terms of proper waste handling. This can ultimately mean that if this container is not manually waste sorted, the waste materials in the container may end up as residual waste because of the different materials that are included in the container. The option for this is the recovery of the waste where the waste is incinerated and then used as an alternative material to create energy. The reason for the reusable cup being in that container in the first place can be referenced to some of the things the respondents mentioned in the interviews in chapter 7. With the lack of containers at the event, some consumers might have chosen the second best option, and since there is already a mix of materials in the container, consumers might be prone to dump their reusable cups in there if there is no alternative. Also, one of the



Figure 8.1. A reusable cup placed in the wrong container.

respondents mention that they were generally confused about how to sort their waste at the event. Another observation of the containers at the event concerns that matter. In figure 8.2 a sign connected to the container is torn apart. This can either be due to the wind, rain, or abrasion.



Figure 8.2. A sign of the waste fraction is torn apart.

Understandably, consumers can get confused about how to sort their waste or in the case of reusable cups sort them into collection containers when signs to communicate specific fractions of waste materials can't communicate properly. The signs that are shown next to the sign that is torn apart, are made of a different material than the one that is torn apart. It is evident here that there should be a concern about what the different signs are made of in order to withstand potential forces on the sign.

Another issue with the signs that can be attached and was observed during the event is that the communication of the signs can be confusing. In figure 8.3, 8.4, 8.5, and 8.6 some of the signs that were used at the event are presented as well as the corresponding translation of them. Here, figure 8.5 was the sign meant for containers that can collect reusable cups. At the DGI L2022 event, the reusable cups consisted of plastic. By observing the four signs, it can be derived that consumers can get confused by which container to sort their *plastic* reusable cups into since two of the signs (figure 8.3 and 8.4) aren't meant for the cups are actually saying plastic. In Danish, the term "glas" can be understood as cups and the material glass. Figure 8.5 and 8.6 shares the same term and could thereby also create confusion to the consumer. To this, it can also be derived from the respondents in 7 that some of them thought there was a deposit scheme attached to the reusable cups. The consumers that believe this could then be prone to use the containers that say "cans and plastic with a deposit on" rather than the ones specifically for "cups and jugs". Another

issue with these signs is their colour of them. Figure 8.4, 8.5, and 8.6 shares the color green although the last one is more turquoise. This can also create confusion from a distance for the consumer that wants to return their reusable cups since the signs of the containers can look like one that is meant for the collection of reusable cups.



Figure 8.3. "Plastic"



Figure 8.4. "Cans and plastic with a deposit on"



Figure 8.5. "Cups and jugs"



Figure 8.6. "Glass"

Part conclusion

From the observations regarding containers meant for reusable cups at the event, it can be derived that the external subsystem like consumer behaviour can be impacted by practical factors. It was observed that reusable cups can end up in containers that are meant for other waste fractions. The reason for this may be due to consumers can get confused by the signs that are attached to some of the containers. This shows that in order to make consumers change their behaviour towards returning their reusable cups in the right

container, proper communication of the system like how it should be waste handled is required.

8.2 Placement of containers

After concerts or shows at the event it was observed, that reusable cups were lying around the site among other waste types. This can be seen in figure 8.7 and 8.7.



Figure 8.7. Reusable cups left after a gymnastics show.



Figure 8.8. Reusable cups left after a concert.

The two pictures are taken from two different places at the event. Figure 8.7 was at the center of the event a little outside the center of Svendborg and figure 8.8 was located in mid-town of Svendborg. At the center of the event, many containers were placed, but specifically, at the show-site, it could be hard to recognise them. In mid-town of Svendborg, there were no specific containers that were placed to collect reusable cups. This was due to an insufficient amount of available containers. As a result of this, large plastic bags with an attached hand-made sign was set up as a temporary solution to collect reusable cups. This didn't work as intended. In figure 8.9 it is shown that different types of waste are dumped into the plastic bags that were made to collect reusable cups. From this, it is clear that there are two different subsystems (waste handling) that indirectly impact the behaviour of the consumers. In order to make the initiative of reusable cups more efficient, there needs to be accordance within the event on how to waste manage the initiative.



Figure 8.9. A plastic back made to collect reusable cups.

In another part of the observation, it was noted that bars both at the center of the event and in the mid-town of Svendborg used different cups when serving drinks. It seemed like official bars that were set up by the event used reusable cups while private establishments used whatever cup they wanted. The latter was typically SUP cups. This can also be seen in figures 8.7 and 8.8 where these also lie around the sites. As mentioned in the previous paragraph, there needs to be accordance between the waste sorting systems at different places of an event, here too should there be accordance on what type of cup should be used. By using two different cups it can be concluded that this can affect the system negatively since it can cause confusion for the consumer and that can affect the return rate of the reusable cups in a negative way.

Another observation showed that at the center of the event there were areas, which were more or less fenced off. One of these areas was for provisional meals for the participants that did sports activities at the event. Here the participants sat in a fenced off area as shown in figure 8.10 and 8.11.



Figure 8.10. Participants in a closed area.



Figure 8.11. Participants in a closed area.

The participants walked through a lock where they got handed a tray and a water bottle made from plastic. There was a bar placed in the middle of this area where the participants of the sports event could order beers. Here, they were handed a reusable cup. The problem then was, that when they were done eating, they had to go through another lock where

they handed their tray and after that, there was a series of different containers where waste could be dumped. The problem here was then that there were no containers meant for reusable cups. Here, the container for "Cans and plastic with a deposit on" was placed which would be the most sensible option for the consumers to dump their reusable cups into as no container to collect reusable cups were placed in that area. On top of that, the sign that showed "Cans and plastic with a deposit on" was the torn one shown in 8.2. Also, from theory, it is mentioned that closed events are easier to handle and monitor compared to open events. From this observation, it can then be questioned why the reusable cups were not the only type of beverage container within this fenced area.

Part conclusion

By observing how the consumer behaviour was at places where there were no containers present in the area to collect the reusable cups it was evident that sometimes these are just left at the site. This affects the system in a negative way as these might not be collected and managed properly. This also exemplifies that in order to implement a system like reusable cups, the same waste handling system should be applied everywhere at the events. Not only should the waste handling be the same but the various cups present at the event should also be homogeneous. This means that in order for the initiative to fully thrive, other systems that are proven by theory to be less sustainable should not be present. It is also an important factor to place the containers at specific locations where consumers are more likely to return their cups. In order to influence the consumer behaviour to return their reusable cups and keep the system flowing it is necessary to consider the placement of the containers. Lastly, areas using locks as a way to guide consumers should utilize the logistics to implement solutions that can impact the system in a positive way.

8.3 Summary of the observations

Throughout this chapter, it has been identified how the system functions in practice and how the external subsystem of consumer behaviour is challenged by some of the issues that were observed. The results from the observation can be put into the following themes:

- Communication
- Strategic placement of the containers
- Lack of containers
- System vs. System
- Open vs. closed

It is identified throughout the observations that there are overlapping themes that were also addressed by the respondents from the interviews at the DGI L2022 event. The themes listed above will also include in the following chapter, where the information will be used to create recommendations for future optimizations that can help event planners to implement the system of reusable cups at events.

Optimization for event planners

9

The purpose of this chapter is to investigate the second part of the research question: (...) *how can event planners optimize the system of reusable cups for future events?*. Here, knowledge gained from the analysis in order to develop recommendations for how event planners can optimize the implementation of reusable cups at events so they can become a more sustainable alternative than single-use cups.

9.1 Suggestions for optimizations

The following section will propose suggestions of optimization with point of departure in the SSBC model as put forward by Bamberg [2013] in section 4.2.

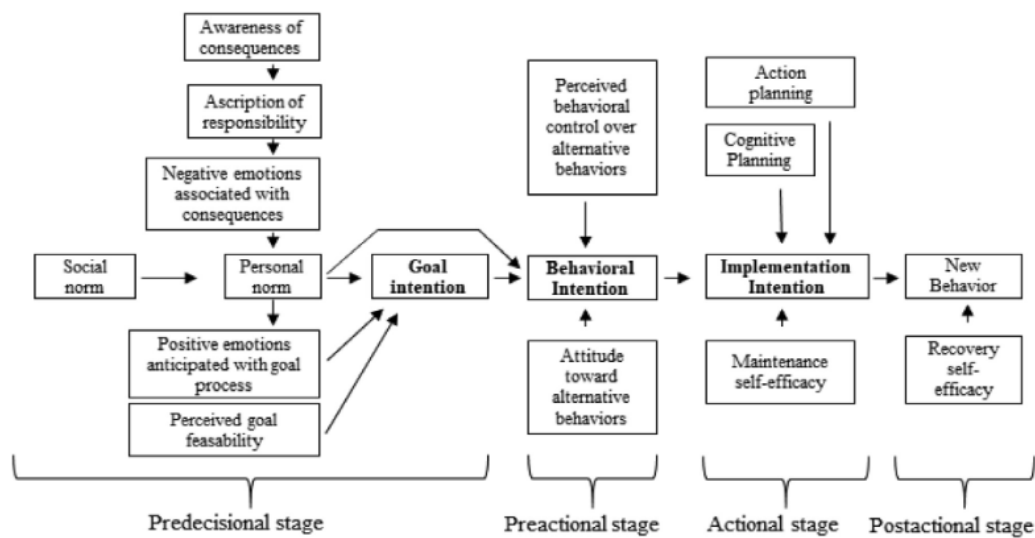


Figure 9.1. The stage model of self-regulated behavioural change (SSBC), adopted by Bamberg [2013][Keller et al., 2021].

In this section, the themes identified in the analyses in chapter 7 and 8 will be contextualised with the SSBC. This is due to the statement by Keller et al. [2021], who suggests that stakeholders and in this case event planners should aim their campaigns (optimizations to the system) toward where in the specific stage that the consumers are in. Here, an explanation of where the themes fit into the model and a specific recommendation as to how the issue may be solved will be offered.

9.1.1 The predecisional stage

The ultimate goal for this stage is to help consumers develop a personal norm (self-commitment) that can contribute in a positive way to their intended goal (to make them return their cups).

Knowledge

The theme of knowledge concerns the development of a personal norm toward a subject. In order for consumers to change their behaviour towards returning their reusable cups, the individual must acquire knowledge of the specific subject as this can help to develop a personal norm. It was addressed by respondents as well as Stephansen [2022], that showing people how the system of reusable cups is a good way to extend the consumers' knowledge. From the interviews conducted at L2022, it is assumed that this might be an important asset in expanding the knowledge of the consumers to make a necessary behaviour change. The SSBC suggests that if an individual is aware of the harmful consequences one's behaviour might have it is more likely to change. By designing a communication product such as the one in chapter 6, it is possible to tell the consumer with a simple systems model, what the behaviour of the system is. Here, the difference in environmental impact an individual can make by adopting the system of reusable cups should also be presented. Timmermann [2022] and Stephansen [2022] mention in their interview that throwaway culture is a critical issue for events as this can be linked as an indicator of the absence of care.

