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ASSESSING ENVIRONMENTAL SUSTAINABILITY PRACTICES IN EVENT REVISIT INTENTION INTENSITY: A CASE STUDY OF THE EUROPEAN CULTURAL CAPITAL TARTU 2024 CAR-FREE FESTIVAL

Master's Thesis

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This thesis is written together, yet independently. Any ideas or data taken from other authors or other sources have been fully referenced.

Abstract

This thesis examines environmental sustainability practices within the European Cultural Capital Tartu 2024 Car-Free Festival, focusing on the impacts of the cognitive and affective aspects of visitors in their behavioral intentions. By employing the 'cognitive-affective-conative' model through a survey analysis of participants, the study investigates the relationship between cognitive factors, environmental sustainability, and visitors' intention to revisit sustainable events. Findings reveal the nuanced interplay between environmental sustainability initiatives, visitor attitudes, and behavioral intentions. The research contributes to a deeper understanding of sustainable event management, offering insights for organizers, policymakers, and stakeholders seeking to promote sustainability in the event industry. By highlighting the significance of integrating environmental considerations into event planning and execution, the study underscores the role of festivals and events as drivers of environmental stewardship and social change.

Keywords: Environmental sustainability, Visitor behavior intention, Cognitive-affective-conative model, Management

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1. Introduction

Festivals and events are vibrant reflections of cultural heritage, social cohesion, and economic vitality, fostering a sense of belonging and collective identity within communities globally (Rasa Levickaitė;2011). However, while we celebrate identity, concerns about the environmental impact of these events have drawn a lot of attention. Recently, sustainability has become a crucial focus across governmental, corporate, and personal levels, deeply influencing societal trends. Despite the abundant data and knowledge on sustainability, there's also widespread confusion and ideological uncertainty. As an enduring element in modern society, sustainability demands a nuanced understanding that integrates social, cultural, environmental, political, economic, technological, and psychological aspects, particularly as they relate to events. (Pernecky, T. 2012). As the world faces pressing environmental challenges, the importance of embracing sustainable practices in event planning and execution cannot be overstated. Events play a fundamental role in human life, marking significant milestones and engaging communities. They have increasingly become integrated into government policies and strategic planning for cities, regions, and countries, recognized for their economic benefits and their social and cultural value. This sector is experiencing rapid growth (Rasa Levickaitė;2011).

However, the growth in the need for festivals raises challenges related to resource distribution, waste, pollution, and the potential overexploitation of people and places (Nery, C., Trindade, O., Mestrado, B., Gestão De Empresas, E., Marjan, S., Jalali, & Associado; 2021). The urgency to address these environmentally sustainable concerns has sparked significant interest in event management practices. Such practices aim not only to minimize the negative environmental impact of events but also to encourage participants to engage in environmentally responsible behaviors. At the core of successful sustainable events lies an understanding of how environmental sustainability influences visitor behavior intention and what motivates them to revisit such events. (Nery, C., Trindade, O., Mestrado, B., Gestão De Empresas, E., Marjan, S., Jalali, & Associado; 2021). In our exploration, we aim to understand its influence on visitor behavior intention and the relationship between cognitive factors, environmental sustainability, and visitors' intention to revisit sustainable events.

Due to the growing awareness of the limited availability of natural resources and the need to reduce human impact on the environment, the topic of environmental sustainability has become a key priority for event management. As a result, event management in sustainable

practices has gained momentum and includes a variety of strategies aimed at reducing waste generation, conserving energy, and promoting environmental stewardship. By integrating sustainability principles into every aspect of event planning, execution, and evaluation, organizers strive to balance the economic needs of hosting an event with the need for environmental protection (Holmes, K., Hughes, M., Mair, J., & Carlsen, J., 2015). Adopting sustainable event management practices represents a significant shift in the events industry, challenging traditional methods and norms. However, organizers face many challenges in implementing these practices, including cost considerations, logistical constraints, and ensuring stakeholder buy-in. Despite these challenges, the potential benefits are huge, ranging from improved brand reputation and stakeholder engagement to long-term cost savings and environmental protection (Bostock, J., Cooper, R., & Roberts, G.; 2016).. Embracing sustainability not only allows event organizers to mitigate adverse environmental impacts but also enables them to become sustainability leaders and agents of positive change.

Background

Events and Festivals Information Gathering

In order to study the impact of environmental sustainability practices on event revisit intention, the first thing is to identify a broad range of events and festivals. We have conducted an extensive online search, using searching engines, various event directories, and websites. This effort resulted in a comprehensive list of 218 events and festivals across Estonia, each offering different themes and settings (See in the Appendix 5-Estonian Events & Festivals). This large pool of data provided a solid foundation for selecting a specific case study to focus on.

From the extensive list of 218 events, we chose the Tartu Car-Free Festival for several compelling reasons. Firstly, the festival's longevity and consistency, having been held annually for several years, provide a wealth of data and insights into its practices over time, which is essential for our revisit intention intensity analysis. Secondly, as residents of Tartu, we have easy access to the festival, making it feasible to conduct in-depth research, including multiple site visits and real-time data collection. Lastly, the Tartu Car-Free Festival’s strong emphasis on local culture and community involvement offers a unique focus on sustainability, providing a rich context for examining how environmental initiatives affect visitors. This focus aligns perfectly with the aims of our research.

In this study, we look at visitor behavior at the Tartu 2024 car-free festival in Estonia. To gain a deeper understanding of the Tartu Car-Free Festival, we conducted an interview with Triin, the key organizer of the festival in sustainability, which offers valuable insights into sustainability practices within festival management, specifically focusing on the Tartu 2024 Car-free festival. The interview consists of 20 questions (see in the Appendix 6-Interviw Questions). This qualitative data complements the quantitative findings and offers a more comprehensive view of the festival's operations.Triin's insights provide a comprehensive understanding of the motivations driving sustainability integration, the implementation of specific strategies, and the encountered obstacles in striving towards environmental goals. (see in the Appendix 2- Interview Scripts).

The festival, deeply embedded in sustainability values, is aligned with the broader cultural and environmental initiatives of the 2024 program, aiming to set an example of sustainable event hosting through practices like waste reduction, the use of reusable materials, and the promotion of vegetarian and vegan food options. The interview also explored waste management strategies like reusable cup and plate systems, waste sorting initiatives, and collaborative efforts to minimize food waste. Furthermore, educational activities and workshops were discussed, targeting attendees to reduce food wastage and promote sustainable behaviors.

We use the cognitive-affective-conative model, a common framework in consumer behavior research, to see how environmental sustainability affects visitors' intentions to return to the festival (Goulding 1999; Solimano 2021; Trabskaya 2022). This approach has been mentioned in previous research by scholars like Kim et al. (2010), Lim and Kim (2020), Trabskaya (2022). and Tsaur et al. (2019). We conducted a survey with 1,346 visitors and analyzed the data to understand their intentions to revisit the festival. We categorized these intentions into three levels: high, medium, and low, following the method introduced by Trabskaya (2022). This helps us see how strongly environmental sustainability factors influence visitors' decisions to return. Our work builds on established measures of event performance such as repeat visiting and revisit intentions, previously explored by researchers like Brida, Meleddu, and Pulina (2012) and Vega-Gómez et al. (2020). The goal is to gain insights into the role of sustainability in shaping visitor behavior at events focused on environmental consciousness.

Firstly, we delve into how environmental sustainability influences visitors' behaviors and intentions in sustainable festival practices. Drawing insights from the cognitive-affective-conative model, we seek to uncover the mechanisms through which environmental sustainability shapes visitors' attitudes, perceptions, and behaviors. By examining factors such as environmental awareness, perceived value, and satisfaction, we aim to elucidate the complex interplay between environmental sustainability and visitors' revisit intentions.

Second, we explore the relationship between cognitive factors, affective indicators of environmental sustainability, and visitors' willingness to revisit the car-free festival as a conative result. Drawing upon concepts from cognitive psychology and customer behaviors, we investigate the factors that drive visitors' intentions to engage in sustainable activities and their likelihood of revisiting. Through the examination of variables such as cognitive dissonance, perceived behavioral control, and environmental attitudes, we provide a comprehensive understanding of the factors that influence how environmental sustainability shapes visitors' intent to revisit festival-style events.

The significance of our research is that we provide a deep analysis of event management in environmental sustainability practices. By untangling the complicated relationship between environmental sustainability, visitor behavior, and intent to revisit, our analysis offers valuable insights for event organizers, policymakers, and stakeholders striving to promote sustainability in the event industry.

Moreover, our results contribute to the broader discussion on sustainable development, highlighting how festivals and events can lead to better environmental management and social change. Our study fills a significant gap in previous research by considering cognitive factors when looking at environmental sustainability in event management. By using a multidisciplinary approach that combines insights from psychology, economics, and environmental science, we gain a deeper understanding of what influences visitor behavior and intentions in sustainable events. Through detailed research, we want to learn more about event management in the environment-sustainable area and give helpful tips to those who work in this area and to policymakers.

Our research aims to address fundamental questions regarding the role of environmental sustainability in shaping visitor behavior and their intent to revisit festival events.

RQ1: How does environmental sustainability influence visitor behavior intention in sustainable event management?

RQ2: What is the relationship between cognitive factors, environmental sustainability, and visitors' intention to revisit sustainable events?

Our research represents a pioneering effort to integrate cognitive factors, affective indicators of environmental sustainability, and visitor behavior intention within the Tartu 2024 Car-Free Festival. We use a mixed academic approach to understand better how to manage events with environmental sustainability in mind and focus on what visitors think with their motivations, which is key to making improvements. Additionally, our study contributes to the existing literature on sustainable event management, offering insights into the factors that drive visitor intent to revisit such events. Our shared objective is to turn research results into actionable tips for creating more sustainable events, which will lead to beneficial environmental and social outcomes.

2. Literature Review

Festivals and events have been playing a significant role in various aspects of society, culture, and politics. The previous study shows that they are not only platforms for celebrating and promoting cultural heritage but also play a pivotal role in enhancing social values and stimulating community engagement (Chenchen, X., Luyang, H., Qian, L., & Shaojiang, L., 2019). However, these gatherings also come with environmental drawbacks such as noise pollution, vandalism, crime, traffic and parking issues, waste, damage to natural environments, strain on local services and infrastructure, and increased living costs for residents (Moisescu, I.D., & Coroș, M.M., 2019). These impacts illustrate the complex and sometimes adverse effects of event tourism on local communities.

Sustainable event management has gained significant attention in recent years as organizations and industries strive to minimize their environmental impact and foster social responsibility. In many concepts, sustainable practices have the potential to not only reduce negative ecological consequences but also enhance social well-being and economic viability. It is also closely linked with social problems, for it implies undesirable outcomes and refers to the relationship between humans and humans with nature (Pernecky, T. 2012). The idea of considering sustainability as a fundamental relationship of human beings was brought out by Becker (2012). Events, as essential activities in society, create the opportunity to connect people, showing that they play a critical role in sustainability.

To reduce environmental impact by addressing issues such as waste generation, energy consumption, and carbon emissions. Research by Hall et al. (2016) found that incorporating waste reduction and recycling initiatives significantly decreased the ecological footprint of a festival. By implementing strategies such as composting or reusable dishware, festivals can minimize waste sent to landfills and promote a circular economy approach. Meanwhile, sustainability practices in event management enhance social responsibility. By engaging with local communities through initiatives such as sourcing locally produced goods and services or supporting charitable causes, music festivals can contribute positively to local economies while fostering community relationships (Getz D., 2016). These initiatives create shared value by supporting local businesses, artisans, and farmers while also providing opportunities for cultural exchange between festival-goers and residents. Lastly, adopting sustainability practices improves the economic viability of the festivals. Organizers can achieve financial savings by reducing resource consumption and implementing cost-effective measures like energy-efficient infrastructure or water conservation methods (Jamal & Stronza; 2009). This allows festivals to allocate resources towards enhancing attendee experiences or investing in additional sustainability initiatives.

Despite numerous benefits associated with sustainable practices in festival management, challenges exist that could hinder successful implementation. Financial constraints are a common barrier that may limit organizers' ability to invest in eco-friendly technologies and infrastructure upgrades. However, it is essential for organizers to recognize that many sustainability measures lead to long-term financial savings. For example, investments in energy-efficient lighting systems may initially require higher upfront costs but result in reduced energy consumption expenditure over time(Getz & Page, 2016).

Resistance from attendees and vendors, towards changes in traditional festival practices is another obstacle frequently encountered during efforts to implement initiatives at events. For instance, introducing recycling stations with proper sorting instructions may initially meet confusion resistance because it disrupts accustomed behavior patterns(Jamal& Stronza;2009). However, effective communication education campaigns help alleviate concerns and increase the willingness of participants to adopt new approaches. Encouraging attendees to embrace sustainably focused experiences creates a culture of collective responsibility among festival-goers(Taylor& Carson;2017). Many organizers lack awareness of available resources and best practices field, and limited knowledge and expertise on sustainable events among organizers impede progress without proper guidance and training (Ellis& Jamieson;2020).

Mair and Smith (2020) emphasized environmental sustainability practices in cultural events and festivals and revealed a growing interest in understanding and promoting eco-friendly initiatives within the event industry. Studies have highlighted the importance of assessing the environmental impact of events, such as carbon emissions and waste generation, and implementing sustainable practices to mitigate these effects. Research has also emphasized the role of cultural capitals in leading environment-friendly event management efforts, showcasing best practices and innovative approaches that can be adopted by other cities and events. Furthermore, the literature underscores the significance of evaluating the effectiveness of car-free initiatives in reducing environmental footprints and promoting sustainable behaviors among event attendees.

Werner, K., Griese, K.M., & Faatz, A. (2019) described that the perception of sustainable festivals and events is a complex issue that involves various stakeholders, including attendees, organizers, and local residents. From the attendees' perspective, value co-creation processes are crucial in achieving the fundamental goal of value creation in sustainable events. The study on sustainable music festivals found that attendees have different attitudes, personal values, and experiences, which can be categorized into three types (Jani, D.;2023). Local residents' perceptions of festival sustainability play an important role in the success of festivals. By perceiving two broader types of festivals: "Ours" and "Theirs," which further result in different impacts on the sustainability of the festivals.

Food festivals as one of the example for the festival category event are crucial for shaping consumer behavior and preferences by providing experiential platforms where people can engage with various cuisines, cultures, and culinary experiences. These events have a significant impact on how individuals perceive and make choices. Emotions, satisfaction, and engagement play key roles in influencing visitor loyalty and future behavior. Through sensory experiences and social interactions, attendees develop positive attitudes toward food products and brands, fostering positive attitudes toward food products and brands, ultimately leading to long-term consumer loyalty (Organ, Koenig-Lewis, Palmer, & Probert, 2015).

Yuan et al. (2008) delved into the complicated dynamics of wine tourist behavior, highlighting the critical role of comprehending consumer attitudes and motivations within wine tourism. Their study proposed a comprehensive model that integrates essential elements, including consumer attitudes, past behaviors, satisfaction levels, and perceived value. This framework provides a structured approach to analyze the intricate relationships between these factors and attendees' intentions regarding revisiting wine festivals and making purchases. The

findings suggest that aligning with consumer preferences and motivations can enhance the wine tourism experience, leading to greater visitor satisfaction and loyalty in a competitive market.

The factors influencing tourists' willingness to revisit cultural and creative areas are multifaceted. They encompass elements such as cultural exposure, memory, and attitudes. Authentic cultural experiences play a pivotal role in encouraging repeat visits. Interactions with local culture profoundly influence the likelihood of returning. Positive attitudes toward culture serve as crucial moderators. They reinforce the link between cultural memory and the intention to revisit. This underscores the significant impact of perceptions and attitudes on tourists' behavioral outcomes. It highlights the importance of enhancing these aspects to promote repeat visits and foster sustained engagement with cultural and creative destinations (Lai Sizhen et al.;2021).

Organ, Koenig-Lewis, Palmer, and Probert (2015) emphasized the significance of food festival experiences in shaping consumer behavior and preferences. Food festivals serve as experiential platforms where participants can engage with diverse cuisines, cultures, and culinary experiences, thus influencing their perceptions and preferences. Scholars highlighted the role of emotions, satisfaction, and engagement in driving visitor loyalty and behavioral intentions at food festivals. Experiential marketing, through sensory experiences and social interactions at these events, plays a critical role in cultivating positive attitudes toward food products and brands, ultimately influencing long-term consumer loyalty.

Yuan et al. (2008) discussed the nuances of wine tourist behavior, emphasizing the importance of understanding consumer attitudes and motivations in the wine tourism context. The proposed model of wine tourist behavior integrates consumer attitudes, past behavior, satisfaction, and perceived value, offering a structured framework to examine the relationships between these factors and attendees' intentions to revisit festivals and make wine purchases. Practical implications from these findings suggest that by aligning with consumer preferences and motivations, organizers can create more engaging and rewarding wine tourism experiences, fostering increased visitor satisfaction and loyalty in a competitive industry.

Lai Sizhen et al. investigated the complex factors that influence tourists' willingness to revisit cultural and creative areas, with a particular focus on cultural exposure, memory, and attitudes. The study highlights the importance of authentic cultural experiences in driving repeat visits, highlighting the impact of tourists' interactions with local culture on their likelihood of return. Tourists’ positive attitudes toward culture are considered to be a key moderator that strengthens the relationship between cultural memory and revisit intention, emphasizing the role of perceptions and attitudes in shaping behavioral outcomes.

3. Theoretical framework

The participants behaviors is one of the interest topic has been discussed among scholars. (Moreno Gil and Brent Ritchie 2009; Vesci et al. 2020； Syed Sibghatullah Shah, & Asghar, Z. 2023.). In the research from Trabskaya, J., Zelenskaya, E., Sinitsyna, A., & Tryapkin, N.(2022), it highlights that studies on participant behaviors often concentrate on how different underlying behavioral dimensions influence decision-making processes. These behavior includes motivation, experience, satisfaction, opportunity, and expectations. (Ferilli et al. 2017; Kang, Jang, and Jeong 2018; Nowacki and Kruczek 2021; Phaswana-Mafuya and Haydam 2005;Trabskaya 2022).In this study, we delve into the behavior of participants at the Tartu 2024 car-free festival in the sustainability topic employing the widely recognized 'cognitive-affective-conative' model. This model, commonly used in consumer behavior research, provides a comprehensive framework to analyze participant engagement (Chen and Chen 2010; Kim et al. 2010; Tsaur et al. 2019; Lim and Kim 2020; Trabskaya et al., 2022).

3.1 The relationship between the cognitive, affective, and conative components

The cognitive component forms expectations or beliefs before attending the festival (Akgün et al., 2020). The affective dimension focuses on the emotions and feelings experienced by participants during the festival (San Martín and Rodríguez Del Bosque, 2008). The conative component represents the behavioral intentions of the participants, which may include intentions to revisit or recommend the product to others (Agapito, Oom do Valle, and Mendes, 2013). We will further explore the details of these components below.

3.1.1 Cognitive

Cognitive components have been used in different in the variety industries. Zhang, Wu, and Buhalis (2018) discovered that from a tourist's viewpoint, the image they hold of a destination and their expectations from the journey before it begins can significantly shape their intentions and desires regarding if they wish to revisit the location in the future. Meanwhile Trabskaya, Zelenskaya, Sinitsyna, and Tryapkin (2022) discussed the cognitive component as perceived beliefs of customer in the museums of contemporary art. The museum can be considered as a ‘mental map generated by the visitors when they are exposed to information related to a museum’ (Chiang, Chen, and Yeh 2010, 21). In our study Tartu 2024 car-free festival as culture festival event is a potentially interesting vehicle for bringing about

behaviour change. In a review of event tourism literature, Getz (2008) recognized the need of understand that the visitors' future behavior could reflected by their experiences at festivals.

