# Barriers to festival greening at Doornroosje

# Nijmegen, the Netherlands

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# Summary

**Background.** With the growth of the music festival sector also comes a growing awareness that organisers should consider environmental sustainability, since the detrimental environmental effects of festivals are omnipresent. However, many festivals are far from being 'green'. This research investigates why this greening is so complicated for a festival organisation.

**Purpose.** The aim of this research is to find out which barriers hinder Doornroosje's organisers in greening their festivals, so they can make an informed decision when they want to make changes. Since it was known beforehand that the visitors are considered a barrier, due to their behaviour and their level of acceptance of greening measures, a second aim was to study whether they actually are as large a barrier as perceived by the organisers.

**Methods.** This project is set up as an embedded single case study, with both qualitative and quantitative research methods. For identifying the barriers that hinder Doornroosje's organisers, I conducted four expert interviews. For deepening the understanding of the visitors' attitudes towards greening, I conducted a survey at four different Doornroosje festivals in the summer of 2019.

**Results.** The most important barriers that I found in the interviews are: lack of money, lack of knowledge, visitors' comfort, visitors' practices, available technology, lack of time, creation, fear of greenwashing, organisers' practices, location and waiting for frontrunners. Of these barriers, some were previously unknown in the literature. The factors that I found in the survey that influence visitors' attitudes are gender, willingness to pay, level of environmental concern and type of festival. These factors of course are by no means the only factors determining visitors' attitudes.

**Recommendations.** Since money is the most often mentioned barrier and also the underlying issue of both the barriers 'time' and 'knowledge', I recommend Doornroosje and other parties with these same issues to focus on finding more sources of money. Also, it would be wise for Doornroosje's organisers to come together more often to discuss issues

they have and work together on finding solutions. Finally, I recommend considering the visitors as a barrier for now, at least until more research has been done to more accurately map their true attitudes. In practice, this means that festivals should put methods in place to tempt and motivate visitors to change their behaviour, instead of assume they will understand and comply with the greening measures that involve them.

# Colophon

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# Chapter 1: Introduction

*"If you want to be sustainable you should not hold an event. If you say 'I want to hold an event and do that in the most sustainable way', then it is a different story."*

<div align="right">(SH, personal communication, April 1, 2019)</div>

## 1.1 Context

Event management is a relatively new and rapidly growing sector (Draper et al., 2018; Getz, 2010). The sector gained industry and academic interest in the seventies and saw a growth spurt in the nineties (Getz & Page, 2016). Of course, the rising use of (social) media since the start of the 21st century has accelerated the growth even more (Brennan et al., 2019; Getz & Page, 2016), up to the point that events and festivals have become an intrinsic part of people's lifestyles.

With the rising interest in and knowledge about event management, also comes the inevitable discussion about sustainability. Awareness of the effects of human activities also extends to events, since they often attract many visitors and could therefore have a large impact on their surroundings (Getz & Page, 2016; Glassett, 2014; Mair & Liang, 2012). But sustainability is a very broad term, encompassing the three concepts: social, economic and environmental sustainability (Kuhlman & Farrington, 2010; Liang & Frost, 2010). Although festivals impact social and economic sustainability for many parties in many ways, this thesis will only focus on environmental sustainability. The literature on the other forms is very broad and interesting, but that surpasses the time and scope of this research project.

Within event management, research on matters of environmental sustainability has been rare for a long time. In the review on existing literature written by Getz (2010) he points out that until then "*little has been done to examine festival growth or sustainability strategies, nor to identify constraints*" (p. 21).

Now that the tides have turned and more data and information are gathered in this field, some real progress can be made and the knowledge base is building both within academic circles and in the industry (Moore, 2014; Jones, 2018). While implementing environmentally sustainable measures within the industry is necessary to keep up with developments in society, expressed in a growing number of regulations (Mair & Jago, 2010), there are more reasons for event managers to change their practices, such as environmental consciousness and the possibility to become a frontrunner (Hitchings et al., 2017; Mair & Jago, 2010; Mair & Laing, 2012).

## 1.2 Problem Statement

In Nijmegen, the main music venue is Doornroosje. Aside from organising shows ranging in genre from rap to pop to rock, Doornroosje also (co-)organises six music festivals in Nijmegen. These festivals also differ hugely in musical styles, with dance music on the one hand (Het Nest Festival) and metal on the other hand (FortaRock). Doornroosje also (co-)organises some festivals during holidays and events, such as Oranjepop on Kingsday and Valkhof Festival in the Four Day Marches week (W. Maes, personal communication, December 4, 2018).

All of the six music festivals are managed in cooperation with other parties. Think for example of other parties owning shares, as well as producers, stage builders and catering. Since all these different partners have their own ideas of what the most important values are, the festivals differ in their set up. For example, Het Nest is organised in collaboration with Subcultuur, a group of dance music enthusiasts who organise many dance parties in Nijmegen throughout the year. Subcultuur values environmental sustainability practices, as does Doornroosje, and they believe their audience does as well. Therefore, they were able to make some changes to the festival to reduce the environmental footprint, among which is a fully vegetarian food line-up. On the other side is FortaRock, which is organised in collaboration with a company of the same name. The organising parties of FortaRock believe that their audience is more

inclined to demand meat, leaving them wary of changing the food line-up (W. Maes, personal communication, November 28, 2018). Other factors such as company policy and money also play a role in deciding which steps can be taken to have a lesser impact on the environment (W. Maes, personal communication, December 4, 2018).

From this background information it becomes clear that quite a few barriers can hinder festivals in shifting their practices to more environmentally friendly alternatives. But of course, the question is not if festivals need to make more environmentally sustainable choices, but when they will do it. Thus, in time it will be necessary to find solutions to cope with the existing barriers. Therefore, the first part of this research will map perceived barriers that influence the greening decisions made at the different Doornroosje festivals. The second part will discuss whether the visitors are rightfully considered a barrier, just like in the example about vegetarian food in this section.

## 1.3 Research Aim and Research Questions

The aim of this research is to provide Doornroosje with more information about the specific barriers that stand in the way of their festivals becoming more environmentally sustainable, so that the different organising parties can become aware of the issues and collaborate to tackle these issues. To fulfil this aim, the existing barriers to festival greening first have to be identified by interviewing people involved with organising Doornroosje's festivals. Since solving most barriers seems pretty straightforward, only the very complex barrier that is the visitor will be examined in more depth, through a visitor survey, to show whether they are rightly viewed as a barrier. Together this information can be used by Doornroosje and their partners to overcome some issues regarding environmental sustainability.

The main question flowing from this aim is "Which barriers do festival organisers at Doornroosje encounter when trying to green

their events?" The one important subquestion is "Are the visitors rightly considered a barrier?"

## 1.4 Relevance

Most of the research articles on environmental sustainability of festivals and on festival's visitors focus on the positive influences, respectively drivers of environmental sustainability and visitors' motivations for attending festivals. Only a few articles explore the negative side, such as existing barriers.

Both the article by Liang and Frost (2010) and the article by Li and Liu (2019) point out that further mapping of organisational barriers is a future research goal. Liang and Frost (2010) write that it is especially important to be able to compare the facets of environmental sustainability of festivals across different countries. Since their research, and that of their colleague Mair as well, focuses only on Australia, adding information about the situation in the Netherlands seems very useful.

Additionally, most festivals researched by Mair and Laing and their colleagues have won prizes in the past for being such environmentally sustainable events. Therefore, it seems logical that the organisers of the festivals they studied encounter less or different barriers compared to the organisers at Doornroosje, which is another reason why this research is justified.

# Chapter 2: Literature Review

This chapter provides an overview of the academic knowledge that exists up to this point. It is structured to present a holistic view of the available knowledge, starting broadly in part 1 with a description of sustainable festivals. This description will provide more understanding towards the steps that festivals can take to become more environmentally sustainable. Next, part 2 will describe barriers identified in other research articles and explain their effects. Finally, part 3 will discuss the very important barrier that is the visitors' attitude.

Parts 2 and 3 conclude with hypotheses about the topic at hand. The chapter concludes with part 4, which offers a conceptual model of the hypotheses that have arisen throughout the chapter, and thus provides a clear schematic overview of the research goals.

## 2.1 Sustainable Festivals

### 2.1.1 Events and Festivals

"*Festivals and other cultural celebrations*" is one of the four parts of the event tourism discourse in research (Getz, 2014). The second is the business events sector, including MICE (Meetings, Incentives, Convention, and Exhibition) as event types (Getz, 2014; Tinnish & Mangal, 2012). The third is the sports events sector and the fourth sector in the event tourism discourse is entertainment, which includes "*concerts, shows, and other spectacles*" (Getz, 2014, p. 2).

Sometimes festivals are also categorised as part of the so-called 'special events', which are defined as "*major one-time or recurring events of limited duration*" (Ritchie, 1984, p. 2). Getz uses the term to include events ranging in size from "*mega-events such as the Olympics*" to small scale events taking place in a community park (Getz, 1989). Special events can be a part of all four discourses within tourism (research).

Festivals are thrown for a number of reasons. Humankind has long used them to celebrate "*publicly communal values, identity, history,*

*status and cultural continuity, as well as their physical survival*"
(Zifkos, 2015, p. 6). Hence, they have become an important part of
cultures all over the world. In this day and age, with wide media
coverage and direct communication between people across the globe,
festivals are soaring (Dobson, 2010; Jones, 2018).

## 2.1.2 Sustainability

The most used definition of sustainability is the one developed by the
World Commission on Economic Development (WCED) in its 1987 report,
"Our Common Future". The WCED defined sustainable development as
"*development that meets the needs of the present without compromising
the ability of future generations to meet their own needs*" (WCED,
1987).

Sustainable development requires three elements: the economic,
environmental and equity principles (Tinnish & Mangal, 2012). These
three themes are also referred to as the three pillars of
sustainability, within the business context called the Triple Bottom
Line (van Berkel, 2014; Dickson & Arcodia, 2010; Laing & Frost, 2010).
All three pillars are equally important in achieving a truly
sustainable festival, i.e. a festival that can economically sustain
growth now and into the future, without damaging the environment or
the social ties beyond repair. For example, when an organiser spends
all his time and effort on making money, and thus neglects the
environmental and equity aspects, he will lose visitors to festivals
that are able to follow developments in society better. Or when he
focuses too much on environmental sustainability, for example by
forcing a vegetarian diet on visitors who feel uncomfortable because
of this, he will lose visitors to festivals of the same genre that
still serve meat.

Research into the economic and equity principles at festivals
dates back to the 1970's (Dickson & Arcodia, 2010; Getz & Page, 2016).
But with the three pillars being equally important, the discourse on
sustainable festivals would be incomplete without information on
environmental sustainability. This also occurred to Getz, who wrote a

review of existing knowledge in 2010. In his opinion "*the paucity of articles on festival or event environmental impacts can only be described as appalling*" (p. 12). He then continues to provide recommendations for further research, which are:

> *changes to ecological systems and the physical environment as a result of festivals and events; the energy consumption and carbon footprint attributable to event-related travel; water production and avoidance; pollution of air, water and land; effects on wildlife and habitat; reducing, recycling and re-using materials, buildings and sites*. (Getz, 2010, p. 12)

## 2.1.3 Greening

Sustainability has become a buzzword over the last decade. The term is used often, in different contexts and carrying different meanings. Even though the aforementioned WCED definition is excessively quoted and can be found in the introductory chapters of almost every article writing about sustainability, it is often used inconsistently. The main issue is that the term sustainability is often used when authors mean 'ecological sustainability'. They ignore the social and economic dimensions and thus disregard the holistic nature of the term (Zifkos, 2015).

Since sustainability is about all three aforementioned pillars, and not just about ecological aspects, I will refrain from using this term in this thesis. Instead, I will use the terms 'greening' or 'green' whenever I'm discussing the efforts of a festival to become more ecologically sustainable.

## 2.1.4 What constitutes a green festival?

In the Dutch festival sector, the company Green Events is a trusted source of help and information for festival organisers interested in greening. On its website, Green Events lists the best options for increasing event sustainability (Green Events Nederland, n.d.). They name twelve options in total, of which six are about social and

economic sustainability. Since this is not the scope of this thesis, they will not be discussed here.

The first of the remaining six options is taking a different approach to waste. Brennan et al. (2019) write that the issues with festival waste "*range from sewage treatment, to food and packaging waste, and the disposal of low-price camping equipment*" (p. 260). At the greenest type of music festival, i.e. a circular one, all waste should be a resource for something else. Instead of the linear "Take, Make & Dispose" Green Events promotes the use of the circular "Reduce, Reuse & Recycle". Although not the biggest contributor to a festival's footprint, according to Glassett (2014), waste is an important topic because it has "*the most direct impact on the surrounding environment*" (p. 4).

The second option is promoting a shift in food and drinks for sale, from the regular fast festival foods to more plant-based, locally produced, fair trade and seasonal products. Andersson et al. (2013) researched the effects of a festival switching to a vegetarian diet and reported a 40% decrease of the festival's environmental footprint. Furthermore, eating less meat does not only increase the health of our ecosystems, but also increases human health, since meat consumption has been proven to cause chronic illnesses, such as "*heart diseases, diabetes and certain forms of cancers*" (Veul, 2018, p. 1).

Another issue with festival foods is the notion that wasted food is very unsustainable, not only environmentally, but also economically and socially, and thus it should be avoided as best as possible (Andersson et al., 2013; Green Events Nederland, n.d.). An important message, one that event organisers find difficult to accept, is that a food or drink item should be allowed to sell out. Organisers are worried this is bad for the festival's image (W. Maes, personal communication, 20 February 2019).

The third topic is energy. Music festivals use a lot of energy, especially the stages with their lighting and large speakers and the food area with their equipment for cooling and cooking. Green Events follows the Trias Energetica in describing how energy use can be optimised. The first step is decreasing energy needs, by replacing old

equipment by new energy-saving models or by cutting down on the number of appliances. For the remaining energy needs, the second step follows. It dictates that fossil fuels should be replaced by renewable energy, for example by using batteries or using biodiesel in an aggregate instead of regular diesel. If this is not possible, the final step comes into play, which is to use fossil fuels as efficiently as possible. A popular method of compensating for the CO2 emitted from the energy that is used during a festival is to partner up with a carbon offsetting company, which will plant trees to offset the CO2 that is released into the air (van Berkel, 2014; Laing & Frost, 2010).

The fourth option for festival greening is mobility. Music festivals generate many transport movements, since materials, visitors and artists all have to travel to and from the site (van Berkel, 2014). The main advice given by Green Events on this topic, both on moving people and freight, is to replace traditional car and truck transport by types that emit less greenhouse gases, such as bikes, public transport and electric vehicles. Glastonbury festival has put this into practice by adopting an incentive system to encourage visitors to come by bike, granting them early access to the festival site and discounts on meals (Brennan et al., 2019). This seems very helpful, since audience travel is proven to make up around 80% of total emissions for festivals (Brennan et al., 2019; Gause, 2017). However, since most music festivals are located in rural areas, which are chosen because of the amount of land available for creating a festival site and campsite, transport is a difficult issue to resolve (Glassett, 2014).

The fifth topic on the Green Events website is water, which is used both to drink and for hygienic purposes such as showers and flushing toilets. Cutting back on water use in toilets and showers is relatively easy. New types of portable toilets use a vacuum-system to flush, instead of water. Showering can be charged and a timer can be installed, so that visitors pay per few minutes of warm water, thus discouraging long showers (Hitchings et al., 2017). Green Events mentions offering tap water on the festival grounds as a solution for

the drinking water issue. This does not decrease the amount of water drank, it probably even increases the amount when water is available for free, but it does solve the issue of needing plastic water bottles and the corresponding transport of these bottles to and from site (Brennan et al., 2019).

The sixth and final greening option is taking care of nature. Green Events notes that music festivals that take place in areas with vulnerable wildlife should focus on this. With a proper plan, the land area used can be cleaned and then improved, so that the local nature quality is higher than it was before the music festival took place.

