



Reinforcement of Sustainability in Sports Events through Sustainability of Sports Event Facilities

Case Tampere

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Abstract

Sport stands out as one of the most financially successful industries, with sports tourism becoming one of the fastest-expanding segments of the tourism industry. Sports events boost tourism and local economies, but they also cause sustainability challenges. Sports facilities play a crucial role in promoting sustainability in sports events, and the United Nations' Sustainable Development Goals (SDGs) are an impactful way to evaluate the level of sustainability and aspects of development.

The City of Tampere has commissioned the research. The research aimed to identify whether the sustainability of a sports facility is relevant to the sustainability of sports events and how sustainability could be improved in facilities and events. The City of Tampere is a remarkable international competition and event enabler, and there is a wide selection of sports facilities in Tampere. The sustainability of the two sports event facilities, Tampere Stadium and Tampere Exhibition and Sports Centre, was examined through the United Nations' SDGs.

The research was conducted using a qualitative research approach with four preliminary interviews, seven semi-structured and recorded expert interviews, and one e-mail interview. The collected data was coded and categorized into themes and analyzed with the content analysis. The analysis aimed to find areas for development and the differences and similarities of the views of different stakeholders on the topic.

The results showed that sports event sustainability and the realization of the United Nations' SDGs in sports events can be reinforced through the sustainability of sports event facilities. The study found several implementations to improve the sustainability of sports events have already been conducted, and all the studied SDGs are partially realized in sports event facilities and sports events. However, the study revealed that substantial efforts are requisite to ensure the sustainability of the operation, and the findings presented concrete measures for further development.

The research provides insights into the role of sports event facilities in reinforcing the sustainability of sports events and serves as a tool for developing the sustainability of sports events and sports event facilities. Reinforcing sustainability in sports events and sports event facilities is necessary to succeed in the industry. By making sports event facilities more sustainable, the City of Tampere, event organizers, and other stakeholders can reduce the environmental impact and improve social and economic sustainability of their events, and demonstrate their commitment to sustainability.

Keywords/tags (subjects)

Sustainability, sports events, sports event facilities, the City of Tampere, Agenda 2030, Sustainable Development Goals

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1 Introduction

Sport stands out as not only one of the most financially successful industries but also as one of the most widely embraced social activities globally. Also in the tourism sector, sports tourism is the fastest-expanding segment. Sports events attract tourists, and they can encourage the development of tourism and traveling and have a positive effect on the destination's economy and social benefits, but on the other hand, they cause challenges and negative effects, for example in terms of sustainability. Sustainability is seen as one of today's most important challenges from an economic, social, political, and environmental point of view. The sports sector is related to all of these and is therefore a suitable sector for promoting sustainability. There has been a growing awareness of the need for sustainable sports events. Sports event facilities are one key area for the action of sustainability, and they can play a major role in reinforcing sustainability in sports events. By making sports event facilities more sustainable, event organizers, facility owners, and operators can reduce the environmental impact of their events and demonstrate their commitment to sustainability. (Deborder & Hautbois, 2023; World Tourism Organization, 2021)

This thesis does not focus on the widely studied sports or sports events themselves, nor the sustainability of sports tourism, but on strengthening the overall sustainability of sports events through the sustainability of sports event facilities. In particular, the thesis concerns the sustainability of sports event facilities in the City of Tampere, which is a vibrant center of sports and cultural activities in Finland. In this research, the sustainability of sports event facilities is examined through the United Nations' Sustainable Development Goals (SDGs). The idea of the thesis is to investigate the state of the sustainability and the implementation of Agenda 2030 of the United Nations in sports event facilities. SDGs is a framework, that is internationally agreed upon and implemented worldwide, but also regionally and locally in societies and communities. The thesis aims to find out how the activities related to sports events and the facilities could be developed to increase the possibility of organizing sports events more sustainably and in addition, attempt to influence that the Agenda2030 goals are realized better locally. (Halonen et al., 2022; Wijdoogen, 2020, 11-14)