3.1.2 Affective

The affective component plays an important role for experience economy (Duman and Mattila 2005). Del Chiappa, Andreu, and Gallarza (2014) discuss the relationship between emotions and visitor satisfaction. They demonstrated that the visitors with higher positive emotions report higher levels in attractiveness uniqueness of the experience and are more satisfied with the visit. Similar results were obtained in other studies examining the behaviour of museum visitors (Palau-Saumell, Forgas-Coll, and Sánchez-García 2016; Wu and Li 2015, Nowacki and Kruczek 2021; Trabskaya et al., 2022).

SERVQUAL model is one of the generally accepted models for measuring the quality of service (Parasuraman, Zeithaml, and Berry 1988). We also adopted this model in our study. This model, renowned for measuring service quality across various dimensions, allows us to assess participants' perceived quality of the festival experience. There are five dimensions in SERVQUAL model has: tangibles ('physical facilities, equipment, and appearance of personnel'), reliability ('ability to perform the promised service dependably and accurately'), responsiveness ('willingness to help customers and provide prompt service'), assurance ('knowledge and courtesy of employees and their ability to inspire trust and confidence'), and empathy ('caring, individualised attention the firm provides its customers') (Parasuraman, Zeithaml, and Berry 1988, 23). To suits our study, we assess the perceived quality of the service of visiting Tartu 2024 car-free festival and use the SERVQUAL elements as the dimensions of the affective component instead of using the original methodology of SERVQUAL, which compares the expected and perceived quality of service (Daskalaki et al. 2020; Lee, Lee, and Yoo 2000). The question whether the SERVQUAL model should be integrated into the cognitive or affective components is still debatable (Etgar and Fuchs 2009).

3.1.3 Conative

Based on the information provided by the cognitive and affective stages, which can lead to the actions a person intends to the conative component (behavioral intention) (Agapito, Oom do Valle, and Mendes 2013).The conative component may be measured through one dimension, such as the overall revisit intention (Kang, Jang, and Jeong 2018), positive word-of-mouth (Nowacki and Kruczek 2021; Zeithaml, Berry, and Parasuraman MUSEUM MANAGEMENT AND CURATORSHIP 3 1996), a willingness to recommend, or through

several behavioral constructs simultaneously (Anderson, Rungtusanatham, and Schroeder 1994; Basaran 2016 ;Trabskaya et al., 2022). In our study, we measure the behavioral intention through revisit intention. Sustainability is defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development, 1987, p. 43). Therefore, the identification of a sustainable strategy for visitors with a high level of revisit intention is an important goal for festival event managers (Pernecky, T., & Lück, M, 2013).

3.1.4 Cognitive-Affective-Conative Relationship

The cognitive-affective-conative model outlines key relationships between its components, offering insights of environment sustainability into participant behavior at the Tartu 2024 car-free festival.

Initially, participants' cognitive perceptions, or perceived beliefs, influence their emotional responses during the festival. Studies indicate that positive cognitive dimensions, such as the festival's image, can enhance participants' mood and overall festival experience (Li et al., 2020; Xu et al., 2019). Even before attending, participants' positive perceptions of the festival can shape their evaluation of the experience. Next, there exists a significant relationship between participants' cognitive beliefs and their behavioral intentions. For instance, participants with favorable perceptions of the festival are more likely to express intentions such as revisiting or recommending it to others (Han and Hyun, 2017; Virto, de Madariaga, and Blasco, 2017). Moreover, participants' emotional experiences during the festival influence their behavioral intentions. Positive emotional responses, such as satisfaction, often lead to intentions of repeat attendance or recommendation (Brady and Robertson, 2001; Ruiz-Alba et al., 2019). Studies have consistently demonstrated a link between satisfaction and intentions to revisit the festival (Kang, Jang, and Jeong, 2018; Wu and Li, 2015).

In this study, we propose a model of participant behavior at the Tartu 2024 car-free festival, integrating the cognitive, affective, and conative components. We suppose that participants' initial beliefs about the festival influence their emotional experiences in environmental sustainability during the event, ultimately impacting their intention to revisit. This model provides a framework for understanding participant behavior and evaluating the

festival experience.

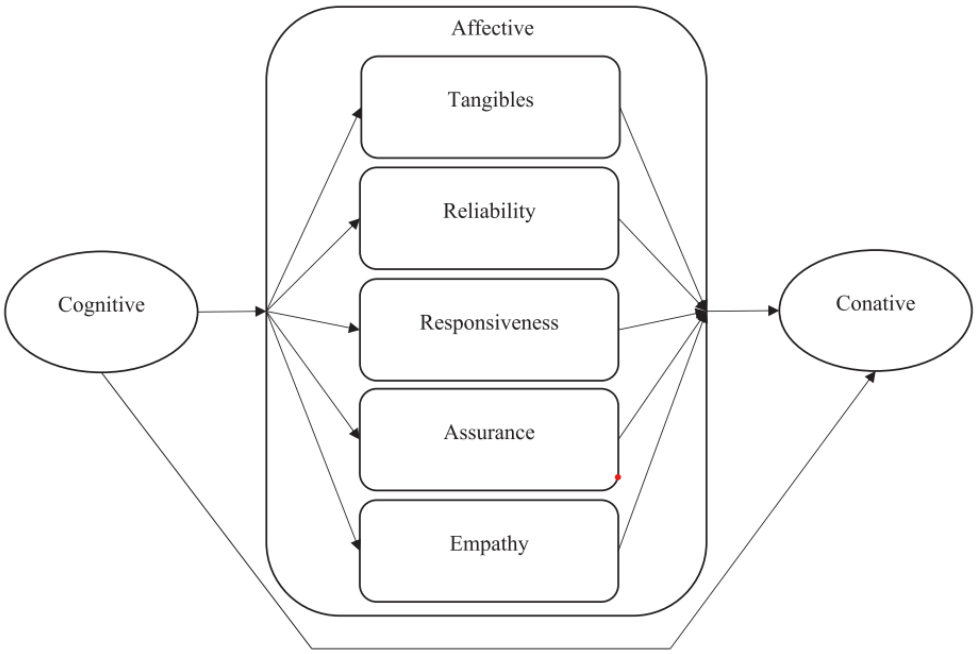

Figure 1. The hypothesised model of visitor behaviour. Trabskaya, J., Zelenskaya, E., Sinitsyna, A., & Tryapkin, N. (2022).

The data collection is based on a hypothesized model of visitor behavior demonstrated in the cognitive-affective-conative model Figure 1, which focuses on the event visitor's behavior in the ecological sustainability topic. There are omitted variables that might end up in the error term. For example, the weather indicator, the activities in the car-free festival, and the free time of individuals. These are the variables that we could not observe, which might cause the measurement errors. In total, 3 major components are included in the model. The cognitive facet is characterized by perceived beliefs, the affective facet draws from the five dimensions of the SERVQUAL model, and the conative facet is gauged by assessing the intention to revisit. We hypothesize that the pre-existing perceptions and beliefs of event attendees (the cognitive component) significantly influence how they perceive and evaluate their actual service experience (the affective component). Consequently, these evaluations are pivotal in determining their intention to revisit the event (the conative component). (Trabskaya et al., 2022)

4. Data and Modeling Strategy

Our study is dedicated to assessing environmental sustainability practices within the realm of event management. To initiate our research, we meticulously reviewed a wide array of events that took place in Estonia over the past year, meticulously comparing factors such as event size, level of attenton garnered, and participant engagement. Among the multitude of events scrutinized, the car-free festival emerged as a standout pioneer in the field of event management, showcasing a strong commitment to ecological sustainability. This distinctive focus on sustainability prompted us to select the car-free festival as our primary case study, emphasizing its exemplary sustainability practices.

Despite the presence of numerous events held during Tartu 2024 that adhered to the same regulations, our research deliberately excluded those that did not align with our core focus on environmental sustainability. This meticulous selection process led us to the Tartu 2024 Car-Free Festival as the central case study for our investigation into sustainability practices within cultural events. By delving into the sustainability initiatives of this festival, we aim to gain valuable insights into effective environmental practices that can be applied in the broader event management landscape.

4.1 Data Collection Method

Our research is focused on quantitative analysis, but meanwhile, it also conducted the interview from the organisers who is in charge of the sustainability area; with the insight view from the organisation's event management, we could understand more details of the decision-making process of the event regarding the environment sustainability. The methodology of this research relies on the collection of online survey data, a widely accepted approach to studying visitor behaviour (Vesci et al., 2020; Piancatelli, Massi, and Vocino, 2020. To ensure a representative sample, we employed a random selection process when recruiting respondents, guaranteeing that each potential participant had an equal chance of being included in our final dataset (Scheuren, 2004).

The survey was posted in a couple of Estonia's Facebook groups. In the initial phase, we hand-crafted the questionnaire to align with our research objectives. Subsequently, we strategically identified and engaged with various Facebook groups known for their diverse user base, aiming to attract a wide range of participants. For example, the “Foreigner in Tartu”, and “Tartu tudengid”. One has more international crowds, and another has more Estonians. To incentivise survey participation, we introduced a 10-euro gift card raffle opportunity from

Apollo, enhancing the appeal of taking part in our study. Then we used our personal social media account to actively promote the survey within our networks, further expanding its reach and visibility.

4.2 Participate Segment

A crucial criterion for survey participation was the attendees' prior experience at the Tartu 2024 car-free festival. Individuals who indicated affirmative attendance were invited to complete the survey, which featured statements centered around the cognitive-affective-conative model and included inquiries about respondents' socio-demographic profiles, such as gender, age, and educational background. These statements were informed by existing research in the field, ensuring relevance and validity. Respondents evaluated the statements using a five-point Likert scale, ranging from 1 'strongly disagree' to 5 'strongly agree,' providing nuanced insights into their perspectives. Our research sample comprised a robust cohort of 1347 festival visitors, enriching the depth and breadth of our analysis. Their personal characteristics are presented in Table 1.

Table 1. The Characteristics of visitors

Survey Questions	Category		No. of participants	Percentage
Q1.What is your education	Education	Doctorate or equivalent	182	13.51%
		Master's or equivalent	433	32.13%
		Bachelor's or equivalent	545	40.46%
		Secondary vocational	134	9.95%
		Upper secondary	53	3.93%
		Total		100.00%
Q2.What is your gender?	Gender	Male	727	53.97%
		Female	620	46.03%
		Total		100.00%
Q3. What is your Age group?	Age group	13-20	18	1.34%
		21-29	432	32.07%
		30-39	552	40.98%
		40-49	275	20.42%
		50-59	54	4.01%
		60-69	12	0.89%
		70-79	4	0.30%
		Total		100.00%

Source: Authors' calculation based on the online survey results.

The majority visitor segment from our survey is in the Master's degree (32.15%) and Bachelor's degree (40.46%), and 13.51% doctorate or equivalent degree, 9.95% secondary vocational degree and 3.93% upper secondary degree. In multiple studies it suggest that in general festival

attendees belong to higher socioeconomic groups and often include wealthy, mature, highly educated, and primarily female participants (Craik, Citation1997; H. Kim et al., Citation2007; Kim, Kim et al., Citation2011b; Urry, Citation1990). At the age 30-39 take the most responds (40.98%), followed by the age 21-29 (32.07%) and age 40-49 (20.42%). From this data, we can see that the majority of participants are the young people, in another words, we can assume that this group has the knowledge of the environment sustainability topic.

4.3 The modelling strategy for revisiting intention

Based on our theoretical framework, we establish elements of the cognitive–affective-conative model, including perceived beliefs, tangibles, reliability, responsiveness, assurance, empathy, and revisit intention (refer to Appendix 1). These components were derived from survey responses.

Perceived beliefs, representing the cognitive component, were assessed using a three-item scale. Table 2 shows that Q1, Q2, and Q3 are the question items for the perceived beliefs.

Table 2 Latent Variables Cognitive Component

Variable	Source of the statements
Perceived beliefs	
Q1. Are you interested in attending the Tartu 2024 car-free festival?	Trabskaya, Zelenskaya, Sinitsyna, & Tryapkin, 2022;Trinh and Ryan 2013; Kim, Kim, and Wachter 2013
Q2.Would you describe visiting the Tartu 2024 car-free festival as an	
Q3.Did attending the Tartu 2024 car-free festival evoke positive emotions for you?	

In Table 3, we can see the affective component comprised five dimensions, with tangibles (Q4 and Q5), and reliability (Q6 and Q7), each measured by two items. Responsiveness by one item (Q8), assurance by two items (Q9 and Q10), and empathy by one item (Q11).

Table 3 Latent Variables Affective Component

Variable	Source of the statements
Tangibles	
Q4. Did you find the enviromental sustainability solutions at Q5. Did you find the environmental sustaibability solutions showcased at the Tartu 2024 car-free festival provide the unique experience for your visit?	Trabskaya, Zelenskaya, Sinitsyna, & Tryapkin, 2022;Nowacki 2005; Tsaur et al. 2019
Reliability	
Q6. Did the Tartu 2024 car-free festival deliver its environmental sustainability solutions as promised? Q7. Your expectation of environmental sustainability solutions provided by the Tartu 2024 car-free festival were met.	Trabskaya, Zelenskaya, Sinitsyna, & Tryapkin, 2022;Kowalska and Ostrega 2020; Forgas Coll et al. 2017
Responsiveness	
Q8.Please rate how were you satisfied with the environmental sustainability solutions offered during your visit to the Tartu 2024 car-free festival?	Trabskaya, Zelenskaya, Sinitsyna, & Tryapkin, 2022;Forgas-Coll et al. 2017; Palau Saumell, Forgas Coll, and
Assurance	
Q9.car-free festival possess sufficient knowledge about environmental sustainability solutions to address your inquiries? Q10.Did you feel in a safe environmental when you visiting the Tartu 2024 car-free festival?	Trabskaya, Zelenskaya, Sinitsyna, & Tryapkin, 2022;Mey and Mohamed 2010; Nowacki 2005
Empathy	
Q11.Did you feel well taken care of during your visit to the Tartu 2024 car-free festival?	Trabskaya, Zelenskaya, Sinitsyna, & Tryapkin, 2022;Kowalska and Ostrega 2020

Q12 in Table 4 shows the dependent variable revisit intention, reflecting the conative component, was evaluated with one item.

Table 4 Latent Variables Conative Component

Dependent variable	Source of the statements
Revisit Intention	
Q12. Would you consider returning to the Tartu 2024 car-free festival in the future?	Trabskaya, Zelenskaya, Sinitsyna, & Tryapkin, 2022;Kang, Jang, and Jeong 2018

Similar as the study from Trabskaya, J., Zelenskaya, E., Sinitsyna, A., & Tryapkin, N. (2022), we used the cognitive and affective components as the latent variable. And the data for the latent variable is directly derived from the original data and we calculate the correlation between each items from our original data. Meanwhile, we checked if the correction is high (greater than 0.6). Since each latent variables represent a particular dimension of the components, the latent variable should be perceived as a self-independent variable, which has been proposed by Rigdon (2012) and Rigdon, Becker, and Sar- stedt (2019). After set up the

particular dimension of each laten variables and, we proceed with the correlation between the formed laten variables of the affective component. We have used SEM model in Python calculated the correlation and coefficient between Latent variables.(Appendix 13)

Table 5 latent variables coefficient

Variable	Coefficient
Perceived beliefs	
Q1. Are you interested in attending the Tartu 2024 car-free festival?	0,72***
Q2.Would you describe visiting the Tartu 2024 car-free festival as an enjoyable experience?	
Q3.Did attending the Tartu 2024 car-free festival evoke positive emotions for you?	0.76***
Tangibles	
Q4. Did you find the enviromental sustainability solutions at the Tartu 2024 car-free festical well arranged?(Refill water, reuseble decoration, recycle balls and cups, est.)	0.78***
Q5. Did you find the environmental sustaibability solutions showcased at the Tartu 2024 car-free festival provide the unique experience for your visit?	
Reliability	
Q6. Did the Tartu 2024 car-free festival deliver its environmental sustainability solutions as promised?	
Q7. Your expectation of environmental sustainability solutions provided by the Tartu 2024 car-free festival were met.	0,77***
Responsiveness	
Q8.Please rate how were you satisfied with the environmental sustainability solutions offered during your visit to the Tartu 2024 car-free festival?	
Assurance	
Q9.car-free festival possess sufficient knowledge about environmental sustainability solutions to address your inquiries?	-0,89***
Q10.Did you feel in a safe environmental when you visiting the Tartu 2024 car-free festival?	
Empathy	
Q11.Did you feel well taken care of during your visit to the Tartu 2024 car-free festival?	
Dependent variable	
Revisit Intention	
Q12. Would you consider returning to the Tartu 2024 car-free festival in the future?	

Significance levels – ***p < 0.01, **p < 0.05, *p < 0.1.

Source: authors' calculations based on the online survey results.

For the conative component (revisit intention), based on the intensity of visiting, we break it into three different levels: lowest intensity to revisit (1 and 2 points), medium intensity to revisit (3 points) and highest intensity to revisit (4 and 5 points). The levels were constructed in such a way to have three equal sub-samples representing the levels (Table 6).We could see both from the Table 6 and Appendix 3 that majority visitors has high intension to revisit the

Tartu 2024 Car-Free Festival.

Table 6. The Level of revisit intention intensity

The Level of revisit intention intensity	Original item scale(1- Strong disgree; 5- strong agree)	Respondents' original answers, in %
Lowest intensity to revisit	1	0.60%
	2	5.80%
Medium intensity to revisit	3	15.30%
	4	40.80%
Highest intensity to revisit	5	37.50%

Source: authors' calculations based on the online survey results.

The dimensions of the cognitive and affective components are considered as the unobserved laten variables. The Laten variables are derived from the original data. Based on the theoretical model, in table 7, we have reviewed the correlation is high which is greater than 0.6, in the items of the same dimension.

Table 7. Correlation matrix of survey questions

Item Number	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Q1	1.0											
Q2	0.46	1.0										
Q3	0.45	0.5	1.0									
Q4	0.37	0.44	0.53	1.0								
Q5	0.43	0.47	0.53	0.5	1.0							
Q6	0.43	0.46	0.43	0.46	0.47	1.0						
Q7	0.38	0.44	0.49	0.45	0.5	0.47	1.0					
Q8	-0.18	-0.2	-0.17	-0.2	-0.26	-0.29	-0.23	1.0				
Q9	0.4	0.43	0.44	0.44	0.49	0.49	0.4	0.28	1.0			
Q10	-0.17	-0.2	-0.13	-0.17	-0.24	-0.28	-0.2	0.79	-0.25	1.0		
Q11	0.38	0.44	0.47	0.43	0.48	0.49	0.5	-0.24	0.5	-0.27	1.0	
Q12	0.41	0.42	0.41	0.48	0.47	0.51	0.47	-0.28	0.48	-0.27	0.49	1.0

Source: authors' calculations based on the online survey results.

The correlation between the formed latent variables in affective component is also part of our analysis. In Table 8, we calculated the correlation between the formed latent variables of the affective component. We could see that reliability and tangibles show significantly large

interdependency between the two dimensions. In the opposite, reliability and responsiveness are totally independent of each other.

Table 8. Correlation between the latent variables of the affective component.

Latent variable of the affective component	Tangibles	Reliability	Responsiveness	Assurance	Empathy
Tangibles	1				
Reliability	0.86	1			
Responsiveness	-0.93	-0.95	1		
Assurance	-0.62	-0.62	0.6	1	
Empathy	0.79	0.84	-0.88	-0.59	1

Source: authors' calculations based on the online survey results.

