

**UNDERSTANDING ENVIRONMENTAL SUSTAINABILITY AND
MANAGEMENT PRACTICES IN INTERNATIONAL FIGURE SKATING
COMPETITIONS**

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Master's Thesis

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TIIVISTELMÄ

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Urheiluliikkeen tulee kantaa vastuu omista ympäristövaikutuksistaan. Tämän tutkimuksen tavoitteena on ollut tutkia ympäristöllistä kestävyyttä kansainvälisissä taitoluistelukilpailuissa. Tämä tutkimus pyrkii vastaamaan kahteen tutkimuskysymykseen: 1. Miten ympäristöllinen kestävyys on määritelty kansallisten taitoluisteluliittojen ja kansainvälisen luisteluliiton (ISU) järjestämissä kansainvälisissä taitoluistelukilpailuissa? 2. Mitä ympäristöjohtamisen käytäntöjä on käytetty kilpailuorganisaation toimesta ympäristövastuun edistämiseksi?

Lisäksi pro graduni käytännöllisenä tarkoituksena on tuottaa ymmärrystä siitä, miten ympäristövastuuta voitaisiin paremmin huomioida ja johtaa kansainvälisissä taitoluistelukilpailuissa.

Taitoluistelun Euroopan mestaruuskilpailut 2023 toimivat tässä tutkimuksessa tapausesimerkkinä. Tutkimuksen data on kerätty yhdeksän puolistrukturoidun haastattelun avulla. Data analysointiin kvalitatiivisin analyysimenetelmin.

Tutkimuksen tulokset osoittavat, että vaikka ympäristöllisen kestävyuden käsite tunnetaan ja tiedetään hyvin, niin ympäristöjohtaminen ja ympäristöllisen kestävyuden kontekstointi kansainvälisiin taitoluistelukilpailuihin on yhä vajavaista. Kansainvälisten taitoluistelukilpailuiden järjestäjien tulisi harkita tarkasti mitä ympäristöjohtaminen tarkoittaa kansainvälisissä taitoluistelukilpailuissa.

Asiasanat: ympäristöjohtaminen, tapahtuma, kansainväliset taitoluistelu kilpailut

ABSTRACT

Kivisaari K., 2023, Understanding Environmental Sustainability and Management Practices in International Figure Skating Competitions, Faculty of Sport and Health Sciences, University of Jyväskylä, (Responsible Management and Business of Sport) Master's thesis 66 pp., 1 appendix.

Sports need to take responsibility for their environmental impacts. The main research aim of this thesis is to find out about environmental sustainability in international figure skating competitions. The thesis aims to answer two research questions: 1. How is environmental sustainability conceptualized in the context of international figure skating competitions hosted by International Skating Union (ISU) and national figure skating federations? 2. What environmental management practices are applied in the competition organisation?

In addition, the practical purpose of this master's thesis is to provide understanding on how environmental management could be considered better and be lead in international figure skating competitions.

The European Figure Skating Championships 2023 were used as a case example to scrutinize these questions. Data was collected through nine semi-structured interviewees. The data was analyzed through qualitative analysis practices. The main findings of this thesis suggest that there is a good understanding of environmental sustainability, but environmental management practices and conceptualizing environmental sustainability into international figure skating competition context are still lacking. The organizers of international figure skating competitions should carefully consider what environmental management means for international figure skating competitions.

Key words: environmental management, event, international figure skating competitions

ABBREVIATIONS

EFSC	European Figure Skating Championships
EMS	Environmental management system
FSSA	Finnish Figure Skating Association
IOC	International Olympic Committee
ISU	International Skating Union
SDG	Sustainable Development Goal
UN	United Nations
UNEP	United Nations Environmental Program
FIFA	International Federation of Football Association Football
IIHF	International Ice Hockey Federation
FIS	International Ski Association

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1 INTRODUCTION

All sports need to take responsibility for sustainability matters in their discipline. The effects of sports to climate change and the possibilities to influence sustainability matters through sports has been already researched respectively (e.g.(Blankenbuehler & Kunz, n.d.; Grant, 2014; Trendafilova et al., 2014)) The amount of research done regarding sports and the environment has increased since the 1994 Olympic Winter Games in Lillehammer, Norway (Trendafilova et al , 2014), and therefore talk and action on sustainability matters in sports have proliferated during the past years.

Several sports actors for example International Federation of Football Association Football (FIFA), the International Olympic Committee and International Ice Hockey Federation have made plans on how to take environmental aspects into account in their actions. (McCullough et al., 2016) For example, International Olympic Committee (IOC) has raised environmental sustainability as one of their key pillars in the Olympic movement and is committed to distribute sustainable processes and practices among its member nations and governing bodies (IOC 2017; Schmidt 2006). Despite the acknowledged importance of the topic, I find that there seems to be an extensive gap between the desires of the sport organisations regarding sustainability and the actions which are actually done. In addition, to be aware of the ways in which figure skating impacts the environment and in what ways the climate change will impact figure skating we need knowledge on how to manage these raising issues specifically in figure skating (Orr & Inoue, 2019) Therefore it is important to understand the current managerial practices in figure skating.

The aim of this study is to find out about the environmental management practices within international figure skating competitions. The study focuses on the environmental practices in European Figure Skating Championships (EFSC) 2023. The study will try to answer the following research questions: 1. How is environmental sustainability conceptualized in the context of international figure skating competitions hosted by ISU and national figure skating federations? 2. What environmental management practices are applied in the competition organisation?

In addition, the practical purpose of this master's thesis is to provide understanding on how environmental management could be considered better and be lead in international figure skating competitions.

Figure skating is a beautiful art-like sport, which requires a lot of training to embody the needed skills and physique. To achieve this figure skaters in all its forms ice dance, pairs and singles, needs ice. The solution for years has been ice halls. They allow training despite the temperature and weather outside. These huge freezers use a lot of energy and water to function, which naturally has an environmental impact. The elite athletes of the sport travel around the globe during both the training and the competing season also having an environmental impact. Presumably, international figure skating events are also one of the most impactful aspects of the sport.

Figure skating has been part of my life for 20 years and I have created a great passion for the sport. During the past years my own environmental knowledge has grown through my education. I have been following the development of the sport worlds “green awakening” with intrigue, for example the international ice hockey federation (IIHF) has published their “IIHF Environment and Social Responsibility Guidelines” (IIHF, n.d.), which provides an over look to their sustainability approach in ice hockey. Also, the International Ski Association (FIS Ski) presents their environmental sustainability approach on their website broadly: for example, FIS Skis commitment to an environmental manifesto, their transparent approach to carbon emission calculations and their target to become a climate positive sport. (FIS, n.d.) Compared to these public outcomes by other winter sports, I have been disappointed by the radio silence of the International Skating Union (ISU). The ISU does not at least publicly share their environmental sustainability approach.

On the contrary, some national figure skating federations, like the Finnish Figure Skating Association (FFSA) have published their responsibility program, which includes an environmental program to advance environmental sustainability in the Finnish figure skating context. (FSSA,2021)

This study will be carried out as a qualitative method study, in which the data is collected in different ways. The data will be collected through semi-structured interviews, and documentation provided by the key organisations will be used as well.

This study is structured as follows. First, I will present the central concepts and the key organizations which are presented in this study. I will then continue to present the existing literature on the subject and the research area. I will then continue to the research design and ethical implications. Next the results and central findings will be presented. After this the

findings will be discussed together with the existing literature. Finally, I will conclude the findings of this study.

2 CONCEPTS

In this section I will present the central concepts for this thesis. First, I will present environmental sustainability, then environmental management in general and finally the basic concept of an international figure skating competition.

2.1 Environmental sustainability

The concept of sustainability as we know it today goes back to the Brundtland commission's declaration, where sustainability is defined for the first time as follows: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (United Nations General Assembly, p. 43, 1987) Environmental or often also referred to as ecological sustainability is one dimension of the sustainability concept, and its purpose is to secure the natural resources used by humans for the future generations. The use of these resources should be done in such a way that the ecological degradation is as small as possible. (United Nations General Assembly, 1987)

The United Nations sustainable development goals (SDG) are closely linked to the environmental sustainability. These goals, especially goals 6, 13, 14 and 15 are closely related to environmental sustainability. Goal 6 is to ensure clean water, goal 13 is to encourage climate action, goal 14 is to support life below water and goal 15 is to support life on land. (*Sustainable Development Goals | United Nations Development Programme*, n.d.). These four goals are considered as the basis of our society, on to which the other goals build upon. They have been in a wedding cake-model, which offers a visualization of the idea. (Figure 1) (*The SDGs Wedding Cake*, 2016)

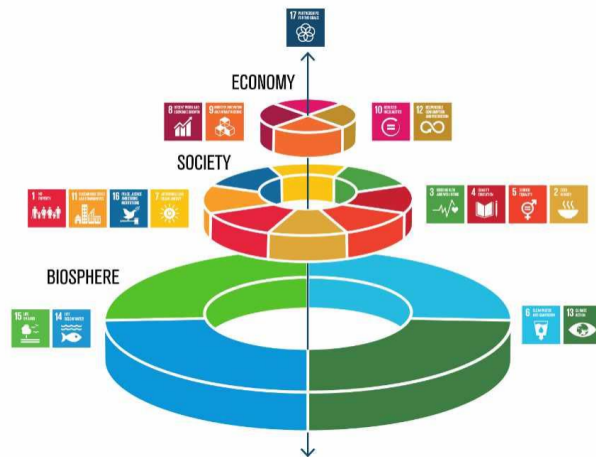


FIGURE 1. The wedding cake model presents the different dimensions of the SDGs. Goals 6,13,14 and 15 build up the basis: the biosphere (<https://www.stockholmresilience.org/research/research-news/2016-06-14-the-sdgs-wedding-cake.html>, 9.5.2023)

In this thesis environmental sustainability refers to a balanced and resilient condition, where human actions like sport events can still be organized with-out harming the environment in such a way that it would not serve the needs for the next generations(Morelli, 2011)

2.2 Environmental Management

The concept of environmental management has been around since the 1990s. Environmental management can be described as managerial practices, which try to minimize the environmental impact of a product or service (Klassen & McLaughlin, 1996).

In this study environmental management is being used as a starting point to view at the managerial approaches which are being used in order to address environmental concerns and minimize negative impacts, which occur in the international figure skating events, which are organized by the ISU and a national figure skating federation. In this study environmental

management is intertwined with the environmental management practices, which occur during the event.

2.3 Environmental Management Practices

In academia management practices have been referred to as practices which are used by managers to improve the performance of the company or organisation and the development. (Alor-Hernández et al., 2016; Muñoz-Maya et al., 2021; Siebers et al., 2008) There is no definition for environmental management practices. The concept of management practices could be transferred also to environmental management practices which would refer to managerial methods and tools which are used to enhance the environmental performance of an organization.

In this study environmental management practices are used to define the managerial methods and tools which have been harnessed to better the environmental performances of the EFSC 2023.

3 FIGURE SKATING AS A SPORT

Long before figure skating as a competitive sport existed, ice skating did exist. Ice skating was a convenient way to travel during the winter months, especially in the Northern parts of the globe. In the 1400s the starting blocks of modern figure skating were set as the Dutch people started to compete along the canals in addition to just travelling on them. Fast-forwarding to 1800s ice skating was already a popular recreational activity in Europe. Figure skating had also been born as skaters competed in making the most outstanding figures also known as patterns to the surface of the ice. These figures gave the name to the sport. Later moves derived from ballet were introduced to figure skaters, this increased the popularity of the sport at the time. As the sport grew organisations like local figure skating clubs grew also and later on in 1892 the international skating union (ISU) was introduced. First championships for men skaters were held in 1896, women followed in 1906 and couples skating which developed later to pair skating and ice dance was included in 1908. The introduction of artificial ice and indoor rinks around 1920s allowed the athletes to train all-year around, which helped the sport to evolve and gain popularity.(Freese & King, 2004.)

3.1. The International Skating Union

The ISU is the umbrella organisation for figure skating and speed skating. The ISU was founded in 1892, when interest in skating disciplines grew at the same time the need for a governing body that would govern and set rules for these disciplines grew as well. When the ISU was founded it had 14 member countries, which were all from Europe. (*ISU History*, n.d.) Today the ISU consists of nearly hundred members (*Member Federations - International Skating Union*, n.d.)