Chapter 2 describes the strategic approach of the City of Tampere to sustainability, examining its comprehensive plans, programs, and current sustainability status. In this chapter, it is also dis-

cussed the city's active involvement in hosting and organizing sports events, highlighting the opportunities and challenges in integrating sustainability. A key part of this research is the analysis of the sports event facilities in the City of Tampere, with a focus on the Tampere Exhibition and Sports Center and the Tampere Stadium, which are introduced in Chapter 2. The theoretical framework of sustainability and its connection to sports and sports events, which is gathered from documents and literature is introduced in Chapter 3. Chapter 4 includes the implementation of the study and a description of the methodological choices. In chapter 5 the result of the study is introduced, and chapter 6 discusses the main results in view of the theoretical framework and the reliability and ethicality of the study. The final section, chapter 7, summarizes the main results and offers development proposals and suggestions for future research.

Interest in this subject emerged as it applies nationally and globally to all activities and actions in all sectors. For example, in its review of *The Megatrends 2023*, Sitra offers from Finland's perspective current phenomena that have long-term effects and are slowly developing. These phenomena include among other things, the cracking of economic foundations, the growing challenges of well-being, and the weakening of nature's carrying capacity. (The Finnish Innovation Fund Sitra, n.d.) These phenomena are directly related to the dimensions of sustainability and can be examined and improved through sustainability research. Also locally, the theme of sustainability affects all activities and the development of activities. As Halonen et al. (2022) point out, more research on the possibilities of sustainable development is needed to support the implementation and improvement of sustainability. Sustainability is already widely promoted in the operations and event production of the City of Tampere, but the impact of sports event facilities on sustainability practices during sports events has not been thoroughly investigated.

This thesis is conducted for my employer, the City of Tampere, as a part of the wider research on sustainable development and to support the implementation of Agenda 2030 goals of the city. End users of the thesis are the Event Services and the Sports and Youth Services of the City of Tampere, which both are essential in the process of organizing sports events. In addition to these two, another end user is the department of Strategy and Development of the city, which plans and monitors the implementation of Agenda 2030 goals in the operations of the city.

2 The City of Tampere as a Partner and Platform in Organizing Sports Events

The City of Tampere is a remarkable international competition and event enabler, and sports events in particular play a significant role in the city's selection of events. The city has received recent recognition by rising to number 42 on the 2023 ranking of sports cities, ahead of several big cities. (BCW Global Sports Practice, 2023) International success and willingness to be seen as an excellent organizer of sports events in the future require the facilities and processes to be in an enabling and modern condition, and there must be enough facilities, which are suitable for organizing modern sports events.

The role of the municipality as a promoter of sports and as a builder and maintainer of sports facilities cannot be questioned, as the related responsibilities are defined in the law. The activities of municipalities are regulated by laws, and the Act on the Promotion of Sports and Physical Activity defines the responsibility of the municipality. The law aims to promote, among other things, the well-being and health of the population, the opportunities for different population groups to exercise and practice sports, the honesty, and ethical principles of sports, and to reduce inequality in sports. According to the Act on the Promotion of Sports and Physical Activity, 5§, the municipality must create the conditions for sports for its residents:

- 1) by organizing sports services and sports that promote health and well-being, considering different target groups;
- 2) supporting civic activities, including social activities; and
- 3) by building and maintaining sports facilities (Finlex, 2022)

The City of Tampere acts as an event platform by offering facilities and venues for events. The city also acts as a partner in organizing events and assists in major event biddings, and the organization of events by giving instructions and guidance, but also with financial grants. In addition to being a partner in organizing events, the city itself organizes events but has also a role for example as a developer of event marketing. (The City of Tampere, 2022b, July 20; Tampereen kaupunki, 2023j; Tampereen kaupunki, 2023f) The following chapters describe the programs and plans of the city of Tampere, the current situation of sustainable development, as well as the city as a partner for sports events, and the sports event facilities of the city.