Our model set up the factors influencing revisit intentions by categorizing them into three intensity levels and analyzing the impact of cognitive (perceived beliefs) and affective (tangibles, reliability, responsiveness, assurance, and empathy) components. These components are evaluated uniformly across all levels of revisit intention. The medium intensity level is used as a reference point to compare the lowest and highest levels. Latent variables serve as proxies for these cognitive and affective elements. Additionally, personal characteristics are included as control variables, but we consider them as not significantly influence revisit intentions according. This suggests that the quality of service and customer perceptions, rather than demographic factors in determining revisit intentions. The final model specification was estimated SEM in Python.

4.4 Data result

Our model's results, displaying coefficients and significance levels, are shown in Figure 2. Coefficients with a positive sign indicate a higher likelihood of belonging to the group with intentions to revisit, whereas coefficients with a negative sign suggest a lower likelihood.

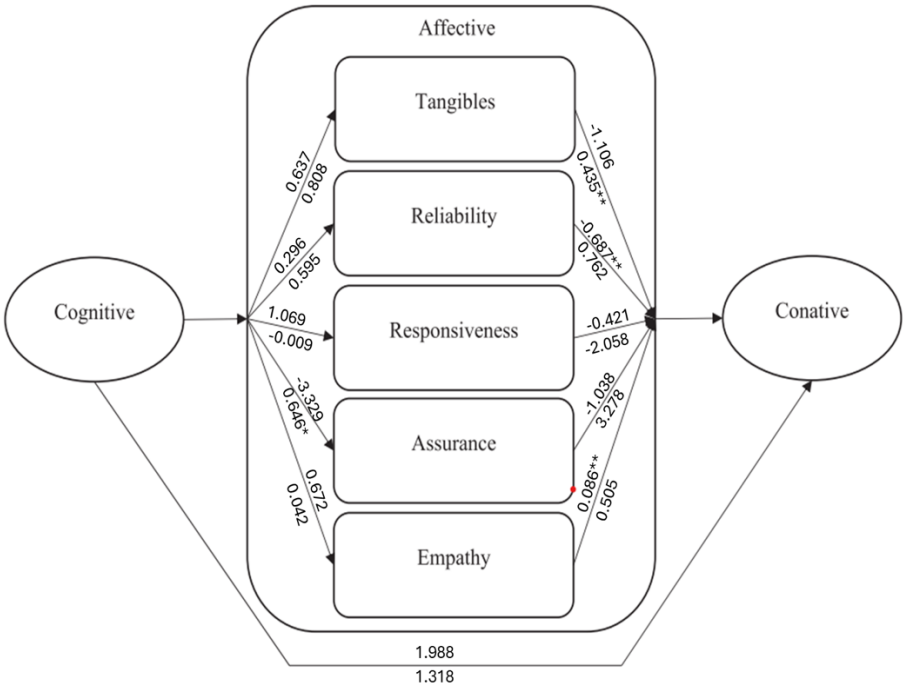

Figure 2. The Structural Model.
Source: authors' calculations based on the online survey results.
Notes: Coefficients of the model for the highest level of the revisit intention intensity are displayed above the arrow line; coefficients of the model for the lowest level of the revisit intention intensity are displayed below the arrow line. *Significant at 10%; **Significant at 5%; ***Significant at 1%.Model fit: RMSEA = 0.127; CFI = 0.899 and TLI = 0.793

Our research question explores how environmental sustainability influences visitor behavior intentions in sustainable event management. To address this, we developed the model that analyzes perceived beliefs as a measure of the cognitive component and examines its impact on every dimension of the affective component (tangibles, reliability, responsiveness, assurance, and empathy). Our findings reveal that not all dimensions of the affective component are positive and significant. This variation could explain the differences from previous studies, which have shown that past experiences or existing beliefs are crucial in shaping how guests evaluate their experiences in terms of tangibles, reliability, responsiveness, assurance, and empathy during their visit. 086**). These aspects of the affective component significantly and positively impacted

In our model, we hypothesized that perceived beliefs influence the intentions to revisit a museum. However, our analysis did not demonstrate a direct effect of perceived beliefs on revisit intentions, as the significance levels were not robust. Nevertheless, we explored whether

the affective component impacts the intention to revisit to answer our second research question "What is the relationship between cognitive factors, environmental sustainability, and visitors' intention to revisit sustainable events?"

Our findings pinpointed two key variables essential for maximizing revisit intentions: tangibles (0.435**) and empathy (0. the intention to revisit the festival event, particularly among those with a strong desire to return. To enhance the likelihood of revisits, it is crucial that visitors have positive interactions with museum staff and feel emotionally comfortable in the environment. Additionally, the festival should provide elements that create a meaningful connection with visitors. It follows from this that even if visitors were not fully satisfied with the festival's service or product, these factors might not deter their intention to return to the festival.

Reliability emerged as a key factor (-0.687**) for the group with the lowest revisit intentions. This variable reflects whether the festival fully delivered on its promised services. A negative coefficient indicates that higher reliability decreases the likelihood of being in the group with a low intention to return. Thus, it is crucial for festival organizers to fulfill their promises to meet visitor expectations and encourage revisits.

Empathy (-0.16*) also significantly impacted this group, suggesting that individual attention and care significantly influence the intention to return to the museum. However, given the lower statistical significance of these variables, these results should be interpreted with caution.

The analysis of our SEM output has identified several critical issues and areas for improvement within our model. The RMSEA value at 0.127258 significantly exceeds the acceptable limit of 0.08, indicating a poor fit that could suggest model misspecification or an incompatibility with the data. Furthermore, both the CFI at 0.899829 and the TLI at 0.793398 are below the desired threshold of 0.95, revealing a weak relative fit against a baseline model that assumes no relationships among variables.

In terms of coefficient estimates, we observe some values that are either extremely large or near-zero, which may imply overfitting, poor scaling of variables, or an insufficient sample size. Importantly, several path coefficients, such as those from perceived beliefs to tangibles,

are not statistically significant, suggesting that these hypothesized relationships might not actually exist or are not adequately represented by the model.

5. Discussion and implications

The findings of our study shed light on the complex interplay between environmental sustainability, visitor behavior intention, and the cognitive-affective-conative model within the context of the Tartu 2024 Car-Free Festival. Through our analysis, several key insights have emerged, offering valuable implications for event management and broader policy considerations. Firstly, our research confirms the significant influence of environmental sustainability initiatives on visitor behavior intention. By integrating sustainability principles into event planning and execution, organizers can effectively shape participant attitudes and perceptions, ultimately driving intentions to revisit sustainable events. Our findings underscore the importance of aligning event management practices with environmental stewardship goals, highlighting the potential for festivals and events to serve as catalysts for positive behavioral change. Secondly, our study explores the complex relationships between cognitive factors, environmental sustainability, and visitors' intentions to revisit sustainable events. We use ideas from psychology, economics, and environmental science to identify what drives visitor decisions. We look at variables like cognitive dissonance, perceived behavioral control, and environmental attitudes to fully understand what shapes visitor intentions in sustainable event settings. However, the SEM model shows weaknesses in the RMSEA, CFI, and TLI values. This may be due to the survey's limited five-option response format, suggesting that our survey design might not have been robust enough.

6. Conclusion

Our study provides an in-depth assessment of how environmentally sustainable practices influence visitor behavior at Tartu’s Car-Free Festival 2024, an important event: the European Capital of Culture. Using a cognitive-affective-conative model and analyzing survey data from festival attendees, we gained valuable insights into how cognitive factors related to environmental sustainability and influence visitors' intentions to return to similar sustainable events. The findings highlight the importance of integrating environmental concerns into event planning and execution. Most festival attendees are educated young people, suggesting that they are likely to be aware of and aware of environmental sustainability practices. This suggests that targeting this population with sustainability initiatives may lead to increased visitor

engagement and higher return rates. The model analyzes perceived beliefs' impact on various affective dimensions—tangibles, reliability, responsiveness, assurance, and empathy. Key findings indicate that tangibles and empathy significantly enhance revisit intentions, especially among those with a strong desire to return, suggesting the importance of positive staff interactions and an emotionally comfortable environment.

To improve our model, we should revise the theoretical underpinnings to ensure that each pathway is supported by contemporary research and sound theoretical reasoning. We should also consider streamlining the model by removing paths that are statistically insignificant, which would improve both the model's parsimony and its fit. Additionally, a detailed examination of our data is crucial to identify any outliers or influential cases, and we should normalize or standardize variables that contribute to disproportionately large coefficients. These steps will help refine our model, making it more robust and representative of the underlying processes we aim to understand.

Through correlation analysis, we found that factors such as perceived beliefs, tangibles, reliability, responsiveness, assurance, and empathy significantly influence visitors' attitudes and intentions toward sustainable activities. Understanding these cognitive and affective components can provide a more nuanced understanding of how visitors perceive and evaluate their experiences at a car-free festival, thereby influencing their likelihood of attending similar events again in the future.

The implications of our research extend beyond the Tartu Car-Free Festival 2024. By elucidating the complex relationships between environmental sustainability initiatives, visitors’ attitudes, and behavioral intentions, we contribute to a deeper understanding of event management practices. Event organizers, policymakers, and stakeholders can use this knowledge to promote sustainability, enhance visitor experiences, and drive positive environmental and social change through events.

In answering RQ1, our findings reveal that environmental sustainability practices significantly shape visitor behavior intentions. The data indicates that most festival attendees are educated young people who are aware of and responsive to sustainability initiatives. These practices enhance visitor engagement and increase their likelihood of returning to similar events. By integrating environmental concerns into event planning and execution, organizers can create more appealing and meaningful experiences for attendees, thereby fostering a higher rate of revisit intentions. Key factors such as tangibles and empathy, which include the quality of physical facilities and the emotional comfort provided by staff interactions, were found to be particularly influential. These elements contribute to a positive overall experience,

highlighting the importance of incorporating sustainability into both the tangible and intangible aspects of event management.

To answer the RQ2, our study underscores the significant relationship between cognitive factors, environmental sustainability, and visitors' intention to revisit. The model analyzes how perceived beliefs about sustainability impact various affective dimensions, such as reliability, responsiveness, assurance, and empathy. Our findings show that tangibles and empathy notably enhance revisit intentions, especially for attendees with a strong desire to return. This suggests that positive staff interactions and an emotionally comfortable environment play crucial roles in reinforcing visitors' intentions. Moreover, our correlation analysis indicates that these cognitive and affective components significantly influence visitors' attitudes towards sustainable activities. Understanding these relationships provides a more nuanced perspective on how visitors perceive and evaluate their experiences, ultimately affecting their likelihood of attending similar events in the future.

Going forward, further research could explore other factors influencing visitors' behavioral intentions, such as cognitive dissonance, perceived behavioral control, and environmental attitudes. By broadening our analysis and taking a multidisciplinary approach, we can gain a deeper understanding of the mechanisms that drive visitor behavior and intentions in the context of sustainable activities.

In summary, our study highlights the pivotal role of environmental sustainability in event management. By aligning event practices with sustainable principles, organizers can foster a culture of environmental stewardship and social responsibility within the events industry. This not only enhances visitor experiences but also drives positive environmental and social change. Our research provides a comprehensive understanding of the factors influencing visitors' behavioral intentions in the context of sustainable events, offering actionable insights for practitioners and policymakers. Going forward, further research could explore additional factors influencing visitor behavior, such as cognitive dissonance, perceived behavioral control, and environmental attitudes. By broadening our analysis and adopting a multidisciplinary approach, we can gain a deeper understanding of the mechanisms that drive visitor behavior and intentions in sustainable activities. Ultimately, festivals and events can act as catalysts for positive change, contributing significantly to the broader sustainability discussion.

7. References

1. Akgün, A. E., Ayar Senturk, H., Keskin, H., & Onal, I. (2020). The Relationships among Nostalgic Emotion, Destination Images and Tourist Behaviors: An Empirical Study of Istanbul. Journal of Destination Marketing & Management, 16, Article 100355. doi:10.1016/j.jdmm.2019. 03.009.
2. Andersson, G. (2016). Sustainability Process and Certification in the Swedish Event Tourism Industry. Journal of Environmental and Tourism Analyses, 4(1), 5–29.
3. Arcodia, C. (2022). The Routledge Handbook of Business Events. Taylor & Francis.
4. Arthur P.j. Mol, & Zhang, L. (2012). Sustainability as Global Norm: The Greening of Mega-Events in China.
5. Agapito, Dora, Patrícia Oom do Valle, and Júlio da Costa Mendes.(2013). "The Cognitive-Affective Conative Model of Destination Image: A Confirmatory Analysis." Journal of Travel & Tourism Marketing 30 (5): 471–481. doi:10.1080/10548408.2013.803393.
6. Aronow, T. (2020). A senior project presented to the Faculty of the Department of Experience Industry Management, California Polytechnic State University, San Luis Obispo, in partial fulfillment of the requirements for the degree Bachelor of Science.
7. Basiago, A. D. (1995). Methods of defining "sustainability." Sustainable Development, 3(3), 109–119. https://doi.org/10.1002/sd.3460030302
8. Bostock, J., Cooper, R., & Roberts, G. (2016). Rising to the Challenge of Sustainability: Community Events by the Community, for the Community. Palgrave Macmillan UK EBooks. https://doi.org/10.1057/9781137508553_2
9. Brennan, M., Collinson Scott, J., Connelly, A., & Lawrence, G. (2019). Do music festival communities address environmental sustainability and how? A Scottish case study. Popular Music, 38(2), 252–275. doi:10.1017/S0261143019000035
10. Brida, Juan Gabriel, Marta Meleddu, and Manuela Pulina. 2012. "Factors Influencing the Intention to Revisit a Cultural Attraction: The Case Study of the Museum of Modern and Contemporary Art in Rovereto." Journal of Cultural Heritage 13 (2): 167–174. doi:10.1016/j.culher.2011.08.003.
11. Boggia, A., Massei, G., Paolotti, L., Rocchi, L., & Schiavi, F. (2017). A model for measuring the environmental sustainability of events. Department of Agricultural, Food and Environmental Sciences, University of Perugia, Borgo XX Giugno, 74 06121 Perugia Italy

12. Bukrejeva, N. (2023). Design for enhancing sports events' capacity to adopt more sustainable practices (Master's thesis). Tallinn University of Technology, School of Engineering, Department of Mechanical and Industrial Engineering & Estonian Academy of Arts, Department of Design, MSc. Design & Technology Futures. Tallinn, Estonia.
13. Chen, C.-F., & Chen, F.-S. (2010). Experience Quality, Perceived Value, Satisfaction and Behavioral Intentions for Heritage Tourists. Tourism Management, 31(1), 29–35. doi:10.1016/j. tourman.2009.02.008.
14. Chenchen, X., Luyang, H., Qian, L., & Shaojiang, L. (2019). A Research on Peasants' Harvest Festival Promoting the Development of Rural Festivals: Content Analysis Based on Web Text. Proceedings of the 2019 4th International Conference on Social Sciences and Economic Development (ICSSED 2019).
15. Chirieleison, C., Montrone, A., & Luca Scrucca. (2019). Event sustainability and sustainable transportation: a positive reciprocal influence.
16. Craik, J. (1997). The culture of tourism. In C. Rojeck & J. Urry (Eds.), Touring cultures: Transformations of travel and theory (pp. 114–136). London: Routledge.
17. Daskalaki, Vasiliki V., Maria C. Voutsa, Christina Boutsouki, and Leonida Hatzithomas. (2020). "Service Quality, Visitor Satisfaction and Future Behavior in the Museum Sector." Journal of Tourism, Heritage & Services Marketing 6 (1): 3–8. doi:10.5281/zenodo.3603167.
18. Del Chiappa, G., Andreu, L., & Gallarza, M. (2014). 'Emotions and Visitors' Satisfaction at a Museum. International Journal of Culture, Tourism and Hospitality Research, 8(4), 420–431. doi:10.1108/IJCTHR-03-2014-0024.
19. Duman, Teoman, and Anna S. Mattila. 2005. "The Role of Affective Factors on Perceived Cruise Vacation Value." Tourism Management 26 (3): 311–323. doi:10.1016/j.tourman.2003.11.014.
20. Efrat Eizenberg, & Yosef Jabareen. (2017). Social Sustainability: A New Conceptual Framework. Sustainability, 9(1), 68–68. https://doi.org/10.3390/su9010068
21. Eizenberg, E., & Jabareen, Y. (2017). Social Sustainability: A New Conceptual Framework. Faculty of Architecture and Town Planning, Technion, Israel Institute of Technology, Haifa 3200003, Israel.
22. Etgar, Michael, and Galia Fuchs. 2009. "Why and How Service Quality Perceptions Impact Consumer Responses." Managing Service Quality: An International Journal 19 (4): 474–485. doi:10.1108/ 09604520910971566.

23. Ferilli, G., Grossi, E., Sacco, P. L., & Tavano Blessi, G. (2017). Museum Environments, Visitors' Behaviour, and Well-being: Beyond the Conventional Wisdom. Museum Management and Curatorship, 32(1), 80–102. doi:10.1080/09647775.2016.1239125.
24. Goulding, Christina. 1999. "Contemporary Museum Culture and Consumer Behaviour." Journal of Marketing Management 15 (7): 647–671. doi:10.1362/026725799785037003.
25. Getz, D. (2010). Event studies: Theory, research, and policy for planned events. Routledge.
26. Getz, D. (2008). Event tourism: definition, evolution, and research. Tourism Management, 29(3), 403e428. http://dx.doi.org/10.1016/j.tourman.2007.07.
27. Holmes, K., Hughes, M., Mair, J., & Carlsen, J. (2015). Events and Sustainability. Routledge.
28. Jani, D. (2023). "Our festival, Their festival": the local perceptions of festival sustainability in Zanzibar festival portfolio. International Journal of Event and Festival Management.
29. Jamal, T., & Robinson, M. (2011). The SAGE Handbook of Tourism Studies. Sage Publications.
30. Jonkisz, A., Karniej, P., & Krasowska, D. (2022). The Servqual Method as an Assessment Tool of the Quality of Medical Services in Selected Asian Countries. Int J Environ Res Public Health, 19(13), 7831. doi:10.3390/ijerph19137831.
31. Kang, J., Jang, J., & Jeong, C. (2018). Understanding Museum Visitor Satisfaction and Revisit Intentions Through Mobile Guide System: Moderating Role of Age in Museum Mobile Guide Adoption. Asia Pacific Journal of Tourism Research, 23(2), 95–108. doi:10.1080/ 10941665.2017.1410190.
32. Kim, K., Sun, J., Jogaratnam, G., & Oh, I. (2007). Market segmentation by activity preferences: Validation of cultural festival participants. Event Management, 10(4), 221–229.
33. Kim, Young Hoon, Mincheol Kim, Tanya Ruetzler, and Jim Taylor. 2010. "An Examination of Festival Attendees' Behavior Using SEM." International Journal of Event and Festival Management 1 (1): 86– 95. doi:10.1108/17852951011029324.
34. Kim, Y. H., Duncan, J., & Chung, B. W. (2015). Involvement, Satisfaction, Perceived Value, and Revisit Intention: A Case Study of a Food Festival. Journal of Culinary

Science & Technology, 13(2), 133–158. https://doi.org/10.1080/15428052.2014.952482

35. Kim, Y. H., Kim, D. J., & Wachter, K. (2013). A Study of Mobile User Engagement (MoEN): Engagement Motivations, Perceived Value, Satisfaction, and Continued E Engagement Intention." Decision Support Systems 56: 361–370. doi:10.1016/j.dss.2013.07.002.
36. Kim, Y. H., Kim, M., Goh, B. K., & Antun, J. (2011b). The role of money: The impact on food tourists' satisfaction and intention to revisit food events. Journal of Culinary Science & Technology, 9(2), 85–98.
37. Kishita, Y., Uwasu, M., Hara, K., Kuroda, M., Takeda, H., Umeda, Y., & Shimoda, Y. (2018). Toward designing sustainability education programs: A survey of master's programs through semi-structured interviews
38. Lai, S., Zhang, S., Zhang, L., Tseng, H.-W., & Shiau, Y.-C. (2021). Study on the Influence of Cultural Contact and Tourism Memory on the Intention to Revisit: A Case Study of Cultural and Creative Districts. Sustainability, 13, 2416. https://doi.org/10.3390/su13042416
39. Lee, Haksik, Yongki Lee, and Dongkeun Yoo. 2000. "The Determinants of Perceived Service Quality and its Relationship with Satisfaction." Journal of Services Marketing 14 (3): 217–231. doi:10.1108/ 08876040010327220.
40. Lim, S. H., & Kim, D. J. (2020). Does Emotional Intelligence of Online Shoppers Affect Their Shopping Behavior? From a Cognitive-Affective-Conative Framework Perspective. International Journal of Human–Computer Interaction, 36(14), 1304–1313. doi:10.1080/10447318.2020.1739882.
41. Li, H., Song, W., & Collins, R. (2014). Post-event visits as the sources of marketing strategy sustainability: A conceptual model approach.
42. Mair, J., & Smith, A. (2021). Events and sustainability: Why making events more sustainable is not enough.
43. Mair, J., & Smith, A. (2021). Events and sustainability: why making events more sustainable is not enough.
44. Moisescu, I. D., & Coroş, M. M. (2019). The UNTOLD story Event tourism ' s negative impact on residents ' community life and well-being.
45. Moreno Gil, S., Ritchie, J. R. B., & Almeida-Santana, A. (2019). Museum tourism in Canary Islands: assessing image perception of Directors and Visitors. Museum

Management and Curatorship, 34(5), 501–520. https://doi.org/10.1080/09647775.2019.1590728.