## 2.2 Known barriers

When such a comprehensive knowledge base exists on what contributes to a greener festival, one might wonder why not all festivals are now as green as can be. This is of course due to factors that hinder organisers when they try to take greening measures. The first of these barriers already become apparent from the Triple Bottom Line concept. A festival cannot be sustainable in the long run without financial stability, or without the approval of visitors and (in the case of an outdoor festival) the neighbourhood. However, many more barriers can be found in the literature. An overview of these barriers is presented in table 1, along with the sources that found them to be of importance. The following sections will then describe them in more detail.

**Table 1**

*An overview of the barriers to festival greening, as identified from the literature.*

| Barrier | Mentioned in |
|---|---|
| Lack of resources (money and time) | Andersson & Getz, 2008; van Berkel, 2014; Brennan et al., 2019; Dobson, 2010; Dodds & Graci, 2012; Glassett, 2014; Li & |

| | Liu, 2019; Mair & Jago, 2010; Mair & Liang, 2012; Marsh, 2019. |
|---|---|
| Lack of knowledge and skills, and greenwashing | van Berkel, 2014; Brennan et al., 2019; Dickson & Arcodia, 2010; Dodds & Graci, 2012; Laing & Frost, 2010; Li & Liu, 2019; Mair & Jago, 2010; Watson, 2016. |
| Lack of stakeholder agreement/support | van Berkel, 2014; Brennan et al., 2019; Glassett, 2014; Laing & Frost, 2010; Mair & Jago, 2010; Mair & Liang, 2012. |
| Location | van Berkel, 2014; Brennan et al., 2019; Dodds & Graci, 2012; Glassett, 2014; Laing & Frost, 2010; Mair & Liang, 2012. |
| Visitors | Abreu-Novais & Arcodia, 2013; van Berkel, 2014; Brennan et al., 2019; Fisher, 2008; Glassett, 2014; Hitchings et al., 2017; Li & Liu, 2019; Mair & Laing, 2012; Moore, 2014; Opray, 2017. |
| Availability of green suppliers and supplies | van Berkel, 2014; Brennan et al., 2019; Dobson, 2010; Dodds & Graci, 2012; Glassett, 2014; Li & Liu, 2019; Laing & Frost, 2010; Mair & Laing, 2012; Moore, 2014. |
| Temporality | van Berkel, 2014. |
| Lack of organisational motivation | Dodds & Graci, 2012. |

## 2.2.1 Lack of resources (money and time)

Lack of money is one of the most often mentioned barriers in the literature. This is strongly related to lack of time, since money can buy more time, either from existing or new employees. This combined barrier is referred to as 'lack of resources'. However, in this section both money and time will be discussed separately as well.

**Money.** Lack of money is often mentioned without much further explanation (inter alia Mair & Jago, 2010; Mair & Liang, 2012; Glassett, 2014; Li & Liu, 2019) probably since it is considered a

quite straightforward barrier. Brennan et al. (2019) elaborate on money as a barrier to explain that higher costs for green equipment is an issue. Without the financial resources to experiment with greening alternatives, the festival is stuck using the same methods every edition.

According to Andersson & Getz (2008), a few different factors influence the availability of money and are thus indirect barriers. The first factor they name is bad weather (p. 214). This negatively influences the number of tickets sold and thus the revenue from both tickets and on-site purchases (since less people buy concessions). The second factor is "*The high cost of entertainment or performers*" (p. 214). This is two-sided, because on the one hand high-quality performers attract more visitors and, in that way, raise the festival's income, but on the other hand the higher quality performers are more expensive so they also lower the income, especially if the festival sells out every year regardless of the line-up. The third and final factor in the Andersson & Getz article (2008) is "*Over-reliance on one source of money*" (p. 214). This negatively influences the festival's financial stability because that one source of money can potentially dry up, for example when a sponsor wants to end its sponsorship, leaving the festival in a difficult position.

Raising entrance fees seems like a straightforward solution to finance the more expensive greening measures, however a few authors mention that this has to be handled very carefully, since festival attendees are often not aware of the so-called 'unpaid bill', referring to the disconnection between the actual 'cost' of production of items and the prices consumers are used to paying for them (Dobson, 2010).

**Time.** All authors who mention time as a barrier, describe its direct link to staffing costs (inter alia Dobson, 2010; Dodds & Graci, 2012; van Berkel, 2014; Brennan et al., 2019). For example, the 2018 edition of Glastonbury was skipped to "*give the farm, the village and the festival team a year off to prevent serious damage to the site*" (Smith, 2017). During this time, the organisers spoke to suppliers and other market parties to look for possibilities to make the 2019

edition greener, especially regarding waste (Marsh, 2019). It was because of this year off, and thus the extra amount of available time, that they were able to do this.

However, according to some authors greening does not necessarily lead to higher costs (inter alia Dobson, 2010; Dodds & Graci, 2012; Li & Liu, 2019). Li and Liu (2019) write that "*if done correctly, investment in green facilities and practices can not only enhance employee and customer satisfaction, but save money and enhance customer demand, which would result in financial gains in the long run*" (p. 11). Dodds and Graci (2012) write that "*recycling event supplies, collecting and reusing items, and reducing the amount of printed material*" can be beneficial steps both for the environment and for a festival's budget (p. 31).

## 2.2.2 Lack of knowledge and skills, and greenwashing

**Lack of knowledge and skills.** This is often mentioned in the literature as a barrier (inter alia van Berkel, 2014; Brennan et al., 2019; Dodds & Graci, 2012; Laing & Frost, 2010; Li & Liu, 2019; Mair & Jago, 2010).

Examples of how a lack of knowledge and skills can hinder greening are plentiful. Dodds and Graci (2012) for instance, write that the staff of Pride Toronto made the mistake of assuming that greening required no further management than hiring experts and providing funds. Although plenty of resources were available, the greening program in this example failed because the staff themselves had no knowledge and skills needed to facilitate the process.

Another example comes from Brennan et al (2019), who write that the festival organisers that filled out their survey experienced a lack of knowledge and skills to be a barrier when switching to green energy plans for their festivals. They lacked technical expertise needed to make generators run more efficiently and knowledge about alternatives needed to make an informed decision on equipment to replace generators, which was "*despite their interest in exploring such options*" (Brennan et al., 2019, p. 259). In this sense, a lack of

knowledge and skills is related to a lack of time, since organisers who would want to explore alternatives do not have the time to do so.

A third example comes from Laing and Frost (2010), who mention some examples of festivals where the organisers implemented a greening strategy without considering all facets of the strategy. They write about a sporting venue that introduced recycling bins but failed to also provide bins for residual waste, leading to visitors throwing everything in the recycling bins. They also mention a family event with specific attention for recycling and behavioural change towards greening, at which food vendors put all their waste into the same bin.

Some methods to overcome this issue are mentioned in the literature, such as providing workshops and information guides for organisers (Dickson & Arcodia, 2010; van Berkel, 2014; Li & Liu, 2019). However, Dickson and Arcodia (2010) rightly point out that this can lead to another issue, namely that organisers misjudge the level of responsibility and the amount of money that greening requires when they see everything they could or should be doing. Also, some greening solutions that work great at some festivals, might be very impractical at others. This could lead to organisers getting demotivated to start at all (Dickson & Arcodia, 2010).

**Greenwashing.** A lack of knowledge and skills on the side of the consumers (in this case: organisers) is very related to greenwashing on the side of the producers. For example, Watson (2016) writes about Nestlé's greenwashing practices. He found that Nestlé claims its bottled water comes from sustainable sources and these sources are protected by dedicated stewards, however Nestlé takes most of its US water from springs in California and Arizona, states which have been suffering from droughts for many years (Watson, 2016).

Another example is mentioned by Glassett (2014), when discussing green methods at festival's food stands. He writes that festivals could put rules into place that food trucks have to follow, such as only serving food on eco-friendly plates, but that with it comes the risk of vendors falling for greenwashing practices, when they believe a company's claim that their plates are recyclable or biodegradable when in fact they are not (Glassett, 2014).

As is clear from these examples, organisers that lack certain knowledge and skills could make the wrong decisions, while aiming to do good, because of the companies that greenwash their products.

### 2.2.3 Lack of stakeholder agreement/support

Festivals rely on a large number of different stakeholders. Reid and Arcodia (2002) developed a conceptual model which divides the most important stakeholders in two groups: the primary stakeholders, without whom the festival would not exist, such as "*employees, volunteers, sponsors, suppliers, spectators, attendees and participants*" (p. 494), and the secondary stakeholders, such as "*government, host community, emergency services, general business and media*" (p. 494). Another important stakeholder is the venue or land managers (Laing & Frost, 2010). Since not all of these stakeholders are relevant to festival greening, and since some have them will be discussed in more detail in other sections, only some of them are discussed separately in this section.

**Sponsors.** While some sponsors encourage greening, or even come aboard because of a festival's greening efforts, others might react oppositely. When a sponsor favours profit over its image or the environment, it can hinder the greening process (Glassett, 2014). Mair and Laing (2012) also identified a lack of financial support from stakeholders as an important barrier, writing that it was often hard for organisers to find sponsors willing to invest.

**Participants (artists).** This is a very unique stakeholder group. As Brennan et al. (2019) point out, they see a festival very differently than the organisers and visitors do. For artists, a festival is just one stop on the busy touring schedule. In their research, Brennan et al. spoke to different artists about their travelling behaviour. They write that two opposing reactions were common: on the one hand the artists that travelled a lot felt guilty about the environmental damage their behaviour caused, on the other hand the artists that did not travel much felt like a failure, because

travelling more means they reach a larger audience and generate more income.

An example of artists being aware and ashamed of the environmental damage of their traveling is the decision of Radiohead in 2008 to not play any more festival shows. The band requested an analysis of their carbon footprint, from which two main contributors became clear: "*their transport of audio equipment and fans driving to performances*" (Laing & Frost, 2010, p. 263). In response, the band decided to no longer play large concerts and festivals, but instead only play in "*city venues serviced by public transport*" (Laing & Frost, 2010, p. 263).

**Media.** With many societal issues, the media determine the way in which new information is reported, which in turn determines the way the public sees the issue. Journalists and reporters choose what news to display in what manner, and in this way shape public debate and opinion (Mair & Jago, 2010). This is very clear in the debate about climate change and the necessity for greening, with right parties denying the need to act. When other stakeholders are influenced by the media to underestimate the effects of global warming, they will not be motivated to act to counter it (Mair & Jago, 2010).

A festival is most successful when all involved stakeholders agree on a common goal and their needs in achieving this goal are met (Reid & Arcodia, 2002). Therefore, active communication and a willingness to negotiate between the stakeholders are necessary (van Berkel, 2014).

## 2.2.4 Location

According to Laing and Frost (2010), the choice for a music festival's location can provide a possibility to assess three factors that can either hinder or help greening, which are "*access to transport, waste management and availability of green power*" (p. 263). Of these three factors, transport is mentioned most often as a large contributor to a festival's carbon footprint in the scientific literature (inter alia

van Berkel, 2014; Brennan et al., 2019; Dodds & Graci, 2012; Glassett, 2014; Mair & Laing, 2012).

   **Transport.** The main issue with transport is that many visitors choose to come to the festival by car when the site is located in a remote rural area. This leads to "*negative impacts, like congestion, noise and pollution*" (van Berkel, 2014, p. 15). Estimates of the part that transportation plays in a festival's carbon footprint range from 40-60% (Dodds & Graci, 2012) to even 80% (Brennan et al., 2019; Gause, 2017). In response, organisers try to convince their visitors to come to the festival using other options, such as public transport. However, not all rural areas are easily accessible by existing options such as trains and buses (Brennan et al., 2019) and when good links do exist, there is a risk of reaching maximum capacity (Brennan et al., 2019; Glassett, 2014). An alternative is for the festival organisation to contract private buses to bring visitors to the festival site, but organisers often find this too expensive (Brennan et al., 2019).

   Another option to reduce the impact of transport to and from the festival site is to change the festival's site to a more urban location, this does however also have its downsides. As mentioned by Glassett (2014), there are three financial consequences that might keep organisers from moving the festival from a rural to an urban area. First, leasing an area large enough to hold the festival is more expensive (and more difficult) in urban areas compared to rural areas. Second, parking fees provide a substantial amount of income for a festival organisation and losing this source of revenue is not feasible. Third, moving the festival to an urban area will render a festival campsite almost impossible. Although the proximity of hotels and other types of lodging would provide visitors with enough options, it might be problematic for the festival to miss out on this source of money as well.

   **Green power.** Although enough green energy solutions that can be applied in a festival setting have been developed, most festivals still run on diesel aggregates (Brennan et al., 2019). This is due to two issues that come into play when greening the power supply. First is the fact that many festivals are held in public parks or privately

owned pastures, in large open areas that are not suited to permanent changes, such as solar panels (Mair & Laing, 2012). Second is the so-called 'split incentive', which means that when a festival invests in (permanent) green power at a certain location, the owner of the venue or land profits from the lower costs throughout the rest of the year, without having paid for it (Mair & Laing, 2012).

**Waste management.** At this point in time, festivals generate a lot of waste. For festival organisers, the challenge is how to deal with this waste, since proper waste collection and separation requires quite some space, both frontstage and backstage. Festivals that are held in city parks or other areas with a size restriction, might not have the space available to properly arrange this (Brennan et al., 2019; Dickson & Arcodia, 2010).

## 2.2.5 Visitors

According to multiple authors, visitors have very little knowledge about the environmental consequences of festivals, even though they showed positive attitudes towards greening initiatives (inter alia van Berkel, 2014; Li & Liu, 2019; Mair & Laing, 2012). This could explain why it is so difficult to influence festival visitors to alter their behaviour. The two main areas in which visitors hinder festival greening are discussed below in more detail.

**Waste.** On site waste separation depends both on whether the visitors are willing to comply, and on whether they understand the bins marked for separation (Glassett, 2014). Additionally, visitors are inclined to bring things with them to the site, such as sunglasses and garments to dress up, which are often used only once and are not recyclable (Glassett, 2014).

The (amount of) waste generated at campsites is even worse. Fields full of discarded tents and other camping equipment are a well-known sight for many festival organisers (Moore, 2014; Opray, 2017). Mair and Laing (2012) write that one of their interviewees spoke of campsite visitors even leaving furniture behind, such as couches. Fisher (2008) writes that a Glastonbury organiser called some parts of

the campsite a "*bombsite, with broken tents, discarded armchairs and bin liners*". Of course, levels of consumption of foods and drinks brought from home are high on the campsite, so the rubbish from that adds to the mess.

A final issue is that compliance with a festival's recycling scheme also depends on the level of intoxication. Many festival visitors use alcohol and drugs to the extent that it will inevitably lead to a decreased interest in how to properly recycle their waste (Glassett, 2014).

**Transportation.** At most festivals, the largest part of all visitors come by car, a choice of which the effects have been highlighted in previous sections. Some solutions to tempt visitors to choose low-carbon transport options have already been mentioned as well, and although these and many other solutions have been available for some time, most visitors still choose to come by car. At Shambala for example, the 2019 edition saw 1% of visitors arriving by bike and 25% by coach (Iqbal, 2019). Although this is a relatively high share of low-carbon transport, it still means 74% of visitors to one of the most environmentally aware festivals in Europe travels by car.

Some authors write that festivals provide the perfect scene to coax people out of their at-home habits, by providing other services or less services than they are used to (Brennan et al., 2019). For example, charging money for the time visitors spend in the shower at a festival decreases the perceived necessity of people to take a shower. Instead of showering every day, visitors shower once or not at all during a weekend festival (Hitchings et al., 2017). In this sense, festivals are very capable of changing what is considered to be normal.

This changing of habits can also come in the form of education, which some festivals actively do (Mair & Laing, 2012). However, some authors found visitors to not accept forms of education because they just wanted to enjoy their trip without being told what to do (Abreu-Novais & Arcodia, 2013). According to Hitchings et al. (2017), "*events [are] attractive precisely because they seem far removed from the everyday imperative to be an upstanding citizen*" (p. 498).