The main task of the ISU is to “*regulate, govern and promote the sports in Figure Skating and Speed skating Branches--.*” (*About the ISU - International Skating Union*, n.d.) These words are put to action by the ISU Council which proposes ISU policies, general ISU structure as well as ISU competitions and events. Decisions are made by the ISU congress which builds up from the ISU members and the ISU president. This competition season 2022-2023 the ISU organizes together with the national figure skating associations 10 international figure skating competitions.(*About the ISU - International Skating Union*, n.d.) (Figure 2)

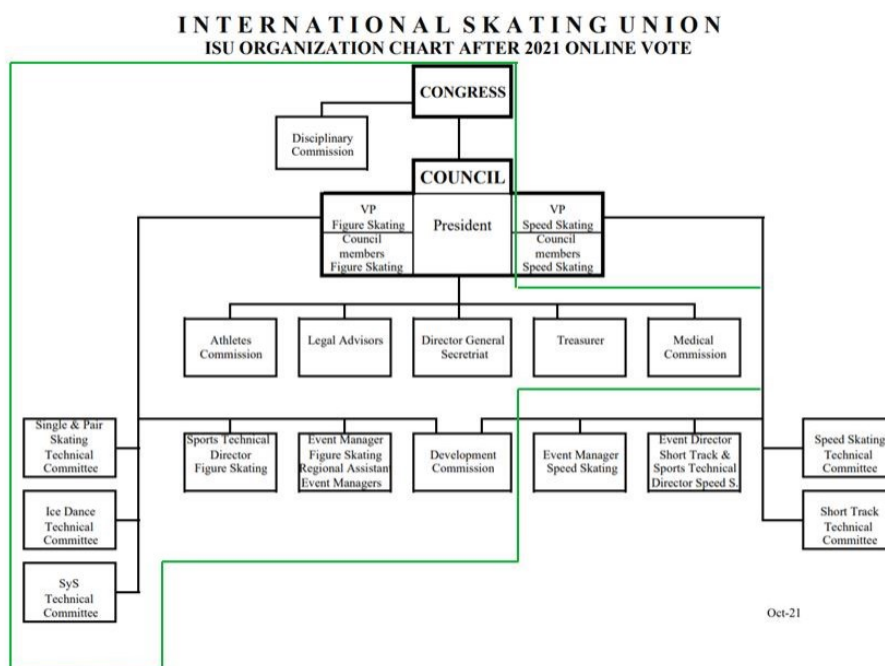


FIGURE 2. The ISU organizational structure, the green line shows the parts of the ISU which influence and build up the figure skating department of the ISU. (Suomen Taitoluisteluliitto, STLL Kansainvälinen Luisteluliitto, ISU, 20.04.2023)

From herein afterwards the ISU is used to mean the Figure Skating department of the International Skating Union, as this thesis merely focuses on figure skating it is natural to leave out the speed skating side of the union.

3.2 National figure skating associations and the FSSA

There are multiple national figure skating associations globally and many of them are members of the ISU. In this master's thesis I am going to use the Finnish Figure Skating Association as an example federation, because it has held three international figure skating competitions during this figure skating season 2022/2023. Of these three competitions two were held jointly with the ISU. The Finnish Figure Skating Association (FFSA) is an association which develops and promotes figure skating in Finland. The association was founded in 1960. The FSSA works as an umbrella organisation for all figure skating clubs in Finland. The FSSA is a member of the

ISU as well as the Finnish National Olympic Committee. The FSSA also organizes together with the local figure skating clubs major domestic and international figure skating competitions and events.

3.3 International figure skating competitions

In this study international figure skating competitions are defined as competitions, which are arranged by the ISU and a national figure skating federation. This type of arrangement is used to arrange two types of competitions: figure skating competitions and synchronized skating competitions. In this study I am going to focus on international figure skating competitions. International figure skating competitions has multiple competition events, as it consists of four different disciplines. These events are run through very similarly, in whatever country the international competition is hosted in.

To run an international figure skating competition event a lot is required from the facilities. Two ice rinks need to be reserved for event use for up to 10 days. International figure skating competitions consist of practice sessions, competition events and an exhibition gala. Two ice rinks are required in order to run the practice sessions and competition events simultaneously. At least the competition ice needs to be fixed to match a defined color and temperature, also the protective glass and nets used for ice hockey need to be removed, and advertisements along the rink walls need to be changed to show the sponsors of the event on hand. The organizer is also required to provide warming-up facilities for the athletes, a “kiss ‘n’ cry”- corner, dressing rooms, break rooms for the judges and technical panel, skaters lounge and competition office, audio appliances, warm meals for athletes, coaches, judges and the technical panel. Outside of the rink the organizer needs to provide several hotels to separate the athletes and the judges to different hotels, transportation between the hotels, the rinks and the airport.

During the season 2022/2023 the ISU hosted together with the national federations 18 international figure skating competitions, and three international synchronized skating competitions. (Table 1) During Olympic seasons the ISU is also part of organizing the Olympic Figure Skating event.

TABLE 1: The ISU hosts multiple competitions during one competing season. There are 18 international figure skating competitions and 3 international Synchronized Skating competitions

Figure skating	Synchronized skating
ISU Grand Prix of Figure Skating Series (6+1)	ISU World Synchronized Skating Championships
ISU Junior Grand Prix of Figure Skating Series (7+1)	ISU World Junior Synchronized Skating Championships
ISU European Figure Skating Championships	ISU Synchronized Skating Junior World Challenge Cup
ISU Four Continents Figure Skating Championships	
ISU World Figure Skating Championships	
ISU World Junior Figure Skating Championships	
ISU World Team Trophy	

The competitions are organized by the ISU together with a national figure skating association. National figure skating associations which are members of the ISU can bid to host international figure skating competitions. The competition organizing committee therefore forms from both ISU representatives as well as the hosting national figure skating association.

4 LITERATURE REVIEW

In this literature review first, I am going to provide an overview of the academic publications handling sports and environment. Then I am going to present literature referring to sports and the SDG's and finally I will be looking at sport management and strategy implementation within the context of environmental sustainability.

4.1 The development of environmental dialogue in Sports from 1990 to 2022

I am going to present the different environmental aspects that have risen in sport world from an environmental perspective in the last three decades from 1990-2022. The idea of presenting the environmental dialogue in sports field is to give an overview of the whole field, to help understand how the findings of this study situate themselves within the field, there a is limited understanding on environmental sustainability and its management in figure skating, and so far I could not find any particular research done in this context.

I am going to present first the environmental dialogue from 1990-1999, then proceed to 2000-2009, and then present the dialogue between 2010-2022.

4.1.1 Environmental dialogue in Sports 1990-1999

Since the Lillehammer Games 1994 greening the sport field has been a researched topic. As the topic was still new in the 1990's we can see that the academic field had not yet reacted to this new phenomenon of greening sports: the topic lacks quality literature and research. During this decade the issues around environment are questioned and brought to discussion. Mostly, the impacts the impacts of sports on the environment have been tracked down and noticed. The book by Dacosta and Marques (1997) voiced out multiple issues concerning sports and the environment. They strongly argue how and why sport is strongly linked to the environment and reason why sports should take responsibility in environmental matters. They also present a coherent timeline, which presents the steps that happened in the sports world from the 1980s until the 2000's. The timeline shows that the literature published during this time focuses mainly on the impacts sport have on the environment. (Dacosta & Marques, 1997.)

Despite the lack of academic research the United Nations Environment Programme (UNEP) released a handbook “Greening our Games, Running Sports Events and Facilities that won’t cost the Earth” (1994) designed for sport decision-makers to help them minimize their environmental impacts, when arranging sporting events and building sports facilities (Chernushenko, 1994). From an environmental management perspective this can be considered as one of the first guidelines for sport managers to help deal with environmental matters. The handbook starts off by reasoning why the environment is something that sport managers should consider in their work. After this Chernushenko (1994) defines what sustainability means in sport and how sustainability can be promoted on different levels of sport. The handbook also provides sports managers practical approaches to include environmental practices in their work environment. For example, by presenting how environmental goals can be assigned and what is a green office. The handbook is very elaborate and provides insights to environmental management for all levels of sport and sport managers. (Chernushenko, 1994.)

I claim that in the mid-1990s, the sports world started to realize that it needs to do its part concerning environmental matters: it recognized its impact and started to initiate change within the community. This can be also considered pretty late, as the environmental movement in the western society started already in the mid-1990s’ and burst in the 1970s. (Haq & Paul, 2012) On the other hand, concepts like environmental management also emerged around the 1990s.

4.1.2. Environmental dialogue in sports 2000-2009

During the years 2000-2009 the environmental dialogue in sports continued to grow. I can see this growth through the rise of academic studies on sustainability and sport, especially on environmental and social sustainability. The research on social sustainability is typically relating to topics such as social inclusion through sport (e.g. Eime et al., 2009; Skinner et al., 2008; Spaaij, 2009)).

Environmental sustainability was still in the same context as it was in the 1990’s typically mapping out the environmental impacts of sports or voicing out the environmental issues a sport has (e.g. Dingle, 2009). Dingle (2009) voiced out the environmental issues with motorsport. The study gives examples what motorsport sector had already done regarding this issue, but Dingle (2009) also stated that more knowledge on the topic was needed in order to make needed changes within the sport.

As a new addition to the conversation Dodouras & James, (2004) and Collins et al., (2009) assessed the tools that were used to assess environmental impacts of sport events. Dodouras & James (2004) conclude that there are multiple ways of assessing sustainability, but it requires work between disciplines and work sectors to achieve this. Unfortunately, the research lacks conversation and examination, how these methods can be applied to management of sport events, and rather focuses on the possible positive and negative effects of these events.

Collins et al. (2009) investigated quantitative assessment tools for environmental impacts in mega sport events. Their findings suggested that there is a need for a quantitative assessment “toolkit”, to understand the impacts these events have from an environmental perspective. They tested out two different approaches Ecological Footprint analysis and Environmental Input-Output analysis. Both of these methods gave insights to environmental matters, they even suggested that the two methods could be seen as complementary. The study also paid attention to the limitations of these approaches, which were mainly concentrated on how reliable data to use these approaches could be gathered. (Collins et al., 2009)

Johnsen et al (2004) took the impact assessment tool discussion further compared to Collins et al. (2009) and Dodouras and James (2004) as their study tries to assess all the sustainability dimensions in their study on the World Ski championships (Johnsen et al., 2004) instead of just focusing on the environmental aspects. Also major actors in the sport field like the National Football League (NFL), Sportswear company Nike and the IOC take major steps towards more sustainable practices in the sporting industry. (Sotiriadou & Hill, 2015)

The research on the sustainability of the world’s biggest sporting event Olympics accelerated during this time period as well, as each new host city declares to arrange an event with sustainability as their guideline to successful games (Briese, 2001; Frey et al., 2008; Holden et al., 2008; Tziralis et al., 2008). For example, Briese (2001) scrutinized the ecological sustainability of the Sydney 2000 Summer Olympics. The main findings were that the Sydney 2000 Games were able to fulfill some of their main environmental goals, but they also had major failures from an environmental perspective. In addition, a transition from weak sustainability to strong sustainability is called after, in order to make change in the sports sector. (Briese, 2001.) Holden et al (2008) assessed the sustainability of the Olympics. This was done by presenting four different scenarios for the Vancouver 2010 Winter Olympics. These scenarios tried to present the importance of understanding the context in which sustainability is used, as the term might mean different things depending on the context (e.g. local vs global). The study also suggests that it is narrow-sighted to assume that by including sustainability in a

mega-event it would easily make transformations to the local community. Unfortunately, the study does not present how the sustainability played out in the Vancouver 2010 games, since the article was published two years prior to the games.

Despite the efforts to host the most sustainable Olympic Games, based on the literature, it seems to be easier said than done. Yet, the efforts by these Olympic host cities shows in my opinion that the sports field is taking environmental matters into consideration, even though they are perhaps not equipped to achieve the wanted level.

During the first decade of the 2000s, the environmental dialogue seems to proliferate and becomes an evident research topic within the field. New additions to academia are made by introducing methods to measure environmental impacts of sports events. These tools could develop to be important environmental management tools that could guide the environmental management work of managers.