46. Nery, C., Trindade, O., Mestrado, B., Gestão De Empresas, E., Marjan, S., Jalali, & Associado. (2021). Portuguese music festivals - A study of the environmental challenges from festival manager's perspective.
47. Nowacki, M. (2005). EvaluatingNery, C., Trindade, O., Mestrado, B., Gestão De Empresas, E., Marjan, S., Jalali, & Associado. (2021). Portuguese music festivals - A study of the environmental challenges from festival manager's perspective. a Museum as a Tourist Product Using the Servqual Method. Museum Management and Curatorship, 20(3), 235–250. doi:10.1080/09647770500602003.
48. Nowacki, M., & Kruczek, Z. (2021). Experience Marketing at Polish Museums and Visitor Attractions: The Co-creation of Visitor Experiences, Emotions and Satisfaction. Museum Management and Curatorship, 36(1), 62–81. doi:10.1080/09647775.2020.1730228.
49. Oppermann, M. (1996). Convention cities: Images and changing fortunes. The International Journal of Tourism Research, 13(3), 285-295.
50. Organ, K., Koenig-Lewis, N., Palmer, A., & Probert, J. (2015). The impact of food festival engagement on visitor emotions, satisfaction, and behavior change: A case study of the Ludlow Food Festival. Tourism Management, 48, 84-99. https://doi.org/10.1016/j.tourman.2014.10.012
51. Organ, K., Koenig-Lewis, N., Palmer, A., & Probert, J. (2015). Festivals as agents for behaviour change: A study of food festival engagement and subsequent food choices. Tourism Management, 48, 84-99. https://doi.org/10.1016/j.tourman.2014.10.021
52. Parasuraman, A., Zeithaml, V., & Berry, L. (1988). SERVQUAL: A Multiple-item Scale for Measuring Consumer Perceptions of Service Quality. Journal of Retailing, 64(1), 12–40.
53. Phaswana-Mafuya, N., & Haydam, N. (2005). Tourists' Expectations and Perceptions of the Robben Island Museum – A World Heritage Site. Museum Management and Curatorship, 20(2), 149–169. doi:10.1080/09647770500502002.
54. Poczta, J., & Malchrowicz-Mośko, E. (2018). Modern Running Events in Sustainable Development—More than Just Taking Care of Health and Physical Condition (Poznan Half Marathon Case Study). Sustainability, 10(7), 2145–2145. https://doi.org/10.3390/su10072145.

55. Pernecky, T. (2012). Events, society, and sustainability: Five propositions (1st ed.). Routledge. (Original work published 2012) https://doi.org/9780203134535
56. Pernecky, T., & Lück, M. (Eds.). (2013). Events, Society and Sustainability: Critical and contemporary approaches. Routledge.
57. Ras Levickaitė. (2011). City festival - A traditional cultural expression of the creative industries (The case of International Contemporary Dance Festival "New Baltic Dance") / Miesto festivaliai – Tradicinė kultūrinė kūrybinių industrijų raiška (Tarptautinio šiuolaikinio šokio festivalio "Naujasis Baltijos šokis" atvejis). Creativity Studies, 4(1), 36–53. https://doi.org/10.3846/20290187.2011.577178
58. San Martín, Héctor, and Ignacio A. Rodríguez Del Bosque. (2008). "Exploring the Cognitive–Affective Nature of Destination Image and The Role of Psychological Factors in its Formation." Tourism Management 29 (2): 263–277. doi:10.1016/j.tourman.2007.03.012
59. Solimano, Andrés. 2021. The Evolution of Contemporary Arts Markets: Aesthetics, Money and Turbulence. Abingdon: Routledge.
60. Stevenson, N. (2020). The contribution of community events to social sustainability in local neighbourhoods.
61. Syed Sibghatullah Shah, & Asghar, Z. (2023). Dynamics of social influence on consumption choices: A social network representation. Heliyon, 9(6), e17146–e17146. https://doi.org/10.1016/j.heliyon.2023.e17146.
62. Taylor & Francis. (2013). Events, society, and sustainability: Five propositions. https://doi.org/10.4324/9780203134535-3.
63. Trabskaya, E., Sinitsyna, A., & Tryapkin, N. (2022). Revisiting museums of contemporary art: what factors affect visitors with low and high levels of revisit intention intensity?, Museum Management and Curatorship, DOI:10.1080/09647775.2022.2073559.
64. Tsaur, S.-H., Wang, Y.-C., Liu, C.-R., & Huang, W.-S. (2019). Festival Attachment: Antecedents and Effects on Place Attachment and Place Loyalty. International Journal of Event and Festival Management, 10(1), 17–33. doi:10.1108/IJEFM-02-2018-0014.
65. Urry, J. (1990). The tourist gaze. London: Sage.
66. Van Nieuwenhuizen, K. E., Both, I. G. I. A., Porte, P. J., Van der Eijk, A. C., & Janse F. W. (2023). Environmental sustainability and gynaecological surgery: Which factors influence behaviour? An interview study. Journal of Obstetrics and

Gynaecology Research. Advance online publication. https://doi.org/10.1111/1471-0528.17709.

67. Vega-Gómez, Francisco I., Francisco J. Miranda-Gonzalez, Jesus Perez Mayo, Óscar Rodrigo GonzálezLópez, and Laura Pascual-Nebreda. 2020. “The Scent of Art. Perception, Evaluation, and Behaviour in a Museum in Response to Olfactory Marketing.” Sustainability 12 (4): 1384. doi:10.3390/ su12041384
68. Vesci, M., Conti, E., Rossato, C., & Castellani, P. (2020). The Mediating Role of Visitor Satisfaction in the Relationship Between Museum Experience and Word of Mouth:Evidence from Italy. The TQM Journal, 33(1), 141–162. doi:10.1108/TQM-02-2020-0022.
69. Villeneuve, P., & Erickson, M. (2008). The Trouble with Contemporary Art is ... . Art Education, 61(2), 92–97. doi:10.1080/00043125.2008.11651149.
70. Werner, K., Griese, K. M., & Faatz, A. (2019). Value co-creation processes at sustainable music festivals: a grounded theory approach. International Journal of Event and Festival Management.
71. Xu, Z., Zhang, H., Zhang, C., Xu, M., & Dong, N. (2019). Exploring the Role of Emotion in the Relationship Between Museum Image and Tourists’ Behavioral Intention: The Case of Three Museums in Xi’an. Sustainability, 11(3), 559. doi:10.3390/su11030559.
72. Yuan, J., Morrison, A. M., Cai, L. A., & Linton, S. (2008). A model of wine tourist behaviour: A festival approach. Journal of Tourism Research, 10, 207-219. https://doi.org/10.1002/jtr.651
73. Zeithaml, V. A., Berry, L., & Parasuraman, A. (1996). The Behavioral Consequences of Service Quality. Journal of Marketing, 60(2), 31–46. doi:10.2307/1251929.
74. Zhang, H., Wu, Y., & Buhalis, D. (2018). A Model of Perceived Image, Memorable Tourism Experiences and Revisit Intention. Journal of Destination Marketing & Management, 8, 326–336. doi:10.1016/j.jdmm.2017.06.004.
75. Zheng, C., Hu, L., Qian, L., & Liu, S. (2019). A Research on Peasants’ Harvest Festival Promoting the Development of Rural Festivals: Content Analysis Based on Web Text. Proceedings of the 2019 4th International Conference on Social Sciences and Economic Development (ICSSED 2019).

Resümee

Keskkonnasäästlikkuse praktikate hindamine sündmuste korduskülastuse kavatsuse intensiivsuses: Euroopa kultuurkapitali Tartu 2024 autovaba festivali juhtumiuuring

Käesolevas lõputöös vaadeldakse Euroopa kultuuripealinna Tartu 2024 autovaba festivali keskkonnasäästlikkuse praktikaid, keskendudes nende mõjule külastajate käitumiskavatsustele.

Kasutades osalejate küsitlusanalüüsi kaudu kognitiiv-afektiivset-konatiivset mudelit, uurib uuring seost kognitiivsete tegurite, keskkonnasäästlikkuse ja külastajate kavatsuse vahel jätkusuutlikke sündmusi uuesti külastada. Tulemused näitavad keskkonnasäästlikkuse algatuste, külastajate hoiakute ja käitumuslike kavatsuste nüansirikast koosmõju.

Uuring aitab kaasa säästva ürituste korraldamise sügavamale mõistmisele, pakkudes teadmisi korraldajatele, poliitikakujundajatele ja sidusrühmadele, kes soovivad edendada jätkusuutlikkust ürituste valdkonnas. Rõhutades keskkonnakaalutluste integreerimise tähtsust sündmuste planeerimisse ja elluviimisse, rõhutab uuring festivalide ja sündmuste rolli keskkonnajuhtimise ja sotsiaalsete muutuste käivitajana.

Märksõnad: Keskkonnasäästlikkus, Külastaja käitumise kavatsus, Kognitiiv-afektiivne-konatiivne mudel, Juhtimine

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Binghua Liu

21.05.2024

Xuan Tang

21.05.2024

Appendix 1 Survey Questions and Latent Variables Formation

Appendix 1. Survey questions and latent variables formation.

Latent Variable	*Coefficient*	*Source of the statements*
Perceived beliefs		
Q1. Are you interested in attending the Tartu 2024 car-free festival?	0,72***	Trabskaya, Zelenskaya,Sinitsyna and Tryapkin 2022;Trinh and Ryan 2013; Kim, Kim, and Wachter 2013
Q2. Would you describe visiting the Tartu 2024 car-free festival as an enjoyable experience?	0,76***	
Q3. Did attending the Tartu 2024 car-free festival evoke positive emotions for you?		
Tangibles		
Q4. Did you find the environmental sustainability solutions at the Tartu 2024 car-free festival well-arranged?(refill water, reuseble decoration,recycle bows and cups, est.)	0.78***	Trabskaya, Zelenskaya,Sinitsyna and Tryapkin 2022;Nowacki 2005; Tsaur et al. 2019
Q5. Did you find the environmental sustainability solutions showcased at the Tartu 2024 car-free festival provide the unique experience for your visit?		
Reliability		
Q6. Did the Tartu 2024 car-free festival deliver its environmental sustainability solutions as promised?	0,77***	Trabskaya, Zelenskaya,Sinitsyna and Tryapkin 2022;Kowalska and Ostrega 2020; Forgas-Coll et al. 2017
Q7. Your expectation of environmental sustainability solutions provided by the Tartu 2024 car-free festival were met		
Responsiveness		
Q8. Please rate how were you satisfied with the environmental sustainability solutions offered during your visit to the Tartu 2024 car-free festival?		Trabskaya, Zelenskaya,Sinitsyna and Tryapkin 2022; Forgas-Coll et al. 2017; Palau-Saumell, Forgas□Coll, and Sánchez-García 2016
Assurance		
Q9. car-free festival staff possess sufficient knowledge about environmental sustainability solutions to address your inquiries?	-0,89***	Trabskaya, Zelenskaya,Sinitsyna and Tryapkin 2022; Mey and Mohamed 2010; Nowacki 2005
Q10. Did you feel in a safe environmental when you visiting the Tartu 2024 car-free festival?		
Empathy		
Q11. Did you feel well taken care of during your visit to the Tartu 2024 car-free festival?		Trabskaya, Zelenskaya,Sinitsyna and Tryapkin 2022;Kowalska and Ostrega 2020
dependent variable		
Revisit Intention		
Q12. Would you consider returning to the Tartu 2024 car-free festival in the future?		Trabskaya, Zelenskaya,Sinitsyna and Tryapkin 2022; Kang, Jang, and Jeong 2018

Significance levels – ***p < 0.01, **p < 0.05, *p < 0.1.
Source: authors' calculations based on the online survey results

Appendix 2 Interview Scripts Reference

Bing: I can do the introduction. So, we're working on our graduation thesis, and the topic is sustainability related to event management. Since we're celebrating the Tartu 2024 Car-free Festival, and it's really big. I think this is why we chose to take this topic.

Bing: That's really great. Like, can you help us with this interview?

Triin: Yeah, sure. I have to say that many people forwarded me your invitation and proposal.

Bing: Yeah.

Triin: Like, I'm the only one who is responsible for the Car-Free festival event, so you might not get a reply from many others.

Bing: Because the original idea is that we want to do both quantitative and qualitative analysis. For qualitative analysis, we need to conduct 20 interviews. That's why we just searched the Internet, OK, and sent all the invitations out to see if people will take our invitation, and then they all lead to you. So I guess we're just going to have your interview. But it's okay, and then we are going to conduct the interview with the survey we did online. We have already collected around 1300 survey results, which is enough for our thesis. So yeah, we're going to analyze the data from there and then combine it with the result from the interview here. Yeah. But still, like, thank you so much for helping us.

Triin: Yeah, sure. And I hope that somebody else will also pick up your proposal, and they will be willing to discuss it or at least agree with the interview as well.

Bing: But is anyone else doing similar research about the Car-free Festival?

Triin: We have proposed this for the Green Destination award, so I think on the Green Destination website, you can find some summary about it. So, yeah, but I haven't heard that somebody is going to... yeah.

Bing: That's good. Okay. So we don't have to find out if there's another article ready since... yeah. Okay, we're going to go through the questions. I'm sure you already read it. Yeah. So, the first one... it's big. How is environmental stability practiced during car-free festivals? They have a page about it, but in practice, how important is this topic for you guys?

Triin: Well, it is quite important because sustainability is one of our lead values. We have four values: uniqueness, sustainability, awareness, and co-creation, and being one of the four branches, it's quite a big thing in the 2024 program and activities. We have guidelines for sustainability, environmentally friendly guidelines for organizing events, but also a dedicated program line that is dedicated to climate and environmental topics. So we are dealing with sustainability and the environment in two ways: our own activity should be more environmental and sustainable, but at the same time, art and culture can also open up with different topics connected with the environment and sustainability, which maybe are too hard for regular people to understand. Can art and culture bring them closer to nature, for example? So, yeah, it's...

Bing: So I know sustainability is a really hot topic in Europe in general, but what is the real motivation, you think, for the Car-free Festival to conduct this? Because, yes, it's a regulation based on the 2024 culture, so what is the motivation of the Car-free Festival? Because I've been there and I know you use a lot of practice inside this event. So what makes you think you want to... I don't want to say how motivated, like how much you want to do because there are so many events going on during that period; it can be big chaos in the way.

Triin: I think the main motivation has been that the world is changing, and we also need change because otherwise, we wouldn't survive, for example, climate-wise. So in 2021, it was the first Car-free Ave, and for example, we saw so much waste because of single-use plastic dishes, pizza boxes, cups, and so on. So in 2022, when we already had environmentally friendly guidelines for events, we also wanted to implement them ourselves because otherwise, how else can we order the cultural sector to follow our lead and be more environmentally friendly in their organization and actions? So it was maybe to showcase, to show that this is doable, this is possible, everybody can do it, and the city will lead the way in how we would like to see how all public events in the future would look like.

Bing: Like, so the first Car-free Festival was in 2020?

Triin: 2021 was the first Car-free Ave, but the first sustainable event was in 2020.

Bing: OK.

Triin: Yeah.

Bing: So after the first event, you saw so much waste, and you guys decided to do something to change the structure of the event?

Triin: Yes.

Bing: And then, that leads to a series of events that you're trying to improve the quality of the event in 2022?

Triin: Yeah.

Bing: So does the process of implementing change cost you a lot, or is it going to be a good transformation for the Car-free Festival?

Triin: I think at first it was a big investment, for example, to get more waste bins or to change the way we offer food and drinks to the guests, and not every change is going to be successful or popular. But I think in the end, you know, that the people will follow your example. If the festival doesn't have to follow you, we are already seeing it right now that every other public event has to follow our lead in changing the way they offer food and drinks. So, I think in the end, we are really happy with the changes and the work we put into it.

Bing: Like, if you put yourself in the audience's perspective, I would want to join in the event, to experience the art and cultural part of it, rather than focusing on the practices or the bad sides of it. So is there any kind of challenge you can't overcome, like you just mentioned, that you're still working on?

Triin: Yeah, for example, not every food and drink really fits into our new guidelines. But also, some problems still exist. We are still researching what would be a better way to offer

water to our guests, for example, and how to minimize the use of single-use cups. We already have quite a few rental cups, but I think that the proportion of single-use cups is still too high. So I would say the biggest challenge is to change the mindset and the way how people are acting.

Bing: Like you said, how do you guys get a lot of investment on this? Is there any like, you have an idea to tell people that you need money to invest in? Is there any kind of law or regulation for Car-free Festivals that can't do this? Because some people don't understand the importance of it.

Triin: For us, it's quite important to show people what we have already done and what we have achieved. But at the same time, it's important to keep people motivated. If you just tell them what you have done and what we have already achieved, and they don't see the progress, they don't see the changes that we're making, then they will not be so willing to put their energy into it and to make a difference.

Bing: Like, how does your current leadership and management deal with the situation when there's a lot of the topics on the table and like, you want to do the same practices as the other groups? Like, when there's conflict, when there's conflicting ideas, is there any kind of advice you can give us?

Triin: I think the best way to work is to bring all the ideas to the table. For example, I have this idea and think it's important that we do it, but if somebody else is not agreeing, they're not agreeing. Then, I will take it to the next meeting or next chance and propose it again and again and again until it has to be done.

Bing: Like you have to wait?

Triin: Not really. Like, I think it's quite important to really talk about it, to put your ideas on the table. If nobody is talking about it, then it's just going to be gone and nobody is going to be able to do anything about it. So I think it's quite important to put your ideas on the table and to talk about it.

Bing: Yeah, it's really important. So I know you guys are doing a really good job in implementing the change to the Car-free Festival, and I'm wondering, do you have any plan to share the concept to any other... do you have any plan to share the concept or even the whole system to any other big events in the future?