## 2.2.6 Availability of green suppliers and supplies

This barrier is directly mentioned in a few articles (inter alia van Berkel, 2014; Brennan et al., 2019; Li & Liu, 2019; Mair & Laing, 2012), however it is never explained using examples, perhaps because it is considered to speak for itself. A notable contrast exists between two articles: Mair and Laing (2012) found organisers to be optimistic about this in their interviews, they write that organisers were aware of the growing number of suppliers that offered green supplies, thus making greening easier. However, the research by van Berkel (2014), dated two years later, found organisers to be unable to find suppliers offering green options.

Indirectly however, this barrier is omnipresent in examples in many articles, especially regarding waste at festivals (inter alia Brennan et al., 2019; Dobson, 2010; Dodds & Graci, 2012; Glassett, 2014). The most important topic within this discourse is what to do with cups, since more and more festivals want to stop using single-use plastic softcups. However, a good replacement does not (yet) exist (Glassett, 2014).

Although good alternatives have been developed to solve some other issues around festival waste, such as dinnerware made from biodegradable materials instead of plastic (Dodds & Graci, 2012), or vacuum toilets that do not need water to flush (Laing & Frost, 2010), or a fully equipped campsite where visitors only need to bring clothes and toiletries (Moore, 2014), these alternatives are usually a lot more expensive.

## 2.2.7 Temporality

The issue of temporality as a barrier was only explicitly discussed in the thesis by van Berkel (2014). She found this barrier in her interviews when one of the interviewees explained how the short duration of a festival, combined with the yearly return of the event, posed some issues. Because of these two characteristics of music festivals, making long-term ecologically sustainable investments is

not that easy. For example, a festival organisation might want to green their toilets, but because of the temporal character of the event they cannot choose the greenest and most efficient solution, i.e., build actual toilets. They are left renting toilets and thus depend on the options provided by others, which might not be as green as more permanent solutions (van Berkel, 2014).

## 2.2.8 Lack of organisational motivation

This barrier is mainly explained in detail in the article by Dodds and Graci (2012). In their research into Pride Toronto, they found a lack of organisational motivation to be the largest barrier. It was such a problem in this case, that even though both funding and available expertise were adequate, the greening program failed. The authors explain that this is likely due to the fact that the organisers have a clear priority, which is to stand up for the rights of the gay, lesbian and transgender community in Toronto, and therefore greening the event always comes second. The main reason greening practices were adopted at all, was that the senior managers in charge decided going green would be good for the event's publicity.

## 2.2.9 Hypotheses

The previous sections show that many barriers have already been identified. However, not all of them are equally common. For example, the fact that the greening program of Pride Toronto failed (Dodds & Graci, 2012), is very specific to the situation there, I do not expect to find that same issue within Doornroosje. The hypotheses formed based on the literature about barriers are thus as follows:

I expect a lack of resources, a lack of knowledge and skills, a lack of stakeholder support, the location, the visitors and the availability of green supplies and suppliers to be important issues, since they are well-grounded in the literature. Furthermore, I expect temporality might be of some influence, since it seems a logical barrier that influences almost every event, yet it is not mentioned more often. Finally, I do not expect greenwashing and a lack of

organisational motivation to be barriers at Doornroosje, respectively because the person responsible for the festival catering is very experienced and because at Doornroosje there seems to be a lot of motivation for greening among the organisers.

## 2.3 Visitors

In the previous sections we learned that the visitors are considered a barrier because they are the most important stakeholder, and if they choose to visit another festival it is detrimental for the festival they do not longer attend. The main way in which visitors can actively hinder greening is by refusing to comply with greening measures. Since going vegetarian and changing the use of cups are the two main focal points at Doornroosje's festivals, this chapter will focus on what is already known about visitors' perceptions of these two measures. Additionally, the chapter starts with an analysis of how people feel about greening in general.

According to Kollmuss and Agyeman (2002), "*the question of what shapes pro-environmental behaviour is such a complex one that it cannot be visualized through one single framework or diagram*" (p. 239). However, since the aim of this research is simply to determine characteristics based on which festival organisers can estimate how far they can take the greening of their event, in this and the following sections the focus will be on demographic factors, because that is what organisers know about their audiences.

### 2.3.1 Visitors' attitudes towards greening

Articles that discuss the influence of sociodemographic factors on pro-environmental behaviour in general are relatively scarce. Most articles discuss a very specific topic that has to do with a pro-environmental lifestyle, such as recycling, personal transportation methods, consumption patterns et cetera. And although these behaviours can be considered an indicator of pro-environmental worldviews, people can have many more reasons to exhibit these behaviours.

One of the articles that does discuss this is the one by Kollmuss and Agyeman (2002). They found both gender and education to be significant indicators of people who exhibit pro-environmental behaviour. For gender they found that "*women usually have a less extensive environmental knowledge than men but they are more emotionally engaged, show more concern about environmental destruction, believe less in technological solutions, and are more willing to change*" (p. 248). For education they found that the more years of education people had had, the more likely they were to show pro-environmental behaviour. Meyer (2016) found the same influence of education on environmental consciousness.

Another article that discusses the influence of sociodemographic factors on pro-environmental behaviour in general is the one by Franzen and Vogl (2013). The authors found that "*environmental concern depends on a number of respondents' socio-demographic characteristics such as gender, age, education, and income*" (p. 3). More specifically, they found that women were more concerned than men and that education increases pro-environmental behaviour. Additionally, they found that younger people are more concerned than older people and that affluent people are more concerned than people with less money to spend.

This last point also has to do with willingness to pay, which is an important concept within the greening literature. Since greener solutions are often more expensive, consumers have to be willing to pay this price, which is easier for affluent people. According to Watson (2016), "*a 2015 Nielsen poll showed that 66% of global consumers are willing to pay more for environmentally sustainable products. Among millennials, that number jumps to 72%*".

At festivals, willingness to pay is also a very important topic. By buying tickets, the visitors pay for most of the festival. Therefore, if an event wants to invest in greening options that raise the expenses, that extra money also has to come from the visitors (Dodds & Graci, 2012). And although 80% of festival visitors recognises that they themselves are partly responsible for encouraging pro-environmental actions, next to the organisers of course (Brennan et al., 2019), as much as 65% of European polled festival attendees

reported that they would go to a festival with bad environmental credentials as long as their favourite band was playing (Fisher, 2018).

Some articles discuss solutions to the issue that simply raising prices is often not appreciated by the visitors, due to a lack of transparency (inter alia Dobson, 2010; Glassett, 2014; Laing & Frost, 2010). A solution is mentioned by Dobson (2010) for example, who writes that visitors at a festival were willing to pay more for a ticket when the benefit they received in return was nothing more than knowing that this money would be used to counteract negative impacts on the environment. Glassett (2014) came to the same conclusion and recommends festivals should add a mandatory surcharge to the price of the festival ticket, but clearly show that the money would be used to offset the carbon footprint of the festival (p. 46). In the same research, Glassett (2014) also polled festival visitors to find out whether they would indeed pay more for a greener festival and he found that 65% of respondents were willing to pay at least 5 dollars more, while 26% were even willing to pay 10 dollars extra.

This information leads to two hypotheses that will be tested later on in this research. The third hypothesis mentioned below reflects an expectation voiced by Doornroosje's festival organisers.
- Hypothesis 1: Visitors who care about the environment are willing to pay more for a ticket if it ensures environmentally sustainable solutions.
- Hypothesis 2: Visitors are on average willing to pay between 5 and 10 euros per festival day to compensate for the environmental impact of their visit.
- Hypothesis 3: The festival audiences differ in their concern for the environment, with visitors of Het Nest and Valkhof festival being most concerned, and visitors of FortaRock and Donuts being least concerned.

## 2.3.2 Visitors' attitudes towards vegetarianism

Generally speaking, the image exists in society that eating vegetarian food is 'a woman's thing', while men are considered to be the tough meat-eaters (Veul, 2018) Many research studies have dived into this topic, trying to establish the common socio-demographic characteristics of vegetarians. The following paragraphs will provide some information on these characteristics. Since eating habits differ greatly across the world, there is extra attention for studies performed in and close to the Netherlands.

The articles discussing socio-demographic factors that predict vegetarianism mostly agree on which factors contribute the most. The first one, as mentioned above, is gender. Quite a lot of articles mention gender as a contributing factor (inter alia Allès et al., 2017; Hoek, 2004; Perry, 2001; Veul, 2018). Veul (2018) writes that in the Netherlands, men consume 52% more meat compared to women. According to Allès et al. (2017), of the 2370 French vegetarians in their research, 85% were female.

The second socio-demographic factor is age (inter alia Allès et al., 2017; Perry, 2001; Veul, 2018). Veul (2018) writes that two age groups are most likely to shift to a (partly) vegetarian diet: first are young people, mostly out of consideration for the environment and animal rights and second are people over 40, and especially over 60, whose main concern is healthier eating habits. Allès et al. (2017) however found different results, with 30-50-year olds being 10% more likely to be vegetarians compared to 18-30-year olds and the oldest two groups, 50-65 and 65+ to be respectively 20% and 47% less likely to be vegetarians compared to 18-30-year olds.

The third factor connected to vegetarian choices is education level (inter alia Allès et al., 2017; Hoek et al., 2004; Veul, 2018). For example, Veul (2018) writes that half of all Dutch vegetarians have completed some form of higher education, as opposed to 20% of the entire Dutch population. In France, 40% of the surveyed vegetarians have completed post-graduate education (Allès et al., 2017).

The fourth factor is socioeconomic status (inter alia Allès et al., 2017; Hoek et al., 2004). According to Allès et al. (2017), vegetarians were most likely to have a monthly income of less than €1200 per person per month, which is the lowest category in their research. Hoek et al. (2004) however, write that vegetarians were more likely to have a high socioeconomic status. Although the term 'socioeconomic status' encompasses more than just income, the difference is nonetheless striking.

The fifth one is smaller households (inter alia Allès et al., 2017; Hoek et al., 2004). Allès et al. (2017) for example found that vegetarians were most likely to be singles or couples living alone without children.

The sixth contributing factor to vegetarianism is place of residence, as vegetarians generally live in more urbanised residential areas (inter alia Hoek et al., 2004; Veul, 2018).

Although these factors are often named as separate influences, it seems right to also consider the similarities. The articles studied for this section strangely did not do this. Nonetheless, when results show that vegetarians are mostly young, highly-educated women who are single without children and live in cities, a pattern emerges that shows we are talking about students or recent graduates. It would therefore be unexpected to find that they would fall into the highest category of income levels.

Continuing with festivals specifically, it must be noted that only a few articles discuss vegetarianism at festivals. In a research article by Andersson et al. (2013) for example, the research topic was not how visitors responded to the vegetarian food line-up, but why the festival decided to go with this strategy and how much of a difference it made to the festival's ecological footprint. Another article mentioning vegetarian food at festivals is the article by Jutbring (2018), who writes that 15% of visitors to the festival under study continued a vegetarian diet after having experienced the vegetarian food and the accompanying marketing initiative on site, and they named the festival's efforts as inspiration.

In conclusion, the most often mentioned and most thoroughly described demographic factors that influence whether people eat vegetarian food are gender, age and education level. Since this is true for society in general, it seems right to assume this is also true for festivals.

Hypotheses 4 and 5 below follow directly from the information in this section. Hypothesis 6 emerged from the information shared with me at Doornroosje, and seems to be valid according to the information provided above. Hypothesis 7 is meant to investigate whether a price difference is enough to tempt meat-eaters to choose a vegetarian dish, which is an area of interest for Doornroosje's organisers.

- Hypothesis 4: Females are more likely to choose vegetarian dishes at the festivals than males.
- Hypothesis 5: Young(er) people are more likely to choose vegetarian dishes at the festivals than old(er) people.
- Hypothesis 6: The festival audiences differ in their acceptance of vegetarian dishes, with visitors of Het Nest and Valkhof festival being most willing to eat vegetarian food, and visitors of FortaRock and Donuts being least willing to eat vegetarian food.
- Hypothesis 7: More people are willing to eat vegetarian dishes at festivals when they're cheaper than meat dishes.

## 2.3.3 Visitors' attitudes towards festival cups

Although some alternatives exist to the 'regular' fossil-fuel plastic softcups, not all of them are equally favourable. For example, stainless steel cups have been tested as an alternative, but both vendors and visitors are unhappy about using these for beer, and since they are much more expensive than plastic cups, visitors are unhappy about the added costs of buying them (Glassett, 2014).

Another alternative is using biodegradable cups, however Glassett (2014) writes that visitors do not recognise PLA cups as being different from fossil-fuel plastic cups and therefore treat them the same way as regular plastic softcups, i.e., throw them on the ground

when they are empty (p. 29). Brennan et al. (2019) noticed the same effect and added that the PLA cups that were thrown in the bins were mostly found in the plastic bins, while they should actually be collected as landfill waste (p. 263).

That leaves the option of a reusable cup, since the material has been proven to work for festivals, but the thickness of the material combined with the deposit visitors have to pay, clearly indicates that it is not a single-use cup. Although a deposit of a few euros or dollars is not enough to convince everyone to return their used cups, other visitors will pick up the cups to get the deposit money (Glassett, 2014). In the same research, Glassett (2014) found 70% of visitors willing to use reusable cups with a deposit system.

Since the question whether people in general are willing to use reusable products seems extremely correlated with whether they are environmentally conscious, the assumptions about gender and age from section 2.3.2 are repeated to form hypotheses 8 and 9. Hypothesis 10 is the reusable cups counterpart of hypothesis 6, also reflecting assumptions made by Doornroosje's festival organisers. Hypothesis 11 is meant to investigate the role of money, with Doornroosje's assumption being that visitors prefer not having to spend more.

- Hypothesis 8: Females are more likely to accept using reusable cups at the festivals than males.
- Hypothesis 9: Young(er) people are more likely to accept using reusable cups at the festivals than old(er) people.
- Hypothesis 10: The festival audiences differ in their acceptance of reusable cups, with visitors of Het Nest and Valkhof festival being most willing to use these cups, and visitors of FortaRock and Donuts being least willing to use these cups.
- Hypothesis 11: Less people are willing to use a reusable cup when a deposit is charged on it.

The information mentioned before leads to one final overarching hypothesis:

- Hypothesis 12: People who indicate they care about environmental sustainability are more likely to choose vegetarian dishes and be accepting of reusable cups.

## 2.4 Conceptual Model

The information provided in the previous sections of chapter 2 has been combined to form a conceptual model for this research project. In the model, shown below in figure 1, the assumptions and hypotheses provided throughout this chapter have been put together in a clear and schematic way.

**Figure 1**

*The conceptual model showing the barriers and factors that emerged from the literature.*

You see both parts of this research reflected in the conceptual model. With festival greening to the right, the barriers to greening represent the first research goal: do the barriers found in the literature reflect the barriers that play a role at Doornroosje? To the left are the factors that possibly influence the visitors, reflecting the second research goal: to find out whether these factors actually affect the visitors' willingness to accept greening at a festival.

The lowest barrier in the list, temporality, is connected to festival greening by a grey arrow, indicating that its effect is expected to be less important compared to the other barriers, in line with the hypotheses formed in section 2.2.9.

# Chapter 3: Methodology

This chapter describes the research methods used to answer my research questions. It follows the structure suggested by Bryman (2012), of the three key decisions that have to be made to be able to conduct research (p. 45). The first is to choose a research strategy, based on ontological and epistemological choices, which is discussed in section 3.1. Second, the best fitting research design, and corresponding issues of validity and reliability, is detailed in section 3.2. The third main decision is on the research methods and this is explained in section 3.3, along with information on data collection. Section 3.4 describes the methods of analysis.

## 3.1 Research Strategy

Research traditionally adheres to either a qualitative or a quantitative strategy, however in recent years the third option of a mixed methods strategy has become more appreciated (Bryman, 2012). Although the ontological and epistemological principles differ between the two methods, according to Bryman (2012) the two strategies can be mixed when they increase understanding of the phenomenon under study (p. 700), which is the case in this research. Knowing that the organisers see visitors as a barrier to greening is one thing, but knowing whether they are right in believing this, provides a basis for (not) taking further steps towards greening.