By expanding the knowledge of consumers on what consequences their actions may have on the environment it can be assumed that consumers will be more prone to take responsibility and thereby develop a new behaviour towards the reusable cup system. This new behaviour can then be a means to accommodate the challenge of throwaway culture as the consumers will then take more responsibility for their actions. It is therefore recommended that event planners look into how they can expand the knowledge of the consumers in a way that makes them want to return their reusable cups. This can be done with signs that explain the system of a reusable cup. Such signs need to be simple in structure and explain the advantage of the initiative so consumers that have no knowledge of the initiative can be able to understand what is being done and why it is being done.

Social norms

This theme plays a role in developing an individual's personal norm towards an intended goal. The overall goal is to make people adapt to the system of reusable cups and that is done by acknowledging the cup as an important resource that needs to be returned so it can be reused again and again. As stated in section 7.1 there is an emerging trend where people are reusing their products more. This can possibly help the system of reusable cups as people are getting more used to the idea of reusing. It can be assumed that if more people become aware of their behaviour they might develop a new personal norm that then can create a snowballing effect as time goes by. In the end, this can create a new social norm that can potentially impact society in other ways. As Timmermann [2022] mentioned in the preliminary interview, Danish people have a habit of throwing their beer cups at events. But if there is a social norm that focuses on taking care of these cups rather than throwing them away then this habit could change.

The recommendation to event planners is to keep on pushing reusable cups at events. If more people get introduced to the more sustainable initiative, in time, it can create a new social norm which will then enhance the system.

Hygiene vs. impact

In section 7.2 it was identified that there is a clash between washing every cup after every use to secure proper hygiene or trying to use a cup more than once in order to provide a larger environmental benefit. Here, R1 and R2 explain that due to the COVID-19 virus, people are becoming more aware of potential germs. This is an example of how the social norm can affect an individual's decision-making. In order to find a solution to this, both parameters must be considered. Best practices in terms of different washing options were stated in section 7.2 but using the cups multiple times before they have to get washed will be more advantageous for the system. To keep up with hygienic standards a labeling system can be introduced. With this, consumers can label their cup, go to the bar, and get a refill into their cup and thereby use the cups multiple times before it has to get washed.

On this basis, it can be recommended that event planners should look into the system and apply features that both secure proper hygiene with minimal impact on the environment and also it should be investigated how to properly implement a system that encourages consumers to use their cups multiple times before they return their reusable cup.

Communication

Communication can be related in the SSBC to perceived goal feasibility. If the consumer doesn't perceive their intended goal as feasible then it is less likely that the consumer will change their behaviour.

In the preliminary research interviews, Pedersen [2022] explains, that the signs for waste fractions attached to the containers should be easy to recognise for the individual consumer. This is to secure that the waste is managed properly. Throughout the observation of the system, it was recognised that the reusable cups sometimes end up in containers that were meant for other waste fractions. It can be assumed that the intended goal of returning the reusable cups properly was not feasible to do in these cases. This statement is enhanced by one of the respondents in section 7.2 who explains that the waste sorting at the event could be difficult to understand. As stated in section 8.1 this could be due to the signs that are attached to the different containers. Here, it can raise confusion among the consumers if the signs look alike in terms of colours, and the text that the signs have can also impact the action of sorting one's waste.

It is recommended for event planners to consider what the signs, that are attached to specific containers, communicate in order to make the consumers understand the system.

Open vs. closed events

This is another theme that could possibly impact the consumers' goal intention and the perceived feasibility of it. At open events, it can be difficult to control where the people go after they have acquired a reusable cup. As stated in section 7.2 it is not possible to set up containers everywhere that can be used to collect reusable cups. It can then be assumed

that if people are able to walk away from the event with their reusable cups and there are no containers specifically for the cups then their return rate of them can be affected in a negative way. Closed events have an advantage here because they have more control of what comes into the event and what goes out. Here, Timmermann [2022] explains that by introducing a lock system by the entrances guards can secure that consumers don't take their reusable cups with them home. It was observed that open events can have fenced-off areas for specific purposes. Here it would be ideal to implement reusable cups as the only type of beverage container since they can be controlled in terms of what goes in and what goes out of this area.

On this basis, it is recommended that event planners of open events should consider designing specific areas where the system of reusable cups can be controlled. By implementing closed areas it can be easier to control what goes in and what goes out.

System vs. system

By having two different systems of cups present at an event it can cause confusion to the consumers which can affect what personal norms should be developed. This can mean that it can be hard to change their behaviour since it can be hard for the consumer to distinguish how to behave towards the two different systems. In relation to what was derived in section 7.2, two different types of cups were present at the DGI L2022 event: SUP cups and reusable cups. If events want to implement reusable cups as a more sustainable alternative to single-use cups it is important that single-use cups do not coexist with the system of reusable cups at the same event. Especially since the purpose of implementing reusable cups in the first place is to use them as a more sustainable alternative to e.g. SUP cups. It was observed in section 8.2 that the bars that were using SUP cups to serve drinks were private establishments and the bars serving drinks with reusable cups were set up by the event. Here, there should be an agreement with the private establishments that they use reusable cups and becomes a part of the overall system in order to make them a more sustainable alternative to single-use cups.

For event planners to optimize the system of reusable cups it is necessary that different systems of beverage cups don't coexist at the same event. Agreements with private bars should then be conducted in order for the system to become more effective.

Consumer habits

This theme also relates to the personal norms of the consumers and what best practices are of handling the cups after they have been used. As it was stated in section 7.3, several respondents kept the reusable cup and washed or rinsed them so they could use them the day after. A reason for this kind of behaviour can also be related to open events where consumers can go wherever they want. If every single consumer brings a reusable cup back home and washes it, it will create a disadvantage for the cups compared to various single-use cups in terms of environmental impact according to Cottafava et al. [2021]. A quick rinse of the reusable cups could though be advantageous in terms of environmental impacts compared to washing them after use. But this requires that water facilities are set up at the event that enables consumers to rinse their cups. Keller et al. [2021] says that there could be an opportunity in enabling consumers that already own a reusable cup

to use it in their everyday routines. If this is implemented at events it can pose a series of challenges. As previously explained, there needs to be set up water facilities where consumers can wash their reusable cups. Then there also needs to be communicated what types of reusable cups there are allowed at the event so the tradition of throwing one's cup at a concert doesn't pose a security risk if the reusable cup is e.g. made of metal.

On this basis, it is advised that event planners should invest in communicating how consumers should handle their reusable cups after they have used them. This communication should focus on why it is important that the reusable gets returned.

9.1.2 Preactional stage

As explained in section 4.2 by Bamberg [2013], the preactional stage is the one where actions that can be done to achieve an intended goal are considered. In relation to reusable cups at events, this is where the consumer should decide on which strategy to choose from when returning their reusable cups.

Knowledge and communication

Here, the theme of knowledge and communication can also be related to the SSBC in the preactional stage and specifically within 'perceived behavioural control over alternative behaviours'. Throughout the interviews, at the DGI L2022 event, some of the respondents express that they were not aware of the different options to return their reusable. These could both be returned in the bars and at different collection containers that were placed at the event. But this was not communicated properly. Since none of the respondents mentioned anything about returning the reusable cups at the bar it is assumed that none of them had used this option. This means that the perceived behavioural control over alternative behaviours is limited as there was only knowledge of one of the two returning options. In situations where a consumer might deem it impossible to find a collection container for reusable cups then they might turn to another option and dump the reusable cups in another waste fraction. Communicating the various option for returning their cups might motivate people more and thereby strengthen their behavioural intention. On this basis, it is recommended for event planners they should invest in communicating the options that consumers have to return their reusable cups. Here, staff in the dedicated bars should mention to the consumers that they can return their cups at the bar, and also signs can illustrate the different options that consumers have.

Lack of containers

From the analysis in section 7.4 it was identified that there was a lack of containers that were specifically for reusable cups at the event. This has the effect, that it is not always possible for the consumers to return their cups. This can be related as a hindrance to consumers 'behavioural intention' as the lack of containers limits their options to return their reusable cups. It is therefore advised that there is a sufficient amount of containers at disposal at the event in order to change the behaviour of the consumer.

Strategic placement of containers and system vs. system

Another example of perceived behavioural control over alternative behaviour can be related to the strategic placement of the collection containers for the reusable cups. If there is a lack of these containers then the consumer in some instances has no opportunity to return their reusable cups to a container that collects them. It is therefore important to consider where these are placed. The collection containers for reusable cups should as a first priority be placed in locations where the reusable cups are most present. This can e.g. be close to the bars that serve them. A second priority will then be at the entrances in order to control that the reusable cups don't leave the area of the event without being returned to a container.

Having lots of containers are important for events as these are a way to return the reusable cups. In the case of large events, it is equally important that these containers are placed all over the event. If an event is only using this option at one place and a temporary solution at a second place then it can result in worse return rates for the reusable cups in the second place. It is evident from the observations that if the physical waste sorting system is not the same throughout the whole event then it can result in reusable cups being mixed with different waste fractions. It is therefore recommended that event planners are implementing the same waste sorting system throughout the whole event rather than implementing a temporary solution as a result of e.g. the lack of the number of collection containers for reusable cups. In situations where there is a lack of containers, it should then be considered how to place and distribute these more strategically.

Deposit vs. one-time fees

It was widely agreed upon by the respondents that having a deposit scheme attached to the reusable cup could create an incentive for returning the reusable cups. If consumers are presented with a deposit scheme this might encourage consumers to return their cups in the bars or a specific location where it is possible to claim the deposit. Doing this can help to relieve some of the difficulties that could arise with using collection containers such as wrong waste fractions ending up in the wrong containers. This can be related to the SSBC as the consumers' attitude towards alternative behaviour. If people are encouraged to claim their deposits from the cups it can help to strengthen the return rate of the reusable cups. Timmermann [2022] has an interesting input to this. She mentions that having a deposit scheme attached to reusable cups can sometimes invite a segment of people that can have aggressive behaviour towards the collection of the cups. In relation to this, R12 proposes a solution that could motivate the consumers at the event to return their reusable cups instead. The solution is to exchange the returned reusable cups with tickets that then can be used at the event in various drink or food stalls. By introducing a deposit scheme that does not include money transfers directly but as a redeemable ticket, then events can avoid the segment of people that sometimes can have an aggressive behaviour towards collecting as many cups as they can.

It is recommended that event planners use deposit schemes rather than one-time fees as it seems to have a higher effect on changing the behaviour of consumers.

9.1.3 Actional stage

For this stage, it is the action of returning the reusable cups that are considered.

Consumer habits

In situations where alcohol can limit the possibility of the desired behaviour it is recognised that coping strategies should be developed. This refers to the cognitive planning in the SSBC. In relation to reusable cups, it is then necessary to consider how consumers under the influence of alcohol can maintain their implementation intention. As Stephansen [2022] explains during the preliminary interview, the system of reusable cups should be easy and intuitive for the consumers to use. In Denmark there is a deposit scheme on most plastic bottles and cans, this is a system that has been implemented for many years and is still in development. This is something that every person in Denmark understands. By implementing an equal system for reusable cups at events it is, therefore, more intuitive for people to return their cups. This can also influence the consumers 'self-efficacy' by making the system as intuitive as possible, which then can create a feeling of confidence for the consumer that they can make them maintain their newly acquired behaviour.