Triin: I think it's quite important to talk about it and to make sure that we're not just doing it for ourselves, but that we're also doing it for the whole community and for the whole world. So I think it's quite important to talk about it and to share it with the world.

Triin: Yes, we are already sharing our experience with other events and organizers. For example, we are a part of the European Capital of Culture network, and every year we have a meeting where all the European Capitals of Culture come together and discuss the problems and share their experiences and ideas. So we are already sharing our experience with other cities and organizations, and I think it's quite important because if we can do it, everybody can do it.

Bing: Like, what is the effect that you have on the attendees, the artists, and the environment?

Triin: Well, I hope that the effect will be long-lasting and positive. For example, I hope that the people who attend our events will start to think more about their own environmental footprint and start to make changes in their own lives. And I hope that the artists who attend our events will start to think more about the environment and start to make changes in their own work. And I hope that the environment itself will benefit from our actions and become healthier and more sustainable.

Bing: Is there any... like, can you share some stories or anecdotes from participants or artists, like, when they saw this, they had an idea, or like, it was an eye-opener for them?

Triin: Yes, for example, one of the artists who participated in the 2022 program was a sculptor, and he made sculptures from recycled materials, and he organized workshops where people could come and make their own sculptures from recycled materials. I think it was quite an eye-opener for many people because they saw that you can make beautiful art from things that would otherwise end up in the trash.

Bing: Yeah, it's quite amazing. Yeah, it's a wonderful way to contribute to the environment and you also have the art part of it. It's very interesting. Yeah. So, if you're looking for it, what kind of key insights or recommendations would you give to others who are looking to adopt similar practices in their events?

Triin: I think the most important thing is to start small and to start now. For example, you don't have to change everything at once, but you can start by changing one thing, for example, how you offer food and drinks, and then you can build on that. I think it's also important to involve everyone in the process, not just the organizers but also the attendees and the artists, and the environment itself. I think it's also important to share your experience with others and to learn from others because we are all in this together.

Bing: Yeah, it's very important. What are some resources, and what are some actions or organizations they can contact? Because, yeah, the more, the better.

Triin: Yeah, for example, I would recommend contacting Green Destinations because they have a lot of resources and information about sustainable tourism and events. And I would also recommend contacting other events and organizers who have already implemented similar practices and asking them for advice and guidance.

Bing: Yeah, that's very important. Yeah. So, is there any kind of message you want to share with us and, like, we can put it into our thesis to share with our readers?

Triin: Yes, I would like to say that sustainability is not just a trend, but it's the future, and we all have to do our part to make the world a better place for future generations. And I would also like to say that if we can do it, everybody can do it.

Bing: Thank you.

Xuan: Thank you so much.

Triin: Of course! Let's continue from there.

Bing: Thank you so much, Triin, for sharing these wonderful insights and experiences with us. It's truly inspiring to hear about the impact of your sustainability initiatives in the cultural events space. We'll definitely take these ideas into consideration for our thesis and share this important message with our readers.

Triin: You're very welcome, Bing. I'm glad to have had the opportunity to speak with you about these topics. If you or your readers have any more questions or need further information, please feel free to reach out. It's important that we all work together to create a more sustainable future. Thank you!

Bing: Absolutely, Triin. Collaboration and sharing of knowledge are key to driving positive change. Thank you again for your time and valuable insights. We'll be in touch if we have more questions. Have a great day!

Triin: Thank you, Bing. You too! Goodbye!

Bing: Goodbye!

Appendix 3 Survey Result

1. Are you interested in attending the Tartu 2024 car-free festival?

1,347 responses

2. Would you describe visiting the Tartu 2024 car-free festival as an enjoyable experience?

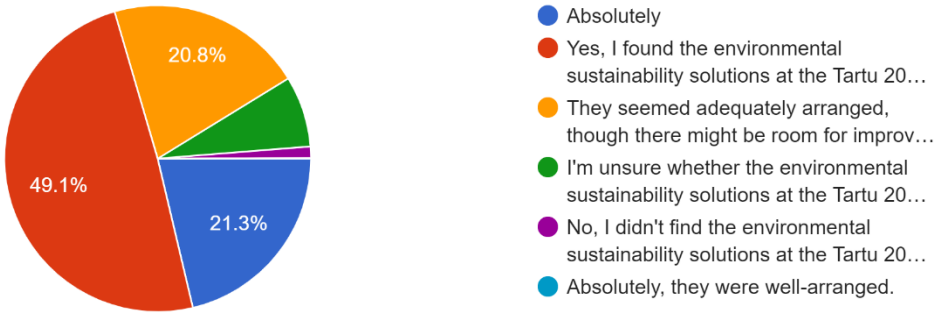
1,347 responses

3. Did attending the Tartu 2024 car-free festival evoke positive emotions for you?

1,347 responses

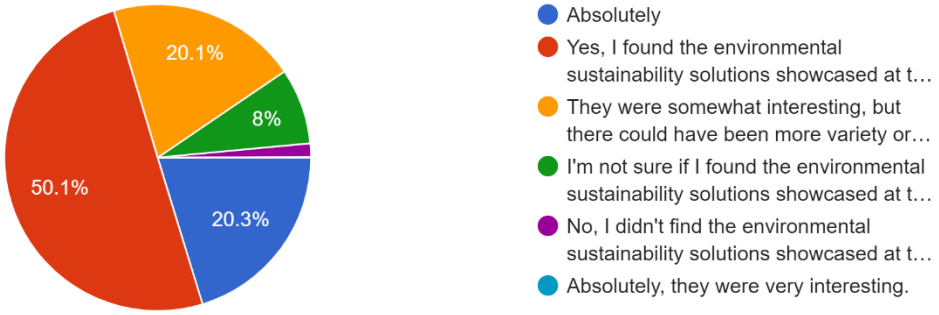
4.Did you find the enviromental sustainability solutions at the Tartu 2024 car-free festical well arranged?(Refill water, reuseble decoration, recycle balls and cups, est.)

1,347 responses



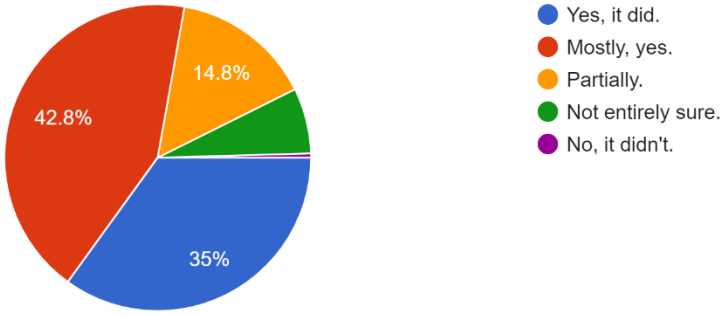
5.Did you find the environmental sustaibability solutions showcased at the Tartu 2024 car-free festival provide the unique experience for your visit?

1,347 responses



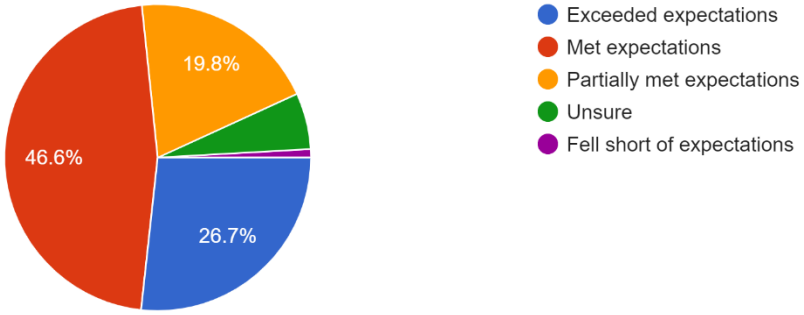
6.Did the Tartu 2024 car-free festival deliver its environmental sustainability solutions as promised?

1,347 responses



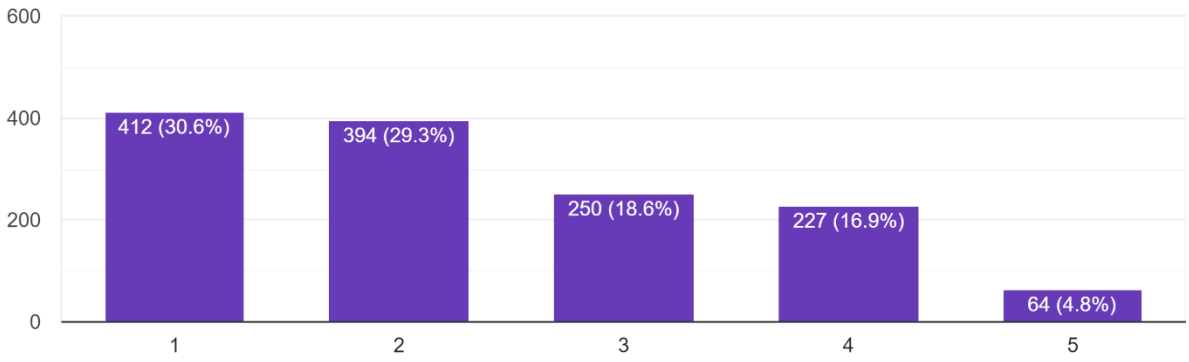
7. Your expectation of environmental sustainability solutions provided by the Tartu 2024 car-free festival were met.

1,347 responses



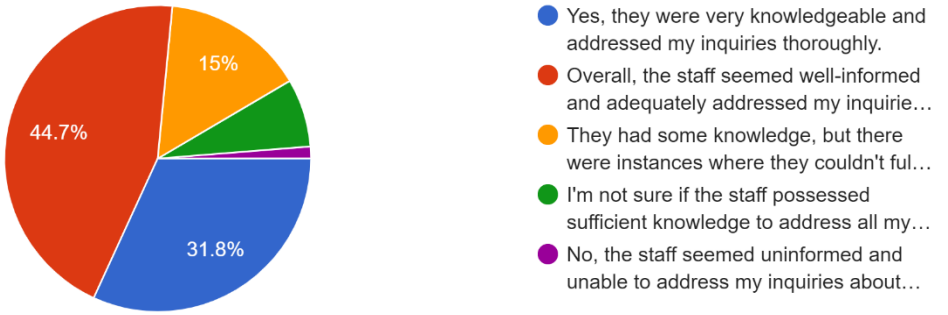
8. Please rate how were you satisfied with the environmental sustainability solutions offered during your visit to the Tartu 2024 car-free festival?(1 completely satisfied to 5 dissatisfied)

1,347 responses



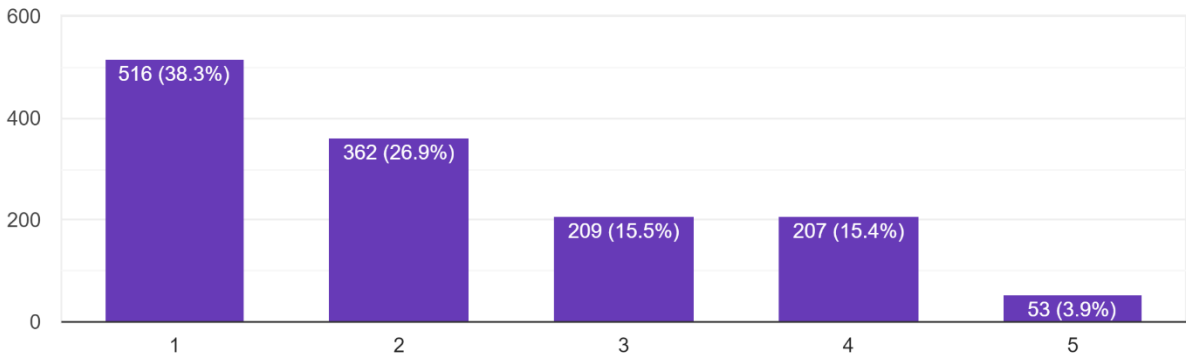
9.car-free festival possess sufficient knowledge about environmental sustainability solutions to address your inquiries?

1,347 responses



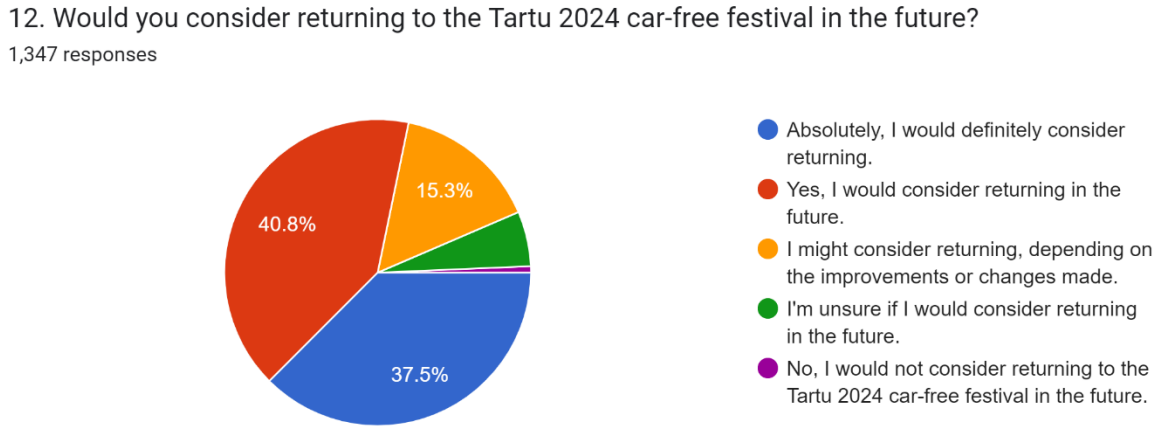
10. Did you feel in a safe environmental when you visiting the Tartu 2024 car-free festival? (1 Very safe to 5 Not safe at all)

1,347 responses



11. Did you feel well taken care of during your visit to the Tartu 2024 car-free festival?

1,347 responses



Appendix 4 Python Code

```
[ ] import pandas as pd

    # Assuming the file is a CSV
    pd.read_csv('The Environmental sustainability for Tartu 2024 car-free festival new.csv')
```

```
def head(file_path, num_lines=5):
    # Open the file
    with open(file_path, 'r') as file:
        # Read and print the specified number of lines
        for i in range(num_lines):
            line = file.readline()
            if not line:
                break  # End of file
            print(line.rstrip())  # Remove trailing newline characters
```

```
from types import new_class
def replace_data(file_path, old_data, new_data):
    # Read the file
    with open(file_path, 'r') as file:
        data = file.read()

    # Replace the old data with the new data
    new_content = data.replace(old_data, new_data)

    # Write the modified data back to the file
    with open(file_path, 'w') as file:
        file.write(new_content)
```

```
# Specify the file path
file_path = 'The Environmental sustainability for Tartu 2024 car-free festival new.csv'  # Replace 'your_file_path.txt' with the actual path to your file

# Specify the old data to replace and the new data

old_data ="Yes, absolutely"
new_class='5'

old_data = "yes, visiting the Tartu 2024 car-free festival would likely be enjoyable."
new_data = '4'

old_data = "It might be enjoyable, depending on the activities and atmosphere"
new_data = '3'

old_data = "I'm not sure if it would be enjoyable or not."
new_data = '2'

old_data = "No, I don't think visiting the Tartu 2024 car-free festival would be an enjoyable experience."
new_data = '1'
# Call the replace_data function
replace_data(file_path, old_data, new_data)
```