According to Bryman (2012), authors can have many reasons to opt for a mixed methods approach (pp. 633-634), three of which are relevant to this study. The first is 'triangulation', which means that one strategy is used to cross-check the results from the other strategy. The second is 'different research questions', meaning that the research strategy flows directly from the chosen research questions. The third is 'confirm and discover', in which hypotheses from qualitative work are tested using quantitative research. All three are true for this research project, since there are strong links between the arguments. At the start of the project, Doornroosje

employees already spoke with me about reasons to (not) green their festivals, so the research questions were set up in such a way as to check both hypotheses: that organisers point out visitors as a barrier and that visitors actually are a barrier. So, it is no coincidence that the research questions require different research strategies and methods.

## 3.2 Research Design

In his book, Bryman (2012) examines five different types of research designs. Since this research aims to investigate barriers to festival greening within Doornroosje, the most fitting design is the exemplifying case study, about which Yin (2003, p. 41) writes "*the objective is to capture the circumstances and conditions of an everyday or commonplace situation*". Considering that Doornroosje is one of many parties in the Netherlands involved with festival organisation, the company is a representative case to study how festival greening is coming along.

Yin (2003) also advocates clearly specifying the unit(s) of analysis and the corresponding subunits. In this research there is only one unit of analysis, which I defined as 'the state of festival greening at Doornroosje', implying that it can be classified as a single case study. Additionally, this research has two different subunits, the interviews and the survey, which together build a description of this state. This means that my single case study can be further classified as *embedded*.

According to Creswell (2012, p. 98) it is important to use more than one type of data in case study research to gain an in-depth understanding of the case. In this research, interviews are combined with a survey to get an insight into both the perspectives of the organisers and of the visitors. A great addition to this data would have been to access Doornroosje's documentation on the company's perspective, however I was not allowed to read and use that for this research.

In social research, some concepts are important in "*judging the quality of a research design*" (Yin, 2003, p.39). I used the terms that were developed by Guba and Lincoln (as described in Bryman, 2012). The first is credibility, which is the equivalent of internal validity. It stresses that findings are only credible when the research method is set up properly and the person(s) under study has the opportunity to judge whether the researcher has understood their social world (Bryman, 2012, p. 390). For this research, that means setting up proper interview guides that cover all areas but do not suggest desirable answers, as well as sending the interview transcripts to the interviewees for revision.

Second is *transferability*, which parallels external validity. This is a tough matter in qualitative research, since studies are often designed to capture the uniqueness of a certain situation (p. 392). In this research, the advantage is that some well documented studies exist that can be used as a backbone for interpretation of the findings. Combined with a detailed description of the research findings, this can improve the *transferability*.

Third is *dependability*, which equals reliability. For a mixed-methods study to be repeatable by other social scientists, a comprehensive record of all research data is needed. This includes everything from selection of participants to transcripts to data analysis descriptions (p. 392). If this is all accessible to other researchers, they can see whether conclusions by the original researcher were valid. For this research, all (raw) data is available upon request.

Fourth and last is *confirmability*, which matches objectivity. It is concerned with ensuring the researcher keeps an objective viewpoint, as much as this is possible when using qualitative methods (p. 392). For this research, that means to beware of personal views to become entangled in the results.

## 3.3 Research Methods and Data Collection

### 3.3.1 Semi-structured interviews

Since the basis of this research is to identify the perceived barriers that hinder greening of Doornroosje's festivals, the main method of data collection was semi-structured interviews. In this method the researcher works with an interview guide (Appendix 1), but is also able (and allowed) to respond to answers by asking new questions that were not in the guide. It is therefore a very fluent and unique way of data collection (Bryman, 2012).

Since Doornroosje has different partners for the different festivals they organise, it was important to gain insight into the barriers that play in role for each of those partners. The goal was to interview at least one person, but preferably two, from each partner (organisation). However, it soon became clear that this was not possible. Subcultuur for example only consists of three people, of which one person is solely responsible for greening Het Nest. This person, in this thesis named after his initials ME, was the only person from Subcultuur who could talk to me on the subject of (barriers to) greening. I also planned to interview one or two people from FortaRock, the eponymous company behind the festival, but since they were struggling financially, my supervisor from Doornroosje did not allow me to go there and ask "intruding" questions.

In the end I was able to interview four people, identified only by their initials for privacy reasons: ME from Subcultuur, the organising partner of Het Nest Festival; EV, the CEO of the partner company that is involved with all of Doornroosje's festivals, in some cases as a financial partner and in others mainly for catering purposes; SH, the freelance producer who is involved with Het Nest and Donuts; and PO, the freelance producer who is responsible for managing the other four festivals. Some details about my interviews are presented in table 2.

**Table 2**

*Some details on the interviewees.*

|  | ME | EV | SH | PO |
|---|---|---|---|---|
| Position | Community manager (focus on greening and website) | CEO of catering company | Freelance producer | Freelance producer |
| Date of the interview | 22 February 2019 | 26 march 2019 | 1 April 2019 | 8 April 2019 |
| Duration of the interview | 1h 16m | 53m | 1h 15m | 1h 29m |
| Festival(s) | Het Nest | Oranjepop, Bevrijdings-festival, Donuts, FortaRock, Valkhof & Het Nest | Het Nest & Donuts | Oranjepop, Bevrijdings-festival, FortaRock & Valkhof |

At the time that my interviews were conducted, the aim was to not only find barriers, but also drivers. However, after discussing the preliminary results with my supervisor at Doornroosje, we agreed that writing down these drivers would not help Doornroosje with their aim of organising greener festivals. Therefore, the focus of this research shifted to only describing the barriers and adding the survey data to find out more details about the visitors.

The interviews were developed in such a way that they would first extract barriers from the interviewee in the form of examples. I wanted to find barriers in their stories without them knowing exactly what kind of information I was looking for, thus lowering the chances of them giving socially acceptable answers. At the start of the interview, I explained that I wanted to know about the greening process, but I kept silent about the importance of the barriers. Only at the end of the interview did I directly ask whether a certain barrier did play a role in their process, if the interviewee did not mention it during our conversation.

The topics that were covered included steps taken by the festivals to go green, along with how well it worked out and why they chose these steps. I also asked what steps they would not want to take and why. Then I asked about their habits and how they would feel about changing their own habits and those of visitors and employees. The next section of questions focused mainly on the collaboration process, on how they feel about it and what they think could be better. The final section, as mentioned before, focused on asking about (drivers and) barriers that were possibly not mentioned by the interviewees, to ensure all factors found in the literature were discussed.

All interviews were conducted in Dutch to allow the interviewees to speak freely in their own native language. Prior to the interviews, both in the email invitation and when meeting for the interview, I asked permission to record the conversations, to which everyone agreed both times. With these recordings I was able to transcribe the interviews, which increases transferability and dependability. The transcripts were then sent to the interviewees for what is known as respondent validation, a process deemed important by Bryman (2012, p. 391), to allow them to check and possibly even retract the statements they made. This process increases credibility and trustworthiness of the research. Due to the size and language of the transcripts, they are not included in this thesis. They are however available upon request.

## 3.3.2 Survey

The aim of the survey in this research was to find out whether visitors are actually as large a barrier to greening as is perceived by the organisers. To this end a self-completion questionnaire was distributed among visitors of four Doornroosje festivals in the summer of 2019. The survey was created using Qualtrics software and was only available through digital means. At the festivals, I walked up to people to ask if they were willing to fill out my survey in return for a free drink. When visitors agreed, I offered them a QR code that they could scan with their phone or a Bitly link that they could easily

type into their browser to get to the survey. Some details of the surveys are presented in table 3 below.

**Table 3**

*Some details on the surveys conducted at four Doornroosje festivals.*

|  | FortaRock | Donuts | Valkhof | Het Nest |
|---|---|---|---|---|
| Date of survey | 2 June 2019 | 15 June 2019 | 13 July 2019 – 18 July 2019 | 7 September 2019 |
| Number of respondents | 100 | 104 | 174 | 103 |
| Gender | Female: 32, Male: 67, Other: 1. | Female: 69, Male: 33, Other: 2. | Female: 97, Male: 73, Other: 4. | Female: 58, Male: 44, Other: 1. |
| Average age | 31 | 23 | 28 | 26 |

The survey was divided into four sections. The first section asked for general information, such as gender and age. The second section was about satisfaction with the festival's food, along with questions about whether people were willing to choose a vegetarian option at the festival. The third section focused on cups, first whether respondents are bothered by seeing a layer of used cups on the ground and then whether they would be willing to (pay a levy to) use a reusable cup. The final section asked whether the respondents in general were concerned about the environment. Completing the questionnaire took between two and five minutes and a total of 482 responses were collected at the four festivals. The questionnaire is included in Appendix 2.

The self-completion questionnaire was chosen over structured interviews for two reasons. First, because it allows the researcher to approach and sample more people in the same amount of time, which is of essence both because the festival lasts a limited amount of time and also because the audience becomes more intoxicated as the evening sets in. The second reason for choosing a self-completion

questionnaire is that it allows respondents to complete the survey at their own pace (Bryman, 2012, pp. 233-234).

Of course, an advantage to conducting structured interviews is that the interviewer knows for sure that respondents finish the interview. However, I found a solution to that issue. At the first festival I sampled, FortaRock, I handed out drink tokens to respondents. But since it took people some time to fill out the survey and I did not want to wait around for them to finish, I gave them a token when they agreed to fill in the survey, resulting in some partial responses. At the second festival, we changed this around. I had a stand that people could come to, to fill out the survey. Only upon showing me the last page, saying the results had been registered, would I in turn give them a free drink. This method was then continued at the third and fourth festivals.

Some disadvantages to choosing self-completion questionnaires are that it is more difficult to help respondents when they do not understand the questions, that it is impossible to probe respondents for a more detailed answer when asking open questions, that the questionnaire can be read as a whole and that there is greater risk of missing data (Bryman, 2012, pp. 234-235). However, I found workarounds to these issues, for example by offering the reward only after the respondent showed me they finished the survey, by using options in the Qualtrics software that stopped the respondents from reading ahead by only showing one section of questions at a time and by asking very short and concise closed questions.

Three issues hindered true random sampling of respondents. First, only people who had a (charged) cell phone on them could fill out the questionnaire. This was an issue for five to ten people. Second, since the questionnaire was in Dutch, it was not available to non-Dutch speakers. This was only an issue for one group of German visitors at FortaRock, of around five people. Third, only people who could be tempted to invest some time to get a free drink have participated. At Donuts and Valkhof I was only allowed to hand out non-alcoholic drinks and some people turned down my invitation because of that. This is true for thirty to forty people in total.

## 3.4 Data Analysis

### 3.4.1 Qualitative data analysis

After transcription of the recorded interviews, the text documents were loaded into Atlas.ti, for easy analysis of the data. As a tool, I chose to use Charmaz's coding process from the grounded theory toolbox, since it is very flexible but also very capable of leading you as a researcher towards the answers you are looking for.

The first step in the coding process is 'initial coding', in which the researcher goes through the text, in some parts even line-by-line, converting what was said into short but clear codes (Bryman, 2012, pp. 569). In this process it is very important to keep the depth of the data and create as many codes as necessary. The second step is 'focused coding', in which the codes that best fit the research questions are selected and linked, to form groups of codes (Bryman, 2012, pp. 569). To get to fitting categories of codes, I read and reread the transcripts until I was satisfied that no initial codes were missed in the categorisation process and that the barriers that emerged were separate and logical.

### 3.4.2 Quantitative data analysis

The hypotheses formed in chapter 2.3 were tested using IBM SPSS. Since the number of variables, the relationships between the variables and the measurement levels were different between the hypotheses, they required a number of different methods of analysis. Since the explanation of which choices were made for which variables seemed better fitting in chapter 4, where the analysis results are presented, it is not discussed in detail here.

# Chapter 4: Results

In this chapter the results of the two different parts of this research are presented. Section 4.1 discusses the barriers I found in the interviews and section 4.2 discusses the results of the visitor survey. The chapter concludes with section 4.3, in which I present a new conceptual model, reflecting the results found in this research.

## 4.1 Which barriers do festival managers at Doornroosje encounter?

The barriers to festival greening that play a role in the decision-making process of Doornroosje's event managers were extracted from the expert interviews, as described in the Methodology chapter. The findings are presented in the table below (table 4). A total of 11 barriers emerged from the analysis, of which some were mentioned often by all interviewees and some capture the viewpoint of one or two individuals. Even though not all barriers are equally important in the greening process, I decided to also incorporate some of the less-often mentioned constraints in table 4 and the following paragraphs. The two criteria used to determine which barriers to present here, were a) it should be presented when it is mentioned by three or more people and/or b) it should be presented when overcoming the barrier is possible without being straightforward. For example, I found 'Existing Contracts' to be a barrier to greening, but I left it out since it does not meet the second criterium. Switching to a greener supplier is only possible when the existing contract has ended, meaning it is not possible at any time, and the solution of switching to another supplier is straightforward, so it does not require a detailed explanation. A full list of codes that emerged from the analysis in Atlas.ti can be found in appendix 3.

Generally, it can be said that all interviewees ran into the same major issues when trying to take greening measures. They were mostly affected by financial constraints, however the two producers (SH and PO) were clearly more worried about money than ME and EV, as can be

seen in table 4. However, this table also reflects the personal interests and views of the interviewees. During the interview with ME it was very clear he is an optimistic person, in his own words: "*we need to think in terms of solutions*". Regarding barriers he was very much focused on the visitors, but even then he was constantly mentioning solutions. On the other side, EV was much more sceptical. He has a lot of experience in the festival scene, which probably creates a more realistic view of the situation. In his explanation of issues with greening festivals, EV focused mainly on technology. He mentioned many examples of possible (and impossible but interesting) improvements. For example, about the hardcups versus softcups debate he said: "*I am in favour of a cup that is yet to be developed that can be put in one of those [talking about an on-site composting machine for festivals]*".

SH was mainly talking about money and about creation. In his view, these were the two most important barriers to greening a festival. Creation in his explanation means that the look and feel of the festival will always be number one, only once that is decided upon will greening measures come into play (and then often hindered by the amount of money left). Only SH mentioned this as a barrier directly, and described it using many examples, and only after our interview did I find creation as a barrier mentioned indirectly in the other three interviews. The other producer, PO, was very focused on money and on knowledge. He kept repeating that he does not know everything and that this might lead to his festivals being less green.

**Table 4**

*Overview of the barriers found in the interviews and number of times they were mentioned by my interviewees.*

|  | ME | SH | EV | PO | Total |
|---|---|---|---|---|---|

| Money | 7 | 10 | 7 | 15 | 39 |
|---|---|---|---|---|---|
| Knowledge | 5 | 3 | 6 | 16 | 30 |
| Visitors' Comfort | 9 | 2 | 2 | 6 | 19 |
| Available Technology | 1 | 3 | 6 | 8 | 18 |
| Time | 8 | 3 | 1 | 5 | 17 |
| Creation | 4 | 9 | 0 | 1 | 14 |
| Visitors' Practices | 2 | 4 | 3 | 4 | 13 |
| Fear of Greenwashing | 2 | 0 | 1 | 7 | 10 |
| Organisers' practices | 2 | 3 | 0 | 4 | 9 |
| Location | 2 | 0 | 0 | 4 | 6 |
| Waiting for Frontrunners | 0 | 0 | 4 | 0 | 4 |

The barriers in table 4 are different from the barriers in table 1, at the start of the literature review section on barriers. Of course, I could have chosen to use the same names for the barriers in my interviews, however, in my opinion that would have decreased the depth of understanding. Endless grouping of codes that partly fit together reduces the amount of information that can be gained. That's why I will explain the barriers I found and their interconnections in the following sections, and leave the connections with predefined barriers for the discussion.