On this basis, it is recommended that event planners make the system as easy and intuitive as possible for consumers so the influence of e.g. alcohol doesn't affect the return rate of the reusable cups as much.

Lack of containers

In order to return the reusable cups, it is necessary that there are containers that collect them. In instances where there are no containers, it can affect the implementation intention and the action planning of the consumer. If there are no containers it can seem infeasible for the consumer to return their reusable cups and this can affect the opportunity to change the behaviour of the consumer. It is therefore recommended that event planners secure that there are enough containers that can collect the reusable cups.

9.1.4 Postactional stage

There were no specific themes that were identified in the analysis that matched this stage. In this stage, the focus is on the consumers to decide whether their action of returning their reusable cups meet their expectations.

In this regard, it can be recommended that event planners communicate the positive differences that it makes to return their cups in order to maintain the system as a more sustainable alternative.

9.2 Part conclusion

Throughout the previous sections, recommendations based on the findings of this thesis were presented in order for event planners to recognise optimization opportunities to change the consumers' behaviour in order for the system to thrive. By going through the different stages of the SSBC it can be concluded that there are themes that can be put into multiple stages such as knowledge and communication. Although it is evident throughout the findings that the predecisional stage poses more opportunities to impact consumer behaviour than the other stages, this doesn't mean that the other stages are less relevant to consider. If consumers are to acquire a new behaviour towards returning their reusable cups after use, then all the stages should be considered.

Discussion of the applied theories and methods

10

In this chapter, the applied theories and methods will be discussed. This is to verify the different theories and methods that were used to answer the research question in chapter 3. On the theories and methods, a critical review of them will be conducted and also it will be explained how other theories and methods could create other perspectives on the research question.

10.1 Critical review of the applied theories

In this section, a critical review of the applied theories in this thesis will be conducted. Here, the aim is to verify that the applied theories actually were relevant to use in order to investigate the research question.

10.1.1 Systems thinking

The theories on systems thinking that were applied were the ones by Mobus [2022] and Wujec [2015]. Mobus [2022] was used to identify a definition of the concept and also to outline the relevancy of observing a system to get knowledge of it. Mobus [2022] furthermore outlines that an important feature of system thinking is that it can be understood by others by using some kind of *model language*. Here, Wujec [2015] was used to exemplify systems modeling. The definition of Mobus [2022] and how to illustrate a systems model by Wujec [2015] was then used to conduct the communication product in chapter 6. The aim of this communication product was to illustrate the system to participants at the event and also investigate whether or not it can help them to understand why the reusable cups are present at the event and what should be done to maintain the system. The achieved outcome was that the respondents in interviews reacted positively to the communication product and thought that this example of the system could help to maintain the system of reusable cups. Wujec [2015] describes that different people have different thoughts on how a system is structured and what it consists of. This was also evident in interviews that were conducted at the DGI L2022 event. Here, the purpose of the communication product was to simplify the system and relate it to the consumers. The black box analysis mentioned by Mobus [2022] was used to get a different perspective of the behavioural patterns of consumers that could impact the overall system of reusable cups. This theory helped to identify factors that might have an impact on the opportunity for behavioural change for the consumers of the reusable cups. Overall, the theories used in this thesis have helped to answer the research question by identifying practical factors that can impact the implementation of reusable cups at events.

10.1.2 Behavioural change

The main theory that was used to identify opportunities for behavioural change throughout the thesis is by Bamberg [2013] whereas Keller et al. [2021] was used to give inputs to how the SSBC was used in regards to reusable cups, and van der Haar and Zeinstra [2019] was used to underline that the stage of motivation in which the consumers find themselves have an impact on the level of behavioural change. Bamberg [2013] suggests that the SSBC can be used to determine psychological factors that may influence consumer behaviour and how to change it. The SSBC was applied to the different themes that were identified from the interviews at the DGI L2022 event. Here, the themes were put into the SSBC in order to identify how event planners can optimize the system in the future for events so it impacts consumer behavioural change. This theory has helped to answer the research question by investigating what practical issues there are at a consumer level in terms of reusable cups at events and it has also helped to create a recommendation for optimizations of the system from a consumer perspective that event planners can utilize to change their behaviour.

10.1.3 Other theories

Introducing the theory of 'nudging' could have helped the thesis to recommend specific actions that can be done by event planners to change the behaviour of consumers by nudging them to do a specific action. The reason why this theory was not introduced to the thesis is that the aim of the thesis was not to recommend specific actions but to identify how the behaviour of consumers at events can impact the system of reusable cups that from a theoretical perspective is a better alternative to single-use cups.

10.2 Critical review of the applied methods

The methods used to investigate the research question of this thesis are qualitative methods. It was deemed that this was the best way to investigate how behavioural patterns can impact the system of reusable cups since it concerns with the users of the system. In the following sections, a verification of the methods will be conducted. Here, the validity, reliability and generalization of the methods will be discussed according to Aarhus University [2022] and Creswell [2014].

10.2.1 Preliminary research interview

These interviews were conducted prior to the event to gather knowledge of what challenges event planners have towards the implementation of reusable cups and also the considerations that can be event planners have to secure successful implementation.

The sample size of interviews done for the preliminary research interviews is rather low. Other respondents were also contacted in order to have more perspectives on the subject but these didn't have time or didn't respond to the request. These can be seen in figure 5.1 in chapter 5. The validity is weakened in terms of sample size but it is also strengthened since the interviews are concerned with experts within the area of implementing reusable cups at events [Aarhus University, 2022]. In relation to this, the generalization or "external validity" explains whether the results gathered from the method can be used to describe the phenomenon in a general setting [Creswell, 2014]. This thesis aimed to include

different perspectives on the implementation of reusable cups at events and therefore it was important to gather information from different events. Using more respondents could have created a wider perspective, but since the respondents also have had feedback sessions with multiple events in terms of how to implement reusable cups, the information from these interviews can then form a general view on the subject.

Having an interview guide, to ensure that the respondents were asked the same questions in each interview, can strengthen the reliability of the method [Creswell, 2014]. Since the respondents used in the interviews can be recognised as experts within the field, it can be assumed that if the questions were asked again to the respondents then the same answers would be given. This also strengthens the reliability of the study. However, since the implementation of reusable cups is still a novel system within events, it can also be assumed that the answers of the respondents can be different if the questions are asked in the future. The interviews from the respondents were also transcribed after the interviews were done in order to ensure the reliability of the interviews [Creswell, 2014].

10.2.2 Interviews at the DGI L2022 event

These interviews were conducted during the DGI L2022 event to gather associations and opinions on issues there might be with the reusable cups at events from a consumer perspective.

In order to strengthen the reliability of the method, there was developed an interview guide, that made sure that every respondent was asked the same question as mentioned previously. In order to investigate behavioural change from a consumer perspective, it was necessary that the respondents of the interviews were indeed consumers as this can strengthen the reliability of the study [Aarhus University, 2022].

The sample size of the respondents can be discussed in terms of how many respondents would be required to be a sufficient amount in order to ensure the validity and generalization of the findings [Creswell, 2014; Aarhus University, 2022]. Here, it was deemed enough after several answers to the questions were the same although every answer from the respondents also included unique answers. It was also recognised that some of the respondents had not used the reusable cups yet. In order to get answers from respondents that had used the cups, it could have been ideal to pick a location closer to the bars where the reusable cups were present. By this, it could have been easier to catch consumers and get their perspectives. The external validity of the findings can also be deemed as valid since it was consumers that gave their perspective on the system. Although, it was not investigated whether the respondents had acquired a new behaviour as a result of the implementation of reusable cups. This could have been valid information in order to determine if the consumer that has changed their behaviour towards returning the cups actually felt that they directly contributes to a more sustainable event. Throughout the interviews, the respondents were asked what went well and what didn't work well with the reusable cups from their perspective. This was done to investigate what within the system is well functioning and what parameters could require optimization for future purposes. This was to create a realistic view of the situation and this can also contribute to the validity of the findings according to Creswell [2014].

10.2.3 Observations

validitet, reliabilitet og generaliserbarhed - Other observational strategies in Creswell

The observation that was done at the DGI L2022 event was conducted throughout the whole event. This was to develop an in-depth understanding of the system of reusable cups and how behaviours by consumers can impact the system. This strengthens the methods validity as the researcher have spend prolonged time in the field [Creswell, 2014]. The validity and reliability is also strengthened by observing the system of reusable cups in different locations at the event in order to get a wider perspective of the system.

The external validity of the observations can be assumed to be low since events are very different from each other. That is why the investigation of consumer behaviour also included interviews and not only observations. These two methods strengthen each other by backing up arguments as to how different situations can influence consumer behaviour. This is also relevant for the reliability of the observations.

10.2.4 Other methods

The 'mixed method design' could be used to give another perspective to the thesis. A mixed method design combines qualitative and quantitative methods in the same research design [Molina-Azorín, 2007]. Here data on the return rate of the reusable cups at events could give a reflection on how vital consumer behaviour is for a system like reusable cups to thrive. Another perspective could be to investigate which reuse systems was most utilized by the consumer. Since the event was held in late June 2022 and numbers of the return rate have not yet been released it was deemed impossible to introduce this kind of data.

A 'case study' could also have given a different perspective to the thesis. It could have helped to describe a specific context and thereby create specific recommendations for how an event planner can optimize the system of reusable cups in order to maintain the system. The reason why a case study is not conducted is that many events have different challenges to the implementation of reusable cups as identified throughout the preliminary research interviews. This means that different challenges are present at different events. It was also identified that there currently is no plug-and-place solution to this matter. This is why this thesis aims to investigate the impact of consumer behaviour on the system from a general point of view in order to identify some of the issues, that can be optimized in order for the initiative to become more sustainable.

This thesis aims to contribute to research on how to implement reusable cups at events in order to make them a more sustainable alternative to single-use cups. It was derived from the preliminary research that there is a lack of research concerned to consumer behaviour and that this is necessary to address in order to optimize the return rate of the reusable cups. The theory concludes that the environmental impacts of reusable cups are only more beneficial if they are used a sufficient amount of times. With this knowledge, the following research question was conducted:

How can consumer behaviour impact the system of reusable cups at events? And on this basis, how can event planners optimize the system of reusable cups in the future for events?

It was identified through the analysis that consumer behaviour is vital in terms of returning the reusable cups. Here, different themes concerned to what issues within the system can affect the return rate were identified. These themes were then investigated according to the SSBC in order to develop suggestions for event planners to optimize the system of reusable cups for future events. Plotting the different themes into the SSBC illustrates how event planners have an opportunity to change the behaviour of consumers to main the system of reusable cups. It is evident from the findings that it is important that consumers have knowledge of the alternative system in order to maintain it. To gather knowledge it is necessary that event planners communicate how to maintain the system and also communicate why it is important. At events, many different people are present. Hence, it is important that the communication relating to the alternative is communicated so that everyone understands it. In order for the consumers to change their behaviour to maintain the system, it is necessary that their intended goal of returning their cup is feasible to do. If this is not the case, then the perceived behavioural control over their behavioural intention is limited and this can result in a worse return rate. If events focus on communicating and developing options for the consumers to return their cups, then consumers can choose which return system is more feasible to do in order to accommodate their behavioural intention. When a consumer has chosen which return system to utilize than the act of returning their reusable cups happen. Here, it is necessary that event planners make intuitive solutions that make it easy for the consumer to complete their act. If the above-mentioned suggestions are implemented for the system of reusable cups, then the reusable cups can thrive in the setting of events and can thereby be considered to be a more sustainable alternative than single-use cups.