2.1 Sustainable Development in the Operation of the City of Tampere

Tampere is the third largest city in Finland (Kuntaliitto, 2023), and as a large municipality it offers a wide range of services in different branches, and there is a multiplicity of guidelines and programs for planning, preparation, and implementation of services, both city-level and at the service group level. The perspective of sustainability is considered in the strategy, plans, and programs of the City of Tampere and to be able to examine the implementation of sustainability in the city's various functions, it is important to first examine the strategies and programs guiding the operation and its development. Figure 1 shows a summary of the key programs, plans, and commitments used in this study and the relationships between them. Different programs are part of the city's strategic management system, and they concretize the strategy. The programs and plans also support, complement, and follow each other.

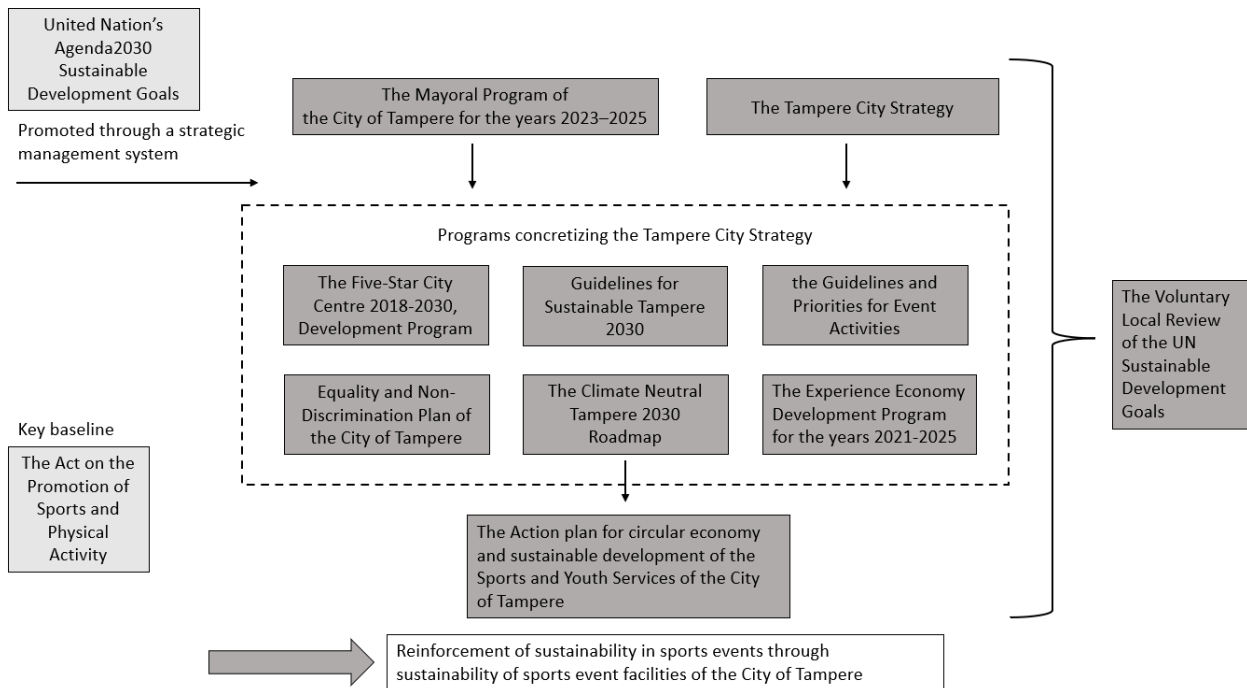


Figure 1. A summary of the key programs, plans, and commitments used in the study and the relationships between them