4.1.3 Environmental Dialogue in Sports 2010-2022

Approaching the latest research 2010-2022 the literature becomes more and more diverse from the point of view of sustainability. (Trendafilova & McCullough, 2018) Publications on voicing out the role of sport in environmental issues still exists, but the new decade pays more attention to athletes and sport management. Graham et al., (2018) studied to what extent future sport managers are educated on environmental matters. They find that environmental sustainability is an important part of sport management, and its role in the field is growing all the time. Therefore, the curricula for sport managers should include more environmental sustainability education, either included in already existing courses, or courses with only this topic. Unfortunately, it seems that resources are lacking to achieve this.

McCullough et al., (2020) continue the discussion by suggesting that a new sport managerial sector, “sport ecology” is needed in the field of sport to address environmental concerns. They find several benefits what this new sector would bring for the sport sector.

A new perspective to environmental matters is presented as the relationship of athletes and nature is researched by MacIntyre et al. (2019). MacIntyre et al. (2019) mapped out relationships extreme athletes have with nature. They chose extreme athletes because their sport is heavily dependent on the natural surroundings provided by nature. The research group found

that the eight extreme athletes they interviewed had the same type of thoughts regarding the environment. The athletes were interviewed about their early childhood and its connections to nature, about the challenges they undertake in nature through their sport and on environmental concerns that they might have.

Meyer et al. (2020) researched that athletes could switch to plant-based diets in order to minimize the environmental impact. As athletes need more nutrition than the general population, their adaptation to plant-based diet holds a lot of potential from an environmental perspective. Findings of the study show that there are several research gaps which make it difficult to assess the beneficiary of a plant-based diet. Meyer et al. (2020) call after a set of dietary guidelines for athletes, which consider sustainability viewpoints as well. Their findings did not show results which would indicate that athletes with plant-based diets would be giving weaker performances compared to athletes with a different type of diet.

Already from the 1992 onwards, the Olympics remain as important environmental topic within the sport sector also in the time period of 2010-2022. During this time there have been seven Olympics, including both winter and summer games, arranged.(IOC, n.d.)

Due to the vast amount of literature within this research area -environmental sustainability in the Olympic Games- I am going to present only a few examples. Most of the studies handle environmental issues that have been detected before, during or after the Games. For example, Konstantaki et Wickens (2010) studied the resident's perception of environmental and security issues at the London 2012 Games. Their research shows that the residents were mostly excited and viewed the Games as a positive event for their hometown London. The participants were put into two groups based on their age. Group A consisted of participants that were in between the ages 18-34, Group B on the other hand included people aged 35-55. When asked about environmental concerns the participants of the study split opinions. Group B was more concerned about the environmental impacts than group A. (Konstantaki & Wickens, 2010)

Prudinikova (2012) did research on the negative environmental impacts of the Sochi 2014 Winter Olympics. The research is done before the actual games and focuses on the impacts that have occurred before the Games. The author presents Sochi as a unique environment which is vulnerable to natural forces, which are strongly present at Sochi. The study raises the question if it is safe to build the Olympic facilities in Sochi as it may increase the frequency or intensity of natural disasters (Prudinikova, 2012.)

In a more recent study done by Dendura, (2019) compared two Olympic Games Rio De Janeiro Summer Olympics held in 2016, with PyeongChang winter Olympic Games held in 2018. The study tried to find out if the environmental actions done during and after the games were sufficient enough.

To conclude, the Olympic Game research on environmental matters focuses mainly on the impacts of the Games to the host city. There is a lack of literature that would handle the environmental management and best practices discovered during these mega-events, based on the insights provided by McCulloch et al (2020) or Graham and others (2018), the sport sector seems to be lacking on the managerial approaches to environmental sustainability.

Despite the growing interest in sustainability issues in sports, there is a scarcity of academic research on the exact topic: environmental management in figure skating. This justifies that it is relevant to look at the topic from a wider perspective. In addition, the sport specific characteristics may influence the way in which environmental management is done in a sport. Therefore, it is important that environmental management approaches are detected in every sport alone and reflected to the practices done in other sport disciplines. Most research regarding environmental sustainability is done for Mega-Events like the Olympic or Paralympic Games. For smaller, hall events, like the international figure skating competitions, it would be beneficial to have academic knowledge as well as practical approaches to advance environmental sustainability also in these instances.

4.2 United Nations, Sustainability and Sports

The United Nations (UN) have taken a stance in providing support and tools to achieve sustainability also in the sport sector. Their set of 17 sustainability goals are perhaps the most prominent agenda globally, in addition to this the UN has created commitments designed especially for the sport sector.

The UN's sustainability goals are a complex set of goals which interlink and contradict with each other from time to time. Still the SDG's have inspired several different action plans on how sports can contribute to the SDG's. The most comprehensive is perhaps the UN department "Sport for development and peace community" has created a simplified document which highlights the ways in which sport can contribute to the goals. The document includes all 17

goals and presents them from the point of view of sport. (UNOSDP, n.d.) In addition, World Health organisation (WHO) and UNESCO have brought out action plans which highlight the importance of sport in achieving goal 3 “Wellness and good health” (World Health Organization, 2018)

The role of sports to achieve the SDG’s has also been researched to some extent. Dai et Menhas, (2020) tracked down the SDG’s which are related to health impacts. In their review article they go through each health-related SDG in relation to the Chinese government’s action plan to good health in China. This action plan was based on the SDG’s. (Dai & Menhas, 2020)

The SDG’s have also been used as a tool to assess the education of sustainability in sport management programs(Ličen & Jedlicka, 2022) In their study Ličen & Jedlicka, (2022) examined several US graduate sport management programs’ curricula through SDG lenses. Despite the fact that they found seven themes that could be positioned under the SDG umbrella, they note that the teaching holds tightly onto capitalistic ideals where money making is seen as the most important aspect.

The SDG’s have also been used separately to assess a specific goal in education.(Chong et al., 2022) For example, Chong et al., (2022) explore in their study how sports can be used in order to contribute to fulfilling goal 5. They did this by applying the PRISMA-method to review and find academic articles on the subject. They found out that the education programs which are designed to contribute to goal number 5, could use the targets of the goal to assess the program and to make bigger changes. The societal change received from these programs were on a microscale. As we see from these examples the SDG’s can be stretched out to work as a framework for guiding sustainability work in sports.

In addition, to the SDGs the UN has produced several commitments to which the actors within the sport sectors can commit: “Sports for Climate Action” and “Sports for Nature”. Sports for Climate Action is a framework produced by the United Nations Framework Convention on Climate Change (UNFCCC). The framework was released in 2018 to provide guidance for sports actors to help reach global goals to combat climate change and to encourage sport actors to use sport as a tool to raise awareness of climate matters among their communities. (UNFCCC, n.d.) In addition, to these objectives the Sports for Climate Action builds upon five principles to which sport actors who want to participate in the initiative need to commit. In order to achieve transparency and credibility for the process, actors who have signed the

commitment are also expected to provide a pledge, present a plan, take action towards the set goals and report on the efforts that have been made. (United Nations, n.d.)

Sports for Nature is also a UN lead project which has been done in cooperation with for example, the International Olympic Committee IOC and international sport federations. The point of this project was to provide a handbook for sports actors to shift to new practices to limit their negative impacts on the environment.(United Nations Environment Programme, 2022)The UN together with other instances have provided a lot of material for the sport sector to utilize on their sustainability journey.

4.3 Environmental management in sport events

Environmental management has become an evident part of event management in general, despite there is still a scarce amount of literature on the topic. (Guizzardi et al., 2017) In sports context environmental management and ways to implement environmental action are discussed by Hayes & Karamichas, (2012). They argue that the most important aspects in environmental management are the commitment, infrastructural impact and the location of the event. In their study they examined five different sized sporting events and their environmental management practices during these events.

For the study they had divided different environmental management tools into two categories: planning instruments and management support tools. This way they could analyze the effectiveness of these tools.(Hayes & Karamichas, 2012) Based on their findings Hayes & Karamichas (2012) argue that event management phase, where the event is planned, is the most significant for implementing environmental actions. Environmental management systems (EMS) were recognized as important tools to achieve commitment towards environmental work during the event. They also state that post-event management is lacking in environmental monitoring which would further the legacies of these events.

Even though Hayes & Karamichas (2004) present several environmental management tools for sport event environmental management, a more recent study by Hugaerts et al., (2021) calls for new tools to support management of environmental matters in sports. They claim that the sport management sector is lacking in knowledge in sustainability overall as well as management tools which could provide comparable results with other sport events. To answer this issue, they

created a measurement tool based on the SDGs to measure the sustainability of participatory sport events. Their new tool gave promising results in assessing an event from sports and SDG perspective. (Hugaerts et al., 2021)

Environmental management in sport events has also been studied by Daddi et al., (2021). They did a multiple case study on environmental practices in football events. They tried to answer how environmental matters are considered through management practices in football events both on an operational level and on a governance level. Their research shows that more actions were made on an operational level than on governance level. In addition, the actions were taken merely due to financial benefits and societal pressure, rather than internal will to act environmentally cautiously. The study produced a satisfactory list of best practices which had been conducted in the case events. (Daddi et al., 2021)

4.4 Implementation of strategy

Implementation of strategy is difficult (e.g., Hrebiniak, 2006; Okumus, 2001). Yet the success of the created strategy is in the ability of the managers to implement it from the strategy plan into action. I dare to argue that the same difficulties apply also in sport event management.

Hrebiniak (2006) mapped out some of the obstacles that management face when implementing a strategy. From his research he points out the education of managers, which commonly focus on planning, rather than doing, resulting in managers being good at planning strategies, but poor in taking them into practice. The attitudes among managers regarding implementation is also lacking, as the managers see that the responsibility to implement a plan is somewhere else than on their desktop. Limited understanding of the interdependency of planning and executing is also a recognized obstacle. Also, the different time scales of these two overlapping processes needs to be understood by the management in order to implement a strategy successfully.

Finally, the management needs to work determinedly to make the strategy and the actions which the implementation requires reach all levels of the organisation. (Hrebiniak, 2006) Regarding sport events, there was no examples of strategy implementation research, indicating that very little is known how managers take strategies into action in sport event context. From an environmental perspective this is concerning as events are typically very consuming for the

environment (Dickson and Arcodia, 2010). For this reason, it would be important to know what the best practices have been to implement environmental practices in sporting events.

4.5 Environmental impacts of sport events

In this section I want to introduce the negative environmental impacts sports events may have. Cerezo-Esteve et al, (2022) have produced a systematic review of the environmental impacts that occur during Giga, Mega and Major sports events. In their review they point out that there are both positive and negative environmental impacts that may occur during or after a sports event, and that most impacts have been assessed in mega sports events, like the Olympic Games. Some of the positive impacts were reduced pollution levels, increased knowledge of the environment, development of transport infrastructure within the event area and an increasing number of green initiatives appearing in these event sports. Negative impacts included increased pollution, waste and noise levels, as well as increase in consumption of water. Possible destruction of natural habitats and loss of biodiversity. (Cerezo-Esteve et al., 2022) It is good to notice that despite the article trying to take into account different types of events, most of the events included in the review were from mega sports events like the FIFA Football World Championships and Olympic Games. These impacts can differ from the impacts that for example an indoor ice sports may have. It is also good to be aware of the environmental impacts that the sports venues have. For example, the ice rinks use up a lot of energy to keep the rink cool and to have it properly lit. In addition ice rinks need a lot of water to function.(Luoto et al., 2008) Typically, the travels of the spectators is recognized as one of the major negative environmental impacts. (Collins et al., 2009)

Even though the environmental impacts of sports have been topical since the 1990s there are still gaps in the literature that need to be filled. For example, there is no research on the environmental impacts of figure skating events, nor the sport itself in general. All these impacts which were listed above could be relevant at an international figure skating competition event as well. Unfortunately, there is no literature on the impacts of figure skating events.

5 METHODS AND ETHICAL IMPLICATIONS

In this section I am going to first present and justify the chosen methods for this research. Then I am going to point out the ethical implications of this study.