## 4.1.1 Money

Lack of money is not just the most often mentioned, but also the most straightforward barrier I've found in my interviews. A festival that only just breaks even, will not have money to invest in greening, since both employees spending time to find ecologically sound alternatives and the implementation (rent or purchase) of these alternatives are expensive. This is mentioned by all four interviewees, for example ME spoke about Het Nest finally becoming financially stable in 2019's third edition. The first two years the

festival suffered financial losses. He gave an example: "*we're not going to pop in the most expensive festival batteries now that we're just becoming a financially healthy festival*". PO on the other hand produces a few of the free or very cheap Doornroosje festivals and he commented: "*I work on a tight budget, that is something I always have to take into account. And that does not make it easy, it makes it especially difficult when you see that the greener options are much more expensive.*"

Another interpretation of money as a barrier is that smaller festivals, that do not have the financial means to experiment with different greening measures, are always lagging behind larger organisations that do have the money to experiment. The smaller festivals thus depend on the larger ones for knowledge about effective greening measures, since they are unable to gather this information themselves. An additional consequence, according to EV, is that in this case the larger festival organisations are also in charge of leading the market for greening products. On this topic he says: "*If they opt for a successful alternative approach, then it is much more convenient to join in with them*". When a few festivals that can invest money in a certain measure all choose the same option, for example hardcups, companies that produce and rent out hardcups emerge and start competing for customers. This means that in the end, using the same system, i.e., hardcups, becomes affordable for all organisations, even though it might not be the most efficient or the greenest option. In this sense, festivals with a larger budget gain a monopoly position, or as stated by EV: "*But then you also have the market leaders, who determine the system sooner than the small players*".

However, according to my interviewees, it is not true that all greening options are more expensive. PO for example bought "*stone plates and regular cutlery instead of disposables*" for the backstage areas at FortaRock, Bevrijdingsfestival and Oranjepop. This is an investment, although not a very large one, that pays for itself after a few uses and then saves money. On this topic, ME said that:

> *Working in an environmentally sustainable way is financially*
> *attractive in the end, that's actually very logical. And in the*

*beginning it takes time to understand what the best choices are.*
*But I think that in the end, when it is all set up, it is*
*cheaper.*

This viewpoint seems to make sense, since it is true for many
common greening measures, such as solar panels and insulation of
buildings, that they require an investment but once that has been
repaid, they are going to generate money.

## 4.1.2 Knowledge

This barrier was explained by my interviewees in many different ways,
however with one common feature: all examples they mentioned were
about hardcups. The most obvious explanation of this barrier is that
finding information about greening measures that are both easy to
implement and provide a significant reduction in footprint is
difficult and time-consuming. ME mentioned how gaining knowledge about
softcups versus hardcups was not a priority for Het Nest in the first
two years, since the Subcultuur owners were all new to organising a
festival: "*The first two years we used normal cups. We thought it was
very complicated and so we just did what everyone else does*".

Another explanation of knowledge as a barrier is that choices can
be made based on old knowledge. The impact of this became apparent
when talking about hardcups with EV. He stated: "*Twenty years ago,
when I started, we already had a concept with hardcups. And we put
that aside because it was unworkable*". However, the methods of working
with hardcups have changed significantly over the years and EV's
experience of rinsing used hardcups on site, which is what he disliked
about the system, is outdated. Current hardcup systems use a clean cup
for every beverage and used cups are stored on site to be cleaned in a
factory after the event, so that rinsing cups during the event is no
longer necessary. EV admitted he has never worked with this new method
yet and said "*I have more faith in the new system*". But he still
mentions throughout the interview that he is reluctant to try this new
method. PO also mentions this issue: "*I do not know everything. So
maybe there are blind spots and I do not know about certain new*

*services or techniques that could be used to achieve a much better
result*".

A third interpretation of this barrier is that detailed knowledge
is not available for many event greening topics. The main issue here
is that greening as a process is related to so many other influences
and factors that it is impossible to take them all into account. Using
the hardcups as an example again, EV said:

> *They did make models in which it is more environmentally
> friendly, but then they did not take CO2 into account for
> convenience, because that was too difficult to calculate. The
> transport of those things, back and forth, and the washing and
> storage, that is a lot of CO2.*
>
> However, although this seems to be a very logical issue, it was
> only mentioned

by EV and not by my other interviewees.

## 4.1.3 Visitors' comfort and visitors' practices

Visitors are often mentioned as a barrier to greening. First of all
because it's important for organisers to keep them happy, to ensure
they will come back next edition. I called this interpretation
'visitors' comfort', since the festival organisers have to work within
the boundaries of what visitors are comfortable with. There is however
a second interpretation of visitors as a barrier, which is that
visitors have their own practices and they are likely to behave
accordingly. An example: at Dutch music events, both concerts and
festivals, it is common practice to drop your cup on the ground when
it is empty. This means that, no matter how much money and effort an
organiser puts into waste separation methods, as long as visitors are
not triggered to behave differently, they will keep throwing their
cups on the ground.

**Visitors' comfort**. An example of how visitors' comfort can be a
barrier was mentioned by PO. He compared Het Nest festival, which is
completely meat-free, to FortaRock, admitting that the audience is the
main reason why he still serves meat:

*That all-vegetarian food offer like they do at Het Nest now, that is very good, so let them show us that it works. But I think you should also look at what your audience wants, [...] I do not think that necessarily suits FortaRock.*

ME said about their choice at Het Nest to go vegetarian: "*A standard dance event is not necessarily very focused on the food. But maybe that's exactly the reason why it is easier for us to take that step.*" In this quote he indirectly mentions that visitors' comfort could have been a barrier, if the provision of food had been more important to the people visiting the festival.

Another quote from ME shows that the visitors' comfort is very important to them in general, without an example:

*Greening is super important, and I think it's a goal that we always pursue, but if it turns out that you really hinder the guests, then you have to consider what you want to do with it.*

EV also mentioned how the visitors' comfort can be a barrier, when talking about the issues around waste separation and the different materials that are currently used at festivals. About whether an on-site composting machine could work, he said:

*[...] it has to be in an area which is separate from [areas with] other streams of waste, so that the cups don't reach it. But it's not nice to sit down somewhere where you cannot have a drink, where you can only eat but not be allowed to drink. So then the cups have to go in that direction as well. And then a PET bottle is not allowed, a water bottle, because that [is also not compostable].*

**Visitors' practices**. The main topic used in examples of why visitors' practices are an issue is waste, especially frontstage waste separation. SH talked about how difficult this is in the following quote:

*It is a very difficult subject, because it is very different from separating your waste at home or at a company, where you can clearly expect or require your employees to separate their paper, plastics and residual waste. You are dealing with an audience, with thousands of people who are*

*enjoying a day out. And then you want to try to separate the*
*waste they produce, which is almost impossible to do. It is*
*possible in the backstage area, more and more people are aware of*
*that, so that is where it happens. But in the public areas it is*
*much more difficult.*

EV adds to this that is easy for visitors to make a mistake, even if they mean well:

*You get many impulses at a festival. And then you have*
*those brightly coloured bins there, and then you throw away your*
*cup, you are actually very neat for throwing it in a bin, but*
*before you know it it is the wrong bin.*

A striking difference of opinion came from EV and PO. When talking about waste separation and efforts to get the visitors on board, these interviewees had opposing ideas. PO said that:

*If you make waste islands and it is clearly indicated where to*
*put plastic and where to put residual waste, and with the kind of*
*audience we have, then I think people are inclined to deal with*
*that in the right way.*

When I asked EV about this same measure however, he stated that:
"*I don't believe that. That just goes wrong, that's what I've always*
*experienced.*"

The reason why I chose to split up the general barrier 'visitors' into the two parts, is that they are different, as is clear from the above examples, and also that they are interrelated. For example, all interviewees talk about education as a measure to enhance visitors' practices, however they also agree that education cannot be taken too far, you have to be careful not to cross the line between what visitors do accept and what they do not accept, thus staying within their comfort zones. That means that education schemes at festivals have to balance these two opposing parts.

## 4.1.4 Available technology

Available technology appears to be an important barrier as well, mainly on the topics of cups and power. My interviewees mentioned

examples for both, from which it is clear that no good alternatives exist yet. Especially the issues surrounding hardcups were extensively discussed in all four interviews. My interviewees all agreed that hardcups are not their preferred option. EV has prior experience working with them and is the most sceptical about their return to the festival scene. He stated: "*The only thing I really like about them, is that the festival site remains clean*".

ME mentioned that: "*Hardcups.. we do not believe that yet. After all, you have to replace them after 10 uses and then they have to be transported, washed, you name it. There is a lot more to it.*" PO added that: "*it is still the plastics industry that you keep going with that. Eventually it becomes waste again.*" EV said:

> *If you're actually able to make a compostable cup, it's even more difficult to make sure it can handle hot drinks. And if that doesn't work, then you need another cup for coffee and tea, which doesn't work with the theory of [waste] mono streams.*

Regarding alternatives to power, my interviewees mentioned biofuels, solar panels and batteries, which are all considered unsuitable for one reason or another. For example, SH said: "*Biodiesel, for example, has been used for some time now. But generators do not run well on it, so there is frequent failure. This has not yet fully crystallised. And you want 100% reliability.*" Another issue is that charged batteries do not have the capacity to serve all of a festival's power needs, as mentioned by PO: "*That way you'll be able to handle the peak tensions, but you'll never be able to run an entire festival on them.*" SH mentioned the same point and added that solar panels have the same issue with capacity.

The lack of reliable alternatives for the power supply and for hardcups and other dinnerware is considered a barrier for greening Doornroosje's festivals because it is one of the most important reasons why the organisers do not switch to greener options.

## 4.1.5 Time

Time seems to be a broader barrier within Doornroosje than I anticipated. There is of course the aspect of not having enough time available to increase the knowledge and skills of organisers, in which it is equivalent to money, which was most explicitly mentioned by ME, in part of a quote I also used in the paragraph on money as a barrier: "*In the beginning it takes time to understand and figure out what the best choices are.*", and PO: "*but when I have more things to figure out in those limited hours, then at some point I have to say I do not have the time.*" However, time was mentioned in more ways by my interviewees. None of these different interpretations of time as a barrier were prompted, my interviewees mentioned them of their own accord.

The first new interpretation of time is a broad one, which can hinder all greening measures at all festivals, namely that it is unwise to be ahead of your time. If a festival adopts greening measures that are not (yet) accepted in society, it might be a reason for people to not (re)visit your festival. PO said about this:

> *In other words, I am in favour of a more organic development. Maybe that's the conservative thing about me, don't be too crazy, because if you want to take too big a step, you don't get the people along with you, they don't understand that, they don't feel that.*

In the case of Doornroosje, this is illustrated by the difference between festivals that still serve meat and festivals that do not. Het Nest is the only gated Doornroosje festival with a fully vegetarian food offer, Valkhof Festival only has one food stand and it also only serves vegetarian options, but Valkhof is not gated, so people can go eat somewhere else if they want. On the other side is FortaRock, which has some vegetarian options but not too many. This difference in food setup stems from the beliefs of Doornroosje's organisers that the younger, higher educated audiences of Het Nest and Valkhof Festival are more willing to accept or even prefer a vegetarian food offer than the older and more conservative audience of FortaRock.

The final interpretation of time is that many important decisions have to be made first, before organisers can start thinking about services and decor. These decisions include things like the number of visitors that can be expected, the exact positioning of the festival site and its stages, the size of the site, et cetera. PO described this the following way in our interview:

> *I have only been able to really get going since a month and a half ago because the important choices had to be made first. How big is the terrain going to be? How many visitors do we expect? Only when I know that, can I start planning other things. Those are my boundaries within which I have to do it. And then you are already fairly close to your event, and then I have to start setting priorities.*

Time is thus an important barrier, not just as the counterpart of money, which was expected beforehand, but also as a barrier in itself. It makes sense that organisers have to time their greening steps well, to make sure they fit into what is happening in society. Although festivals have long been places where normativity is challenged, with the current competition between the hundreds of festivals, losing visitors is a valid concern.

## 4.1.6 Creation

Creation as a barrier was only explicitly mentioned and explained by SH. He described it as the first step in the process of organising a festival, because the ideas of what the festival's look and atmosphere should be like are the foundation. Only after that has been decided, the organisers start thinking about the price of their ideas and how to make these ideas less detrimental for the environment. SH even puts creation as a direct opposite to greening in the following quote: "*on the one hand there is creation and on the other hand there is sustainability. And often creation comes first and then it has to be adapted to also be sustainable.*" SH then took his explanation even further with the following example, of which the last sentence provides a very strong point:

*There were plans for Het Nest to move across the park to the other side. On the side where there are no fixed power outlets. So I said 'guys, that is not [environmentally] sustainable at all'. And they replied 'yeah, but this is creative'. Sure, but then you deny the fact that you want to hold a green event. Then you have to find solutions to a problem that did not have to exist in the first place.*

Another way in which creation plays a part is that it has different effects on the crews during the festival's build-up and break-down phases. In the build-up phase creation is a driving force, influencing how the crew works, because the aim is to build the most beautiful festival site possible. However, after the festival has ended and the site is damaged by being used intensively, the break-down phase starts. During this time the mindset of the crews is completely different. The site is already damaged, plus they are tired and they want to finish as quickly as possible to go home. The end result does not have to be beautiful, it only has to meet general requirements from the terrain owner. This viewpoint is summarised in the following quote by SH: "*Events are a strange phenomenon, during the set up everyone is very focused, everyone aims for the most beautiful image, but when the event is over it suddenly does not matter anymore.*"

As was mentioned before, signs of creation being a barrier only emerged from the other interview transcripts after SH mentioned and explained it. This is an example from the interview with ME, where he mentions this barrier without naming it: "*We really have to go for the experience, customer friendliness, quality, and put that in a[n environmentally] sustainable wrapping.*" PO also mentioned an example in which creation is clearly more important than greening:

*As soon as the technology is available, we'll use LED lights. Now we just use standard halogen lamps. And then you're talking about many lamps that draw 1000W. While an LED lamp with the same light output requires something like 50W. But they are not used yet because they do not have the same quality, according to the*

*people who have to work with them. At the end of the day, it is the artists and their lighting men who have to accept it.*

Creation is thus considered a barrier for greening Doornroosje's festivals because, according to my interviewees, it always comes first. Interestingly, it even comes before money. Only when the look and feel of the festival have been decided, do the organisers shift to searching for affordable and possibly green ways to add substance to the festival.

## 4.1.7 Fear of greenwashing

This barrier was clear especially from the interview with PO. He stated that "*I do not like it when people only do something for the image, while it does not make any sense. That they try to look good, but do not actually do anything, I am allergic to that.*" During the rest of the interview, it was very clear he also projected this onto his own behaviour. He mentioned multiple examples of greening measures he would not be willing to take, because at the same time he has a handful of diesel-powered generators working backstage and that "*everything that comes after feels insignificant*".

On this same topic, ME mentioned that at Het Nest festival it is very important for organisers to be sure that a greening measure is actually better than the regular option. He stated: "*We want to make sure it's truly [environmentally] sustainable and not just for the show*". He also mentioned that to him it would not feel right to implement greening measures "*but bring everything to the site with very dirty transport*".

This is considered a barrier because it seems that Doornroosje's organisers are not willing to implement certain greening measures until other systems can also be upgraded to be greener, while reducing single use plastics for example is important no matter what provides the power to a festival.

## 4.1.8 Organisers' practices

When asking my interviewees whether in some cases their habits would cause them to choose common measures instead of look a bit further to find greener options, it was clear that this is mainly true for the two producers (SH and PO). ME mentioned as a response that he thought EV would have some issues with habits, however EV himself answered "*I am not sure, I think there might be some*".