11.1 Recommendations for future research

Reusable cups are not the only answer to a more sustainable event. Multiple efforts can be done to lower the environmental footprint. On the basis of this thesis, it is recommended that similar studies are conducted for several products in the sector of food and drinks at events. It is also recommended that specific studies should investigate best practices such as communication strategies, strategic placements of containers, and deposit schemes that can impact consumer behaviour to increase the return rate of reusable cups.

Bibliography

- Aarhus University, 2022.** Aarhus University. *Alfabetisk oversigt*, 2022. Accessed: 15/7-2022, the section "Validitet" and "Reliabilitet" have been used. Link: <https://metodeguiden.au.dk/alfabetisk-oversigt>.
- Abdulredha et al., 2020.** M Abdulredha, A Abdulridha, AA Shubbar, R Alkhaddar, P Kot and D Jordan. *Estimating municipal solid waste generation from service processions during the Ashura religious event*. Materials Science and Engineering, 671 (1), 012075, 2020.
- Bamberg, 2013.** Sebastian Bamberg. *Applying the stage model of self-regulated behavioral change in a car use reduction intervention*. Journal of Environmental Psychology, 33, 68–75, 2013.
- Bioøkonomipanel, 2017.** Det Nationale Bioøkonomipanel. *Fakta-ark om bæredygtighed*. https://mst.dk/media/91750/faktaark_baeredygtighed.pdf, 2017. Accessed: 19-04-2022.
- Celestine, 2021.** Nicole Celestine. *What Is Behavior Change in Psychology? 5 Models and Theories*. <https://positivepsychology.com/behavior-change/#examples>, 2021. Accessed: 11-08-2022.
- Changwichan and Gheewala, 2020.** Kunnika Changwichan and Shabbir H Gheewala. *Choice of materials for takeaway beverage cups towards a circular economy*. Sustainable Production and Consumption, 22, 34–44, 2020.
- Cottafava et al., 2021.** Dario Cottafava, Mattia Costamagna, Marcello Baricco, Laura Corazza, Davide Miceli and Luigi E Riccardo. *Assessment of the environmental break-even point for deposit return systems through an LCA analysis of single-use and reusable cups*. Sustainable Production and Consumption, 27, 228–241, 2021.
- Creswell, 2014.** John W Creswell. *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE, fourth edition, 2014. ISBN 9781452274614.
- Danish Standards Foundation, 2008.** Danish Standards Foundation. *DS/EN ISO 14040:2006, Environmental management - Life cycle assessment - Principles and framework*, 4 edition, 2008.
- de Sadeleer and Lyng, 2022.** Irmeline de Sadeleer and Kari-Anne Lyng. *A Life Cycle Assessment on Single-Use and Reuse Beer Cups at Festivals*. Circular Economy and Sustainability, pages 1–23, 2022.
- Dijkstra and Boonstra, 2021.** A. Dijkstra and M. Boonstra. *Festival Experimentation Guide*. Open Innovator, 2021. ISBN 9789491589973. URL <https://books.google.dk/books?id=INiyzGEACAAJ>.

- European Commission, 2008.** European Commission. *Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives*. Official Journal of the European Union, 1(1), 1–19, 2008.
- European Commission, 2012.** European Commission. *Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste*.
https://ec.europa.eu/environment/waste/framework/pdf/guidance_doc.pdf, 2012. Accessed: 08-08-2022.
- European Commission, n.d.** European Commission. *Waste prevention and management*, n.d. Accessed: 15-06-2022 Link: https://ec.europa.eu/environment/green-growth/waste-prevention-and-management/index_en.htm.
- Fetner and Miller, 2021.** Hannah Fetner and Shelie A Miller. *Environmental payback periods of reusable alternatives to single-use plastic kitchenware products*. The International Journal of Life Cycle Assessment, 26(8), 1521–1537, 2021.
- Gregson et al., 2007.** Nicky Gregson, Alan Metcalfe and Louise Crewe. *Identity, mobility, and the throwaway society*. Environment and planning D: society and space, 25(4), 682–700, 2007.
- Hua, 2016.** Zhu Hua. *Research Methods in Intercultural Communication: A Practical Guide*. Guides to research methods in language and linguistics. Wiley Blackwell, first edition edition, 2016. ISBN 9781118837436.
- Keller et al., 2021.** Anna Keller, Jana Katharina Köhler, Charis Eisen, Silke Kleihauer and Daniel Hanss. *Why consumers shift from single-use to reusable drink cups: An empirical application of the stage model of self-regulated behavioural change*. Sustainable Production and Consumption, 27, 1672–1687, 2021.
- Kvale and Brinkmann, 2009.** Steinar Kvale and Svend Brinkmann. *InterView - Introduktion til et håndværk*. ISBN: 978-87-412-5198-1, Paperback. SAGE Publications, Inc., 2009.
- Laura, 2020.** Golsteijn Laura. *Life Cycle Assessment (LCA) explained*, 2020. Last visited d. 27-07-2022 Link: <https://pre-sustainability.com/articles/life-cycle-assessment-lca-basics/>.
- Lewis et al., 2021.** Yvonne Lewis, Alexandra Gower and Philippa Notten. *Single-use beverage cups and their alternatives*. Recommendations from Life Cycle Assessments, 1(1), 1–54, 2021.
- George E Mobus. Principles of systems science. In *Systems Science: Theory, Analysis, Modeling, and Design*, pages 41–87. Springer, 2022.
- Molina-Azorín, 2007.** José F. Molina-Azorín. *Mixed Methods in Strategy Research*. ISBN: 978-0-7623-1404-1, Paperback. Emerald Group Publishing Limited, 2007.
- Pedersen, 2022.** Linda Pedersen. *Interview with Linda Pedersen, DGI L2022*, 2022. Interview done: 25/5-2022.

- Plastic Change, 2020.** Plastic Change. *Tuborgs genbrugskrus hjælper Folkemødet på vej mod bæredygtighed*, 2020. Last visited d. 27-07-2022 Link: <https://via.ritzau.dk/pressemeddelelse/tuborgs-genbrugskrus-hjaelper-folkemodet-pa-vej-mod-baeredygtighed?publisherId=13559714&releaseId=13594943>.
- Stephansen, 2022.** Sanne Stephansen. *Interview with Sanne Stephansen, Roskilde Circular Lab*, 2022. Interview done: 25/5-2022.
- Šuškevičė and Kruopienė, 2020.** Valdonė Šuškevičė and Jolita Kruopienė. *Improvement of packaging circularity through the application of reusable beverage cup reuse models at outdoor festivals and events*. Sustainability, 13(1), 247, 2020.
- Timmermann, 2022.** Liv Timmermann. *Interview with Liv Timmermann, The Technical and Environmental Administration at Copenhagen Municipality*, 2022. Interview done: 1/6-2022.
- van der Haar and Zeinstra, 2019.** Sandra van der Haar and Gertrude G Zeinstra. *The impact of Too Good To Go on food waste reduction at the consumer household level: An explorative study*. 1975, 1. Wageningen Food & Biobased Research, 2019.
- Wentz, 2021.** John Wentz. *Reuse wins at events A life-cycle analysis of reusable and single-use cups*. None, 1(1), 1–43, 2021.
- Windahl et al., 2008.** Sven Windahl, Benno Signitzer and Jean T Olson. *Using communication theory: An introduction to planned communication*. Sage, 2008.
- World Commission, 1987.** World Commission. *Our Common Future — Call for Action*. Environmental Conservation, 14(4), 291–294, 1987.
- Worldperfect, 2018.** Worldperfect. *Lukket plastkredsløb på NorthSide Festival*. Miljøprojekt, 1(1), 1–33, 2018.
- Wujec, 2015.** Tom Wujec. *Draw How to Make Toast*, 2015.
- Yoo and Cho, 2021.** Joanne Jung-Eun Yoo and Meehee Cho. *Supply chain flexibility fit and green practices: Evidence from the event industry*. International Journal of Contemporary Hospitality Management, 33(7), 2410–2427, 2021.

Interview with Sanne Stephansen



Interview with Sanne Stephansen from The Circular Lab at Roskilde Festival Friday the 27th of May at 10.00 am online.

Peter: Hvad er din rolle i organisationen?

Sanne: Jeg er chef for bæredygtighed ved Roskilde Festival gruppen og har et særligt fokus og ansvar for vores programledelse af den grønne omstilling.

5 Peter: Hvad er din/organisationens motivation for at arbejde med bæredygtighed?

Sanne: Vi afholder festival nummer 50 i år og vi er en almenyttig organisation som er sat i verden for at være til gavn for børn og unge. Så sådan som vi tænker det er det en hel naturlig del af at være en almenyttig organisation at tænke bæredygtighed, ansvarlighed det har heddet meget gennem de sidste 50 år at man går ind og tager større samfundsansvar så det er den primære grund kan man sige. Derudover er der bare en stigende nødvendighed om at aktører indenfor kunst og kultur tager større ansvar og kan vise vejen med. Den midlertidighed som roskilde festival har betyder at vi kan gøre tingene merkant anderledes fra år til år bare vi sætter os for det. Det som der er en anden motivationsfaktor for at arbejde med det her, det handler selvfølgelig om at få gjort tingene rigtigt og ordentligt men sådan set også at få vist for omverdenen at det godt kan lade sig gøre at selvom den grønne omstilling er svær, så er der nogle muligheder i det og det vil vi gerne.

25 Peter: Du nævner Roskilde som et midlertidigt samfund, og det er et samfund med en mærkant størrelse, set fra et dansk perspektiv. Derfor har det også et højt ressourceforbrug. Hvilke rammer er det muligt for Roskilde at sætte op for at det ikke bliver påvirket i en negativ retning?

Sanne: Jeg tror som du selv siger, vi samler 130.000 mennesker i otte dage, så har det et stort aftryk, så man kan sige at det som der lidt kommer under loop det er det ressourceforbrug der ellers er til stede i vores samfund. Man kan se det på vores festivalplads og campingområderne når vi er færdige med vores festival, så kan man se at det er brug og smid væk kultur der ligesom er en del af hele vores samfund. Så jeg tror ikke at det er særligt indenfor Roskilde Festival som sådan. Jeg tror bare at det er et problem vi står overfor som samfund der kommer virkelig tydeligt frem når man ser det så intenst i otte dage. Det som vi så kan, det er at vi kan lave et lukket system, eller at vi har et område som er afgrænset som vi har mere eller mindre kontrol over, så kan vi jo prøve nogle ting af og det er jo så det vi gerne vil. Et eksempel på det er i år har vi udfaset alt brug af dieselgeneratorer. Det var jo noget af det som vi kunne gøre forholdsvis nemt, selvom det er der nok mange kollegaer der ikke er enige, men beslutningen var forholdsvis nem, så kræver det selvfølgelig en hel masse at få det til at

falde ordentligt på plads. Hvor man kan sige at det er et godt eksempel på, hvordan vi fra et år går fra at bruge over 70.000 liter diesel i vores dieselgeneratorer over til at bruge nul.