5.1 Methods

This research follows the principles of a qualitative case study presented by Baskarada (2014) which have been modified from the original paper by Yin (2009). I chose to follow these case study principles to increase the validity of this study, and to make sure I would not skip any critical phases of doing a case study. The principles for a qualitative case study build up from several divisions or phases, which are plan, design, prepare, collect, analyse and share. All these divisions need validation. (Baskarada, 2014.) (Figure 3)

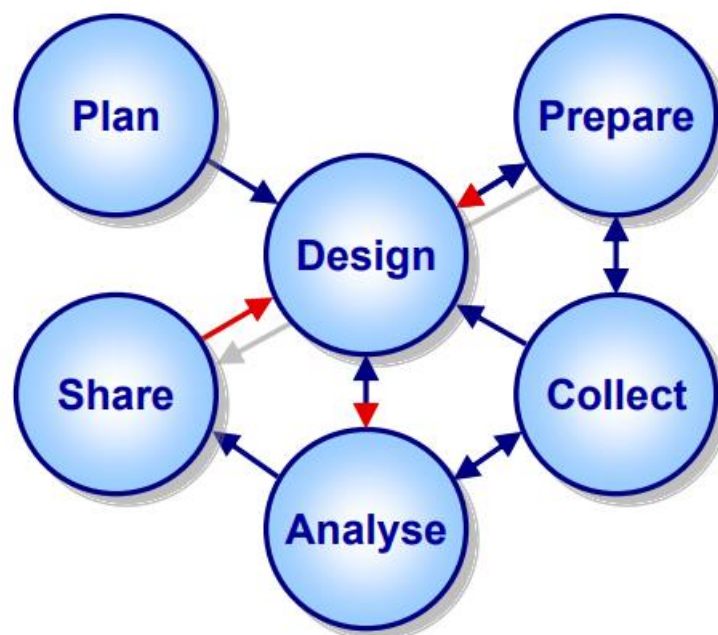


FIGURE 3. The different divisions that build up a qualitative case study according to Baskarda (2014).

In this section I will present in detail how the different phases are addressed and validated in this study.

5.1.1 Plan

In the first phase “plan” Baskarda (2014) suggests that the author presents the research questions and justifies why a case study method was chosen for the research at hand.

As the method to complete this study, qualitative single-case study was chosen as a research method as it fits well to the goals of this study: as this study tries to provide insights for organizational learning, based on findings done at a single event, with the premises that the single-case can provide also new knowledge for a larger set of similar cases. The case European Figure Skating Championships 2023 and its environmental sustainability fit these goals, as the practical purpose of this study is to find out how environmental management could be better organized in international figure skating competitions. In other words, through this study I aim to increase the organizational learning within the competition organisation, and to provide insight that could be used in other international figure skating competitions as well.

Qualitative case study method is often used also to gain knowledge of a complex issue (Tetnowski, 2015) As sustainability in general and environmental sustainability is viewed as a complex issue, scrutinizing it through qualitative case study methods is justified.

5.1.2 Design

In this section I will present the case this study is focused on and the important aspects of this case at hand. Baskarda (2014) states that the design phase should focus on describing the case at hand. This section will include a presentation of the case event, and the organizers approaches to environmental sustainability.

5.1.2.1 European Figure Skating Championships 2023

This study focuses on the European Figure Skating Championships 2023. The EFSC 2023 were held in Espoo, Finland during 23.1.-29.1.2023. The event was organized in Espoo Metro Areena, which is located Southern part of Espoo. (Figure 4)



FIGURE 4. The ice rinks used at the EFSC 2023 were located in Espoo, the red location icon marks the spot of the rinks.

Espoo Metro Arena is an ice hall which was built in 1996, the arena can fit a little under 7000 spectators. (Metro Arena, n.d.) Close to the Arena is a practice rink which was also used during the EFSC 2023 to run practice sessions for the athletes.

Altogether 111 athletes attended the 115th European Championships held in figure skating history. (ISU European Figure Skating Championships 2023, n.d.) In addition, to the athletes there are of course members of the competition organisation, volunteers, judges and technical specialists, coaches, and other team members. The EFSC 2023 competition organisation was built from the ISU and FSSA, as the competition was hosted in Finland.

A typical day at the EFSC consists of practice sessions, competition events, meetings and victory ceremonies. The days are long and can last from early morning to late evening. An example of a day at EFSC 2023 is shown in Table 2.

TABLE 2: This table gives an overview of one day at the EFSC 2023. Multiple practice and competition sessions are run throughout the day. It requires two ice rinks and other facilities to host international figure skating competitions.

Time	Typical competition day at the EFSC 2023			
	Main rink	Practice rink		
7:00	Practice session ladies			
7:30	Practice session ladies			
8:00	Practice session ladies			
8:30	Practice session ladies			
9:00	Practice session ladies			
9:30	Practice session ladies			
10:00	Practice session ladies			
10:30	Practice session Pairs			
		Practice	Session	Ice
11:00	Practice session Pairs	Dance		
		Practice	Session	Ice
11:30	Practice session Pairs	Dance		
		Practice	Session	Ice
12:00	Practice session Pairs	Dance		
		Practice	Session	Ice
12:30		Dance		
		Practice	Session	Ice
13:00	Competition Ladies	Dance		
		Practice	Session	Ice
13:30	Competition Ladies	Dance		
		Practice	Session	Ice
14:00	Competition Ladies	Dance		
14:30	Competition Ladies	Practice	Session	Men
15:00	Competition Ladies	Practice	Session	Men
15:30	Competition Ladies	Practice	Session	Men
16:00	Competition Ladies	Practice	Session	Men
16:30	Competition Ladies	Practice	Session	Men
17:00	Competition Ladies			
17:30	Competition Ladies			
18:00	Competition Ladies			
18:30				
19:00	Competition Pairs			
19:30	Competition Pairs			
20:00	Competition Pairs			
20:30	Competition Pairs			
21:00	Competition Pairs			
21:00	Competition Pairs			
21:30	Competition Pairs			
22:00	Victory Cermony			

5.1.2.2 Starting points of Environmental Management at the EFSC 2023

The EFSC 2023 competition organisation consists of two figure skating organisations namely the ISU and the FSSA. They both have different starting points to environmental management. In order to review the environmental management in EFSC 2023, it is good to understand the starting points to environmental management in both of these organisations which build up the competition organisation. It is also good to remember that the ISU sets the standards for each international competition, the national federation works under the orders of the ISU during the competition. I am first going to present the environmental management approaches of the ISU and then the FSSA. Environmental sustainability is well hidden on the ISU webpage, by searching the page you can find that the ISU has been rewarded in 2020, with a “Carbon Action Award” given out by the International Olympic Committee (IOC) and Dow. The same article presents that the ISU has a working group that advances sustainability and good governance within the ISU. (*The ISU Receives the Carbon Action Award - International Skating Union*, n.d.) Unfortunately, no documentations of the sustainability working group or reports on ISU's sustainability approach can be found. For example, the development plan for ISU events, which includes mostly international figure and synchronized skating events, does not mention sustainability, nor any environmental factors as a development for the upcoming years 2022-2026. (ISU, 2022)

The FSSA presents their ecological sustainability plan within their responsibility program “Vastuullisuus taitoluistelussa” (FSSA, 2021). The responsibility plan is based on the Finnish sport community's responsibility plan, which was created together with the Finnish Olympic Committee and multiple Finnish sport federations. (*Urheillaan ihmisiksi – Urheiluyhteisön vastuullisuusohjelma on julkaistu*, 2020) Also, the Ministry of Education and Culture, which distributes money for sport organisations, expects that candidates who apply for subsidies have a responsibility plan. (lähde)The ecological sustainability plan by FSSA consists of actions for the federation itself, as well as tips for members of the FSSA. The responsibility plan is linked to the United Nations (UN) Sustainable Development Goals (SDG).

5.1.3 Prepare

In the paper by Baskarada (2014) the author is encouraged to familiarize them with the research topic. In addition, the participants of the study should be notified of the timetable of the study and the purpose of their participation to the study. Due to my lifelong engagement with figure skating and figure skating events in Finland and my educational background in environmental sciences and sport management, I would say that I have a strong background to which I can lean into during this research period. Yet, it is good to realize that this commitment can also work against the purpose of this thesis, as I may be biased. To avoid this I try to present all my actions regarding this thesis as transparently as possible.(Simundic, 2013) All the interviewees were informed through a research proposal about the goals of this study as well as the timetable for this study.

5.1.4 Data collection

In this phase the way in which the data has been collected and from whom it has been collected is described and justified (Baskarada, 2014) This single case study used semi-structured interviews to collect the data to receive in-depth answers to the phenomena. Semi-structured interviews are suggested to be used to get in-depth answers on a current phenomenon. (Blee & Taylor, 2002)The nine semi-structured interviewees were held during the first three months of 2023 before, during and after the EFSC 2023.

The interviewee sample consisted of people who are engaged with the ISU, the FSSA or the EFSC 2023 or a combination of these options. Despite the small sample size (n=9), the selection of interviewees aims to present a diverse selection of the people involved in international figure skating competitions; the sample includes managers, event managers, persons who are responsible for sustainability advancement, judges, and members of the technical panel as well as athlete representation. A diverse set of interviewees increase the validity of this study. In the data collection phase in case studies, it is advised that the evidence for the thesis should be collected from several sources (Yin, 2009)

The interviewees were divided into three Pools based on the organisation they represent. (Table 3). Pool 1 (P1) represents the persons from the ISU, not all members of Pool 1 were part of the

competition organisation at EFSC 2023. Pool 2 (P2) represents people from the FSSA, and Pool 3 (P3) represents persons who were engaged with the EFSC 2023.

TABLE 3: The interviewees were divided into three pools based on their background.

Pool	Pool 1	Pool 2	Pool 3
Organisation	ISU	FFSA	Other
	I1	F1	O1
	I2	F2	O2
	I3		O3
	I4		

The interviewees were contacted by several different ways. Due to my knowledge of the sport, I was able to contact several people who I considered important for this study through email. I also received help from the FSSA and ISU to contact some of the interviewees. For example, the judges and technical panel members were sent an email which presented my thesis and asked if they were willing to participate in an interview. Interested participants could contact me through email.

All of the interviewees were given the interview structure (Appendix 1) beforehand, and they could choose whether they wanted to have the interview in Finnish or English. The interviews were held either in Microsoft Teams or in person respecting the wishes of the interviewee. The interviewees were promised anonymity and that the research data will be deleted after the research was completed. In addition, before the interviews began all interviewees were told that they could withdraw from the interview at any moment and that they could leave questions unanswered if they felt like it.

5.1.5 Analysis

This section describes how the collected data was analyzed in this thesis. By applying a code technique, it is easier to keep the targeted results in focus. (Baskarada, 2014) The interview data was analyzed through qualitative content analysis methods. A themed code book was created in order to find the key aspects for this thesis. (Table 4) The theme codes were formulated through the themes of the interviews, and the research questions of this study.

First four main codes, were created to ensure that the codes provide answers to the research questions. These codes were based on the themes of the interview structure (Appendix). Then each main code received one to four sub-codes to find more precise descriptions of the main codes. This method is called a combined method, where some codes are pre-determined (main codes), and the rest emerge from the text(sub-codes). (Stuckey, 2015)

The first main code was named “concepts” the goal of this code was to find out about how the people involved at the EFSC 2023 perceive environmental sustainability in general and in the context of figure skating. The sub-codes “environmental sustainability”, “environmental sustainability in figure skating”, “responsibility” and “environmental impacts”, were found from the data corpus.

The second main code was called “Environmental Management”. The goal of this code was to highlight the parts where processes that would minimize the negative environmental impacts of the EFSC 2023 were described by the interviewees. Two sub-codes emerged from the gathered data; “Environmental management practices” and “Environmental management tools”.

The third main code was actions, the target of this code was to detect all the concrete actions that have been taken in order to minimize the environmental impacts of EFSC 2023. Revising the data brought up four sub-codes including “Current actions”, “Examples”, “Future Actions” and “Suggested Actions”.

The last main code was named as “other”. The point of this code was to save interesting points that were not clearly categorizable to the first three codes. The parts coded as “Other” were revised and during the revision three sub-codes could be detected, they were “barriers”, “drivers” and “Lovegoods”. The sub-code “Lovegood” presents codes which are interesting, but they currently do not fit this research area perfectly. Naturally, parts labelled “Lovegoods” were left out of the further analysis.

The text was revised with these codes’ multiple times. Some codes were adjusted during the process, in order to better organize and describe the findings. The adjustments were written down into a research dairy, to keep track of the changes done to the code book.