SH answered to the same question that of course this is an issue: "*Yes sure, because you have your own method of working, and there are steps that follow each other logically. And if you want to make it more [environmentally] sustainable, you can rethink those steps.*"

An example of this barrier comes from PO. When talking about regulations he mentioned an important one for festivals, which has caused the surge in single use items at festivals: the regulation around 'dangerous' materials. The most durable and therefore green materials, such as glass and porcelain and many others, are not allowed on festival sites because they can (be used to) hurt people. At some point PO mentioned that:

> *There is no regulation that states you cannot give out soda cans on the site. For glass there are regulations, but that can be used as a stabbing weapon. That is perhaps an example of things that become normal, to only give out cups. That may have started one day because cans are dangerous when they are thrown, but that is not necessarily the case at all festivals. So now I am thinking that we can only give out the can, at least that saves the cup.*

PO also made the comparison with other festivals, saying that the larger parties, with more money to spend, work even more out of habit:

> *I have also worked at other festivals, big ones of 50.000 people or more, super commercial ones with expensive tickets, at those festivals a lot more is done out of habit. They call the same supplier again, "bring us so much of this, so much of that, it does not matter if there are a few more".*

This is considered a barrier because organisers who simply follow the same steps in their preparation every year, will be unable to keep up with available greening solutions and thus be less green than possible. However, I do appreciate that PO realised during our interview that pouring a drink from a can into a cup is quite pointless, and I hope this is something he will change.

## 4.1.9 Location

All six festivals organised by Doornroosje in 2019 took place in outdoor areas within the city of Nijmegen, five of them in public parks. Three were hosted in small parks in the city centre, the other two in a large park in the southern neighbourhoods of the city. These parks were not meant to host such large events. The small parks in the city centre are very old and were described by PO as "*vulnerable parks*" that they have to treat with respect. The Goffertpark, the large park where both FortaRock and Het Nest are hosted, has been adapted to be better equipped to host concerts and festivals. The municipality has installed fixed outlets there that provide enough energy to power music events, thus eliminating the need for polluting generators and fuel. However, these outlets are in the large open area of the park, which is mainly used for large shows and is therefore considered not suitable for Doornroosje's smaller festivals. PO mentioned this in the following quote:

> *You have got some very big power connections [in the Goffertpark], they are there for Mojo's Goffert concerts, but as soon as you go a little more into the corner where Het Nest is, and so [is FortaRock] now, that is not there. So then you have to start using generators again.*

The reason why these power outlets cannot be used when moving too far away from them, is explained by SH: "*you can only cover a certain number of meters with a power cable. Something like 100 meters. After that it loses its power, and then you cannot deliver what the equipment needs anymore.*"

Another way in which the location of Doornroosje's festivals stands in the way of greening is mentioned by ME. He mentioned many times during the interview that he would really like to give something back to the park, instead of just taking from it and damaging it. His ideas focused around providing wooded banks for birds to shelter in and sowing flowers to help insects. However, his ideas to help restore the park were not easy to implement, because: "*[the groundskeepers] like to help us think about this, but they are bound by some of the requirements of the park.*" This shows that, even when budget and motivation are not an issue, greening efforts can be hindered by location-specific regulations.

Location can thus be considered a barrier to greening. First, because some of the chosen festival sites require less environmentally friendly solutions and second, because in these parks it is not always possible to do your best to compensate for the damage you did, because of rules and guidelines determining what the park should look like.

## 4.1.10 Waiting for Frontrunners

This barrier was only mentioned by one of the interviewees, EV, and is therefore not well-grounded. However, it was the common thread running through his story. There are two sides to this barrier, the first being that waiting for the frontrunners to make a decision on a greening measure is beneficial, as was explained in the section on money as a barrier. When the larger festival organisations choose the same measure, for example hardcups, renting or buying them becomes cheaper through market mechanisms. The second side to this barrier is that when a festival organisation chooses its own solution, without looking at what others are doing, it risks choosing the wrong path. EV said about this:

> *You also have to time it well, I think it is important what the big parties will do, like Mojo, LowLands and Zwarte Cross. That is important to me, not to be ahead of them, because then you go down a path that might end up dead after all.*

Of course, this second interpretation does in the end also come down to money, because investing in a measure that turns out not to

become the new standard is expensive, especially if having to follow the path chosen by the others requires a new investment.

This is considered a barrier because EV wants to postpone certain greening decisions until the market is better suited to offer fitting solutions. However, if all festivals were to wait for others to take the first step, they would not get anywhere.

## 4.1.11 Relationships between the barriers

From the previous detailed descriptions clearly follow some relationships between the barriers, which will be described in this section.

**Money, time and knowledge.** A relationship between money and time was of course expected, first because the existing literature combines these two to form the barrier "lack of resources", and second because it makes sense that staff time has to be paid for. If a festival has to be organised with the lowest possible staffing costs, they will focus on the bare necessities and not on greening. However, knowledge is also related, since the main reason why organisers are unable to gain more knowledge is a lack of time. This means that these barriers can all be overcome by adding more money to the festival's budget. The organisers could then spend time on finding knowledge, or they could hire professionals who already have the required knowledge. This is of course easier said than done.

**Money and available technology.** Although the examples mentioned for the barrier lack of available technology mainly focused on issues that do not yet have a perfect solution, such as the cups and power, there is of course also a connection to the barrier money. PO mentioned, as described in section 4.1.4, that festival batteries can only provide enough power to cover the peak tensions. This might be true for a festival that only has enough money to place one or two batteries. However, if money would not be an issue, batteries could surely power the entire festival. They would just need a lot of them.

**Location and creation.** These two barriers are strongly related, because festival organisers do not choose the greenest possible

location for their events. They choose a location that they like, because it has character, because it has enough space, because it is far enough away from urban areas so that residents are not disturbed by the music, et cetera. All these other factors are more important, and then the organisers have to try to implement some greening measures even though the site might not be suited for this.

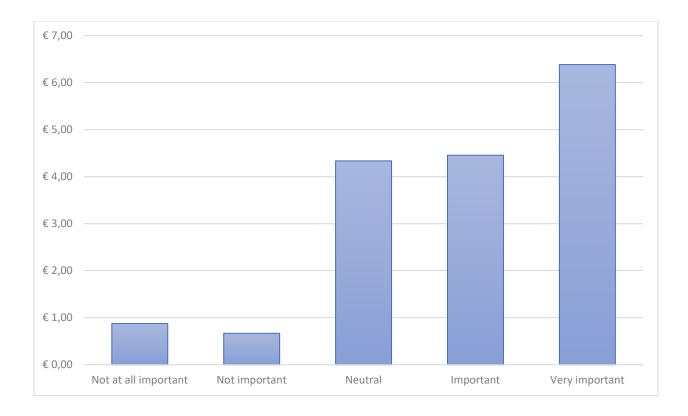## 4.2 To what extent is the audience accepting of greening measures?

The willingness of the audience to accept greening measures at Doornroosje's festivals was measured by a survey, conducted at four festivals, as described in the Methodology chapter. The hypotheses defined in chapter 2 will form the structure of this chapter, they will each be discussed in a separate paragraph.

A total of 481 respondents filled out my survey. However, not all recorded responses can be used to analyse all hypotheses. When it is the case that some responses were left out for a particular hypothesis, it will be described in the corresponding section. In all other cases, the entire dataset of 481 responses was used.

### 4.2.1 Hypothesis 1: Visitors who care about the environment are willing to pay more for a ticket if it ensures environmentally sustainable solutions.

The data belonging to this hypothesis are plotted in figure 2 below. Since the survey questions of which the data is needed to test this hypothesis were completed by all of my respondents, all 481 recorded responses were used.

**Figure 2**

*Relationship between the visitors' level of care for the environment and the amount of money they are willing to pay more for a greener festival.*

A bar chart showing willingness to pay (in euros) across five categories: Not at all important (≈€0.90), Not important (≈€0.65), Neutral (≈€4.35), Important (≈€4.45), Very important (≈€6.40).

To test whether the differences between the people who indicate they do not care about the environment and those who say they do care are statistically significant, a Kruskal-Wallis test was used. This test can calculate significant differences between 3 or more groups with the measurement level of the outcome variable on an ordinal scale. The null hypothesis for this test is that visitors of all levels of care for the environment are willing to pay an equal amount of money for festival greening.

From table 5 below it is clear that the only non-significant group comparison is the one between 'not at all important' and 'not important', which was to be expected after looking at figure 2. This means that the null hypothesis holds between these two groups, they are willing to pay an equal amount of money for greening. For the other groups however, the null hypothesis is rejected. Visitors who indicated they think the environment is 'very important', were significantly willing to pay the most for greening solutions.

**Table 5**

*Pairwise comparisons of 'How important is sustainability to you?' on whether visitors are willing to pay more for festival greening.*

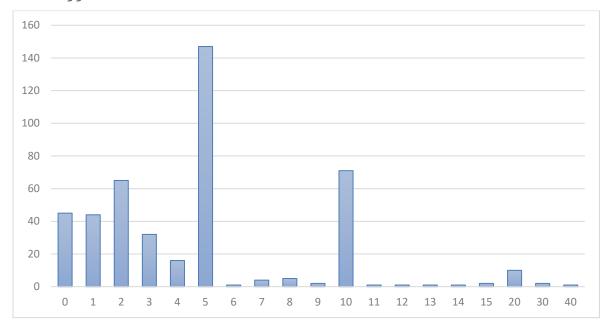| Sample 1-Sample 2 | Test Statistic | Std. Error | Std. Test Statistic | Sig. | Adj. Sig. |
|---|---|---|---|---|---|
| Not important-Not at all important | 11,000 | 68,908 | ,160 | ,873 | 1,000 |
| Not important-Neutral | 121,888 | 54,107 | 2,253 | ,024 | ,243 |
| Not important-Important | 166,265 | 52,850 | 3,146 | ,002 | ,017 |
| Not important-Very important | -222,796 | 53,075 | -4,198 | ,000 | ,000 |
| Not at all important-Neutral | 110,888 | 47,426 | 2,338 | ,019 | ,194 |
| Not at all important-Important | 155,265 | 45,987 | 3,376 | ,001 | ,007 |
| Not at all important-Very important | -211,796 | 46,246 | -4,580 | ,000 | ,000 |
| Neutral-Important | 44,377 | 17,147 | 2,588 | ,010 | ,097 |
| Neutral-Very important | -100,908 | 17,830 | -5,660 | ,000 | ,000 |
| Important-Very important | -56,531 | 13,546 | -4,173 | ,000 | ,000 |

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is ,05.

## 4.2.2 Hypothesis 2: Visitors are on average willing to pay between 5 and 10 euros per festival day to compensate for the environmental impact of their visit.

Since this question in the survey was open, with a box in which respondents could type a number, some people did not answer the question in a useful way. For example, one visitor wrote "*Well, it's already quite expensive for our modest income.*" Someone else answered: "*10%*" and a few people wrote that it was dependent on whether the organisers could show how the money would be used. Such answers that could not reasonably be converted into a numerical value were deleted from the dataset, resulting in a total of 451 valid responses.

For this hypothesis, no statistical test was used. As is immediately clear from figure 3 below, the hypothesis that visitors are willing to pay between 5 and 10 euros per festival day is not right, they are willing to pay between 0 and 5 euros. However, many people did offer to pay 10 euros (71 people in total), and some people even volunteered to spend more than 10 euros (19 people in total).
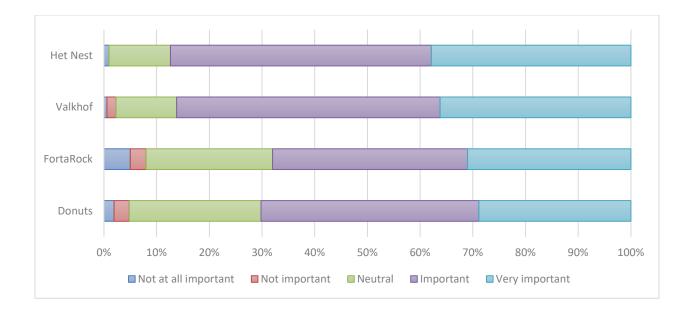
**Figure 3**

*Relationship between the amount of money visitors would be willing to pay more for festival greening versus the number of times this amount was suggested.*



## 4.2.3 Hypothesis 3: The festival audiences differ in their concern for the environment, with visitors of Het Nest and Valkhof festival being most concerned, and visitors of FortaRock and Donuts being least concerned.

The data belonging to this hypothesis are plotted in figure 4 below. The null hypothesis is that all festival visitors have equal concern for the environment. Looking at the graph below, it seems unlikely that this null hypothesis will hold.

**Figure 4**

*The level of environmental concern of visitors to the four different festivals.*

An independent-samples Kruskal-Wallis test was performed to analyse whether the visitors to the four festivals differ in their concern for the environment. The results are presented in table 6 below. In the 'Sig.' column, the significance values are shown. A value below 0,05 indicates a significant difference in visitors' concern for the environment. The difference between FortaRock and Donuts, as well as the difference between Valkhof and Het Nest, is insignificant. All other festival comparisons show significantly different results, which means that the null hypothesis is rejected for these festival comparisons, just as expected.

**Table 6**

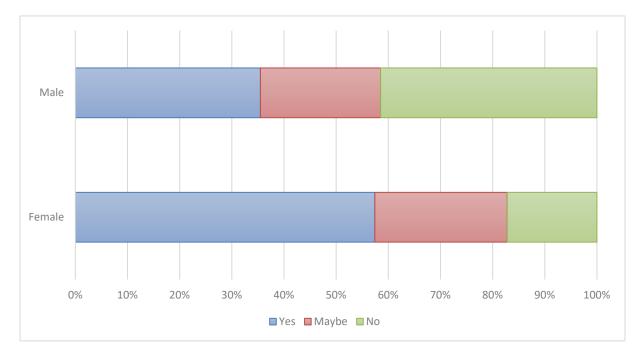*Pairwise comparisons of 'festival' on the level of environmental concern.*

| Sample 1-Sample 2 | Test Statistic | Std. Error | Std. Test Statistic | Sig. | Adj. Sig. |
|---|---|---|---|---|---|
| FortaRock-Donuts | ,915 | 18,085 | ,051 | ,960 | 1,000 |
| FortaRock-Valkhof | -40,222 | 16,204 | -2,482 | ,013 | ,078 |
| FortaRock-Het Nest | -45,705 | 18,128 | -2,521 | ,012 | ,070 |
| Donuts-Valkhof | -39,307 | 16,005 | -2,456 | ,014 | ,084 |
| Donuts-Het Nest | -44,790 | 17,950 | -2,495 | ,013 | ,076 |
| Valkhof-Het Nest | 5,483 | 16,053 | ,342 | ,733 | 1,000 |

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is ,05.

## 4.2.4 Hypothesis 4: Females are more likely to choose vegetarian dishes at the festivals than males.

Before testing this hypothesis, the people who identified as "other" in the gender category were removed from the dataset. Since there were only 8 people in this category, a statistical analysis of this group would not yield reliable results. Therefore, this test was run with 473 valid cases.

The results are presented visually in figure 5 below, clearly showing the differences between males and females.

**Figure 5**

*The differences between females and males on willingness to eat vegetarian food at festivals.*

This hypothesis was tested using a Mann-Whitney Test, since it is capable of comparing two subpopulations on a single ordinal variable. The null hypothesis in this case is that males and females are equally likely to choose a vegetarian dish.
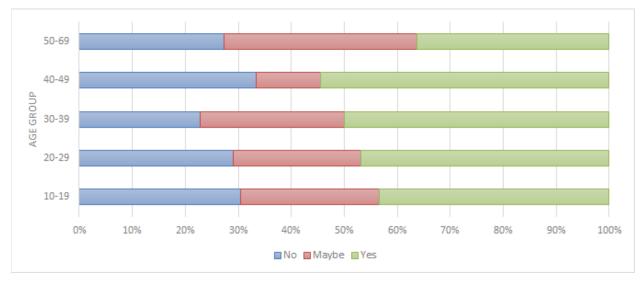
The Mann-Whitney test resulted in a p-value of 0.000, which means the null hypothesis is rejected. The test results also indicate the direction of the relationship, namely that women are more likely to choose a vegetarian dish. Hypothesis 4 is thus confirmed.

## 4.2.5 Hypothesis 5: Young(er) people are more likely to choose vegetarian dishes at the festivals than old(er) people.

Figure 6 below gives a visual representation of the data that was used to test this hypothesis. The null hypothesis is that people of all ages are equally willing to choose vegetarian dishes at festivals.