Peter: Hvilke udfordringer er der forbundet med at inkorporere alternative drikkekops-løsninger fremfor konventionelle engangsplastikkopper?

Sanne: Vi har jo siden midten af halvfemserne haft biobaseret og bionedbrydelige kopper, vi har haft nogle PLA kopper til vores drikkevarer. Det var det rigtige dengang. Det var det alternativ der var til plast der ikke blev sorteret til genanvendelse. Så introducerede vi PLA. Og der er jo heldigvis sket rigtig meget både i forhold til bedre sortering og mere genanvendelse af plast som måske havde et argument for at man skulle bruge netop en PP løsning. Men så er der selvfølgelig også kommet større fokus på som forlængelse af et engangsforbrug af plast og hele plastdirektivet, generelt retningslinjer fra EU som også betyder at vi har et større fokus på genbrug. Det har været med til at når vi kigger os omkring, er det ikke noget vi kan løse alene. Man kan sige at det er det første potentiale i arbejdet med grøn omstilling og bæredygtig udvikling det handler om partnerskaber fordi der ikke er noget af det her som man kan selv. Vi er dybt afhængige af både af leverandører og både af drikkevaren, men også på løsninger indenfor vask så man kan genbruge de her kopper – der er vi jo dybt afhængige af at der er nogen som kan vaske dem, nogen der kan producere den rigtige type af kopper og som tænker hele livscyklus perspektivet ind. Så man kan sige at det er det jeg tror vi som festival og som samfund begynder at omstille os til at man begynder at se at hvad er ens rolle ind i at skabe de bedre løsninger. Så jeg tror det var det der lykkedes tilbage i 2019 da vi skulle introducere de her genbrugskopper for første gang. Det var at der var flere aktører der så potentialet i det. Man kan sige at barriererne er at det er nemmere at lade være. Altså hvis man kigger fra et deltager perspektiv og fra et festivalsperspektiv så er brug og smid væk løsningen bare nemmere. Og det tænker jeg er helt fair at sige højt. Det er nemmere at hente en stak af 100 glas omme i containeren. Det fylder ikke ligeså meget, rive plasten af, stille dem op, ud, væk, så er der ikke noget – så skal man ikke deal med det længere. Men når man så begynder at tage ansvar for det miljøaftryk som det så sætter, så begynder det selvfølgelig at være lidt mere besværligt og der vil være nogle barrierer for at det kan fungere. Det er jo så dem man arbejder med. Så den største udfordring er at skulle fikse og arbejde og løse de her barrierer og gøre det nemt at gøre det rigtigt. Og det er rigtig meget et motto vi har hos os. Det skal ikke nødvendigvis være besværligt. Så det skal være nemt at gøre det rigtigt men

det betyder ikke at overgangen er nem. Jeg tror også vi skal stoppe med at tale om at når man snakker om grøn omstilling og transformationer er der ikke nogen der vil kunne mærke det og vi skal helst ikke synes at det er alt for besværligt. Der vil være en overgang, hvor det er besværligt og hvor det er anderledes og det kræver noget af os at ændre vaner og gøre tingene på en anden måde. Det tænker jeg også bare at vi skal være ærlige omkring. Men hos os ift. Drikkekopper så lige nu, så er det at det handler om at få logistikken til at køre, det handler om at få kigget på indsamling, altså indsamlingseffektiviteten af kopperne er sindssygt nødvendigt for at det også er en god miljøcase og så handler det også om at blive ved med at effektivisere på løsningen. Altså sørge for at bruge mindre vand, sæbe, kig på transporten af kopperne så man ligesom for kigget på produktet i et helhedsperspektiv og på løsningen i et helhedsperspektiv. Så det er noget af det vi kigger på nu. Og det er jo også med til at gøre det igen lidt mere besværligt, for det gjorde man nemlig ikke med engangskrusene. Der var ikke store data som skulle hentes hjem for at man var sikker på at man havde gjort det rigtigt. Så det er bare noget som kræver mere arbejde.

Peter: Hvordan prøver Roskilde at få forbrugerne til ikke bare at smide kopperne ud i en affaldsfraktion, som ikke høre til den pågældende fraktion?

Sanne: Vi har flere initiativer en ting er at være tydelig i vores kommunikation til deltagerne og sige hvad består vores system egentlig af så det er måske det første. Noget andet er ligesom at give flere muligheder for at returnere eller bytte. Så man kan selvfølgelig returnere koppen i en pantbod og så få lagt koppen ind på sit armbånd så man har koppen liggende der til næste gang man skal have noget at drikke. Noget andet er at man kan bytte til nyt i boderne. Så hvis man har fået en drikkevarer og skal op og have en ny, så kan man tage sin kop med og så kan man bytte til nyt, sådan så man ikke behøver en eller anden transaktion andet end den fysiske. Det er de to væsentligste måder at skubbe den her adfærdsskift eller indlæring af ny type af vaner når det handler om drikkekrus på midlertidige begivenheder. Jeg tror at det rigtig meget handler om at være tålmodig fordi vi har været så vant til det andet (red. Engangsplastik kopper) og det eksisterer stadigvæk. Så det der med at blive ved med at holde fast i, at der er noget du kan bytte til nyt, du kan få det på dit armbånd og så bliver vi ved med at gøre det, for jeg tror også at det tager noget tid at lære – vi har jo faktisk kun gjort det et år, da det er tre år siden vi sidst havde festival, så jeg glæder mig rigtig meget til at se hvordan det går i år. Noget af det vi taler om iøvrigt, det er at sige hvor vi ellers kan have nogle opsamlingssteder ved de affaldsspande der er rundt omkring på pladsen. Sådan så man kan sætte det fra sig hvis man er ligeglad med den ene krone og gerne vil investere i et nyt (red. Krus) med de afgifter der ligger derpå. Det er noget af det vi også kigger ind i. Men vi vil gerne lige have et år mere for ligesom at se hvordan det er at det fungerer. Der er jo sket meget i folks mindset bare på de sidste tre år. Så vi skal ligesom se i år og lave nogle grundige analyser og observationer af hvordan vores deltagere håndterer de her kopper, kig på retuneringsprocenter og indsamlingseffektivitet, hvad går i stykker og alt det der. Og så må vi jo så tilpasse og se hvad kan vi gøre frem mod 2023 for at skræpe systemet.

Peter: Dømmekraft i forhold til alkoholdindtag – spiller det en rolle i forhold til afvikling af genanvendelige drikkekrus?

Sanne: Jeg har generelt en opfattelse af at deltagere på festivaler er åbne og positive og vil gerne være med til at skabe en god oplevelse. Så det er den indgangsvinkel vi har til det. Der bliver retuneret i hvert fald 80% i 2019. Det er rimelig højt synes jeg. Jeg tror at der er nogle helt basis ting som er indlejret i vores systemer i vores samfund som umiddelbart ikke giver mening – altså gå ned med pant og få en krone igen – jeg tror at der nogle ting som vi allerede kan tabe ind i som gør det nemt og tilgængeligt. Hvis vi skal kigge på hvor spildet var på de her genbrugskopper for os i 2019, så lå de faktisk i de bagvedliggende systemer. Der var noget omkring designet på koppen der gjorde at nogle af dem sad sammen og der var det med at under transport at nogle blev beskadiget og sådan noget. Så jo der noget med hvor der er nogle tabte produkter ude på vores camping områder fordi de får en højere medfart, men jeg tror faktisk på at hvis vi bliver ved med at informere om hvorfor det er vigtigt at de her bliver returneret, så tror jeg også at vi får løst lidt mere op i det her. Så jo der vil altid være noget spild på en eller anden måde, men vi skal bare arbejde kontinuerligt på at reducere det spild. Og det er så derfor vi skal kigge på om der er flere og bedre løsninger til at komme af med det her på en god måde. Og når man kigger på pant iøvrigt så er vi så heldige at der faktisk kommer nogle hvis primære formål ved at være hos os er at samle pant. For ligesom at understøtte det så har vi ildsjæle som der går rundt og taler flere sprog som kan informere om hvad det er for et sted de er kommet til og hvordan man kan komme af med sin pant og som faktisk siger tak fordi de hjælper os med at indsamle værdifulde materialer. Så man kan sige at det er en del af vores måde at gå til det på. De hjælper os både med det klassiske ABC pant men de hjælper os også med at fange mange af de produkter som der ligger og flyder fordi de ikke er blevet afleveret korrekt. Så det kan man sige er en anden måde at gå til det på, at vi har nogle hænder som er meget dedikeret i det her. Men løbende kigger vi selvfølgelig på systemerne der er for at minimere spild. Jeg har ikke rigtig set det, men det er lidt en mavefornemmelse man har, at festivaldeltagere agerer anderledes, jeg ved ikke rigtigt om det er sådan... tværtimod så som jeg sagde til at starte med så oplever jeg det som et enormt tilgivende miljø og der er mange der gerne vil være med på alt muligt. Og det tror jeg bare vi skal udnytte endnu mere.

Peter: Hvordan arbejder i med bæredygtighed generelt? - mere nøjagtigt omkring adfærd?

Sanne: Jeg synes ikke man kan sige at det adfærd er koblet op på de sociale parametre af bæredygtighed, for det går ligesom igen i det hele. Der er flere måder vi gerne vil gøre det på. Vi kan starte med noget der ligger indenfor den sociale sfære. Vi har arbejdet med og vil stadig gerne arbejde med grænseoverskridende adfærd. I 2016 begyndte vi en kampagne med navnet "orange together" som netop kom ud med et kodeks om hvordan vi er sammen i fællesskabet. Nogle af de begreb vi brugte der var "gamefication" hvor vi fik lavet nogle kortspil der handlede om grænseoverskridende adfærd – hvor går dine grænser og hvor går mine grænser i et frirum – hvor vi havde nogle forskellige organisationer som vi samarbejdede med der var ude og spille det her spil med vores deltagere. F.eks for at sætte fokus og få skabt en samtale om grænseoverskridende adfærd. Derudover samarbejdede vi med forskere fra SDU om det her fordi grænser bliver mere flydende både når man indgår i det her midlertidige fællesskab og måske også når man får lidt indenbords. Så fokus på at få skaffet noget viden og data så vi også kan blive mere konkrete i hvad for nogle tiltag eller projekter eller andet der ligesom skal