The coding was stopped when no new sections of the interview transcriptions were found. After that the chosen sections or quotations were reread under the codes they were placed. If they did not match the description given to each sub-goal the quotation was moved. The categorization

of the codes was stopped when there was no need to move any quotation into another category that it was placed to. One quotation could have multiple codes.

TABLE 4: This table presents the codes that were used for the content analysis and to which research question each code answered. The codes that do not have an assigned research question answered to the practical purpose of this study.

Code	Research question	Sub-codes	Code descriptions
Concepts	R1	1. Environmental sustainability	Descriptions of environmental sustainability
	R1	2. Sustainability in figure skating	Descriptions of sustainability in figure skating
	R2	3. Responsibility	Who is named responsible
	R1	4. Environmental impacts	What impacts international figure skating events causes
Environmental Management	R2	1. Environmental management practices	
	R2	2. Environmental management tools	Descriptions of process Environmental programs, partnerships, knowledge, education, footprint calculations, initiatives, etc.
Actions	R2	1. Current actions	What actions are currently happening?
		2. Future actions	What actions are going to be done?
	R2	3. Examples	Examples of practices
		4. Suggested actions	What actions could be done if there would be no limitations
Other		Barriers	Hindering factors
		Enablers	Motivating factors
	-	Lovegoods	Intresting but not useful

5.1.6 Share

The last part of Baskarada (2014) suggests considering the way results of a case study are presented. Possibly the target group of this thesis will be the persons within the figure skating community who are in managerial positions in events. For this target group it could be more efficient to present the results in a different way, but as this is a master's thesis, I am restricted to share the results in an academic manner, despite this I will try to give concrete suggestions how the environmental management practices could be evolved in international figure skating competitions.

5.2 Ethical considerations

There are several ethical implications that need to be considered regarding this study. Many of the ethical considerations are linked to the interviews. I am first going to present other ethical considerations and then move on to present the ethical considerations regarding the interviews.

It is good to note that as an active member of the figure skating community my view and analysis on the event may be biased. From a different perspective it might also be considered as beneficial for me to have close contacts with the sport, as I have vast amounts of knowledge on the customs and culture of international figure skating events.

As this study was conducted as a single case study the results of this study cannot be generalized either from that perspective, since there is only one study. On the other hand, this study can provide valuable insights to the phenomenon, since most ISU competitions run with the same type of outline, the results of this study can affect the whole process of how international figure skating competitions are organized.

First of all, this research had only nine interviews, which is a rather small sample, which makes this research invalid to be generalized.

Second, most of the interviews were held in English. Most of the interviewees were not able to utilize their mother tongue, which might restrict their capability to answer precisely. As for the interviews held in Finnish, the collected data has had to be translated, and during this process there is a possibility that the exact meaning could have been lost in translation.

Third, as some of the interviewees were connected through an email sent by the competition organisation, it is possible that the sample is biased with people who are already interested in environmental matters. It is likely that people who are already interested in the subject are possibly more willing to share their thoughts on the matter.

Finally, the interviewees were promised anonymity for their answers. As the figure skating circles are small, recognition of one person is not impossible. To prevent this the information given about the interviewees is very restricted. This restriction might leave useful knowledge out of this thesis.

6 RESULTS

In this section I present the results of this study. The results will be organized from the bases of the codes that were used to do this analysis. I will first present the results under the main code “Concepts” and then proceed to main code “Actions” and then to main code “management” and finally main code “other”.

6.1 Concepts

In this section I am going to present the main code “concepts” and its subcodes sustainability, sustainability in figure skating, environmental impacts, and responsibility. The point of this code was to get an understanding of how sustainability, and more precisely environmental sustainability is understood in the figure skating community.

6.1.1 Environmental Sustainability in figure skating

In P1 definitions of sustainability given by the interviewees focused mostly on the environmental side of sustainability. One interviewee specifically brought up also the other dimensions of sustainability.

“Sustainability what it's trying to do, whether it's an event, whether it's any sort of technology that uses energy, transportations, is done in the most sustainable way that I think uses the least amount of energy and has the lowest impact possible on the environment.” (I4)

- Interviewee I4, on what is sustainability

Sustainability was also considered in P1 as a complex and multiphase phenomenon, which importance and visibility in our vernacular life has grown in our society over the recent years.

In P2 sustainability was described mainly from the environmental perspective.

“Sustainable development means being environmentally friendly and also, coming up with solutions which won't destroy the environment, and which are not in contradiction with the nature, rather we have a planet Earth which lives now and will live in ten years and in a hundred years, so we won't destroy ourselves.” (F2)

-Interviewee F2, describing sustainability in their own words

One interviewee had the notion that sustainability also consists of other aspects in addition to environmental aspects but did not specify the other dimensions of sustainability.

In P3 sustainability was also defined from an environmental perspective. The other dimensions were not brought up at all by any of the interviewees.

“Doing everything possible to function in the most environmentally beneficial way” (O2)

-Interviewee O2, when asked to define sustainability in their own words

The interviewees were also asked to define environmental sustainability within the context of figure skating events. None of the interviewees in any of the pools considered figure skating as an environmentally sustainable sport.

Almost all interviewees placed figure skating’s sustainability approach somewhere in the middle of a spectrum, when asked to describe where figure skating is on its sustainability journey compared to other sports. (Figure 5)

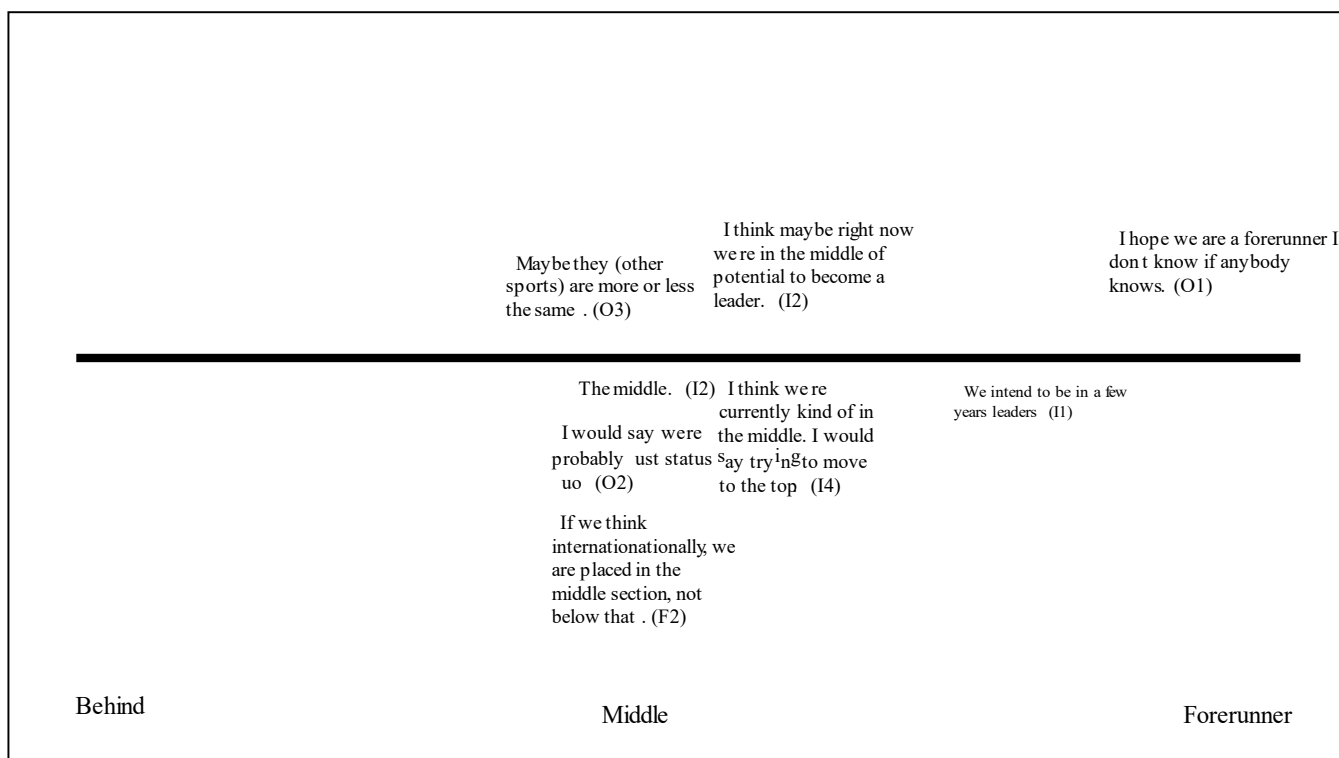


FIGURE 5. This figure shows, where the interviewees would place international figure skating competitions in terms of environmental sustainability. "Behind" describes a situation where figure skating is considered to do less when compared to other sports, "Middle" means that figure skating is considered to do pretty much the same as all other sports, and “forerunner” means that figure skating is doing more than other sports in general.

In P1 none of the interviewees considered figure skating as a sustainable sport. One interviewee from P1 described that sustainability in figure skating is still very much dependent on the practices of each country. Another interviewee claimed that it is hard to be sustainable in events, but easy for example at the ISU office, because the country where the office is located has the infrastructure for sustainable actions, e.g., opportunity to recycle. Interviewees in P1 placed figure skating’s sustainability approach compared to other sports in the middle or above. (Figure 6)

When asked to describe environmental sustainability in figure skating context, the interviewees in P2 did not consider figure skating an environmentally sustainable sport to begin with. It was also mentioned that international competitions like the EFSC 2023 and environmental sustainability were often in contradiction with each other.

In P2 one of the interviewees contemplated that environmental sustainability is not a topic that would have been discussed within the figure skating community to begin with, but they thought that figure skating had a possibility to be a forerunner in this scene.

Environmentally sustainable development and figure skating were also seen even in contradiction with each other.

“Figure skating and [environmental] sustainable development are maybe partly in contradiction with each other, regarding many aspects. Figure skating can for its own part influence the field so, that figure skating has a possibility to act as a forerunner in the sport field.” (F2)

- Interviewee F2 describing environmental sustainability in the context of figure skating

In P3 the interviewees also stated that figure skating is not an environmentally sustainable sport, to begin with. Many of the interviewees compared that because figure skating requires special circumstances it is more environmentally unsustainable than e.g., summer sports like running. One interviewee also mentioned that it would be important for figure skating to understand its impact on the environment. Another interviewee said that they had not had a lot of conversations about environmental sustainability within the ISU.

“I haven't had a lot of these conversations in the ISU.” (O2)

- Interviewee O2, when asked about environmental sustainability in figure skating context.

All interviewees also claimed that they did not know what other sports disciplines are currently doing with regard to environmental sustainability, but most of them placed figure skating in the

middle or as a forerunner in environmental sustainability matters within the sport field. (Figure 6)

Environmental impacts of figure skating were not asked about but most of the interviewees still presented the impacts that international figure skating events have on the environment.

In P1 interviewees brought up environmental impacts that included transportation, especially in international figure skating context, and energy usage in order to maintain the ice at the ice rinks. In P2 the interviewees presented many environmental impacts which arranging an international competition requires, they mentioned the vast number of resources which are required to maintain the ice rinks and the amount of traveling which is required from the athletes and officials to attend international figure skating competitions. In addition, both interviewees raised food waste, emergency power and bus and passenger car rides as environmental impacts of EFSC 2023. In P3 the interviewees pointed out several environmental impacts like the usage of energy and paper and the massive need for transportation to run competitions like the EFSC 2023. These impacts are presented in Table 5.

TABLE 5: Environmental impacts of an international figure skating competition were recognized well by the interviewees

Environmental impact	Interviewees who mentioned this
Energy usage	7/9
Transportation	6/9
Food waste	2/9
Emissions in general	2/9
Water usage	1/9

When scrutinizing the results together, mentioned impacts by the Pools included transportation both to the venue from the local hotels and also getting into the host city in the first place, energy usage, food waste, and emissions which occur when creating an international competition setting.

6.1.4 Responsibility

In order to better understand the managerial approaches to sustainability, the interviewees were asked about whose responsibility it is to take sustainability into consideration when organizing international figure skating competition events.

Most commonly the responsibility was laid on the ISU by the interviewees. The ISU was framed as the most important instance to set common guidelines for the figure skating community regarding sustainability, but there were also some contrary perspectives. In addition, the ISU was seen as responsible to offer management tools and support for members to reach these set common guidelines.