**Figure 6**

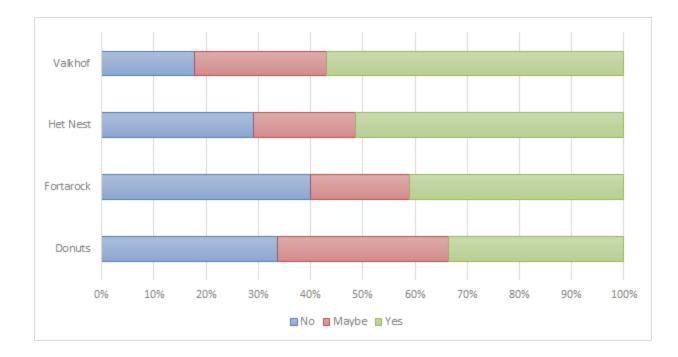*The differences between age groups on willingness to eat vegetarian food at festivals.*



This hypothesis was tested in two different ways. First, age was used as a continuous variable and was correlated with the answers to

"would you choose a vegetarian option at the festival?" using Kendall's Tau-B. This yielded a correlation coefficient of 0.000 and a p-value of 0.997, indicating that there is no relationship at all. Next, the age data was divided into five categories and then again correlated with "would you choose a vegetarian option at the festival?" using Kendall's Tau-B. Again, the correlation coefficient was close to 0 (0.007) and the p value was high (0.850) meaning that there truly is no relationship between these two variables in this dataset. This means that the null hypothesis is not rejected and hypothesis 5 is incorrect.

## 4.2.6 Hypothesis 6: The festival audiences differ in their acceptance of vegetarian dishes, with visitors of Het Nest and Valkhof festival being most willing to eat vegetarian food, and visitors of FortaRock and Donuts being least willing to eat vegetarian food.

The null hypothesis for this test is that visitors of the four festivals are all equally likely to be willing to choose a vegetarian dish. Figure 7 provides a visual representation of the results.

**Figure 7**

*The differences between the four festivals on willingness to eat vegetarian food at festivals.*

The figure shows that visitors of Valkhof are most likely to choose a vegetarian option whereas visitors of FortaRock are least likely to choose a vegetarian option. To test whether these visual differences are significant, a Kruskal–Wallis test was used. Table 7 below shows the results of this analysis.

**Table 7**

*Pairwise comparisons of 'festival' on willingness to eat vegetarian food at the festival.*

| Sample 1-Sample 2 | Test Statistic | Std. Error | Std. Test Statistic | Sig. | Adj. Sig. |
|---|---|---|---|---|---|
| Donuts-FortaRock | -4,644 | 18,016 | -,258 | ,797 | 1,000 |
| Donuts-Het Nest | -36,437 | 17,882 | -2,038 | ,042 | ,250 |
| Donuts-Valkhof | -60,128 | 15,944 | -3,771 | ,000 | ,001 |
| FortaRock-Het Nest | -31,792 | 18,059 | -1,760 | ,078 | ,470 |
| FortaRock-Valkhof | -55,484 | 16,142 | -3,437 | ,001 | ,004 |
| Het Nest-Valkhof | -23,692 | 15,993 | -1,481 | ,138 | ,831 |

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is ,05.

This table shows the pairwise comparisons of the different festivals. As expected, Het Nest and Valkhof do not significantly differ (p=0.138), and neither do FortaRock and Donuts (p=0.797). The

three comparisons that do show a significant difference, confirm that visitors of Valkhof and Het Nest are more willing to eat vegetarian food than visitors of Donuts and FortaRock.

Interestingly, festival organisers at Doornroosje are convinced that visitors at Het Nest are much more willing to eat vegetarian food than visitors at FortaRock. Figure 7 that this is indeed the case, but the difference is smaller than expected. The statistical analysis shows the same: the p-value is 0,078, and although this indicates the groups are not statistically different, the p-value is barely higher than the threshold value of 0.05.
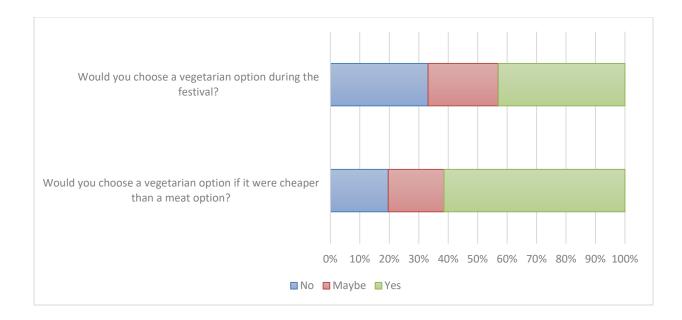
## 4.2.7 Hypothesis 7: More people are willing to eat vegetarian dishes at festivals when they're cheaper than meat dishes.

Before testing this hypothesis, some visitors of Het Nest festival were removed from this dataset, because they did not answer the question about price. This resulted in a total of 407 valid cases.

A visual representation of the results is shown in figure 8 below. The graph shows that visitors are more willing to choose a vegetarian option if it is offered at a lower price than the meat option.

**Figure 8**

*Influence of price on willingness to choose a vegetarian dish at a festival.*
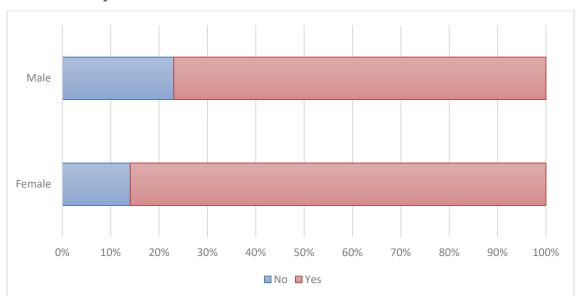
A Wilcoxon Signed-Ranks test was used because this hypothesis requires a within-subjects test and the variables have an ordinal measurement level. The null hypothesis in this case is that the population distributions are identical for both questions.

The results of the Wilcoxon Signed-Ranks test indicated that the "would you choose a vegetarian option if it were cheaper than meat" question (mean rank = 72.26) was rated more favourably than the "would you choose a vegetarian option" question (mean rank = 62.92), Z = -8.359, p = 0.000. This means that the null hypothesis is rejected and a relationship between the questions is proven. Since the relationship indicates that people respond more positively to eating vegetarian food when it is cheaper, hypothesis 7 is confirmed.

## 4.2.8 Hypothesis 8: Females are more likely to accept using reusable cups at the festivals than males.

Before testing this hypothesis, the people who identified as "other" in the gender category were again removed from the dataset. As a result, this test was run with 473 valid cases.

The null hypothesis is that males and females are equally willing to use reusable cups. Figure 9 below shows the data for this hypothesis.
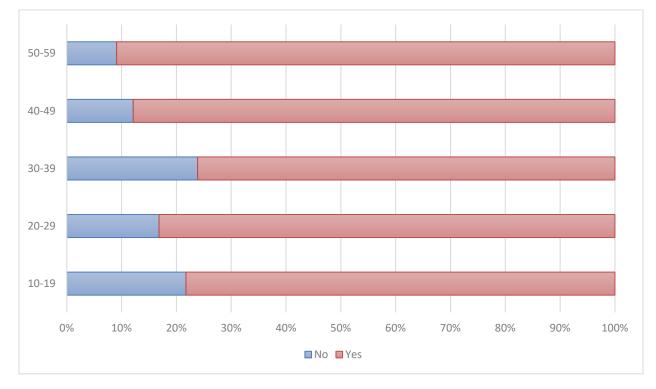
**Figure 9**

*The differences between females and males on willingness to use reusable cups at festivals.*



A Pearson Chi-Square test was used to analyse this data because it can be used to compare two subpopulations with a nominal measurement level. The p-value of 0,012 means the null hypothesis is rejected, which means that females and males do significantly differ in their acceptance of reusable cups.

## 4.2.9 Hypothesis 9: Young(er) people are more likely to accept using reusable cups at the festivals than old(er) people.

The null hypothesis for this test is that all age groups are equally likely to accept using reusable cups. The data belonging to this hypothesis are plotted in figure 10 below. The graph shows that the age groups do differ in their willingness to use reusable cups, but the differences are not great.
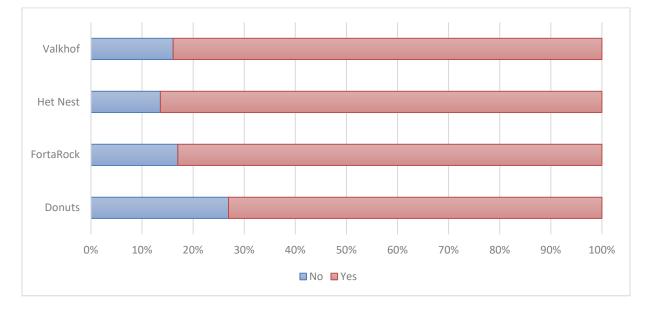
**Figure 10**

*The differences between age groups on willingness to use reusable cups at festivals.*



A Kendall's Tau test was used on age as a continuous variable (p=0,615) and age as an ordinal variable by creating age groups (p=0,938). The significance value is far above 0,05 in both cases, which means the null hypothesis is retained.

## 4.2.10 Hypothesis 10: The festival audiences differ in their acceptance of reusable cups, with visitors of Het Nest and Valkhof festival being most willing to use these cups, and visitors of FortaRock and Donuts being least willing to use these cups.

The null hypothesis for this test is that the visitors of each festival are equally willing to use reusable cups. Figure 11 below gives a visual representation of the data used to test this hypothesis.
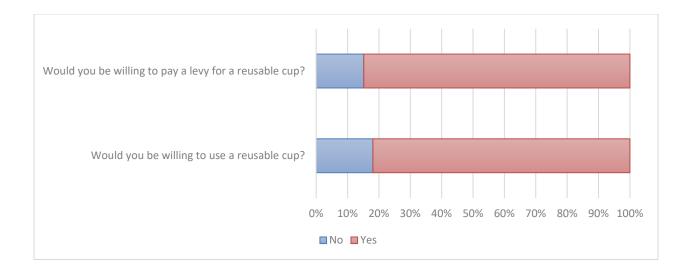
**Figure 11**

*The differences between the four festivals on willingness to use reusable cups.*



To test this hypothesis another Kruskal-Wallis test was run. Although some differences seem to be evident from figure 11, the overarching p-value was 0,060, which means neither of the differences are significant. Therefore, the null hypothesis is not rejected and hypothesis 10 is proven to be false.

## 4.2.11 Hypothesis 11: Less people are willing to use a reusable cup when a deposit is charged on it.

The null hypothesis for this test is that equal numbers of people are willing to use a reusable cup, independent of whether they have to pay a deposit for it. Figure 12 however shows that slightly less visitors are willing to use a reusable cup when they have to pay a levy for it.

**Figure 12**

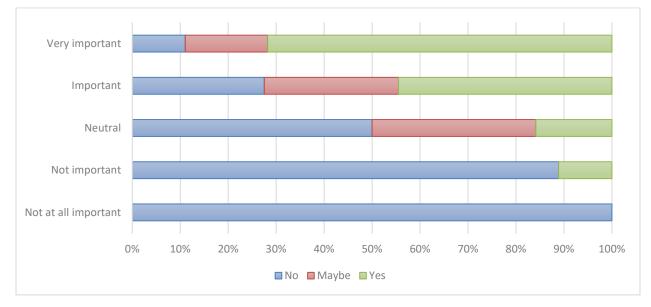*Influence of price on willingness to use a reusable cup at a festival.*

A McNemar test was used to analyse the data because it is suited for testing whether two variables measured on the same individuals are statistically different. This resulted in a p-value of 0.170, which means the null hypothesis is not rejected. The addition of a levy will not result in a significant decrease in willingness to use reusable cups. Although retaining the null hypothesis is often not what a researcher wants, in this case it is good since it means that a deposit system would probably be easily accepted by the festival audiences.

## 4.2.12 Hypothesis 12: People who indicate they care about environmental sustainability are more likely to choose vegetarian dishes and be accepting of reusable cups.

This hypothesis consists of two parts, which are examined separately. The first part involves the willingness to choose a vegetarian option and the second part involves the willingness to use reusable cups.

The first null hypothesis is that all visitors are equally willing to choose a vegetarian option, regardless of their concern for the environment. Figure 13 shows that this is clearly not the case.

**Figure 13**

*Relationship between level of concern for the environment and willingness to choose a vegetarian dish at the festival.*



An independent samples Kruskal-Wallis test was used to test this null hypothesis because the outcome variable (willingness to eat vegetarian food) is on an ordinal scale. As shown in table 8 below, almost all comparisons have a p-value below 0,05. This means that the null hypothesis is rejected for these comparisons. These results can be summarised to say that visitors who care more about the environment are also significantly more willing to choose a vegetarian option.

**Table 8**

*Pairwise comparisons of 'How important is sustainability to you?' on willingness to eat vegetarian food at the festival.*
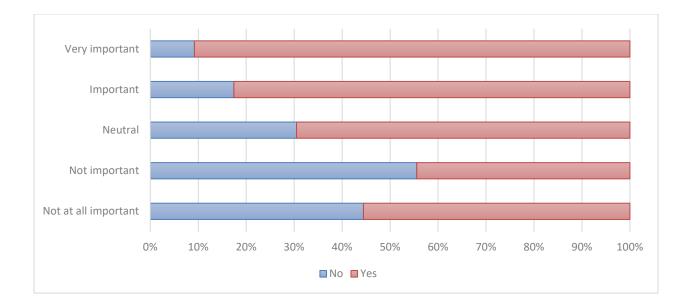
| Sample 1-Sample 2 | Test Statistic | Std. Error | Std. Test Statistic | Sig. | Adj. Sig. |
|---|---|---|---|---|---|
| Not at all important-Not important | -33,222 | 60,641 | -,548 | ,584 | 1,000 |
| Not at all important-Neutral | 90,598 | 45,171 | 2,006 | ,045 | ,449 |
| Not at all important-Important | 168,438 | 43,756 | 3,850 | ,000 | ,001 |
| Not at all important-Very important | -236,350 | 44,047 | -5,366 | ,000 | ,000 |
| Not important-Neutral | 57,375 | 45,171 | 1,270 | ,204 | 1,000 |
| Not important-Important | 135,216 | 43,756 | 3,090 | ,002 | ,020 |
| Not important-Very important | -203,127 | 44,047 | -4,612 | ,000 | ,000 |
| Neutral-Important | 77,841 | 16,665 | 4,671 | ,000 | ,000 |
| Neutral-Very important | -145,752 | 17,416 | -8,369 | ,000 | ,000 |
| Important-Very important | -67,912 | 13,320 | -5,098 | ,000 | ,000 |

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is ,05.

Part two of this hypothesis is about the willingness to use reusable cups. The null hypothesis is that all visitors are equally willing to use reusable cups, regardless of their concern for the environment. Figure 14 shows that this is not likely to be true.

**Figure 14**

*Relationship between level of concern for the environment and willingness to use reusable cups at the festival.*
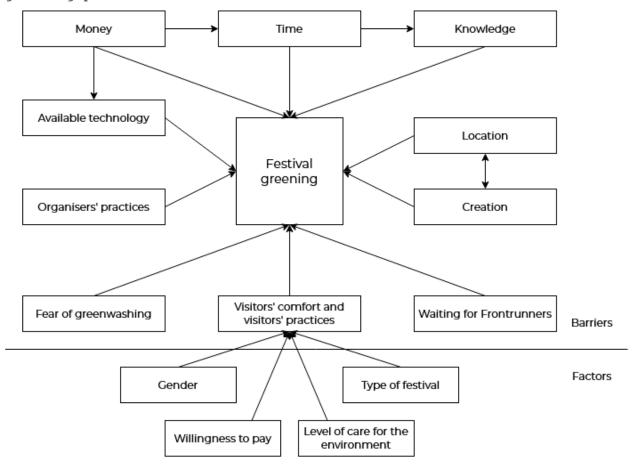
To test this null hypothesis a Pearson Chi-Square test was used since the outcome variable in this case (willingness to use reusable cups) is on a dichotomous scale. This resulted in a p-value of 0,000, which means that the null hypothesis is rejected. Visitors who care more about the environment are significantly more willing to use reusable cups.