Data Cleaning

Data Analysis in Python

```
def delete_column(csv_file, column_name):
    # Read the CSV file into a DataFrame
    df = pd.read_csv(csv_file)
    print(df)

    # Check if the column exists
    if column_name not in df.columns:
        print(f"Column '{column_name}' does not exist in the CSV file.")
        return

    # Delete the specified column
    del df[column_name]

    # Write the modified DataFrame back to the CSV file
    df.to_csv(csv_file, index=False)

# Specify the file path of the CSV file
csv_file = 'The Environmental sustainability for Tartu 2024 car-free festival new.csv'  # Replace 'your_csv_file.csv' with the actual path to your CSV file

# Specify the name of the column to delete
column_name = 'Timestamp'

# Call the delete_column function
delete_column(csv_file, column_name)
```

```
import pandas as pd

# Assuming the file is a CSV
# pd.read_csv('The Environmental sustainability for Tartu 2024 car-free festival new.csv')
# df = pd.read_csv('output_excel_file.csv')
df = pd.read_csv('original_question_results.csv')
print(df)
```

```
      Q1  Q2  Q3  Q4  Q5  Q6  Q7  Q8  Q9  Q10  Q11  Q12  Q13  Q14
0      4   5   3   5   4   5   5   5   5    3    5    3    5    5
1      5   4   4   4   5   4   4   4   4    5    4    5    4    4
2      4   4   4   4   5   4   4   4   4    5    4    5    4    4
3      5   5   5   5   2   2   4   4   5    2    4    1    5    5
4      3   4   4   4   3   4   4   4   5    4    3    4    5    5
...   ..  ..  ..  ..  ..  ..  ..  ..  ..  ...  ...  ...  ...  ...
1342   4   3   5   3   2   4   3   3   3    3    2    4    3    2
1343   1   2   3   2   2   2   2   3   2    3    2    2    3    3
1344   3   3   3   3   4   2   2   3   3    2    3    2    2    3
1345   3   2   2   2   3   3   2   1   3    3    2    4    2    3
1346   2   3   5   2   2   4   4   5   3    1    2    2    2    4

[1347 rows x 14 columns]
```

```
df.to_excel('original_question_results.xlsx')
```

```
---------------------------------------------------------------------------
ModuleNotFoundError                       Traceback (most recent call last)
Cell In[114], line 1
----> 1 df.to_excel('original_question_results.xlsx')

File ~/.asdf/installs/python/3.10.11/lib/python3.10/site-
packages/pandas/core/generic.py:2252, in NDFrame.to_excel(self, excel_writer,
sheet_name, na_rep, float_format, columns, header, index, index_label, startrow,
startcol, engine, merge_cells, inf_rep, freeze_panes, storage_options)
   2239 from pandas.io.formats.excel import ExcelFormatter
   2241 formatter = ExcelFormatter(
   2242     df,
   2243     na_rep=na_rep,
   (...)
   2250     inf_rep=inf_rep,
   2251 )
-> 2252 formatter.write(
   2253     excel_writer,
   2254     sheet_name=sheet_name,
   2255     startrow=startrow,
   2256     startcol=startcol,
   2257     freeze_panes=freeze_panes,
   2258     engine=engine,
   2259     storage_options=storage_options,
   2260 )

File ~/.asdf/installs/python/3.10.11/lib/python3.10/site-
packages/pandas/io/formats/excel.py:934, in ExcelFormatter.write(self, writer,
sheet_name, startrow, startcol, freeze_panes, engine, storage_options)
    930     need_save = False
    931 else:
    932     # error: Cannot instantiate abstract class 'ExcelWriter' with abstract
    933     # attributes 'engine', 'save', 'supported_extensions' and 'write_cells'
--> 934     writer = ExcelWriter(  # type: ignore[abstract]
    935         writer, engine=engine, storage_options=storage_options
    936     )
    937     need_save = True
    939 try:
```

```
File ~/.asdf/installs/python/3.10.11/lib/python3.10/site-
packages/pandas/io/excel/_openpyxl.py:56, in OpenpyxlWriter.__init__(self, path,
engine, date_format, datetime_format, mode, storage_options, if_sheet_exists,
engine_kwargs, **kwargs)
     43 def __init__(
     44     self,
     45     path: FilePath | WriteExcelBuffer | ExcelWriter,
   (...)
     54 ) -> None:
     55     # Use the openpyxl module as the Excel writer.
---> 56     from openpyxl.workbook import Workbook
     58     engine_kwargs = combine_kwargs(engine_kwargs, kwargs)
     60     super().__init__(
     61         path,
     62         mode=mode,
   (...)
     65         engine_kwargs=engine_kwargs,
     66     )
```

```
# drop Question 8 column in dataframe
df.drop('Q5', inplace=True, axis=1)
df.drop('Q9', inplace=True, axis=1)
print(df)
```

```
      Q1  Q2  Q3  Q4  Q6  Q7  Q8  Q10  Q11  Q12  Q13  Q14
0      4   5   3   5   5   5   5    3    5    3    5    5
1      5   4   4   4   4   4   4    5    4    5    4    4
2      4   4   4   4   4   4   4    5    4    5    4    4
3      5   5   5   5   2   4   4    2    4    1    5    5
4      3   4   4   4   4   4   4    4    3    4    5    5
...   ..  ..  ..  ..  ..  ..  ..  ...  ...  ...  ...  ...
1342   4   3   5   3   4   3   3    3    2    4    3    2
1343   1   2   3   2   2   2   3    3    2    2    3    3
1344   3   3   3   3   2   2   3    2    3    2    2    3
1345   3   2   2   2   3   2   1    3    2    4    2    3
1346   2   3   5   2   4   4   5    1    2    2    2    4

[1347 rows x 12 columns]
```

```
df = df.rename(columns={'Q6': 'Q5'})
df = df.rename(columns={'Q7': 'Q6'})
df = df.rename(columns={'Q8': 'Q7'})
df = df.rename(columns={'Q10': 'Q8'})
df = df.rename(columns={'Q11': 'Q9'})
df = df.rename(columns={'Q12': 'Q10'})
df = df.rename(columns={'Q13': 'Q11'})
df = df.rename(columns={'Q14': 'Q12'})
print(df)
```

```
      Q1  Q2  Q3  Q4  Q5  Q6  Q7  Q8  Q9  Q10  Q11  Q12
0      4   5   3   5   5   5   5   3   5    3    5    5
1      5   4   4   4   4   4   4   5   4    5    4    4
2      4   4   4   4   4   4   4   5   4    5    4    4
3      5   5   5   5   2   4   4   2   4    1    5    5
4      3   4   4   4   4   4   4   4   3    4    5    5
...   ..  ..  ..  ..  ..  ..  ..  ..  ..  ...  ...  ...
1342   4   3   5   3   4   3   3   3   2    4    3    2
1343   1   2   3   2   2   2   3   3   2    2    3    3
1344   3   3   3   3   2   2   3   2   3    2    2    3
1345   3   2   2   2   3   2   1   3   2    4    2    3
1346   2   3   5   2   4   4   5   1   2    2    2    4

[1347 rows x 12 columns]
```

```
df['Q12'].to_csv('Q12.csv', index=False)
```

```
import pandas as pd

# Load the Excel file into a DataFrame
df = pd.read_csv('Q12.csv')  # Replace 'your_excel_file.xlsx' with the actual file path

# Count the occurrences of the value "1" in the entire DataFrame
num_ones = df.eq(1).sum().sum()

print(f"Number of occurrences of '1' in the Excel file: {num_ones}")
```

```
import pandas as pd

# Load the CSV file into a DataFrame
data = df


# Calculate the correlation matrix
correlation_matrix = data.corr()


print(correlation_matrix)
```

```
            Q1        Q2        Q3        Q4        Q5        Q6        Q7  \
Q1   1.000000  0.462197  0.452225  0.365311  0.431161  0.430055  0.384301   \
Q2   0.462197  1.000000  0.502558  0.443781  0.465057  0.458995  0.436495
Q3   0.452225  0.502558  1.000000  0.532410  0.529071  0.434686  0.486948
Q4   0.365311  0.443781  0.532410  1.000000  0.496231  0.461696  0.454349
Q5   0.431161  0.465057  0.529071  0.496231  1.000000  0.473983  0.498347
Q6   0.430055  0.458995  0.434686  0.461696  0.473983  1.000000  0.469211
Q7   0.384301  0.436495  0.486948  0.454349  0.498347  0.469211  1.000000
Q8  -0.177329 -0.202093 -0.169645 -0.204247 -0.262117 -0.288078 -0.231723
Q9   0.400548  0.432128  0.439210  0.442236  0.494980  0.490173  0.497092
Q10 -0.168121 -0.200360 -0.133489 -0.170436 -0.241156 -0.281673 -0.200601
Q11  0.377595  0.443002  0.474005  0.425447  0.480598  0.485749  0.502881
Q12  0.410171  0.415721  0.409985  0.482675  0.472831  0.512169  0.469836

            Q8        Q9       Q10       Q11       Q12
Q1  -0.177329  0.400548 -0.168121  0.377595  0.410171
Q2  -0.202093  0.432128 -0.200360  0.443002  0.415721
Q3  -0.169645  0.439210 -0.133489  0.474005  0.409985
Q4  -0.204247  0.442236 -0.170436  0.425447  0.482675
Q5  -0.262117  0.494980 -0.241156  0.480598  0.472831
Q6  -0.288078  0.490173 -0.281673  0.485749  0.512169
Q7  -0.231723  0.497092 -0.200601  0.502881  0.469836
Q8   1.000000 -0.278615  0.793720 -0.235596 -0.282319
Q9  -0.278615  1.000000 -0.251244  0.504057  0.484492
Q10  0.793720 -0.251244  1.000000 -0.265723 -0.271210
Q11 -0.235596  0.504057 -0.265723  1.000000  0.490335
Q12 -0.282319  0.484492 -0.271210  0.490335  1.000000
```

```
import numpy as np
# df_correlation_matrix = pd.DataFrame(correlation_matrix)

correlation_matrix.to_csv('question_correlations.csv', index=False)
df_correlation_matrix = pd.read_csv('question_correlations.csv')
df_correlation_matrix.to_excel('question_correlations.xlsx', index=False)
```

```
---------------------------------------------------------------------------
ModuleNotFoundError                       Traceback (most recent call last)
Cell In[113], line 6
      4 correlation_matrix.to_csv('question_correlations.csv', index=False)
      5 df_correlation_matrix = pd.read_csv('question_correlations.csv')
----> 6 df_correlation_matrix.to_excel('question_correlations.xlsx', index=False)

File ~/.asdf/installs/python/3.10.11/lib/python3.10/site-
packages/pandas/core/generic.py:2252, in NDFrame.to_excel(self, excel_writer,
sheet_name, na_rep, float_format, columns, header, index, index_label, startrow,
startcol, engine, merge_cells, inf_rep, freeze_panes, storage_options)
   2239 from pandas.io.formats.excel import ExcelFormatter
   2241 formatter = ExcelFormatter(
   2242     df,
   2243     na_rep=na_rep,
   (...)
   2250     inf_rep=inf_rep,
   2251 )
-> 2252 formatter.write(
   2253     excel_writer,
   2254     sheet_name=sheet_name,
   2255     startrow=startrow,
   2256     startcol=startcol,
   2257     freeze_panes=freeze_panes,
   2258     engine=engine,
   2259     storage_options=storage_options,
   2260 )


File ~/.asdf/installs/python/3.10.11/lib/python3.10/site-
packages/pandas/io/formats/excel.py:934, in ExcelFormatter.write(self, writer,
sheet_name, startrow, startcol, freeze_panes, engine, storage_options)
    930     need_save = False
    931 else:
    932     # error: Cannot instantiate abstract class 'ExcelWriter' with abstract
    933     # attributes 'engine', 'save', 'supported_extensions' and 'write_cells'
--> 934     writer = ExcelWriter(  # type: ignore[abstract]
    935         writer, engine=engine, storage_options=storage_options
    936     )
    937     need_save = True
    939 try:

File ~/.asdf/installs/python/3.10.11/lib/python3.10/site-
packages/pandas/io/excel/_openpyxl.py:56, in OpenpyxlWriter.__init__(self, path,
engine, date_format, datetime_format, mode, storage_options, if_sheet_exists,
engine_kwargs, **kwargs)
     43 def __init__(
     44     self,
     45     path: FilePath | WriteExcelBuffer | ExcelWriter,
   (...)
     54 ) -> None:
     55     # Use the openpyxl module as the Excel writer.
---> 56     from openpyxl.workbook import Workbook
     58     engine_kwargs = combine_kwargs(engine_kwargs, kwargs)
     60     super().__init__(
     61         path,
     62         mode=mode,
   (...)
```

```
from scipy.stats import pearsonr

data = correlation_matrix

significance_level = 0.01

# Create an empty dictionary to store correlation coefficients and p-values
correlation_results = {}

# Iterate over pairs of variables and calculate correlation coefficients and p-values
for var1 in data.columns:
    for var2 in data.columns:
        if var1 != var2:
            corr_coef, p_value = pearsonr(data[var1], data[var2])
            correlation_results[(var1, var2)] = (corr_coef, p_value)

# Display the correlation coefficients and p-values
for pair, values in correlation_results.items():
    significance_test =  values[1] < significance_level
    print(f"Correlation between {pair}: Coefficient = {values[0]}, P-value = {values[1]}, significance-test = {significance_test}")
```

```
Correlation between ('Q1', 'Q2'): Coefficient = 0.721712456855951, P-value = 0.00805234219572191, significance-test = True
Correlation between ('Q1', 'Q3'): Coefficient = 0.6900145038928078, P-value = 0.013012997125446256, significance-test = False
Correlation between ('Q1', 'Q4'): Coefficient = 0.6105248718622326, P-value = 0.034986520529813464, significance-test = False
Correlation between ('Q1', 'Q5'): Coefficient = 0.6975430119867576, P-value = 0.011671932384921807, significance-test = False
Correlation between ('Q1', 'Q6'): Coefficient = 0.7025286917908538, P-value = 0.010842142150148724, significance-test = False
Correlation between ('Q1', 'Q7'): Coefficient = 0.6381720712127741, P-value = 0.0255432490294833, significance-test = False
Correlation between ('Q1', 'Q8'): Coefficient = -0.7967458573454567, P-value = 0.0019202896702850878, significance-test = True
Correlation between ('Q1', 'Q9'): Coefficient = 0.6671721499590275, P-value = 0.01778191071258637, significance-test = False
Correlation between ('Q1', 'Q10'): Coefficient = -0.795899575100226, P-value = 0.0019576083528545134, significance-test = True
Correlation between ('Q1', 'Q11'): Coefficient = 0.642115898419495, P-value = 0.024365443719015792, significance-test = False
Correlation between ('Q1', 'Q12'): Coefficient = 0.676811656835983, P-value = 0.01563543009330645, significance-test = False
Correlation between ('Q2', 'Q1'): Coefficient = 0.721712456855951, P-value = 0.00805234219572191, significance-test = True
Correlation between ('Q2', 'Q3'): Coefficient = 0.7626214687564508, P-value = 0.003921427699115429, significance-test = True
Correlation between ('Q2', 'Q4'): Coefficient = 0.7118161331711014, P-value = 0.00941430364390881, significance-test = True
Correlation between ('Q2', 'Q5'): Coefficient = 0.7537706484588195, P-value = 0.004633290844823995, significance-test = True
Correlation between ('Q2', 'Q6'): Coefficient = 0.7503396759630446, P-value = 0.004934006422226087, significance-test = True
Correlation between ('Q2', 'Q7'): Coefficient = 0.7138249423006107, P-value = 0.00912489840432742, significance-test = True
Correlation between ('Q2', 'Q8'): Coefficient = -0.8445586049981288, P-value = 0.0005471709830517266, significance-test = True
Correlation between ('Q2', 'Q9'): Coefficient = 0.7209127283052852, P-value = 0.008156562566363823, significance-test = True
Correlation between ('Q2', 'Q10'): Coefficient = -0.8467950713792916, P-value = 0.0005109428618545429, significance-test = True
Correlation between ('Q2', 'Q11'): Coefficient = 0.7267846834558692, P-value = 0.007414352247809754, significance-test = True
Correlation between ('Q2', 'Q12'): Coefficient = 0.7078108195281335, P-value = 0.010011703141691634, significance-test = False
Correlation between ('Q3', 'Q1'): Coefficient = 0.6900145038928078, P-value = 0.013012997125446256, significance-test = False
Correlation between ('Q3', 'Q2'): Coefficient = 0.7626214687564508, P-value = 0.003921427699115429, significance-test = True
Correlation between ('Q3', 'Q4'): Coefficient = 0.785445157174552, P-value = 0.0024659447811157136, significance-test = True
Correlation between ('Q3', 'Q5'): Coefficient = 0.798884661620635, P-value = 0.0018284008457210398, significance-test = True
Correlation between ('Q3', 'Q6'): Coefficient = 0.7152240785712923, P-value = 0.00892728620946208, significance-test = True
Correlation between ('Q3', 'Q7'): Coefficient = 0.7486396782272595, P-value = 0.005088355257902711, significance-test = True
Correlation between ('Q3', 'Q8'): Coefficient = -0.8298595077353305, P-value = 0.0008375132831077808, significance-test = True
Correlation between ('Q3', 'Q9'): Coefficient = 0.7144529285254342, P-value = 0.009035802976331058, significance-test = True
Correlation between ('Q3', 'Q10'): Coefficient = -0.8144578867165465, P-value = 0.0012566549340652712, significance-test = True
Correlation between ('Q3', 'Q11'): Coefficient = 0.7391499155138019, P-value = 0.006017960236244293, significance-test = True
Correlation between ('Q3', 'Q12'): Coefficient = 0.6898700723670084, P-value = 0.013039790058227496, significance-test = False
Correlation between ('Q4', 'Q1'): Coefficient = 0.6105248718622326, P-value = 0.034986520529813464, significance-test = False
Correlation between ('Q4', 'Q2'): Coefficient = 0.7118161331711014, P-value = 0.00941430364390881, significance-test = True
```

```
with open( question_coefficients.txt ,  w ) as text_file:
    for pair, values in correlation_results.items():
        significance_test =  values[1] < significance_level
        text_file.write(f"Correlation between {pair}: Coefficient = {values[0]}, P-value = {values[1]}, significance-test = {significance_te
```

```
new_df = pd.DataFrame()


# Categorize questions into constructs
new_df['Perceived_Beliefs'] = correlation_matrix[['Q1', 'Q2','Q3']].mean(axis=1)
new_df['Tangibles'] = correlation_matrix[['Q4','Q5']].mean(axis=1)
new_df['Reliability'] = correlation_matrix[['Q6', 'Q7']].mean(axis=1)
new_df['Responsiveness'] = correlation_matrix['Q8']
new_df['Assurance'] = correlation_matrix[['Q9','Q10']].mean(axis=1)
new_df['Empathy'] = correlation_matrix['Q11']

print(new_df)
```

```
      Perceived_Beliefs  Tangibles  Reliability  Responsiveness  Assurance  \
Q1             0.638141   0.398236     0.407178       -0.177329   0.116213
Q2             0.654918   0.454419     0.447745       -0.202093   0.115884
Q3             0.651594   0.530741     0.460817       -0.169645   0.152861
Q4             0.447167   0.748116     0.458023       -0.204247   0.135900
Q5             0.475097   0.748116     0.486165       -0.262117   0.126912
Q6             0.441245   0.467840     0.734606       -0.288078   0.104250
Q7             0.435915   0.476348     0.734606       -0.231723   0.148246
Q8            -0.183023  -0.233182    -0.259901        1.000000   0.257553
Q9             0.423962   0.468608     0.493632       -0.278615   0.374378
Q10           -0.167323  -0.205796    -0.241137        0.793720   0.374378
Q11            0.431534   0.453023     0.494315       -0.235596   0.119167
Q12            0.411959   0.477753     0.491002       -0.282319   0.106641

       Empathy
Q1    0.377595
Q2    0.443002
Q3    0.474005
Q4    0.425447
Q5    0.480598
Q6    0.485749
Q7    0.502881
Q8   -0.235596
Q9    0.504057
Q10  -0.265723
Q11   1.000000
Q12   0.490335
```

```
new_df.to_csv('value_of_variables.csv')
```

```
new_df['Perceived_Beliefs']
```

```
Q1     0.638141
Q2     0.654918
Q3     0.651594
Q4     0.447167
Q5     0.475097
Q6     0.441245
Q7     0.435915
Q8    -0.183023
Q9     0.423962
Q10   -0.167323
Q11    0.431534
Q12    0.411959
Name: Perceived_Beliefs, dtype: float64
```

```
import numpy as np

# Data points for the variables
data = {
    'Perceived_Beliefs': new_df['Perceived_Beliefs'],
    'Tangibles': new_df['Tangibles'],
    'Reliability': new_df['Reliability'],
    'Responsiveness': new_df['Responsiveness'],
    'Assurance': new_df['Assurance'],
    'Empathy': new_df['Empathy']
}

# Create a NumPy array from the data
```

```
data_array = np.array([data[var] for var in data])

# Calculate the correlation matrix
correlation_matrix = np.corrcoef(data_array)

# Create a DataFrame from the correlation matrix
df_correlation = pd.DataFrame(correlation_matrix, columns=data.keys(), index=data.keys())

# Save the correlation matrix to a CSV file
df_correlation.to_csv('variable_correlation_matrix.csv')

print(df_correlation)
```

```
                    Perceived_Beliefs  Tangibles  Reliability  Responsiveness  \
Perceived_Beliefs            1.000000   0.853201     0.837300       -0.911740
Tangibles                    0.853201   1.000000     0.862033       -0.926729
Reliability                  0.837300   0.862033     1.000000       -0.951007
Responsiveness              -0.911740  -0.926729    -0.951007        1.000000
Assurance                   -0.656667  -0.616163    -0.621723        0.596261
Empathy                      0.777985   0.793842     0.843489       -0.882662

                    Assurance   Empathy
Perceived_Beliefs  -0.656667  0.777985
Tangibles          -0.616163  0.793842
Reliability        -0.621723  0.843489
Responsiveness      0.596261 -0.882662
Assurance           1.000000 -0.589668
Empathy            -0.589668  1.000000
```

```
from scipy.stats import pearsonr

data = df_correlation
```

```
pip install statsmodels
```

```
Requirement already satisfied: statsmodels in /usr/local/lib/python3.10/dist-packages (0.14.2)
Requirement already satisfied: numpy>=1.22.3 in /usr/local/lib/python3.10/dist-packages (from statsmodels) (1.25.2)
Requirement already satisfied: scipy!=1.9.2,>=1.8 in /usr/local/lib/python3.10/dist-packages (from statsmodels) (1.11.4)
Requirement already satisfied: pandas!=2.1.0,>=1.4 in /usr/local/lib/python3.10/dist-packages (from statsmodels) (2.0.3)
Requirement already satisfied: patsy>=0.5.6 in /usr/local/lib/python3.10/dist-packages (from statsmodels) (0.5.6)
Requirement already satisfied: packaging>=21.3 in /usr/local/lib/python3.10/dist-packages (from statsmodels) (24.0)
Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python3.10/dist-packages (from pandas!=2.1.0,>=1.4->statsmodels
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-packages (from pandas!=2.1.0,>=1.4->statsmodels) (2023.4)
Requirement already satisfied: tzdata>=2022.1 in /usr/local/lib/python3.10/dist-packages (from pandas!=2.1.0,>=1.4->statsmodels) (2024.
Requirement already satisfied: six in /usr/local/lib/python3.10/dist-packages (from patsy>=0.5.6->statsmodels) (1.16.0)
```

```
import pandas as pd

# Load data
data = pd.read_csv('data.csv')

# Assume data is cleaned and ready for analysis
print(data.head())
```

```
   Unnamed: 0  Q1  Q2  Q3  Q4  Q5  Q6  Q7  Q8  Q9  Q10  Q11  Q12  \
0           0   4   5   3   5   5   5   5   3   5    3    5    5
1           1   5   4   4   4   4   4   4   5   4    5    4    4
2           2   4   4   4   4   4   4   4   5   4    5    4    4
3           3   5   5   5   5   2   4   4   2   4    1    5    5
4           4   3   4   4   4   4   4   4   4   3    4    5    5

   Perceived_Beliefs  Tangibles  Reliability  Responsiveness  Assurance  \
0           4.000000        5.0          5.0               3        4.0
1           4.333333        4.0          4.0               5        4.5
2           4.000000        4.0          4.0               5        4.5
3           5.000000        3.5          4.0               2        2.5
4           3.666667        4.0          4.0               4        3.5

   Empathy
0        5
1        4
2        4
3        5
4        5
```

```
df=data.drop(['Perceived_Beliefs', 'Tangibles', 'Reliability',
       'Responsiveness', 'Assurance', 'Empathy','Unnamed: 0'], axis=1, inplace=True)
```

```
print(data)
```

```
        Q1  Q2  Q3  Q4  Q5  Q6  Q7  Q8  Q9  Q10  Q11  Q12
0        4   5   3   5   5   5   5   3   5    3    5    5
1        5   4   4   4   4   4   4   5   4    5    4    4
2        4   4   4   4   4   4   4   5   4    5    4    4
3        5   5   5   5   2   4   4   2   4    1    5    5
4        3   4   4   4   4   4   4   4   3    4    5    5
...     ..  ..  ..  ..  ..  ..  ..  ..  ..  ...  ...  ...
1342     4   3   5   3   4   3   3   3   2    4    3    2
1343     1   2   3   2   2   2   3   3   2    2    3    3
1344     3   3   3   3   2   2   3   2   3    2    2    3
1345     3   2   2   2   3   2   1   3   2    4    2    3
1346     2   3   5   2   4   4   5   1   2    2    2    4

[1347 rows x 12 columns]
```

```
data.to_csv('df.csv', index=False)
```

```
print(df)
```

```
None
```

```
from semopy import Model
# Load your data into a DataFrame
df = pd.read_csv('df.csv')
# Define the SEM model specification
model_spec = """
# Measurement models for first-level latent variables
```

```
Tangibles =~ Q4 + Q5
Reliability =~ Q6 + Q7
Responsiveness =~ Q8
Assurance =~ Q9 + Q10
Empathy =~ Q11

# Measurement model for higher-order latent variable
cognitive_Perceived_beliefs =~ Q1 + Q2 + Q3
Conative=~Q12
affective=~Tangibles + Reliability + Responsiveness + Assurance + Empathy
# Structural model
Conative ~ cognitive_Perceived_beliefs + affective
cognitive_Perceived_beliefs ~ affective+Conative
affective~Conative+cognitive_Perceived_beliefs
"""

# Create and fit the model
model = Model(model_spec)
results = model.fit(df)
```

```
model = Model(model_spec)
model.fit(data)
params = model.inspect()

# Check the data type of the p-value column
print(params['p-value'].dtype)

# If it's not float, convert it
if params['p-value'].dtype == 'object':
    params['p-value'] = pd.to_numeric(params['p-value'], errors='coerce')

# Now, check again
print(params['p-value'].dtype)
```

```
WARNING:root:Fisher Information Matrix is not PD.Moore-Penrose inverse will be used instead of Cholesky decomposition. See 10.1109/TSP.
object
float64
```

```
# Function to assign significance
def assign_significance(row):
    try:
        p_value = float(row['p-value'])
        if p_value < 0.01:
            return '***'  # Significant at 1%
        elif p_value < 0.05:
            return '**'   # Significant at 5%
        elif p_value < 0.10:
            return '*'    # Significant at 10%
        else:
            return ''
    except ValueError:
        return 'Error'  # In case of conversion failure

# Apply the function to determine significance
params['Significance'] = params.apply(assign_significance, axis=1)


# Print or export results
print(params[['lval', 'op', 'rval', 'Estimate', 'Std. Err', 'p-value', 'Significance']])
params.to_excel('SEM_df.xlsx', index=False)
```