In P1 half of the interviewees agreed that the ISU should be responsible for providing guidelines and tools for its members to achieve sustainability goals. On the contrary two of the interviewees thought that the national federations had the most power to make changes to the international competitions to be more environmentally sustainable.

“But of course, I said before same as the sport, the ISU need to make the regulation with that all the rules are the same globally. So also give the the the tools that make all of the ISU community go in one sense it's, I believe, the the responsibility of the ISU.” (I3)

- Interviewee I3 on whose responsibility is to take care of environmental sustainability efforts at international figure skating competitions.

Some interviewees also laid responsibility on the IOC, National Olympic Committees, National Federations, and governments. It was also brought up in P1 that the athletes can change their behavior if needed e.g., by bringing in their own water bottle or switching the lights off when they leave the hotel room, but bigger visions and guidelines should come from somewhere else.

In P2 the interviewees agreed that the ISU should be responsible for environmental sustainability in figure skating and in international figure skating competitions, as ISU also sets the rules and regulations for the sport itself and the competitions. One of the interviewees also suggested that regarding the international figure skating competitions the ISU could demand more on environmental aspects.

The P3 interviewees were unanimous that the responsibility on environmental sustainability at international figure skating competitions should be on the ISU. One interviewee said that when it would come from the ISU the same principles and guidelines could be used in all international competitions. Two interviewees also said that the responsibility could be divided. The other said that it could be divided among the ISU and organizing federation, and the other said it should be divided among the ISU and the host city.

6.2 Actions

The main code actions had multiple subgoals including current actions, suggested actions and future actions. The target of this code was to find out about the environmental actions which are already in practice, planned or still new ideas.

6.2.1 Current actions

The current actions could be divided into actions linked to travel, material flow, communication, and management practices. An action was categorized as a current action if an action was described as something that is currently happening in the case of international figure skating competitions or the organisations organizing the event.

P1 was able to list a lot of things that are being done at the ISU in a more general sense or specifically in the international figure skating context.

The ISU has a sustainability working group, which has been working now for six years according to the interviewees, also the ISU did sign the UNs Sport for Nature framework but did not resign UNs sport for climate action initiative, because the targets were considered as too difficult to achieve currently. One interviewee also mentioned that the ISU has been reducing their CO₂-footprint at the ISU office. The ISU is also retrieving information from members on what they are currently doing in terms of sustainability. The ISU is also reporting on their environmental sustainability progress.

From the international figure skating competition perspective several interviewees from P1 said that they are asking the members who bid to host a competition to return a sustainability plan

for the ISU. Regarding this it was also said by an interviewee that many bidders tend to say that they will make a sustainability plan if they get the competition, but some bidders do send it in beforehand as asked.

“I know that they (ISU) already do, take into consideration (environmental) sustainability if there is a country that's bidding, and they have to have a plan that involves that.” (I4)

- I4, on the ISU asking bidders to place a sustainability plan for international figure skating competitions

“Many just they just answer no, we don't have a plan but at the moment if we are elected as events event, event city or host for the event, we will make it okay.” (I1)

- I1, explaining that even though they require a plan some bidders do not submit it in the bidding phase.

As a current action it was also said that the ISU is open to give recommendations on sustainability for events and that they also have a document which presents recommendations for events from a sustainability perspective.

Also, regarding the competitions, it was said that the ISU app enables the competitions to use less paper and site visits which are done to the competition site prior the competition is place where environmental aspect can be discussed site specifically. The athletes had also been able stop the need of CDs in the competition events reducing the need of equipment.

In P2 the interviewees presented many current actions which have been taken. The interviewees presented both environmentally sustainable and unsustainable practices which they have noticed during EFSC 2023.

Included in the environmentally sustainable actions were a lot of actions which targeted to limit the number of materials. The interviewees reported for example that they were able to utilize same interior materials, which they have used in the previous international competition held in Finland.(Figure 6) Both interviewees also said that the FSSA chose not to purchase new volunteer clothing for every competition, instead they bought vests that can be used for a longer period of time as they are not handed out for the volunteers after the competition is held (Figure 6)



FIGURE 6. The volunteers wear the same vests for multiple events, the same decor material was used as in previous international figure skating competitions that were hosted in Finland.

The FSSA also chose not to give out presents for the competitors, instead they donated the allocated money to charity. The FSSA does not encourage spectators to throw gifts for the competitors after their performance anymore, limiting the amount of material produced in the event.

Interviewees in P2 also mentioned the site visits as an action taken by the FSSA, but neither of the interviewees mentioned that the site visit would observe environmental aspects at the site. Instead, one of the interviewees mentioned that after Covid-19 pandemic site visits can be also arranged remotely, especially if the site is known by the ISU team.

In P2 the interviewees also mentioned several current actions that take place when arranging the EFSC 2023, which they found to be unsustainable practices. Both interviewees mentioned that there is a lot of food waste produced during the EFSC 2023 as they are required to provide a warm meal at the rink every day for athletes, coaches, and other team members, without knowing how many people will actually eat. Another unsustainable practice mentioned by P2 interviewees was that they are required to offer passenger car transfers for some individuals, in addition the shuttle bus between the ice rink and the hotels used during the EFSC 2023 had to travel between the two location every half-hour, whether or not there was any passengers. P2 interviewees also mentioned that at least regarding Finland it is, according to them, pointless to have a generator to provide electricity if the main electricity source would go down. A second source of electricity is required from the organizer of the competition by the ISU. The other interviewee also mentioned that it is unsustainable that the boards for the events are changed by experts that are flown in from Canada, as the same job could be done by using local experts from Finland. P2 interviewees also agreed that there has been a reduction in paper usage. In P3 the interviewees presented some current actions that they had detected. For example, they had noticed a reduction in the use of paper, and one interviewee brought up the ISU app, which had made this reduction possible. One interviewee in P3 also said that there is a possibility to attend some meetings remotely, which limits the amount of travelling that has to be done. One interviewee also brought up the sustainability group hat ISU has but stated that it seems that it is in the very beginning with its actions and functions. One interviewee also pointed out that in EFSC 2023 there wasn't any public announcement on (environmental) sustainability matters. One interviewee also described the actions done small and insufficient. All in all, current actions were described as small and insufficient in P2 and P3. In addition, several interviewees wanted more publicity for the things that are being done regarding sustainability at the ISU events.

6.2.2 Future actions

The code future action is the second sub-goal of the main goal “Actions”. The purpose of this goal was to detect actions within international figure skating competitions that are being planned but they are not yet being done. Only a few future actions were mentioned by the interviewees.

In P1 the ISU representatives mentioned that engaging their stakeholders in their environmental sustainability approaches will increase collaborations with entities with more knowledge on sustainability or organisations with the same type of circumstances. One interviewee also mentioned that it is important that the ISU will start to provide tools and support for member federations in order for them to reach the ISU recommendations for sustainability. Also, the ISU was planning to become more public about their sustainability efforts regarding the environment.

P2 nor P3 mentioned any future actions that they could make regarding the EFSC 2023 or other international figure skating competitions. P1 was the only pool to have plans for the actions that would happen in the near future regarding organizing international figure skating competitions.

6.2.3 Suggested actions given by interviewees

The interviewees in all pools provided a vast number of suggestions for environmental actions that could be taken in international figure skating competitions. Suggested actions was a sub-code to identify actions that were ideas which perhaps could be implemented in the international figure skating events and through these implementations environmental sustainability could be advanced in the figure skating field.

In P1 there were only four actions that were coded under “suggested actions”. It was suggested by one interviewee that the ISU would create event more environmental checkpoints for international figure skating competitions that could be reached and that they could even increase the ambition level to make progress over time in environmental sustainability matters. Another interviewee thought that there could be a separate department only for sustainability matters.

Finally, one suggested that they could somehow reduce travel during international competitions. There were no same answers for suggested actions among P1 interviewees.

The interviewees in P2 gave a lot of suggested actions towards environmental sustainability in international competitions. Both interviewees claimed that there is a need to revise and develop the current way of organizing an international figure skating competition, which should be done from the perspective of sustainability.

The interviewees suggested mostly management practices and tools that they would need in order to organize an even more sustainable competition. For management practices it as suggested that the host cities would be scouted on the basis of their international accessibility and that the ISU would hold a workshop for members to discuss sustainability in figure skating and the limits and barriers each member federation has. Some tools were for example, a tool to control food waste and to have a sustainability expert coming in from the ISU to help with all dimensions of sustainability in international figure skating competition context.

In P3 lots of suggestions were provided. Concerning the EFSC 2023 and other international figure skating competitions. The interviewees claimed actions from the ISU e.g., one interviewee suggested that the ISU would become stricter, one said that the ISU should give out a plaque to those international competitions which manage to run the competitions more sustainably than is required. It was also suggested that the environmental sustainability work should become more public and that all people involved in the competitions from spectators to officials should be educated on environmental sustainability matters. It was also suggested that the competitions lengths should be revised and that the judges could have an ISU pad that would replace papers needed to judge a competition.

6.3 Environmental Management

In this section I will present the results for the main code “Management”, and its sub-codes “management practices” and “tools”. The point of this code was to find out about the existing management approaches to environmental sustainability in international figure skating events.

6.3.1 Environmental Management Practices and Tools

The subcode management practices was defined as a process which describes how environmental management is done in the organisation, in this case the international figure skating competition event. The subcode aimed to answer research question 2.

In P1 most of the environmental management practices were overlapping with the current actions which were presented in section 6.2.1. For example, the sustainability working group by the ISU and the site visits to the competition sites can be considered as environmental management practices, which were coded to both environmental management practices and current actions.

In P1 answers there were also good insights into what environmental management should be in international figure skating competitions, it was suggested that environmental sustainability should go through all phases of organizing a competition, and it was considered important that environmental sustainability matters are considered from the very beginning.

In P1 the commitments to UN based programs were also brought up. The ISU recently committed to the UNs “Sport for Nature”-framework, which promotes environmental sustainability in sports. On another note, the ISU did not reassign the “Sports for Climate Action”- framework, which aims to reduce carbon emissions by 50% by 2030 and carbon -net zero by 2040. Reasons for withdrawal given by the interviewees were that the ISU could not see how they could reach these set goals in the given time frame. The ISU does not have its own environmental program.

In P2 environmental management practices were overlapping with current actions. The basis of environmental management was described through the financial gains that can be received through some environmental management practices; for example, choosing to use the vests for volunteer clothing is a budget and environmentally friendly option. The environmental management practices at the EFSC 2023 were described by one interviewee who said that they were made simultaneously with the task they had, but that there wasn't any sort of a bigger plan behind it.

“Not an environmental program, this perhaps links to everything else, so each person does it [environmental management practices] alongside their job, but there isn’t one big, one big package, that would be the environmental program” (F2)

-Interviewee F2 describing Environmental Management practices at the EFSC 2023

One interviewee also said that environmental management should take place from the very beginning, when they start to plan the competition. It was also pointed out in P2 that the ISU could demand more in terms of environmental sustainability. No environmental management practices were mentioned by P3 interviewees.

There were only a few environmental management practices set in place. For example, the ISU has a sustainability working group, but many interviewees in P2 and P3 said that the work by the group has not affected their actions at the international figure skating competitions. The sustainability working group was mentioned to do reporting and currently it is doing CO₂-measurements for the ISU operations.

Also there seemed to be a common understanding between the pools that environmental sustainability needs to be considered from the very beginning when the competition organisation starts to produce the event. Despite this, this is not what happens in practice. The interviewees in P2 told that the ISU is not demanding e.g., in the bidding phase the host candidate to provide a thought-out sustainability plan for the event, even though it is asked for. The interviewees in P1 and P2 pointed out that the ISU does not demand for any sustainability actions, it rather recommends, suggests and asks.

“We ask them to be as green as possible.” (I1)

-Interviewee I1, when asked what the ISU does regarding environmental sustainability in international figure skating competitions

In the interviews a need for several tools were recognized, and some tools already exist but require development according to the interviewees. In this thesis “tools” are used as a sub-code

to recognize practices which could help to develop environmental management. Also, here it is good to note that many of the tools have been coded also under the current actions -code.

Some current tools that were mentioned by P1, which are used in events like the EFSC 2023 are the ISU recommendations, memorandum, reporting, UN commitments and CO₂-measurements. In P1 the interviewees thought of two tools that were currently missing. One of them was the need to increase knowledge and competence in sustainability matters, either through education or by involving an expert in the actions, or both. Another was to create partnerships with other ice or winter sports to exchange ideas and struggles.