- være med til at sætte fokus på det her. Altså vi har jo inde i felt hvor der er mange gråzoner så det var ligesom det fik fokus på og accepterede at "hey, den her samtale bliver svær, men lad os starte den og lade os tage den ud fra nogle spørgsmål vi havde i det her kortspil". Så det
- 245 var en måde at arbejde med adfærd. Når det så handler om adfærd indenfor grøn omstilling, så minimering af ressourcer inspirere folk eller skub dem mod at sortere mere på pladsen, så kan man sige at så er der nogle systemiske og strukturelle forhold vi skal arbejde meget mere med. Altså hvor nemt og intuitivt gør vi det for folk at sortere deres affald. Hvad er det for nogle affaldsløsninger man møder, hvor kan man finde information om hvorfor det nytter noget? Altså det her med at være helt
- 250 tydelige og transparente i hvorfor gør vi det og hvorfor er det vigtigt at man hjælper til. I det der er kampagne grebet ret vigtigt for os for der når vi rigtig mange især igennem vores Facebook, Instagram og den slags. Vi har lige startet i sidste uge (dato) vores kickstart "grøn fremtid" kampagne med fokus på det. Så ved siden af det, så for netop at skubbe til adfærd, så kan man sige hvad er vores ansvar for at tilbyde nogle løsninger som gør det nemt at gøre det rigtigt. Det er så der hvor vi har arbejdet langt tid på en lejeløsning på campingudstyr. Der skubber man jo rigtig til adfærd ved at sige "lad det der ligge derhjemme, du skal kun bruge det i otte dage, du har kun brug for brugsret i en begrænset periode så lad os stå for at vælge nogle bedre produkter som man så kan købe sig adgang til i en begrænset periode". Det er en anden måde at skubbe til adfærd på, det er at ændre på rammerne for hvad man kan. Der er ikke nogen der tvinger nogen til at leje noget og jeg tænker det der med at gøre det nemt og tilgængeligt kan måske også rykke noget i den retning. Det sidste eksempel indenfor adfærd det er at fokusere på fællesskabet og invitere til nogle mere forpligtene fællesskaber. Det er det vi gør i vores "community" campingområder. Hvor man ansøger
- 255 om at være en del af et fælleskab, men når man gør det, så er det også ret tydeligt hvad vi forventer af dig. Så en tydelig forventningsafstemning i vores "clean out loud" eller "leave no trace" eller "common ground" hvor vi har sagt, at her må i ikke have hvid pavilion med fordi vi tester nogle andre typer af overdækning. Vi ved det er vigtigt at få læ og ly fra sol og regn, men vi ved også at en hvid pavilion bliver bare til affald. Så kom og hjælp os, leg med os og få skabt nogle andre typer af produkter. Så den måde vi arbejder meget med adfærd, det er at lægge det ud og gøre vores publikum til deltagere og få dem engageret i de omstillinger vi skal have gang i. Og der er vi jo heldige at vi er en festival der har publikum der kommer tidligt som gerne vil være en del af vores oplevelse ude på campingområder før vi ligesom åbner for den store fest. Der er selvfølgelig en masse fest derude med musik og kunst alle dagene op til, men inden vi åbner for den helt store fest har vi noget tid og den bruger vi ret dedikeret på at præsentere nye løsninger og sørge for at det engagement og den virkelyst der ligesom er derude også bliver sat i perspektiv. Det er nogle af de måder vi arbejder med det på.
- 260 Peter: Har der været sparring med andre festivaler?
- 265 Sanne: Der er igennem Dansk Live, som er en medlemssorganisation for festivaler og spillesteder som du sikkert kender. Der er løbende nogle dialoger i nogle medlemsforumer blandt andet, hvor man taler om det. Og så er vi jo gode til flittigt at dele ud af erfaringer. Det er jo ikke en konkurrence. Det er fælles mål. Så derfor skal alt lægges åbent op. Jeg synes også at vi kunne være bedre til det, men jeg tror at faktum er at vi bare har sindssygt travlt, internt. Især når man begynder at gå tættere mod afvikling. Så er der ikke så meget overskud til at få erfaring delt og sådan noget. Det tænker jeg faktisk at vi godt kunne blive bedre til. Det tænker jeg altid er et konstant mål.
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Interview with Linda Pedersen

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Interview with Linda Pedersen from Kultur og Fritid (culture and leisure) in Svendborg Municipality Friday the 27th of May at 11.00 am online.

Peter: Hvad er din rolle i organisationen?

Linda: Jeg er til dagligt konsulent i Kultur og Fritid i Svendborg Kommune, men har arbejdet med landsstævnet siden vi fik landsstævnet i slutningen af 2016. Jeg har været med til at opbygge den organisation vi har idag og der har vi jo en politisk ledelse og så har vi en administrativ ledelse en daglig ledelse og lang række arbejdsgrupper under der og i hver arbejdsgruppe er der en arbejdsgruppe formand og så er der det vi har kaldt en administrativ torvholder. Og det er typisk konsulenter der er administrative torvholdere og nogle afdelingsledere der er arbejdsgruppe formænd. Jeg har så i den organisation vi har haft siddet som administrativ torvholder på bespisning som er en rigtig stor opgave, der skal leveres ca. 177.000 måltider mad til landsstævnedeltagerne. Så har jeg siddet som administrativ torvholder på sponsorarbejdet og som sekretær ved bestyrelsen og for administrativ ledelse og så har jeg siddet som en koordinerende figur for bæredygtighedsarbejde på tværs af vores arbejdsgrupper og i dialogen med WorldPerfect. Man kan sige at bæredygtighedsindsatser ligger egentlig ude i alle de her arbejdsgrupper, men for ligesom at prøve at have noget samling på det, så har jeg været en koordinerende figur imellem L2022 og WorldPerfect.

Peter: Hvad er din/organisationens motivation for at arbejde med bæredygtighed?

Linda: Jeg har en helt privat interesse i det som gør at jeg synes at det har været rigtig sjovt og meget lærerigt at være med omkring det, men jeg har ikke nogen specifik faglighed indenfor det. Jeg er uddannet statskondskaber så der er meget generalist-agtigt kan man sige. Men jeg er personlig interesseret i det og jeg synes at det har været super spændende, men det var egentlig lidt fordi der jo i den her bespisningsopgave har ligget et kæmpe potentiale i at tænke bæredygtighed ind netop fordi det er så mange måltider ud på 15 forskellige lokationer de skal spise de her mange måltider der er 65.000-66.000 portioner frokost som bliver udleveret om morgenen, som de så slæber med ud som er pakket i emballage og den resterende del af så 115.000 måltider der traditionelt er blevet serveret med engangsplast service. Så der har bare ligget et stort potentiale i bespisningen. Så endte det med at jeg fik en generel koordinerende funktion på bæredygtigheden. Man kan sige at vi har en arbejdsgruppe der hedder festområde og catering som sidder med hele den kommercielle del af bespisningen under L2022, så alle de her madboder og barer som er i festivalområderne og det er jo lige i den henseende primært der at krus og kander ligger i det regi fordi der ikke er øl og sådan noget i selve bespisningen, så det ligger egentligovre ved festområde og catering.

Peter: Hvordan har Svendborg Kommune haft det med at skulle inkorporere bæredygtighed?

Linda: Jeg tror alle har været enige i at det har været nødvendigt og uundgåeligt og selvfølgelig skal vi allesammen gøre hvad vi kan i det. Og det er jo også meget som alle andre steder har det jo også stor politisk bevågenhed at man gør nogle tiltag og at man gør hvad man kan og man i hvert fald har det for øje i alt hvad vi gør og vi har jo arbejdet med de her principper for bæredygtighed som er vedtaget af landsstævnets bestyrelse som er vores fælles politisk organ på tværs af Svendborg Kommune og DGI, hvor de jo netop siger det her med at de bæredygtighedsmæssige konsekvenser af de handlinger vi træffer de skal indgå i vores beslutninger. Så jeg tror egentlig det har været meget både administrativt og politisk betragtet som en selvfølgelighed at selvfølgelig skal vi det. Vi har også bæredygtighedsstrategier og klimapolitikker og alt muligt i kommunen som selvfølgelig også gælder selvom der er landsstævne. Så jeg har egentlig ikke oplevet at det har været stille spørgsmålstegn ved det. Der har selvfølgelig været opmærksomhedspunkt omkring budgetter og den økonomiske bæredygtighed i det at vi jo faktisk ikke har haft afsat særkilte ekstra midler til det andet end en aftale vi har med rådgivning fra WorldPerfect. Så det har jo været lidt et benspænd nogle steder. Og så kan man sige at volumen af det vi gør er også lidt i sig selv et benspænd. Vi kiggede blandt andet på biogasbusser og elbusser, men vi skal jo bruge 70-77 busser og der er bare ikke 77 elbusser der lige kan tages ud af drift der hvor de måtte køre til dagligt. Det samme med bespisning, der gik vi jo rigtig langt for at finde en løsning med vaskbart service. Der er ikke nogen der kan håndtere opvasken af 20.000 tallerkener der skal være klar igen næste morgen eller senere samme dag, det findes bare ikke. På den måde kan man sige at volumen er bare så enorm at det på nogle områder har været svært eller vi i hvert fald har måtte tage den næstbedste løsning, som ved bespisning hvor vi har gået med komposterbart engangsservice i stedet for vaskbart service, men det er jo stadigvæk 180.000 engangstallerkener, hvor man kan sige at vi kunne have nøjes med 20.000 almindelige tallerkener, hvis vi har kunnet få dem vasket op. Det kunne vi bare ikke.

Peter: Hvilke bæredygtige initiativer bliver der gjort til L2022?

Linda: Vi har jo kredset det ind til de her fyrtårnsprojekter. (8.36): Der bliver arbejdet med affaldssortering og håndtering af affald i forhold til sikre mest mulig genanvendelse og der bliver arbejdet med direkte genbrug med vores lokale renovationsselskab Vand&Affald som har samlet nogle ting sammen og gemt en masse

affaldscontainere fra den gamle affaldsordning. Der er egentlig mange ting, hvor vi har forsøgt at gøre hvad vi kan. Vi kørte i lang tid med et biogasprojekt som egentlig udgik fordi selskaberne ikke kunne se sig selv i det og vi kunne alligevel ikke skaffe de biogasbusser og sådan noget, så der har været en masse ting i spil undervejs, hvor jeg tror vi har været oppe på omkring 130 forskellige bæredygtighedsindsatser på tværs af arbejdsgrupperne. Så er der noget ud som ikke kunne lade sig gøre eller noget som er vurderet ikke at være så relevant, men som er noget som bare er opstået, nogle ideer der er opstået undervejs som vi har været inde og forholde os til i alle arbejdsgrupper.

Peter: Hvilke udfordringer har i set som organisation at der har været i forbindelse med at arbejde med bæredygtighed?

Linda: Jeg synes primært at det der med, hvad der egentlig er af alternativer i den volumen, der ligger i forhold til det her med f. Eks. Vaskbarhed, tilgængelighed af de her busser. Så der er noget volumenmæssigt hvor vi har været udfordret og så er det jo en generel udfordring med balancen ift. Økonomien i det. At der er jo bare nogle af de her løsninger som er rigtig dyre. Og så er der noget logistik i noget af det. Man kan sige at det vil være 100 gange nemmere bare at bruge engangskrus, som bare kan smides ud og ikke have hele den håndteringsopgave med at få det samlet ind og returneret. Lige på det område ligger der jo egentlig en meget velfungerende koncept i markedet som jo egentlig har gjort det muligt, men klart nogle logistik ting og noget drift, sådan noget med forsyningssikkerhed ift. Det her med dieselgeneratorer kontra solceller og sådan noget. Der skal bare være det strøm der skal være når højtalerne de spiller eller maden skal serveres. Så der er noget driftssikkerheds-mæssigt og økonomien i det. Det er jo nogle stinkedyre tallerkener vi har købt, men det blev vi nødt til vi vil ikke kunne sidde og forsvare os i at spise af jomfruelige plasttallerkener. Det synes vi ikke harmonerer med 2022 og noget som vi kunne stå ved. Og så samtidigt fortælle at vi gerne vil arbejde med bæredygtighed, så det forpligter jo også når vi går ud og siger det.