## 4.3 New Conceptual Model

Based on the findings presented in this chapter, a new conceptual model was created in order to aid the comparison of the data from the literature and from my research. The new model is presented in figure 15 below.

**Figure 15**

*New conceptual model of barriers and factors that influence the greening process.*



Since I have added the discovered relationships between the barriers to this model, it was not possible to keep the layout as simple as that of the model in chapter 2. To read this model easily, I added a line that divides the barriers that influence greening and the factors that influence the visitors.

# Chapter 5: Discussion

As explained in the first chapter, the aim of this research is to provide Doornroosje with more information about the specific barriers that stand in the way of their festivals becoming more environmentally sustainable. With this information they can then try to collaborate with their partners on tackling these issues. Therefore, this chapter will discuss the results and draw conclusions from the results, in order to build the information Doornroosje needs.

In section 5.1 the research questions will be answered and the results will be compared with the information from chapter two, for both the interview data and the survey data. Section 5.2 then provides some clear recommendations for Doornroosje. In section 5.3 I will discuss the limitations of this research and section 5.4 provides some recommendations for further research.

## 5.1 Discussion of the results

### 5.1.1 Interview results

The main research question for this thesis is as follows: "Which barriers do festival organisers at Doornroosje encounter when trying to green their events?". The answer to this question comes from the interview data. Some barriers were mentioned by all four interviewees and are therefore considered very legitimate. These are 'lack of money', 'lack of knowledge', 'visitors' comfort' and 'visitors' practices', 'lack of time' and 'lack of available technology'. Some less often mentioned, and thus less legitimate, barriers are 'fear of greenwashing', 'organisers' practices' and 'location'. The two least legitimate barriers were only explicitly mentioned by one interviewee, 'creation' was mentioned only by SH and 'waiting for frontrunners' only by EV. However, I decided to keep both barriers in the results. For 'creation' this decision was based on two points: first that it was mentioned by SH, an experienced event producer who works for events throughout the Netherlands and Belgium, on big and small ones and everything in between, and is thus considered a reliable source of

knowledge on this topic, and second because I found proof of 'creation' also being a barrier for the other interviewees, although they did not name it explicitly. For 'waiting for frontrunners' I based this decision on the fact that it was the central theme in EV's story, to him it truly was the most important barrier and he kept returning to this point, and therefore it is more legitimate than if he had only mentioned it once.

Because I coded the barriers that emerged from my interviews according to the explanations my interviewees gave, instead of choosing to code them along the lines of the barriers identified from the literature, a good comparison between the results and the literature is difficult. However, some very clear similarities exist between the two lists of barriers. First, a lack of money is clearly an important barrier, since it is the most often mentioned one in both the literature and the interviews, although I found the sidenote that greening does not necessarily have to be more expensive in both sources of data as well. A second similarity I found is a lack of time for employees to find greening measures and ways to implement them. In the literature this is linked to a lack of money and although I separated these two barriers during coding, a clear relationship between the two also emerged from my interviews. A third similarity that I found between both sources of data is that greening the power supply of a festival is considered to be difficult when the location does not offer an alternative, such as fixed power outlets. Fourth, some similar statements were made about the visitors by my interviewees on the one side and by the authors quoted in the literature chapter on the other side. For example, both agreed that visitors are hardly aware of the environmental consequences of festivals although a positive attitude towards greening does seem to exist among visitors. However, both sources of information also agree that waste separation at festivals is very difficult due to (the practices of) the visitors, such as being used to throwing a cup on the ground. The fifth and final clear similarity is the issues with available alternatives to disposable softcups, which both sources of information describe to be less than satisfying.

There are also some barriers that I found in my interviews that do not have a counterpart in the literature. The first example is 'lack of knowledge'. Although I did find this barrier in the literature, it was mostly in the form of examples instead of explanations, let alone different interpretations of the barrier. This is in stark contrast to the three different interpretations of knowledge that I found in my interviews. The same is true for the barrier 'visitors'. The description of this barrier that I was able to build from my interviews is a lot more detailed and more complete compared to the descriptions in the literature. Especially the distinction between 'visitors' practices' and their 'comfort' seems very relevant, because these two properties influence a visitor's behaviour in very different ways and when trying to overcome them, they should both be handled in a different way as well. A third barrier that I found to be broader in the interviews than in the literature was 'lack of time', with two important new interpretations that deepen the understanding of the barrier, although one could argue that the interpretation that says you should keep pace with society, to not get ahead of what is considered acceptable, is somewhat comparable to the barrier 'lack of stakeholder agreement and support' from the literature. Next to these examples where understanding of known barriers was deepened by adding my results, I also found some completely new barriers. These are 'creation', 'fear of greenwashing', 'organisers' practices' and 'waiting for frontrunners'.

Of course, the opposite is also true. There are some barriers I found in the literature that I could not confirm with my interviews. First is the dependence of some festivals upon sponsors and sponsorships. This apparently is not the case with the Doornroosje festivals, since it was not mentioned at all during my interviews, even though money was a recurring topic of conversation. A second issue I did not find is transportation. I say issue because it is not a barrier, but rather an often-used example of other barriers. The main problem is that visitors come to the site by car and it is difficult to convince them otherwise. The fact that this didn't come up in the interviews is unsurprising, since all six of Doornroosje's

festivals are held in areas with good public transport access, and since all festivals but FortaRock are one-day events without camping facilities. The third barrier I found in the literature without a counterpart in the interviews is temporality. This was expected beforehand since it was only mentioned in one research article. Finally, I would like to point out that greenwashing is considered very differently in the two sources of data. In the literature I found examples of organisers being afraid that the people they hired, such as food vendors, would fall for greenwashing practices. In my interviews however, I found that Doornroosje's organisers are afraid they will be accused of greenwashing when they take some greening measures now and leave some for later.

Although these barriers were not relevant to the festival organisers at Doornroosje, it does not mean they are not relevant in further research. Therefore, I suggest that going forwards a combination of barriers that I found in the literature and in my interviews is used. Also I suggest naming the different interpretations of some barriers separately. So instead of knowledge having three interpretations, I suggest naming them after their meaning, for example "gathering knowledge" when talking about the interpretation in which knowledge is not gained because employees do not have the required time.

## 5.1.2 Survey results

Next to this research's main question there is an important sub question: "Are the visitors rightly considered a barrier?" This question was answered by the results of the visitor survey. The hypotheses formed based on the literature showed that three factors were expected to have an influence on whether visitors would accept greening measures or not, which are age, gender and willingness to pay. Of these three factors, two proved to be true for Doornroosje's visitors as well: gender and willingness to pay. Age had no significant influence on acceptance of either vegetarian dishes or reusable cups in my group of respondents.

In addition to not finding age to be of influence, I did find two new factors as well. First is a visitor's level of care for the environment, which is very straightforward but was not yet grounded in the literature, and second is the type of festival.

The answer to the sub question is more complex than a simple yes or no however. My survey results confirm the image that Doornroosje's organisers have, that visitors of Het Nest are more open to greening than visitors of FortaRock. However, they voiced no expectations about Valkhof, which turned out to be the festival with the most accepting audience. Furthermore, although these factors have been found to have an influence, they are certainly not the only ones that determine a visitor's behaviour. For example, I concluded that in this comparison the type of festival influences whether people are open to greening measures, but that does not mean that the same person visiting both FortaRock and Het Nest behaves differently at both festivals. Why a person chooses to visit a certain festival is dependent on many different factors, which in turn might say something about their acceptance of greening. The properties of festival visitors in relation to their acceptance of greening have to be mapped in much more detail if this research's sub question is ever to be answered truthfully.

For now however, the conclusion is that visitors are rightly considered a barrier at some festivals, which in practice means it would be wise for organisers to consider them unaccepting of greening until the opposite is proven for that specific festival.

## 5.2 Recommendations

The aim of this research is to help Doornroosje green their festivals by providing them with useful information on how to proceed. The most prominent piece of advice I can give is to find more (sources of) money. Since a lack of money has so much influence on what is possible and what not, it must be liberating for organisers to be able to place for example three festival batteries if that is what they need to power the entire festival. Although increasing a festival's budget is

easier said than done, my survey has shown that visitors are on average willing to pay 5 euros more per festival day if the money is spent on greening the festival. If Doornroosje would raise their festival entrance fees by 5 euros and then very clearly show the visitors what they were able to do with this money, I am sure people would accept this. More suggestions on how to increase a festival's budget can be found in the literature. I came across many ideas, although this project was not suited for listing them all.

Another recommendation is to keep using the locations they are using now. The city parks with easy access to public transportation hubs are ideal locations to allow for low-carbon methods of travel. Even though many ideas exist to encourage people to travel to remote festival locations by other means than a car, the literature shows that it is still not enough to actually greatly decrease car travel. Therefore, the easily accessible locations Doornroosje uses now are perfect.

A final recommendation is for Doornroosje's organisers to start talking about greening amongst themselves. My interviewees told me that this does not happen yet (or it did not in the spring of 2019), while I think a lot can be gained from discussing these issues. For example, they could decide to test different green power options at different festivals and calculate the costs and effects, to build knowledge together. Or they could for example challenge each other's beliefs, to overcome the view that greening one area of a festival is pointless as long as another area is still far from being green, like PO mentioned he is worried about. Or maybe together they could decide on their priorities, if they agree that greening should be more important, maybe it could become a higher priority than creation.

## 5.3 Limitations

This research project suffered from a couple of limitations. The first was already mentioned in the Methodology chapter: during the research process it became clear that Doornroosje did not have enough sources of qualitative data available. My supervisor could not offer me more

than four interviewees, all other available employees who work on the festivals were too far away from the organising process to answer my questions. Also, Doornroosje does have documents in which the business processes and yearly experiences are discussed but I was not allowed to use these as a source of data. This left me with four interviews and a large problem. Fortunately, I had already started taking visitor surveys at two festivals by the time this lack of data became apparent, and I decided to use that as a second source of data. However, the survey was not built for this research, but for Doornroosje itself, because the CEO was curious to know what the visitors think. When looking into the statistics needed to analyse the data, after all four surveys had been completed, it became very clear that the survey was not set up properly for academic analysis. The best and most reliable option for analysing comparable data is using an ANOVA, but since the answers that people could give to my questions were not on the right scale, I had to settle for simple statistical tests that can cope with nominal variables.

Another issue with the survey is that the way in which it tests willingness to pay is very inconsistent. For example, it asked whether people would be willing to pay more for a reusable cup, which makes the greener option more expensive, while also asking whether people would be willing to choose a vegetarian dish if it were cheaper, which makes the greener option less expensive. If I had known that the survey data would be used in this research project, I would have spent more time perfecting the survey for easy analysis.

A final note about the survey concerns the questions about whether visitors would accept eating vegetarian food at the festival and whether they would be more accepting if the vegetarian dish would be cheaper. Something strange came to light when I looked into the answers to these questions. Some respondents clearly did not read or understand these questions well, since a number of people indicated a lower willingness for the second question (when vegetarian dishes are cheaper) than for the first, which is exactly the opposite of what you would expect. This is true for 36 people in total, which is 7,5% of all respondents.

## 5.4 Suggestions for further research

Through this research I have made a first attempt to (theoretically) solve the issues that hinder festival organisers when greening their events. Although at some point I wanted to find ways to overcome all different barriers, instead of just the visitors, it soon became clear that that was much too broad for this research project. However, I still believe it would contribute to the knowledge base to have a research project identify and list solutions that exist to known issues, and thus spread the word about how these issues can be overcome. As a starting point the barriers identified in this research and other academic papers could be used.

Another possible way forward is to continue mapping what different groups of visitors want and need from a festival. Mine cannot remain the only research paper that decides whether visitors truly are a barrier to greening or not, since there are many different types of music festivals in many different countries in many different contexts, that eventually all have to become green and circular. So more research into the visitors is necessary, both for painting a true picture of their mindsets as well as for gaining reference knowledge for festivals around the world to consult.

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# Appendix 1

Interview guide for the interviews with Doornroosje's organisers (translated from Dutch).

**General information:**

- which festival(s) and which role?
- size of the festival(s)?
- which other parties are involved?
- how would you characterise the audience?

**Drivers and barriers:**

- steps taken towards greening?
- how did that go?
- why these particular steps?
- what more steps would you want to take?
- why have these steps not been taken (yet)?
- which steps that others take would you not want to take and why?
- laws or regulations for greening?
- do you feel any pressure for greening?

**Habits**

- which steps out of habit?
- how would you deal with other people with other habits?
- how would you try to change habits of a) the audience? b) volunteers?

**Communication**

- do you ever consult with others? If yes, does that help? If no, what do you think you could gain from this?
- would you want to consult with others more often?

**Framing**

- what image do you want people to have of the festival?

- would you green just for the festival's image? If yes, under which conditions?


**Drivers and barriers again**

- you say … is an issue, can you think of solutions?

- role of the media?

- role of motivated organiser?

- role of technology?


**Final questions**

- personal views regarding sustainability?

- would you like to add drivers and barriers?

- would you like to add something I have not asked about?

- do you have any questions for me?

# Appendix 2

Questions for the visitor survey administered at four Doornroosje festivals in 2019 (translated from Dutch).

**General**

Q1: What is your age?

    A1: Text field for typing an answer

Q2: What is your gender?

    A2: Choice between 'male', 'female' or 'other'

Q3: How often have you been to [festival name]?

    A3: Choice between 'this is the first time', 'a couple times' or 'every year'

**Food**

Q4: Have you already eaten something at the festival?

    A4: Choice between 'yes' or 'no'

IF YES: Q5: How satisfied are you with the food options?

    A5: Scale of 0 (not satisfied) to 10 (very satisfied)

Q6: How often do you eat vegetarian food at home?

    A6: Scale of 0 (never) to 10 (always)

Q7: Would you choose a vegetarian option during the festival?

    A7: Scale of 0 (definitely not) to 10 (absolutely)

Q8: Would you choose a vegetarian option if it were cheaper than a meat option?

    A8: Scale of 0 (definitely not) to 10 (absolutely)

**Cups**

Q9: To what extent does it bother you when used cups litter the ground?

    A9: Scale of 0 (not at all) to 10 (very much)

Q10: Would you be willing to use a reusable cup?

    A10: Choice between 'yes, because' and 'no, because' with a text field for

    typing an explanation

Q11: Would you be willing to pay a levy for a reusable cup?

A11: Choice between 'yes', 'it does not matter to me' and 'no' with a text field

for typing an explanation

**Sustainability**

Q12: How important is sustainability to you?

A12: Scale of 0 (not at all important) to 10 (very important)

Q13: Would you be willing to pay more for a festival ticket if the money would be used to green the festival?

A13: Scale of 0 (definitely not) to 10 (absolutely)

Q14: How much would you be willing to pay extra, per festival day, to compensate for environmental impact?

A14: Text field for typing an answer

# Appendix 3

Final list of codes after the coding process was completed (translated from Dutch).

BARRIER_Available Technology (18)

BARRIER_Creation (14)

BARRIER_Equal Partners (1)

BARRIER_Existing Contracts (1)

BARRIER_Fear of Greenwashing (10)

BARRIER_Knowledge (30)

BARRIER_Location (6)

BARRIER_Manpower (3)

BARRIER_Money (39)

BARRIER_Open Festival (2)

BARRIER_OVERCOME (34)

BARRIER_Practices (9)

BARRIER_Time (17)

BARRIER_Visitors' Comfort (19)

BARRIER_Visitor's Practices (13)

BARRIER_Waiting for Frontrunners (4)

BARRIER_Waste Separation Issues (8)

Differences HN & FR (6)

Doornroosje (4)

EV (4)

Events (6)

FortaRock (24)

Goffertpark (7)

Het Nest (73)

ME (12)

NOT A BARRIER (1)

One For The Road (7)

PO (2)

RECOMMENDATIONS (16)

Similarities HN & FR (4)

SH (3)