In P2 two very concrete tools were also asked for. One was a tool that would help the competition organisation to better estimate the amount of food that will be consumed at the competition venue, to minimize food waste, and the other was for the ISU to create several guides which take into consideration the circumstances of different countries.

In P3 there was only one interviewee who wished that there would be a guide for the athletes, judges and technical panel members which would tell them how they can contribute to the environmental sustainability practices through their own actions during a competition.

6.4. Barriers and Drivers

The interviewees were also asked about barriers and enablers which restrict or encourage environmental sustainability in organizing international figure skating events. It is important to recognize the actions which drive the positive changes forward, but it is equally important to recognize the actions or practices which hinders the development process.

6.4.1 Barriers

Several barriers were recognized by the interviewees. The biggest barrier that was pointed out was the financial cost. Interviewees were concerned that improving environmental aspects also increases the costs of organizing an international figure skating event. The costs were brought up in multiple instances during the interviews. Another barrier which was mentioned by nearly

every interviewee was the lack of knowledge that would help to navigate in the complexity of sustainability concerns.

“ We are afraid if we ask for too many things, normally all these things [environmental sustainability] it means higher cost, potential higher cost” (I1)

-Interviewee I1 on the barriers which limit the progression of sustainability actions in figure skating.

“I think these [barriers] are economical” (O3)

-Interviewee O3 on the barriers which limit the progression of sustainability actions in figure skating.

In P1 the biggest barriers to being more environmentally cautious in international figure skating competitions were thought to be the cost and lack of competence and knowledge. A big concern was also that if the sustainability requirements for the host of an international figure skating competition are raised, does it lead to less applicants for hosting competitions, this seemed to worry majority of the interviewees in P1, as it is already difficult to find host for smaller events, requiring more according to the interviewees requiring more environmental sustainability could lead up to more costs.

Using old infrastructure to host an event, was seen as a barrier by several as sometimes events have to be organized in places where the infrastructure is not update, e.g., the ice rink is not resurfaced with an electrical Zamboni, or the ice rink is cooled with ammoniac instead of carbon dioxide. The concept of an international competition event and lack of time resources were mentioned as barriers to build more environmentally sustainable competitions. In P1 also the lack of unification between members of ISU regarding environmental matters and, in some cases, the local regulations of the host federation were considered as barriers.

When asked about the barriers the interviewees in P2 told from different aspects how the rules and regulations provided by the ISU seem to be in many instances a barrier in EFSC 2023. Another barrier that was identified by the interviewees in P2 was the infrastructure, which is old and often outdated from the newest technology. Another barrier was that even though the

ISU grants the organizing federation the same amount of money for international competitions, there are differences for example how much you can get with that amount. For example, according to the interviewee in Finland work is more expensive than elsewhere, which leads to having less money to do other things.

“As for the limitations which come from the regulations by the ISU I have to name food waste, we are obligated to provide food everyday at the rink--.” (F1)

-Interviewee F1 on the barriers which come from the ISU.

In P3 there were two barriers which were brought up by the majority of the interviewees. First two interviewees saw that the fear of not having enough candidates to bid for international competitions is a barrier. They pointed out that it is already difficult to find organizers for some competitions, and if the ISU would for example tighten the requirements for environmental sustainability it could lead to having even less candidates for competitions. Second, another barrier was said to be the ISU itself: which was described as slowly changing and old fashioned. Finally, the cost and lack of resources was also considered as a barrier to develop environmental sustainability in international figure skating competitions.

6.4.2 Drivers

The interviewees also recognized different drivers which keep up the spirits to continue to develop sustainability actions within the figure skating community. New technology, rapid changes done during COVID-19 pandemic in order to run competitions, and new partnerships were mentioned as some drivers which develop environmental sustainability within figure skating events. Also, the sameness of international figure skating events and possibility to raise brand value were seen as enablers for a more ambitious environmental approach.

In P1 there was a great variety of drivers. These included the worry of sustaining life on the Earth, increasing the brand value of ISU, co-operations between other organisations on environmental sustainability matters, and the generation change which is happening at the ISU, were according to an interviewee more young, aware people are coming in. Also, the experience

of rapid change which was gained during the Covid-19 pandemic was considered as an example that practices can change over-night. The sport itself was also considered as a driver by one interviewee, as they described the sport as a unique opportunity to spread awareness for example, on environmental matters.

“Skating has that same potential because it's an artistic sport where there's so many there's so many different creative ways to use our sport. Use athletes' voices to try and make a difference, raise awareness, whatever the goal might be.” (Interviewee I4)

-Interviewee 14, when asked about the strengths of figure skating community.

In P2 only a few drivers were mentioned. One of the interviewees mentioned that it is important that there will be a livable planet Earth even after they are gone, and that thought drives them forwards with this thematic. Another was that being a sustainable organisation would add brand value to the organisation. One of the interviewees also said that they feel that federations are really trying. One interviewee questioned whether there is any type of driver or asset within the figure skating community itself that would drive change in the practices. On the contrary the other interviewee described the figure skating community as open and ready to change.

In P3 the figure skating community was described as well educated, open and truly international, these characteristics were considered as an asset for the community to achieve change. Majority of the interviewees also mentioned the youth of the community to be the strength that is needed to drive the change.

“The strength is the young people who are already growing up in a different mindset” (O1)

-Interviewee O1 on the strengths of the figure skating community to make change.

Also, one interviewee said that the sameness of these competitions could be seen as a driver, as the same methods could be applied to all international competitions in a way or another.

7 DISCUSSION

This thesis provides an in-depth look on environmental management practices in international figure skating competitions. I think this thesis contributes to previous literature in two ways. First, there is a very limited amount of research on environmental management practices in this size of sport events, as the literature focuses merely on giga and mega events like the Olympics or the Football World Championships. Second, this thesis seems to be the first approach to start conversation about environmental management in figure skating in general. Due to the special characteristic of each sport, it is important that environmental sustainability is handled from that sports perspective, this way sustainability can be incorporated beneficially in the actions of that sport discipline.

7.1 Summary of the findings

There were three main findings in this thesis. First, the international figure skating competition organisation knows about sustainability and considers it important but has difficulties in implementing it into the figure skating context.

Second, environmental management practices are still evolving in international figure skating competitions, current practices are fairly small, and the environmental practices done depend also a lot on the national federation which organizes the competition together with the ISU.

Third, to enhance environmental management, a unified sustainability strategy is needed, which will develop current practices, help overcome barriers, clearly voice out responsibility and demand for new tools and practices to be created.

In this section I will go through all of these main findings and link them to the research questions and results of this study and then discuss the findings through literature. I will first present main findings to research question one, then to research question two and finally to research question three. Then I will present the contributions this study has made to previous literature, and I will conclude this section with the limitations of this study.

7.1.1 R1: How is environmental sustainability conceptualized in the context of international figure skating competitions hosted by ISU and national figure skating federations?

The first research question tries to map out the understanding of environmental sustainability in general and in figure skating context. It does this by using the codes “sustainability”, “sustainability in figure skating” and “environmental impact”.

It turned out that the interviewees in all of the pools (P1-P3) could define environmental sustainability very well, but only two of the nine interviewees could also name the other dimensions of sustainability which include the social and economic aspects. This could also be due to the fact that this thesis is set to handle the environmental aspects of sustainability rather than sustainability as a whole.

Most of the interviewees in all of the pools thought that it was contradictory to talk about an international figure skating event and sustainability in the same sentence. All of the interviewees stated that figure skating as a sport is not sustainable to begin with. This shows a good understanding of one’s own impact on the environment, which is important especially when an instance starts working on sustainability matters.

Figure skating was compared often, to running, where running was considered environmentally sustainable and figure skating not. Figure skating was also compared to motor sports by few interviewees, where motorsports was considered as a more harmful sport than figure skating from an environmental perspective. This was interesting because according to Dingle (2009), motorsports have been taking important steps towards a more sustainable way of organizing the sport, e.g. the international federation for motor sports forbade the usage of lead-based fuel already in 2008. (Dingle, 2009) Based on the results of this thesis I would say that motorsports have taken more robust steps towards sustainability since the mid-2000s.

Interestingly, nearly all interviewees thought that in the sport scene, compared to other sports figure skating is in the middle of taking the environment into account in their practices. Even though some admitted that they actually did not know what the other sports disciplines are doing in this field.

According to my findings there is no research done which would rate sports events by their approach to environmental sustainability, but when comparing the actions done in international

figure skating competitions compared to bigger events and their environmental actions which were described by Trendafilova and al. (2014) It seems that figure skating would not be placed as a forerunner, and perhaps not even in the middle, as was suggested by most of the interviewees. This finding does not take away the fact that the figure skating community would not have potential to become a leader.

When asked about environmental sustainability in figure skating context the interviewees were able to list several environmental impacts that figure skating causes, which are presented in the results section in Table 5. In all pools transportation and energy usage were mentioned as environmental impacts, which are typically considered as the biggest emitters of events. (Collins et al., 2009) In Pool 2 more environmental impacts were mentioned compared to the other pools.

The literature review of this thesis shows that assessing and describing the environmental impacts of a sport event has on its surroundings, has been topical since 1990s (e.g., Dacosta & Marques, 1997) Therefore, it may be that the interviewees had thought about these issues even though environmental impacts have not specifically been researched in figure skating events.

Based on these results I conclude that there seems to be an understanding of what environmental sustainability is. There seems to be a joint understanding that figure skating cannot be considered as sustainable as such and organizing competitions like the EFSC 2023 have an impact on the environment. Despite this, there was not a strong unified vision among or within the pools on what environmental sustainability means in figure skating context.

More knowledge and competence are needed in order to assess impact of actions taken, and to find ways to minimize the contradictions between figure skating and sustainability matters. Perhaps the ISU could offer education for its members and themselves on sustainability.

7.1.2 R2: What environmental management practices are done in the competition organisation?

The second research question of this study tries to answer how environmental management is practiced in international figure skating competitions. In the content analysis sub-codes “current actions”, “management practices”, “tools” and “responsibility” tries to detect the elements

which influence environmental management. In this section I will go through the results linked to this research question.

Based on the interview data, environmental management practices are still evolving in international figure skating competitions, current actions are fairly small, and the environmental practices done depend also a lot on the national federation which organizes the competition together with the ISU. In Pool 1 the answers to current actions resulted in actions which are related to bigger the picture, for example the UN frameworks, gathering data from the members of ISU on their sustainability practices and the sustainability working group. In Pool 2 the current actions were focused very much on the environmental actions that were taken or not taken at the EFSC 2023. Oddly Pool 1 and Pool 3 did not mention almost any of the environmental actions, that Pool 2 interviewees mentioned. This could mean that either the actions done at the EFSC 2023 were not recognized as environmental actions by the interviewees that were part of EFSC 2023, or the actions were not noticed to begin with.

A statement found by Daddi and al (2021) suggested that environmental actions were done mostly on finance purposes, this aspect was also brought up in the interviews, that most actions were done because it was a good way of cutting costs, and simultaneously there was an opportunity to have some environmental benefits as well. When the environmental actions would have been costly, the cost became a barrier. Environmental management practices in international figure skating competitions can currently be seen mainly as a tool to cut costs. Also the handbook by Chernushenko (1994), motivates sport managers to environmental actions through economic benefits.

Environmental management practices in sport events have been researched scarcely, but research by Hayes and Karamichas (2012) stated that planning the environmental actions beforehand was considered crucial. This was also brought up by the interviewees especially in Pool 1 and 2, which represented the competition organisation. Despite this, it seemed that this was not done in either of the organisations, at least systematically at the EFSC 2023. According to most of the interviewees the ISU asks the candidates who are hosting international figure skating competitions to provide the ISU with a sustainability plan for the event. Which invites the candidate to intertwine the environmental actions to the event management practices as early as possible. Unfortunately, this practice seems to get watered down as it is not required as compulsory from the candidates, nor does it effect in the decision-making process, when deciding the host. If this process would work, it could help the competition organisation to

commit better to the environmental actions from the beginning as suggested by Hayes and Karamichas (2012).

Hayes and Karamichas (2012) also found that EMS were important for managers of the researched events. As they helped the managers stick to the set environmental goals. None of the interviewees mentioned that the competition or the organisation they represent used an EMS to help along the environmental management practices.