	Std. Err	p-value	Significance
0	-	NaN	
1	0.047922	0.000000e+00	***
2	0.060481	0.000000e+00	***
3	0.049315	0.000000e+00	***
4	0.049033	0.000000e+00	***
5	0.023027	0.000000e+00	***
6	0.023851	0.000000e+00	***
7	0.02043	0.000000e+00	***
8	0.022199	0.000000e+00	***
9	0.018927	3.758662e-10	***
10	0.052571	0.000000e+00	***
11	-	NaN	
12	0.046267	0.000000e+00	***
13	-	NaN	
14	0.041251	0.000000e+00	***
15	-	NaN	
16	-	NaN	
17	0.054527	0.000000e+00	***
18	-	NaN	
19	-	NaN	
20	0.053261	0.000000e+00	***
21	0.052962	0.000000e+00	***
22	-	NaN	
23	0.032247	1.000000e+00	
24	0.016533	0.000000e+00	***
25	0.00969	0.000000e+00	***
26	0.013413	1.000000e+00	
27	0.024508	0.000000e+00	***
28	0.012326	1.090408e-01	
29	0.008549	6.301502e-07	***
30	0.012929	0.000000e+00	***
31	0.021191	0.000000e+00	***
32	0.051245	0.000000e+00	***
33	0.00969	0.000000e+00	***
34	0.01618	7.843944e-03	***
35	0.01873	0.000000e+00	***
36	0.017486	0.000000e+00	***
37	0.02043	0.000000e+00	***
38	0.020376	0.000000e+00	***
39	0.020676	0.000000e+00	***
40	0.019899	0.000000e+00	***
41	0.024508	0.000000e+00	***
42	0.036535	0.000000e+00	***

```
g = semopy.semplot(model, "pd.png")
```

```
WARNING:root:Fisher Information Matrix is not PD.Moore-Penrose inverse will be used instead of Cholesky decomposition. See 10.1109/TSP.
```

```
from semopy import Model
# Load your data into a DataFrame
df = pd.read_csv('df.csv')
# Define the SEM model specification
model_spec = """
# Measurement models for first-level latent variables
Tangibles =~ Q4 + Q5
Reliability =~ Q6 + Q7
Responsiveness =~ Q8
Assurance =~ Q9 + Q10
Empathy =~ Q11

# Measurement model for higher-order latent variable
cognitive_Perceived_beliefs =~ Q1 + Q2 + Q3
Conative=~Q12
# Structural model
Conative ~ cognitive_Perceived_beliefs + Tangibles + Reliability + Responsiveness + Assurance + Empathy
cognitive_Perceived_beliefs ~ Tangibles + Reliability + Responsiveness + Assurance + Empathy+Conative
Tangibles~ Conative+cognitive_Perceived_beliefs
Reliability~ Conative+cognitive_Perceived_beliefs
Responsiveness~ Conative+cognitive_Perceived_beliefs
Assurance~ Conative+cognitive_Perceived_beliefs
Empathy~ Conative+cognitive_Perceived_beliefs
"""

# Create and fit the model
model = Model(model_spec)
results = model.fit(df)
```

Appendix 5 Estonian Events & Festivals

Estonian Events & Festivals			
	Event Name	Theme	Address
1	Exhibition Escape the Kitchen!	Exhibition	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
2	Exhibition "Michel Sittow in the North? Altarpieces in Dialogue"	Exhibition	Reiu küla, Lottemaa teemapark
3	The exhibition "The Tower of Dreams", Estonian Theatre and Music Museum	Exhibition	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
4	Photo exhibition by Miles Aldridge "Virgin Mary. Supermarkets. Popcorn. Photos from 1999 - 2020."	Exhibition	Tartu linn, Tartu Sadamateater
5	The exhibition 'Why is Estonia not a kingdom?'	Exhibition	Tartu linn, Teater Vanemuine, suur maja
6	Exhibition by Jaan Künnap "Knots and Splices" at Tallinn TV Tower.	Exhibition	Kesklinna linnaosa, Eesti Noorsooteater, Tallinn
7	Exhibition "Through the Black Gorge of Your Eyes. Ten Women Printmakers"	Exhibition	Tartu linn, Teater Vanemuine, suur maja
8	Exhibition "Urve Küttner. Crystallisations"	Exhibition	Kesklinna linnaosa, Eesti Noorsooteater, Tallinn
9	Exhibition "Man and Nature: The Art of Adaptation"	Exhibition	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
10	Exhibition "Unframed: Leis, Tabaka and Rožanskaitė"	Exhibition	Tartu linn, Teater Vanemuine, suur maja, Tartu
11	Alar Tuul Exhibition "x+y..." at Vaal Gallery	Exhibition	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
12	Exhibition "The Father of Caricature: Works by Honoré Daumier from Paul R. Firnhaber's Collection"	Exhibition	Pärnu linn, Pärnu Kontserdimaja
13	Exhibition "melanie bonajo"	Exhibition	Tartu linn, Teater Vanemuine, suur maja, Tartu
14	Exhibition "Borderless Universe in Their Minds: Italian Transavantgarde and Estonian Calm Expressionism"	Exhibition	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
15	Exhibition "Gingerbread Mania"	Exhibition	Tartu linn, Teater Vanemuine, suur maja
16	Night of Museums in Estonia	Exhibition	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
17	Afternoon Tea at Villa Ammende	Fair	Pärnu linn, Villa Ammende
18	Musica Sacra. Pärnu	Fair	Pärnu linn, Pärnu Eliisabeti kirik
19	Nargenfestival	Fair	Lubja küla, viimsi artium
20	Foodlover Restaurants Week	Fair	Throughout Estonia
21	Food festival "Otepää Maitsed" (Flavours of Otepää)	Festival	Throughout Estonia
22	Tartu 2024	Festival	Throughout Tartu
23	A Little Journey / Väike teekond - Eesti tuur 2023	Festival	Viljandi, Viljandi Sakala Keskus
24	Käärijä concert	Festival	Kristiine linnaosa, Helitehas
25	Tallinn Fashion Week	Festival	Põhja-Tallinna linnaosa, KultuuriKatel
26	Drone Mass	Festival	Kesklinna linnaosa, Estonia kontserdisaal, Tallinn
27	Performance "Transcendentia"	Festival	Põhja-Tallinna linnaosa, Sõltumatu Tantsu Lava
28	Concert Nils Frahm	Festival	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
29	Ballet "Alice in Wonderland"	Festival	Põhja-Tallinna linnaosa, Sõltumatu Tantsu Lava
30	Kaubamaja	Festival	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
31	Saaremaa Three-Day Race	Festival	Tartu linn, Tartu Sadamateater
32	Huumoriklubi English Comedy Night with Special Guest: Kyle Legacy (UK)	Festival	Kuressaare linn
33	Opera by W.A Mozart "The magic Flute"	Festival	Kesklinna linnaosa, Kultuuriklubi Winkel
34	Concert "Dagö 25"	Festival	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
35	Hotell Viru ja Starlight Cabaret esitlevad: The GreatEST Show	Festival	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
36	Ballet "Romeo and Juliet"	Music	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
37	Naksitrallid 2: rotid ründavad	Music	Tartu linn, Teater Vanemuine, suur maja
38	Raised Fist - Unsinkable Tour concert	Music	Tartu linn, Tartu Sadamateater
39	Nunnad hoos	Music	Tartu linn, Tartu Pauluse kirik
40	Estonian Sinfonietta's opening concert ''Chimes''	Music	Kristiine linnaosa, Helitehas
41	Il Divo concert - A New Day Tour, Alexela Concert Hall	Music	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
42	Concert- Camerata Musica & Kirill Lissijenko	Music	Tartu linn, Kivi baar, Tartu
43	Shadow Theatre Teulis / Varju teater Teulis	Music	Tartu linn, Teater Vanemuine, suur maja
44	Band U: 20 jubilee concert	Music	Kesklinna linnaosa, Tallinna Filharmoonia Mustpeade Maja
45	Soome-ugri Klubiöö Tartus	Music	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
46	Camouflage Live Tour "Rewind to The Future And Goodbye"	Music	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
47	Tuhkvalge	Music	Tartu linn, Tartu Sadamateater
48	Soome-ugri Klubiöö Tallinnas	Music	Kesklinna linnaosa, Tallinna Raekoda
49	Nervy concert	Music	Tartu linn, Vanemuise Kontserdimaja, Tartu
50	Sipsik	Music	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
51	Rock the Opera concert in Tallinn	Music	Kesklinna linnaosa, Estonia kontserdisaal, Tallinn
52	kriis.ID	Music	Tartu linn, Tartu Genialistide Klubi
53	Ballet "The Corsair"	Music	Pärnu linn, Pärnu Kontserdimaja
54	Marc-André Hamelin (8.05 asendus)	Music	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
55	Tallinn Restaurant Week	Music	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
56	Hans Christian Aavik (viiul)	Music	Tartu linn, Teater Vanemuine, suur maja
57	Tulipunane vihmavari	Music	Põhja-Tallinna linnaosa, Erinevate Tubade Klubi, Tallinn
58	Kammermuusika Rahvusooperis: ''Vaikne Muusika''	Music	Kristiine linnaosa, Helitehas
59	Black Nights Film Festival (PÖFF)	Music	Tartu linn, Teater Vanemuine, suur maja
60	From Forest to Table - a week of Southern Estonian flavours	Music	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
61	Ballet "Õhtused majad"	Music	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
62	René Eespere LXX. Autorikontsert Estonia Kontserdisaalis	Music	Tartu linn, Tartu Sadamateater
63	Nensi / Нэнси	Music	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
64	St Martin's Day Fair	Music	Tartu linn, Teater Vanemuine, suur maja
65	Ansambel Nensi / Группа ''Нэнси''	Music	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
66	Peeter ja Hunt	Music	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
67	Vanemuise kontserdimaja sünnipäevakontsert. Läti Riiklik Sümooniaorkester	Music	Tallinn, Erinevad kohad
68	Pärnu Restaurant Week	Music	Tartu linn, Vanemuise Kontserdimaja, Tartu
69	Street Mirror Expo 2023 Tartu ERM	Music	Kesklinna linnaosa, Eesti Noorsooteatri väike saal
70	Don Pasquale. G. Donizetti ooper. Pensionäri soodustus	Music	Kesklinna linnaosa, Estonia kontserdisaal, Tallinn
71	The Great Gatsby Ballet	Music	Kesklinna linnaosa, Rahvusooper Estonia Kammersaal
72	XV Jõhvi balletifestival Pass	Music	Throughout Estonia
73	XV Jõhvi balletifestival esitleb: Virsky	Music	Kesklinna linnaosa, Eesti Noorsooteatri väike saal
74	PÖFF soovitab: Jeanne D'arci kannatused. Pärnu Linnaorkester ''Suitsuhall''	Music	Throughout Estonia
75	Robotex International 2023 Festival	Music	Jõhvi linn, Jõhvi Kontserdimaja