Peter: Har der været nogle specifikke overvejelser i forhold til om de miljømæssige parametre og de sociale parametre når i har arbejdet med bæredygtighed?

Linda: En enkelt udfordring mere som der også relaterer sig lidt til det er hele det der med at gennemskue hvad der egentlig er den bæredygtige løsning og hele det der med at gennemskue, jamen er det egentlig bedre at bruge de her vaskbare krus. Altså når man tænker vand, strøm og transport trækker alle de der ting med? Det er langt tykkere plast end engangspplast og hvad hvis det så havde været rPET i de der engangskrus. Det her har dælmme også være svært og det er en af grundene til at vi også har WorldPerfect med til at guide os rundt i det der. Men så sidder der nogle leverandører som lever af at sælge engangskrus som har fine statistikker fra alle mulige forskere som viser, at de der krus de skal bruges 8 gange før de er bedre og i virkeligheden bliver de kun brugt 3 og så er det faktisk ikke bedre. Så det er dælmme svært at navigere i. Det er svært at finde rundt i hele den der forskningsdel.

Peter: Hvilke overvejelser har der været i forhold til de sociale parametre?

Linda: Det har fyldt meget. Og der har også blevet lavet nogle kompromier fordi der simpelthen bare har været noget praktik og noget som også skulle fungere for

deltagerne f.eks. de her mange madpakker de kommer til at være pakket i old school plast. Og det er simpelthen noget med at det også skal være til at håndtere for deltagerne. Det kan ikke nytte noget at de går rundt med en eller anden papbakke som ikke holder tæt når de for udleveret deres frokost klokken 7 om morgenen og skal spise den klokken 1. Det bliver nødt til at være plast som kan foliere så det lukker tæt. Vi kommer også til at udlevere en frossen plastflaske som fungerer som køleelement til den frokost fordi der går så lang tid inden de skal spise den. Der er også fødevarer sikkerhedsmæssigt aspekt i de ikke får en eller anden forkost udleveret som de ikke kan holde nedkølet. Så det er klart der har været noget hvor man kan sige at det skal også fungere. Så går vi tilgængæld ud og kommunikerer, at vi skal nok sørge for at der er affaldscontainere til plast når i har spist jeres frokost. Så på den måde kan vi immødekomme det lidt ved så at ændre lidt i vores affaldsconcept og sige at vi ved godt at vi genererer rigtig meget og det ser voldsomt ud når der står 6.000 folkeskoleelever på en græsplæne som har måske 6.000 salatbakker 6.000 små plastikbakker med dressing i, så er der 12.000 palstikbakker lige pludselig og det ser enormt voldsomt ud. Men der er bare nogle ting som bare skal fungere. Det bliver bare nødt til at fungere i praksis og vi forsøgte også at undgå det frossen vand ved at sige kan vi udlevere madpakken der hvor folk er, når de skal bruge den så folk heller ikke skal slæbe rundt på den. Problemet er at vi ikke aner hvor folk er på landsstævnet – det er 10 forskellige steder i kommunen og selvom vi selvfølgelig godt kan se at nu er der 4.000 tilmeldte til outdoor aktiviteter i Kristiansminde så er der jo 30 kom og prøv aktiviteter dernede og vi ingen anelse om hvor folk er på forskellige tidspunkter. Så der er blevet gjort nogle kompromier ift. At der også er noget praktik der skal fungere for deltagerne.

Peter: Hvad er det for nogle tanker der er blevet sat igang i forhold til at implementere vaskbare krus fremfor engangskrus?

Linda: Fordi konceptet er ret veludviklet på markedet ift. At der er nogle der kommer og leverer de her krus de bliver opbevaret og kørt væk og så er det egentlig det. Så jeg tror logistikken i det er at der skal drives pantboder og alt det der for at være sikker på at de så kommer ind igen de her krus. Det er meget ekstra arbejde der er og specielt fordi vi jo ikke er en heget festival. Det ligger rundt omkring i byen og folk kan tage de der krus med alle mulige steder hen. De kan tage det med hjem i deres egen have og vi aner det ikke. Så det er en lidt kompliceret logistikopgave egentlig fordi hvor er det at folk tager deres ting med hen, hvor man kan sige at hvis man indenfor et hegn så ender de jo indenfor det hegn, langt de fleste. Nu bor jeg lige ved siden af Tinderbox og jeg kan sige at det ikke er alle kopper der ender indenfor heget. Der er jo noget i det der med at få dem samlet ind igen som klart er lidt en udfordring og vi prøver at immødekomme det ved at lægge pant på og sådan noget så der ligesom er noget motivation i at komme retur med dem, men det er også noget hvor vi har sagt at folk er lidt vant til det fordi det har kørt i nogle år så det er ikke helt nyt for folk. Og ellers tror jeg egentlig at den største udfordring har været det der med at gennemskue, hvor bæredygtigt det egentlig er ift. Andre løsninger primært rPET.

Peter: Hvordan har man indtænkt mulige komplikationer ved indsamling af drikkekrus ind i affaldssystemet?

Linda: Selvfølgelig er der tænkt at der er affaldsstationer alle mulige steder og der er også tænkt kommunikation omkring det. Der er synliggørelse med ikoner

som man kender. Så har vi lagt det ind i kortet så man
kan se affaldsstationer inde i kortet, men om fulde folk
240 med en tom faldøl i hånden går ikke ind i deres app og
begynder at kigge hvor den nærmeste affaldsstation er,
så selvfølgelig vil der være noget kommunikation og spe-
cielt det der med at vi jo ikke kan sætte affaldsspande
og pantboder op i hele byen og vi ved jo ikke hvor folk
245 tager hen fordi det kan jo også være byens borgere som
kommer ned og er med og så går de et eller andet sted

hen eller hjem til nogle venner. Så det er klart en tanke
og noget vi talt om, altså hvordan er det at vi løser netop
det her med at de kan tage det med rundt. Men har ikke
nogen forkromet løsning på vi har selvfølgelig håbet at 250
det her pantaspekt gør et eller andet og om ikke det så
er ham eller hende der har drukket bajeren der samler
det op, så er der måske nogle andre som samler det op.
Det er rigtig svært fordi det jo er så store geografiske
255 områder vi opererer med her.

Interview with Liv Timmermann



Interview with Liv Timmermann from Copenhagen Municipality Wednesday the 1st of June at 02.30 pm online.

Peter: Hvad er din rolle i organisationen?

Liv: Jeg arbejder i teknik og miljøforvaltningen i KK og jeg sidder i sådan en tværgående stilling i vores enhed der hedder "events og arrangementer" hvor jeg har været i vores lille projektsekretariat for tre store mega events som vi har holdt i København. Vi startede sidste år med EM i fodbold, så havde vi World Pride og nu har vi Tour de France. En af mine opgaver – Jeg har lidt sådan en paraply funktion og er inde over mange af tingene – men en af de opgaver som jeg er torvholder på er vores bæredygtighedsinitiativer. Vi har brugt de her tre mega events som vi har haft i København til at sætte os ned og så faktisk få sat nogle initiativer igang på bæredygtighed i events. Og det er ikke noget som utroligt nok eventbranchen ikke rigtig er kommet med på hvad man egentlig gør. Der er vi egentlig bare kæmpe forbrugere når vi er til events. Så det har vi prøvet at lave nogle greb på og har egentlig spredt os ud på mange forskellige ting, men noget af det som vi har kastet os over er affaldssortering blandt publikum og så de her vaskbare krus som vi har nogle erfaringer med. Det er jo blevet et krav i KK at når du holder events i det offentlige rum og har et større event – altså over 2.000 serveringer – at så må du ikke bruge engangsplastkrus. Og derfor har vi efterhånden nogle erfaringer for, hvordan gør man det? Det var et krav som kom sådan set 2019, så skulle 2020 være et testår og så skulle vi være fuldt implementeret i 2021. Og så skete der nogle ting. Så det var først i sommeren 2021, hvor vi egentlig fik det testet sådan full-scale til de her store events blandt andet til EM i fodbold. Og det har vi nogle spændende erfaringer for. Som der nok ikke er helt fremmed for dig når du dykker ned i det her emne, så kommer det med nogle gevaldige udfordringer, hvis man skal til at bruge nogle vaskbare krus som typisk er den løsning som lige nu er den eneste løsning efter mit synspunkt.

Peter: Hvad er nogle af de udfordringer der kan være ved at arbejde med bæredygtighed helt generelt?

Liv: Helt generelt? Helt generelt så er det økonomisk tungt. Det er logistisk tungt. Vi kan ikke bare gøre som vi plejer. Vi kan ikke bare smide noget ud og så er det alt i en spand og så tænker vi ikke mere over det. De der systemer der skal til for at kunne genanvende, for at kunne begrænse, det skal gennemtænkes. Og det er administrativt tungt, det er logistisk tungt og det hænger jo i en organisation sammen økonomisk. Så det er den helt store udfordring. Og også en del af det er, vi har ikke de systemer endnu. Der er både det at vi som event arrangører skal lære at forstå arbejdsgangene i det. Vores gæster skal lære det. Og så faktisk en erfaring som jeg er blevet ved med at løbe ind i det er at der faktisk også

et marked, der også nogle leverandører som endnu ikke som er helt klar på de der løsninger. Der er ikke de der løsninger som vi egnetlig gerne vil have ude på markedet de der "plug and place" de der "sådan gør du" det findes ikke man skal selv ligesom ud og banke det op og forstå at meget af det kræver faktisk en enorm forståelse og faglig viden om hvad sker der med de materialer når du er færdig med at bruge dem, hvis du skal genavende dem. Hvordan er dine materialer produceret, hvor kommer din strøm fra? You dont know. Det kræver en enorm faglig viden som de færreste eventarrangører jo har fordi de er planlæggere. At gøre det rigtigt bæredygtigt det ... not an easy fix. Det må jeg nok sige. Det lige så småt på vej.

Peter: Hvad er det for nogle udfordringer som i har set som planlæggere som der har været ved at implementere de her vaskbare krus?