The tools required to organize more sustainable international figure skating competitions were differing between the pools. For example, in Pool 1 the interviewees thought that they needed more knowledge and education on environmental sustainability, in Pool 2 there was need for more practical tools like a way to follow on how much food is needed per day. The lack of tools has also been discussed by Collins et al (2009), but their need for tools were more focused on measuring the environmental impacts of a sporting event. None of the interviewees mentioned that a tool like this would be needed in the context of international figure skating competitions. Also, the lack of knowledge on environmental sustainability has been brought up in the literature e.g., McCullough et al (2020), this insight could also be detected from the answers of the interviewees.

From a broader perspective the ISU is also committed to the UNs “Sport for Nature” and it was committed to another UN program “Sport for Climate”, of which the ISU did not resign the commitment as it was seen as too difficult to achieve in the given time frame. I would say that sticking to these commitments could also have a positive influence on international figure skating competitions and their environmental management. Surprisingly, even though some UN lead programs were mentioned by the interviewees, the SDGs and figure skating’s role in them was not brought up by any of the interviewees, even though the sports role in implementing SDGs is highlighted by UNOSDP, (n.d.) in their document “Sport and the Sustainable Development Goals- An overview outlining the contribution of sport to the SDG's”.

The environmental management of international figure skating competitions is still looking on ways in which it can achieve a better environmental performance. There are already some good structures, which supports environmental management: the sustainability working group, documents which provide guidelines and the practical site visit. Yet there is a need to develop these management practices, settle the responsibility question and come up with new tools and practices.

7.1.3 Practical suggestion to improve environmental sustainability

In this thesis I also aimed to give some practical suggestions. I wanted to find out based on the interviews how the competition organisation could improve their environmental performance in international figure skating competitions. To analyze this, I used the following codes” future actions”, “suggested actions”,” tools”, “barriers” and “drivers”, to provide insights to this matter.

Obviously, as always, there is a lot of ways in which the international figure skating competitions could be improved from an environmental management point of view.

The interviewees had a lot of ideas on how environmental sustainability in international figure skating competitions could be improved through actions that were suggested by the interviewees themselves.

The interviewees also brought up the complexity of environmental sustainability and the lack of knowledge on environmental matters. By developing tools and building the education of managers in charge of international figure skating competitions the environmental performance could be better. Hugaerts et al., (2021), also stated that the sport scene was lacking in tools and knowledge on environmental aspects. As stated in the results, a few interviewees suggested that there could be an event manager with knowledge on sustainability. This sustainability event manager would oversee that the competition meets the set sustainability criteria. If this environmental coordinator would come from the ISU there would be many beneficiaries in my opinion. The sustainability event manager would help in unifying the sustainability goals of the ISU and the ISU members, and therefore unify the way how international figure skating competitions are run from a sustainability perspective. Unification of environmental sustainability was also called after by the interviewees. The sustainability event manager could also clarify the responsibility issue which was mentioned in section 7.1.2, as it would be clear that it is their responsibility to include sustainability as part of organizing these international competitions. The interviewees disagreed whether or not the sustainability event manager should be provided by the ISU, the host national figure skating association or by the city where the competition is arranged. An environmental coordinator was also listed as a best practice for environmental management in sports events by Daddi and al (2021).

There was only a very limited number of future actions mentioned by the interviewees, I think this shows that there is a lack of vision, which leads the interviewees to give more suggested

actions than to be able to list actions that would be done in the near future. Lack of vision and unification between member federations and the ISU's environmental management was also brought up by some interviewees.

The interviews highlighted a lot of barriers within the process of producing international figure skating events. Identifying and resolving how these barriers could be tackled, could already develop the environmental management practices within an international competition. Like in a lot of literature the cost of environmental sustainability and lack of knowledge was mentioned as common barriers. As discussed in the literature review, for example, sport management studies have typically not contained environment-based education. (e.g., McCullough et al., 2020) This might result in lack of knowledge and leadership skills in environmental management practices in figure skating events as well.

One of the more interesting barriers was mentioned to be the ISU. The interviewees who were from FSSA stated that there are many regulations by the ISU, which comes from the ISU Memorandum that limits their capability to make environmentally cautious practices. Daddi and al. (2021) found similar results in their study, in which they found out that environmental practices took place more in the operational level than in the governance level. In figure skating competition events, we can say that the ISU provides the framework for all international competitions and can therefore be described as the governance level. In the results of this thesis the governance level also seems to restrict the potential within the operational level. There were also suggestions that the ISU would first of all intertwine a sustainability budget which would be counted in all sections of the ISU memorandum. In addition, it was suggested that the memorandum would be made more flexible to better fit the needs of the federations who end up hosting international figure skating competitions. These adaptations to the memorandum could arguably be referred to as management supporting tools which were called after by Hayes and Karamichas (2012) as important especially when implementing planned actions into practice.

Regarding the literature, which was presented in the literature review, I have also come up with some ideas through which international figure skating competitions could enhance their environmental sustainability. Providing sustainability plans like the ISU asks its host candidates to do, could enhance the environmental performance of these events as they could be combined with an EMS. Daddi and al (2021) found that to achieve better commitment to environmental practices EMS are good tools to do this, it was found that when EMS are used the management is more committed to making sure that the environmental goals are met during the event.

Currently, no EMS is used by the competition organisation or the organisations which make up the competition organisation. Implementing an EMS could be a way for international figure skating competitions to better their environmental management. The EMS could be managed by the sustainability group of the ISU, which is already an existing structure in the organisation.

7.2 Eight Suggestions

In addition to the suggestions provided by the interviewees, I would also like to propose a few suggestions for organizing international figure skating competitions more environmentally sustainable.

My first suggestion would be that the competition organisation would make their sustainability efforts more public. This could increase the pressure to actually achieve the set goals.

My second suggestion would be that in addition to the suggestion by the interviewees that there should be a manager that is in charge of sustainability at international figure skating competitions, I would encourage the ISU and the national federations like the FSSA to provide education to their members on the topic. Because it is currently being researched that there are gaps in manager education on environmental matters, (Graham et al., 2018) it would be substantiated to believe that current managers are in need of education on this topic.

Third, I would like to propose that the competition organisation would make lists on the tasks that each participant or stakeholder can take in order to lessen their personal emissions during the competition. It has been researched that individual athletes are more likely to lessen their emissions if advised to do so compared to team or nature sports (Wicker, 2019). A figure skating competition consists of mainly individual athletes and small teams (pairs), this approach could motivate athletes to change their behavior to be more environmentally friendly.

Fourth, I would encourage the competition organisation to make a responsibility table that would state out the responsibilities of both organisations which make up the competition organisation, this way it would be clear whose responsibility is what. In addition, the responsibility table could be divided for each competition separately, so that the strengths of the hosting national federation can be considered in the division.

Fifth I would suggest that the competition organisation would think through how the possible environmental plan would be implemented, as it seems that it is easier to make a plan than to follow it (Hrebiniak, 2006).

Sixth, as the interviewees also suggested, I would like to see more partnerships between different international sport federations. For example, the IIHF and FIS already have guidelines and environmental targets for events. This could be a good support for figure skating as well.

Seventh I would suggest, that as it was suggested that the ISU would provide different guidelines for different competition hosts, these guidelines would be somehow intertwined with the budget which was given for the competition. If the host for example reaches level A sustainability, they can gain more money of which at least some need to be dedicated to sustainability work than if the host is able to provide only a level C sustainability. This could encourage candidates that bid for competitions to provide thought out sustainability plans beforehand.

Finally, I would suggest that the competition organisation would carefully take these suggestions by the interviewees of this thesis to the considerations given.

7.3 Limitations

There are several limitations to this study which are good to be displayed. There was only a limited number of interviewees, and they represented only some roles of a competition organisation. This study collected its data based on one competition the European Figure Skating Championships 2023, despite the fact that many interviewees referred to international figure skating competitions in general, it may be that practices which took place in EFSC 2023 are highlighted in these results. This research also took a look at only ISU figure skating competitions leaving out synchronized skating and speed skating, and the environmental management practices which are taken in the federation's other actions than competitions. It is also good to note that the literature review which is presented could not contain all literature regarding environment and sustainability, therefore some aspects might be stressed more than others.

8 CONCLUSIONS

In this thesis I have investigated the environmental management practices in an international figure skating competition setting. The purpose of this study was to find out about the current understanding of sustainability in figure skating and the environmental management practices, as well as find how international figure skating competitions could improve their environmental management and through that better their environmental performance.

Based on the results of this study the organizers of international figure skating competitions have a good grasp of what environmental sustainability is and how it is linked to international figure skating competitions. The actual management practices used at international figure skating competitions vary depending on the national federation who is organizing the event with the ISU. For more homogenous management practices and environmental performance, the ISU should take responsibility in developing the environmental management practices in the international figure skating competitions. Finally, the people involved in organizing international figure skating competitions have a lot of ideas, which have potential to change the way international figure skating competitions are organized. More research is needed on the environmental impacts of figure skating events, and on environmental management practices which are taken within the ice sports. In addition, research is needed on strategy implementation in sport events in order to get the designed practices delivered into action.

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“Nukkumaan käydessä a attelen: Huomenna minä lämmitän saunan, pidän itseäni hyvänä, kävelytän, uitan, pesen, kutsun itseni iltateelle, puhuttelen ja ihallen, kehun: Sinä pieni urhea nainen, minä luotan sinuun”

- Eeva Kilpi, *Laulu rakkaudesta ja muita runoja (1972)*

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Figures:

Fig 1: (<https://www.stockholmresilience.org/research/research-news/2016-06-14-the-sdgs-wedding-cake.html>, 9.5.2023)

Fig 2: Suomen Taitoluisteluliitto, STLL Kansainvälinen Luisteluliitto, ISU, accessed 20.4.2023

Fig 3: Baskarada, S. (2014). Qualitative Case Study Guidelines. *The Qualitative Report*, 19, 1–18.

Fig 4:

<https://www.google.com/maps/place/Espoo+Metro+Arena/@60.1777954,24.7860796,15z/data=!4m2!3m1!1s0x0:0x13997a753c25fd49?sa=X&ved=2ahUKEwjGy-Hewd>, accessed 3.5.2022)

Fig 5: Created by author

Fig 6: Taken by author

APPENDIX Interview Structure

General:

1. Who are you ? (only for the author) Please, can you introduce yourself and can you explicate what is your (work) role in the European championships 2023 Figure Skating?
2. What are your typical tasks in these championships? Can you give practical examples.
3. How do you understand sustainability?
 - a. what about environmental sustainability?
4. What does environmental sustainability mean in figure skating context? Can you give practical examples who and how it is taken into account in these championships?

State of environmental sustainability in European Championships 2023 and management

1. What environmental actions were taken in the European championships 2023 or the ISU competitions in general ?
2. Were the actions taken enough? Why or why not?
3. What environmental actions need to be considered when bidding for a competition?
 - a. Are there any requirements?
4. How successful did the implementation of these practices go according to you?
 - a. What burdened you
 - b. what could be done better?
5. What motivates you or the instance you are representing to take environmental actions in this particular event?
6. What are the barriers that restricted you or the instance you are representing from taking more action in this particular competition event?

7. Is there an environmental management system by the competition organisation or the ISU
8. Has the competition or the ISU been certified regarding environmental matters?
9. How would you describe environmental management in figure skating events and organisations?

Responsibility

1. Should figure skating competitions like the European Championships take environmental sustainability into account when planning and executing the event?
2. Do you feel that in your role you can voice your opinion on environmental matters?
 - a. What can the athlete commission do ?
 - b. what has it done ?
3. Are figure skating competitions in general taking enough actions towards environmental sustainability?
 - a. What motivates you or the instance you are representing to take environmental actions
 - b. What are the barriers that restricted you or the instance you are representing from taking more action
4. Does the ISU/FSSA have an environmental program or something equivalent to that ?
 - a. When was it created?
 - b. How was it implemented?
 - c. Can you describe the process in general (successes and failures)

Future

1. What should change in the organizing of such events, to achieve environmental sustainability in figure skating competitions
 - a. how should this change be made?
 - b. who is responsible for making the change?
 - c. what resources are needed?
2. Do you believe that figure skating will be a sport that exists in the future as well?