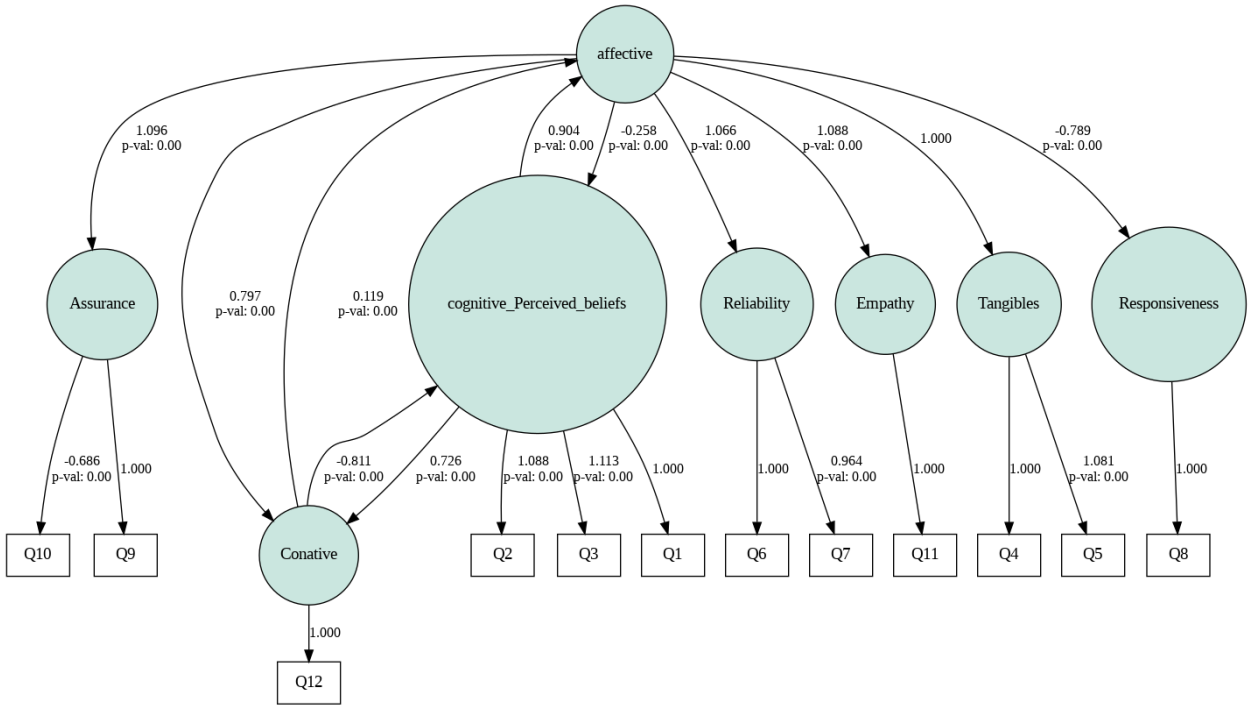
76	Jõhvi Ballet Festival	Music	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
77	Giselle	Music	Tartu linn, Tartu Sadamateater
78	Trio Andreas Lend, Jelena Ossipova and Svetlana Kekiševa JUBILEE CONCERT 30	Music	Kesklinna linnaosa, Eesti Noorsooteatri väike saal
79	Hüljatud	Music	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
80	Balletigala	Music	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
81	St Martin´s and St Chaterine´s Day in Santa Claus´s Korstna Farm	Music	Kesklinna linnaosa, Estonia kontserdisaal, Tallinn
82	Lumivalgeke ja seitse pöialpoissi	Music	Tartu linn, Tartu Sadamateater
83	Estonian Music Week (Eesti Muusika Nädal)	Music	Kesklinna linnaosa, Tallinna Raekoda
84	Simon Brodkin ''Screwed Up''	Music	Tartu linn, Teater Vanemuine, suur maja
85	Kõik ägedad asjad	Music	Tartu linn, Tartu Sadamateater
86	Electroacoustic Music Festival	Music	Tartu linn, Teater Vanemuine, suur maja
87	OM. Sven Grünberg	Music	Narva, Geneva kontserdimaja, Narva
88	The family circus show "Alice in Wonderland"	Music	Haabersti linnaosa, Saku Suurhall
89	Daniel Sloss: ''Can't''	Music	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
90	Kõik hitid - Maailmamuusika meistriteosed ''Universe Orchestra''	Music	Tartu linn, Teater Vanemuine, suur maja
91	Pärnu Linnaorkester: levimuusika kontsert ''Purpurpunane kolmapäev''	Music	Jõhvi linn, Jõhvi Kontserdimaja
92	Tallinn Christmas Market	Music	Tartu linn, Teater Vanemuine, väike maja
93	Pähklipureja ehk Imeline jõuluöö	Music	Tartu linn, Tartu Sadamateater
94	Concert "Gregorian"	Music	Tartu linn, Vanemuise Kontserdimaja
95	Stebby Estonian Night Run - Winter special in Narva	Music	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
96	Till Lindemann ''World Tour 2023''	Music	Pärnu, Pärnu restoranid
97	Christmas City Tartu	Music	Tartu linn, Eesti Rahva Muuseum, Tartu
98	Christmas lunch with music at Villa Ammende	Music	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
99	Christmas windows of Väätsa community centre	Music	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
100	Viini Filharmoonia Straussi Orkester	Music	Tartu linn, Tartu Sadamateater
101	Ooperigala Vanemuises	Music	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
102	Estonian National Museum Christmas Fair	Music	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
103	Glögg cafés in Hiiumaa	Music	Jõhvi linn, Jõhvi Kontserdimaja
104	Wintry Tartu Folk Dance Day	Music	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
105	Trubaduur. G. Verdi ooper	Music	Pärnu linn, Pärnu Kontserdimaja
106	Pärnu Linnaorkester ''Sammalroheline linnutee''	Music	Põhja-Tallinna linnaosa, Sõltumatu Tantsu Lava
107	Pomme - Consolation European tour concert	Music	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
108	Trubaduur. G. Verdi ooper. Pensionäri soodustus	Music	Põhja-Tallinna linnaosa, Sõltumatu Tantsu Lava
109	Ali Brice "I tried to be funny, but you weren't looking''	Sports	Pärnu linn, Pärnu Kontserdimaja
110	Jõulugala. Anett & Ola Onabulé	Sports	Haabersti linnaosa, Unibet Arena
111	Kammermuusika Rahvusooperis: ''Vaskne Muusika'' Rahvusooper Estonia kammersaalis	Theatre	Jõhvi linn, Jõhvi kontserdimaja
112	Christmas Wonderland at Lotte Village - the greatest family Christmas event in Estonia!	Theatre	Jõhvi linn, Jõhvi Kontserdimaja
113	Christmas Village and Christmas Fair in Pärnu	Theatre	Põhja-Tallinna linnaosa, Sõltumatu Tantsu Lava
114	Vanemuise sümfooniaorkestri advendikontsert	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
115	Viimsi Artium esitleb: London Community Gospel Choir (LCGC)	Theatre	Jõhvi linn, Jõhvi Mihkli kirik
116	Mozart. Missa c-moll	Theatre	Narva, Geneva kontserdimaja, Narva
117	'The Nutcracker'' National Ballet of Catalonia	Theatre	Rakvere, Rakvere Kolmainu kirik
118	Rahvusmeeskoori jõulukontsert	Theatre	Tartu linn, Teater Vanemuine, suur maja
119	Christmas Village in Narva	Theatre	Tartu linn, Eesti Rahva Muuseum, Tartu
120	Eesti gruuv 1970-80ndad	Theatre	Jõhvi linn, Jõhvi Kontserdimaja
121	Family Day in Santa Claus´s Korstna Farm - Visit Santa Claus!	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
122	Estonian Sinfonietta's end of year concert ''Voices of the Alps''	Theatre	Kõpu küla, Jõuluvana Korstna talu
123	Opera "The Wedding of Figoro"	Theatre	Tartu linn, Teater Vanemuine, suur maja
124	Eesti Kontserdi aastalõpukontsert	Theatre	Jõhvi linn, Jõhvi Kontserdimaja
125	Aastalõpukontsert. Jõuluks koju	Theatre	Tartu linn, Teater Vanemuine, suur maja
126	Bach Music Festival bachFest	Theatre	Kesklinna linnaosa, Eesti Noorsooteater, Tallinn
127	"Piaf! The Show" concert performance	Theatre	Tallinn, Erinevad kohad
128	Opera "Tosca"	Theatre	Tartu linn, Teater Vanemuine, suur maja
129	Filmimuusika gala	Theatre	Tartu linn, Athena Keskus, Tartu
130	Pärnu Linnaorkester. Minu esimene kontsert ''Lumivalge''	Theatre	Kesklinna linnaosa, Eesti Noorsooteater, Tallinn
131	Opera Stars Gala: Berliini hääled (9.01.23 asendus)	Theatre	Kesklinna linnaosa, Eesti Noorsooteater, Tallinn
132	Opera Stars Gala: Berliini hääled (10.01.23 asendus)	Theatre	Tartu linn, Teater Vanemuine, suur maja
133	Concert- Paavo Järvi ja Eesti Festivaliorkester	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
134	Schönbrunni lossi orkester: Suur Viini Uusaastakontsert 2024	Theatre	Kesklinna linnaosa, Rävala 8, Tallinn
135	Filmimuusika gala - Vanemuise teatri külaliskontsert!	Theatre	Kesklinna linnaosa, Vene Teater, Tallinn
136	sTARTUp Day	Theatre	Kesklinna linnaosa, Eesti Noorsooteater, Tallinn
137	The Beatles Live Again - The Beatbox (ITA)	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
138	Concert Vokaalansambel Spartimu (Korsika)	Theatre	Tartu linn, Vanemuise Kontserdimaja, Tartu
139	Scarlatti sonatas concert	Theatre	Kesklinna linnaosa, Eesti Noorsooteater, Tallinn
140	Lord of the rings in Concert	Theatre	Tartu linn, Teater Vanemuine, suur maja
141	Viini veri	Theatre	Kesklinna linnaosa, Eesti Noorsooteater, Tallinn
142	European Sauna Marathon	Theatre	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
143	Kass / Talsi / Sink	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
144	Tourest	Theatre	Kesklinna linnaosa, Estonia kontserdisaal, Tallinn
145	Ballett Don Quijote - Lviv National Opera (Ukraina)	Theatre	Tartu linn, Teater Vanemuine, suur maja
146	Pillifondi gala	Theatre	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
147	Brazilian Carnival Show	Theatre	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
148	Rhapsody in Blue	Theatre	Pärnu linn, Pärnu Kontserdimaja
149	Concert- Maksim Galkin	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
150	Concert - The Dire Straits Experience	Theatre	Kesklinna linnaosa, Raekoja plats
151	Concert Cradle of Filth - Necromantic Fantasies - Beyond the Pale	Theatre	Tartu linn, Teater Vanemuine, suur maja
152	Kammermuusika Rahvusooperis: ''Muusika Eestile''	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
153	Nädalavahetuse Pass / Weekend Pass / IBU Youth & Junior World Championships	Theatre	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn

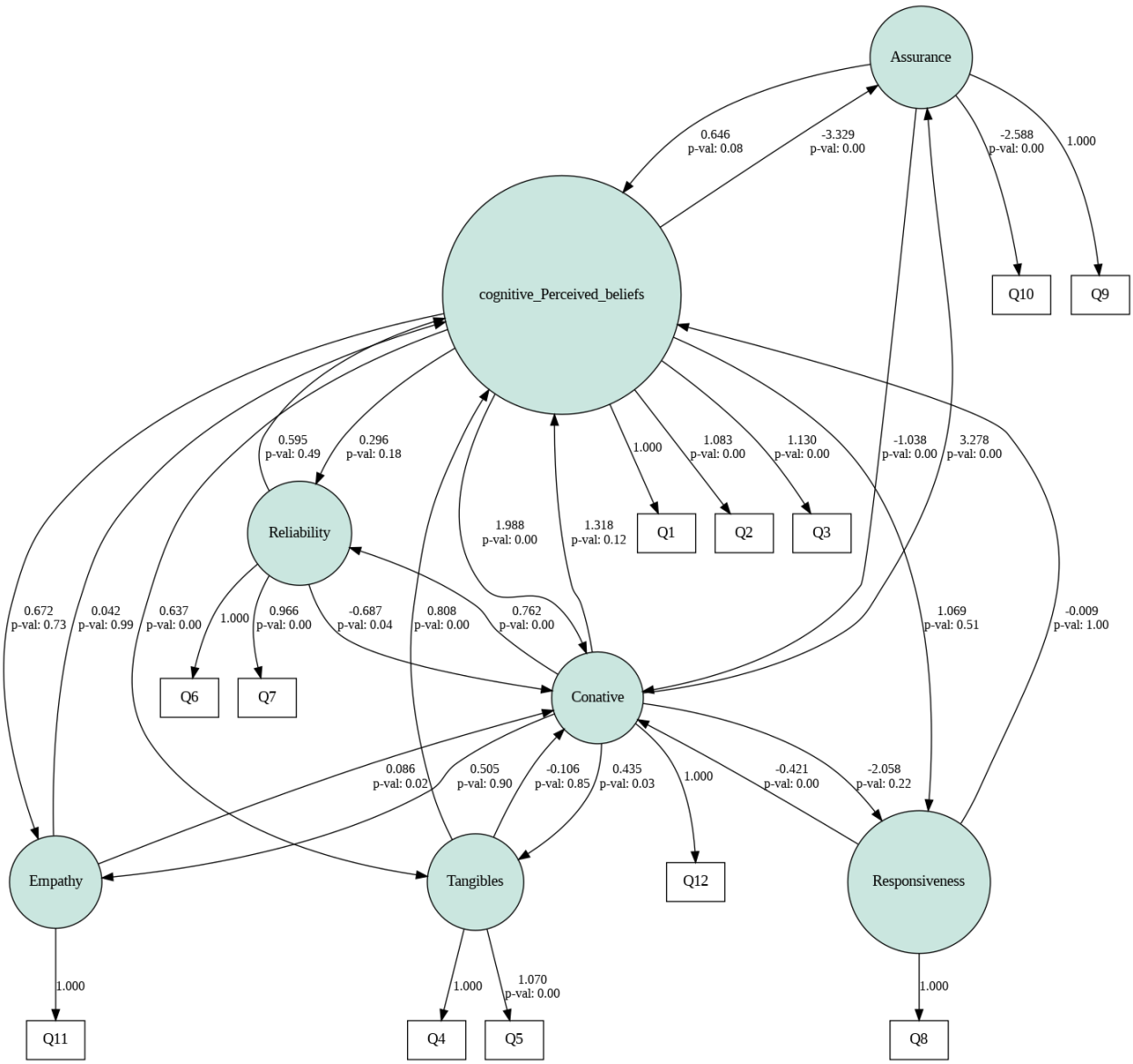
154	Competition Pass / Võistluste pass / IBU Youth & Junior World Championships	Theatre	Tartu linn, Teater Vanemuine, suur maja
155	Concert - Japanese garden	Theatre	Narva, Astri Keskuse ees on start ja finiš
156	Jeanne d'Arc G. Verdi Opera	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
157	Robert Jürjendali autoriõhtu	Theatre	Lasnamäe linnaosa, Tondiraba jäähall, Tallinn
158	Secret Service concert	Theatre	Tartu linn, Tartu Raekoja plats
159	National Opera Symphony Concert	Theatre	Pärnu linn, Villa Ammende Restoran
160	Secret Service	Theatre	Tartu linn, Tartu Sadamateater
161	Cyrano de Bergerac	Theatre	Väätsa alevik, Väätsa rahvamaja vaateaknad
162	Concert "The other side of the water"	Theatre	Tartu linn, Teater Vanemuine, suur maja
163	Tormiloits. Vanemuise sümfooniaorkester	Theatre	Tartu linn, Tartu Sadamateater
164	Pärnu Linnaorkester "Värvide küllus"	Theatre	Tartu linn, Vanemuise Kontserdimaja
165	Talvine teekond. Ain Anger (bass), Mihkel Poll (klaver)	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
166	Kammermuusika Rahvusooperis: "Schubertiaad"	Theatre	Tartu linn, Tartu Sadamateater
167	Re-sound love. Floridante feat. Genka/Paul Oja	Theatre	Pärnu linn, Pärnu Kontserdimaja
168	Pärnu Linnaorkester "Muusa puudutus #7"	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
169	Mozart. Reekviem	Theatre	Tartu linn, Teater Vanemuine, suur maja
170	Tallinn Music Week	Theatre	Tartu linn, Eesti Rahva Muuseum
171	Pärnu Linnaorkester. Pärnu päev levimuusikaga "Ronkmust"	Theatre	Hiiumaa vald
172	Brasiilia serenaad. Bossanoova	Theatre	Tartu linn
173	Giselle. A. Adami ballet	Theatre	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
174	Concert performance of Gioachino Rossini's opera	Theatre	Tartu linn, Tartu Sadamateater
175	Zucchero concert "Overdose D'amore"	Theatre	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
176	Ballet "Anna Karenina"	Theatre	Tartu linn, Teater Vanemuine, suur maja
177	Võhandu Marathon - 100 km of a beautiful river	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
178	Jazzkaar	Theatre	Pärnu linn, Villa Ammende Restoran
179	Tango in the Shadows	Theatre	Tartu linn, Teater Vanemuine, suur maja
180	Concert Estonian Sonatas	Theatre	Pärnu linn, Pärnu Kontserdimaja
181	Tallinn Coffee Festival	Theatre	Jõhvi linn, Jõhvi Kontserdimaja
182	Pärnu Linnaorkester. Rändavad laulud "Smaragdroheline"	Theatre	Põhja-Tallinna linnaosa, Fotografiska Tallinn
183	Grand Race around Lake Viljandi	Theatre	Tartu linn, Teater Vanemuine, suur maja
184	Eesti Kontserdi hooaja lõppkontsert. DAGAMBA	Theatre	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
185	Bach Against the Machine. DAGAMBA	Theatre	Tartu linn, Athena Keskus, Tartu
186	Pärnu Linnaorkester. Hooaja lõppkontsert "Pärlvalge"	Theatre	Tartu linn, Vanemuise Kontserdimaja, Tartu
187	Sleeping Beauty. P. Tchaikovsky's ballet	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
188	Vanemuise sümfooniaorkestri hooaja lõppkontsert	Theatre	Kesklinna linnaosa, Rahvusooper Estonia Kammersaal
189	LHV Maijooks Run - Rimi Run for Girls, 3 km	Theatre	Kesklinna linnaosa, Rävala 8, Tallinn
190	Opera "Madama Butterfly "	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
191	Gardening and Flowering Days in Jäneda	Theatre	Pärnu linn, Pärnu Kontserdimaja
192	Kevad Battles Sports Festival 2024	Theatre	Reiu küla, Lottemaa teemapark
193	Tallinn Literature Festival "HeadRead"	Theatre	Pärnu linn, Iseseisvuse väljak
194	Jazz-balleti klubi Rahvusooper Estonia kammersaalis. Esietendus!	Theatre	Tartu linn, Teater Vanemuine, suur maja
195	Grillfest	Theatre	Kesklinna linnaosa, Restoran Merineitsi, Original Sokos Hotel Viru, Tallinn
196	Tallinn Old Town Days	Theatre	Kesklinna linnaosa, Estonia kontserdisaal, Tallinn
197	Jazz-balleti klubi Rahvusooper Estonia kammersaalis	Theatre	Pärnu linn, Villa Ammende Restoran
198	Tallinn Craft Beer Weekend	Theatre	Tartu linn, Tartu Pauluse kirik
199	Tartu City Day – Opera symbiosis 5	Theatre	Lubja küla, Kultuuri- ja hariduskeskus Viimsi Artium
200	Festival Klaaspärlimäng / Glasperlenspiel	Theatre	Tartu linn, Teater Vanemuine, suur maja
201	Hanseatic Fair in Tartu	Theatre	Tartu linn, Teater Vanemuine, suur maja
202	Pärnu Music Festival. Järvi Academy	Theatre	Kesklinna linnaosa, Estonia kontserdisaal, Tallinn
203	Maritime festival The Tall Ships Races	Theatre	Kesklinna linnaosa, Alexela Kontserdimaja, Tallinn
204	Anixeon 4.0 / Kahe päeva pilet	Theatre	Tartu linn, Tartu Jaani kirik
205	Viljandi Folk Music Festival	Theatre	Narva, Narva Linnuse hoov ja park
206	Pühalepa Music Festival	Theatre	Tartu linn, Vanemuise Kontserdimaja, Tartu
207	Birgitta Festival	Theatre	Pärnu linn, Villa Ammende Restoran
208	Seto Kingdom Day	Theatre	Pärnu linn, Pärnu Kontserdimaja
209	Supeluse fair	Theatre	Reiu küla, Lottemaa teemapark
210	Viru Folk	Theatre	Kõpu küla, Jõuluvana Korstna talu
211	Opinion Festival / Arvamusfestival	Theatre	Jõhvi linn, Jõhvi Kontserdimaja
212	Ironman Tallinn	Theatre	Kesklinna linnaosa, Tallinna Filharmoonia Mustpeade Maja
213	Tallinn Marathon	Theatre	Kesklinna linnaosa, Rahvusooper Estonia, Tallinn
214	Suur Paunvere Exhibition and Fair	Theatre	Tartu linn, Vanemuise Kontserdimaja, Tartu
215	The Italian Tenors - Viva La Vita	Theatre	Kesklinna linnaosa, Estonia kontserdisaal, Tallinn
216	XXVIII Song Celebration and XXI Dance Celebration	Theatre	Kesklinna linnaosa, Estonia kontserdisaal, Tallinn
217	XIV Youth Song and Dance Celebration	Theatre	Kesklinna linnaosa
218	Visible storage gallery for the sculpture collection	Theatre	Tartu linn, Teater Vanemuine, suur maja

Appendix 6 Interview Question

Interview Questions	
General Importance and Motivation	1. How important is it to your organization to prioritize environmental sustainability practices at festivals?
	2. What motivated your organization to incorporate environmental sustainability practices into the festival planning and management process?
	3. What are your organization's long-term goals and aspirations for enhancing the environmental sustainability of your festival?
Implementation and Practices	4. What specific environmental sustainability practices has your organization implemented at festivals in the past?
	5. How do you integrate renewable energy sources and energy-efficient technologies into festival infrastructure and operations?
	6. What measures do you take to minimize water consumption and promote water conservation at your festival?
	7. What strategies do you employ to minimize the environmental impact of festival operations and activities?
	8. How do you address issues related to noise pollution, light pollution, and habitat disturbance during the festival?
	9. How do you ensure the safety and well-being of wildlife and natural habitats in and around the festival venue?
Challenges and Solutions	10. What are the main challenges your organization has faced in implementing environmental sustainability practices at festivals?
	11. How do you ensure that vendors and suppliers adhere to environmental sustainability guidelines and standards?
Communication and Engagement	12. How do you communicate the environmental sustainability efforts of your festival to attendees and stakeholders?
	13. How do you engage with local communities and authorities to ensure that your festival aligns with local environmental priorities and regulations?
	14. How do you involve attendees in sustainability initiatives and encourage them to participate actively?
	15. What role do sponsors and partners play in supporting and promoting environmental sustainability at your festival?
Measurement and Evaluation	16. How do you measure the success or effectiveness of the environmental sustainability initiatives implemented at your festival?
	17. How do you assess and mitigate the carbon footprint of your festival, including transportation emissions and energy usage?
	18. How do you handle waste management and recycling at your festival, and what percentage of waste is typically diverted from landfill?
	19. How do you engage with attendees and solicit feedback on the environmental sustainability performance of your festival?
	20. What strategies do you employ to continuously improve and innovate in the area of environmental sustainability at your festival?

Appendix 6 SEM result

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p-val: 0.00
-2.588
p-val: 0.00
1.000
cognitive_Perceived_beliefs
Q10
Q9
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p-val: 0.49
0.296
p-val: 0.18
1.000
1.083
p-val: 0.00
1.130
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-1.038
p-val: 0.00
3.278
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Reliability
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p-val: 0.12
Q1
Q2
Q3
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p-val: 0.73
0.042
p-val: 0.99
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p-val: 0.00
1.000
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p-val: 0.00
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p-val: 1.00
Q6
Q7
Conative
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p-val: 0.02
0.505
p-val: 0.90
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p-val: 0.85
0.435
p-val: 0.03
1.000
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p-val: 0.00
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Empathy
Tangibles
Q12
Responsiveness
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1.000
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p-val: 0.00
1.000
Q11
Q4
Q5
Q8