Liv: Ja. Der er en hel del. Der er en hel logistik omkring dem som bare er langt mere kompliceret end hvad vi er vant til når vi kun har en engangskrus. Det sætter ret store udfordringer ift. Din planlægning, så man skal nærmest igang med det her når man designer pladsen. 1) er at få fundet et system som gæsterne forstår. Få valgt en leverandør som 1) har de produkter du gerne vil have og det kan faktisk også være en udfordring, for der er ikke mange der lejer krus lige nu. Mange leverandører eller sponsorer og drikkevareboder der betyder serveringen af dem ret meget. Det er en del af produktet, det er hvad kommer din øl eller drink i, så der kan man ikke bare lige vælge. Så 1) er produktet. Når du så har valgt dit produkt. Så koster det noget mere at leje kruset lige nu at leje kruset i forhold til hvis det bare var et engangskrus. Det betyder den pris det koster at få det transporteret, lejet og vasket igen. Hvad gør du med den? Det er for mange krus omkring 2 kroner og nogen har så valgt at lægge den pris ind som en pant på kruset. Andre ligger det ind som en afgift på kruset. Det betyder at folk får en opfattelse af at det her er penge som jeg skal have tilbage. Mange bruger det også som den her pant eller afgift som et incitament for at folk gerne vil aflevere kruset igen. Og det er jo det der er hele humlen, at få folk til at forstå at de her krus de skal afleveres igen. Hvis de har fået den forståelse at de kan få pant tilbage, hvder er nogen som har for søgt sig medat lægge 10 kroners pant på sit krus, det kan du så få tilbage. Så er der en udfordring i bankloven (specifikt hvidvask loven) at du skal kunne bogføre det én til én. Så hvis du har en pant på dit krus så skal du kunne trække den pant ind på dit kasseapparat igen. Så den samme salgsbod skal have kruset både ind og ud, det fylder. Og det tager tid for de små boder, det er ikke deres hovedformål, de tjener ikke penge på det. Det

er bare administrativ bøv. Plus dem der står med tre krus, de står og tager plads for dem som gerne vil have eller sælge noget i butikken, så de tager plads fra deres primære kunder. Det er de ikke særligt interesseret i. Så må man også sige at hvis man lægger ret mange penge oveni i de her krus som en pant. Lad os sige, hvad kunne folk have lyst til at stå i en lang kø for at få tilbage? Er det 10 kroner? 20 kroner? Så bliver det lige pludselig også meget attraktivt og der er mange penge derude for pantsamlere. Det betyder at du lige pludselig inviterer et segment ind til dit event som du måske ikke helt har haft lyst til fordi de godt kan have en ret aggressivt adfærd. Og hvor mange krus kan de så indsamle. Kan de komme for flere hundrede kroner? Og så alle de der transaktioner som du bliver nødt til at få ind gennem det samme kasseapparat lige pludselig så begynder problematikkerne bare at torne sig op. Og det har gjort at dem der har forsøgt med et pantsystem de har sagt "nej, det gør vi ikke igen". Dem som har forsøgt sig med en afgift, hvor man betaler for kruset en gang, men man kan ikke få det tilbage. Dem der har prøvet det, de siger "nej, det gør vi ikke igen". Fordi at de har oplevet at gæsterne bliver enormt vrede over at de ikke kan få deres 3 kroner igen. Og simpelthen når man ser at man har købt kruset, så vil man have de der penge igen. Så det har også givet rigtig mange dårlige gæsteoplevelser. Så det vi hører lige nu er at langt de fleste de ligger simpelthen den her afgift nærmest ind i drikkevareprisen hemmeligt. Enten så hæver de bare drikkevarepriserne eller de tjener mindre på drikkevarerne. Det kommer lidt an på om man har politikker omkring hvad drikkevarer skal koste. Men når man så har den skjulte afgift så er det at incitamentet for at få afleveret krusene igen – det bliver svært at få kommunikeret igennem. Så er det at vi som eventarrangører at hele opgaven ligger ude ved arrangøren at få stillet flest mulige indsamlere op, at få placeret dem alle de vigtige steder at have vagterne ved portene og få dem til at sige "at det der krus skal ikke med hjem det skal ned til den der indsamler". Fordi der har været nogle events, hvor eventarrangørerne ikke har været opmærksomme på at få de der krus samlet ind. Og meget af det er frivilligt drevet og folk og fest og det betyder at der har været nogle evetns hvor det bare ikke har været den grønne løsning. De skal cirka vaskes tre gange for at man sparer CO2'en på transport og sådan. Og der har været nogle events hvor der har været et svind på mere end 33%. Så det betyder også at hele branchen også er igang i med at skulle finde ud af om det kan betale sig. Og gæster skal også til at finde ud af at det der krus ser lækkert ud, skal de ikke tage det med hjem og du skal ikke kaste med det. Det skal afleveres igen. Der er også en adfærd i at hvis man er til festival og man har drukket sin øl, så smidder man den og så står man og tramper oveni det og det er bare heller ikke en løsning. Så det ligger både hos eventarrangørerne og det ligger også adfæren hos gæsterne. Der er lidt forskellige røre igang hos os. Vi har her i foråret lavet en undersøgelse fra alle de eventarrangører vi har haft sidste sommer og simpelthen samlet deres erfaringer. Hvordan gør det? Hvad er jeres svind? Hvad gjorde i? Hvad gør i ikke igen? Og den rapport vil jeg gerne sende dig.

Peter: meget gerne

Liv: og så har vi lavet et webinar, som jeg også kan sende dig. Den ligger på YouTube, hvor vi tog udgangspunkt i hvad er det for nogle resultater den her undersøgelse har vist. Og så samlede vi både leverandører af krus, vi samlede eventarrangører, Danmarks Naturfredningsforening og siger hvorfor er det her en god ide. Og så lavede vi ligesom sådan en fælles vidensdeling i, hvordan gør man. Og jeg tror at vi var 70 mennesker

samlet fra hele branchen. Det viste virkelig hvor mange der sidder derude lige nu. Der er kæmpe meget brug for vidensdeling i hvad virker, hvad gør man, hvad gør man ikke. Så er vi jo igang med Tour de France og der laver vi en undersøgelse også. Vi laver en lille adfærdsundersøgelse og vi laver en ny LCA. Så vi er igang med at skulle lave en ny LCA på krusene fordi den vi har lavet var på et lukket arrangement og der er bare rigtig mange af de arrangementer vi har i København som er åbne, så derfor er det nødvendigt også at have en case på et åbent arrangement. Så det laver vi til Tour de France som både er en adfærdsundersøgelse og en LCA og så får vi at se hvordan det går.

Peter: Hvordan har i tænkt jer at få koblet de to ting sammen, adfærd og LCA. Hvilke overvejelser har i gjort der?

Liv: det er jo derfor vi også laver en adfærdsundersøgelse. Vi bliver nødt til at sammenligne dem. Og vi bliver nødt til også at forstå jamen hvordan stod de så ude på pladsen. Kunne folk forstå det? Gider folk at aflevere dem? Det er jo også en del af hele fortællingen i hvordan det her lykkes. Der er noget teknik i hvorfor, hvornår det sådan CO2 mæssigt betaler sig at gøre det ene eller det andet. Men der i høj grad også noget brugeradfærd og noget design i hvor står indsamleren henne og hvor meget kommunikerer vi omkring det. Hele det der med at få folk til at forstå at krus som de låner – de har ikke købt det – men låner det. Så de skal aflevere det igen. Den forståelse, det er opgaven.

Peter: Det er jo selvfølgelig også noget som man bliver klogere på jo mere man implementere det og jo mere man bliver eksponeret til det, Så vil der nok også komme mindre svind.

Liv: Det tror jeg i høj grad. Jeg tror det der adfærd som vi har lært os at ølkrus kan man kaste op i luften og det smidder man bare og ellers står man bare og tramper oveni det. Det skal vi simpelthen lære, at det gør man ikke. Vi har haft nogle dialoger med nogle af de store spillesteder og stadions og sådan. Fordi de er jo en kæmpe spiller i det her. Mange tusindvis af engangskrus de ikke sælger hver søndag på stadion. Og der er deres svar simpelthen at det tør de ikke. Fordi det er en sikkerhedsrisiko fordi folk kaster med dem. Men kigger man bare til udlandet. Sådan et sted som England som har eller har haft en voldsom fodboldkultur så er der ingen traditioner om at kaste med øl. Det er der simpelthen ikke. Det gør folk ikke. Så det betyder at det er et eller andet vi har tillært os at gøre i Danmark. Og det skal vi have fravendt igen. Lang pause ... (21.30-22.00) Liv: der er faktisk også nogle af dem som taler om at de altså også til festivalerne udgør en sikkerhedsrisiko, fordi når de der krus splintres så bliver de faktisk rigtig skarpe og de splintres og er svære at samle op. De ligger i græsset og det kan nærmest blive som små nåle der ligger alle vegne. Det har man ikke særligt meget lyst til på en festival, at have nåle liggene efter koncerter eller første dag. Så der er nogle tekniske ting i de der vaskbare krus som vi skal på en eller anden måde udenom.

Peter: Der er noget ændring i noget adfærd indenfor kulturen og så er der også nogle af de her tekniske problemer der kan være med de her krus.

Liv: Så er der jo også meget interessant den del med at der ikke er særlig mange firmaer du kan gå til i øjeblikket. Der er i virkeligheden kun for mig bekendt kun to der vasker krus i de store mængder der er behov for til store events. Der både en Sjælland og en i Jylland. Og det betyder også bare at har du et event som ligger i Nord-

245 jylland f. Eks. Så skal du ret langt. Så inviterer du lige
pludselig endnu flere lastbiler til at køre adskellige kilo-
meter som skal køre to gange. De skal først hente, vaske,
aflevere igen. Og så det derfor vi også kigger på LCAén
og tænker på hvor meget kørsel det lige er vi får oveni
her. Og så er der den del i det at bryggerierne, faktisk
de store bryggerier de er gået sammen og allesammen
peget på en leverandør og det er en som ligger i Jylland,
det betyder at alle de events som de er ude til, hvor de
leverer deres krus, der inviterer de lastbiler som ligger og 250
kører på tværs af hele landet fordi den leverandør ligger
i Horsens? Det er dansk mobilopvask. Tilbage til det
jeg berørte med at markedet bare heller ikke er modent
endnu. Der er ikke mange steder at gå hen og nogle af de
løsninger som du finder er i virkeligheden ikke så grønne 255
fordi, der er ikke andre at gå til.

An example of a participant interview at DGI L2022



Interviewer: *Explains the course of the interview and asks for permission to use the interview as material for the thesis.*

Interviewer: What do you think when you hear the term "reusable cups"?

Respondent 13: Thinks that it is a good initiative and that it is also necessary. Also thinks that it follows the trend with reuse. People buy thermos bottles that they can continue to reuse.

Interviewer: What do you think works well with the reusable cups?

Respondent 13: Thinks that there are a lot of collection bins where you can return your cups.

Interviewer: How many times have you used the reusable cups?

Respondent 13: Have not yet used the cups.

Interviewer: What do you think about the sorting of the reusable cups?

Respondent 13: Believes that there are many trash cans around the event but it can be difficult to register where the right ones are. Sometimes there are places that just don't have the option that you need.

Interviewer: What do you think about paying an extra fee for the reusable cups?

Respondent 13: Thinks that the fee of 5 DKK can be communicated better to the consumers. E.g. it can be explained why there is a fee.

Extra notes: Thinks that it must be a difficult challenge to administer such a huge event and at the same time to monitor where all of the reusable cups go. Thinks that it would work better in a fenced off event.