2.1.1 Strategy and Supporting Plans and Programs

The operation of the city of Tampere is guided by Kalervo Kummola's Mayoral Program for the years 2023–2025, People's Tampere - City of Opportunities. The mayoral program aims for the City of Tampere to be an equal and sustainably growing city that takes on the role of Finland's second growth center and a strong leader in future solutions. The goal of the program is, among other things, to develop the experience economy and strengthen the city's appeal as an event city. The Mayoral Program is concretized in the Tampere City Strategy and in other plans and programs that complement the strategy. (Tampereen kaupunki, n.d.a)

The City of Tampere is managed and developed with the Tampere City Strategy, which aims for the year 2030. Focus areas of the strategy are equal individuals, active communities, climate-neutral action, and a pioneer of the future. The goal of the strategy is to strengthen well-being in a non-discriminatory and equitable way through leisure, education, and employment opportunities. Cooperation with companies and communities aims for communal growth, creativity, and well-being. In the strategy, it is mentioned that Tampere is internationally known for its impressive sustainable actions. One main goal is to be a climate-neutral city by 2030. The goal is also to encourage residents, communities, and companies to make sustainable choices and experiments that promote responsibility in different areas of life. The strategy aims at bold future solutions to increase the city's attractiveness and operational opportunities both nationally and internationally. (Tampereen kaupunki, 2023e; The City of Tampere, 2023b)

The goal of the City of Tampere is to act economically, ecologically, socially, and culturally sustainable way, and this perspective is also one of the goals of the strategy. Sustainable development is considered in the decision-making and operations of the City of Tampere. The Tampere City Strategy brings out that the city of Tampere is committed to promoting the United Nations' Sustainable Development Goals (SDGs) and evaluates, reports, and openly communicates the realization of the goals. It is mentioned that the focus areas of the strategy promote ten SDGs in particular: "Good Health and Well-being, Quality Education, Decent Work, and Economic Growth, Industry, Innovation, and Infrastructure, Reduced Inequalities, Sustainable Cities and Communities, Responsible Consumption and Production, Climate Action, Life on Land as well as Partnership for the Goals". (Tampereen kaupunki, 2023e, 23; The City of Tampere, 2023b, 22)

In addition to the strategy, there are various plans and programs, which specify and concretize the strategy. In this context, plans containing goals and guidelines for sports events and event facilities, especially from a sustainability perspective are relevant. (Tampereen kaupunki, 2023i) Guidelines for Sustainable Tampere 2030 were drawn up in 2018 and are one of the key documents for sustainable operations. Tampere's environmental goal is to be a carbon-neutral city in 2030, and the document contains six sustainable development policies (“sustainable mobility and urban structure, sustainable housing and construction, sustainable production and consumption of energy, sustainable consumption and materials economy, sustainable urban nature, good state of the environment”) to achieve the goal. Each policy includes methods and tools for implementation. (The City of Tampere, 2018a)

The Climate Neutral Tampere 2030 Roadmap gathers the city's climate actions to achieve carbon neutrality by 2030. The roadmap includes seven themes: coordination and monitoring of the city's climate efforts, urban planning, mobility, construction, energy, consumption, and nature. The roadmap consists of a total of 305 actions, some of which are large investments, and some are smaller actions that have a big impact in the long term. The plan has concrete goals for, among other things, carbon-neutral real estate projects, energy efficiency, communication, and reducing, reusing, and recycling materials. The roadmap implements the SDGs of the United Nations, and the measures apply specially to goals 7, 9, 11, 12, 13, 15, and 17, but the pursuit of the goals is aimed to be conducted sustainably and not in a way that undermines other SDGs. (The City of Tampere, 2023a; Tampere City Board, 2020)

Equality and Non-Discrimination Plan of the City of Tampere guides the methodical equality and non-discrimination work in Tampere and supports the implementation of social sustainability. The plan has confluence with several different programs and plans and it deepens these, for example, the city's welfare plans, the safety plan, and the guidelines for event activities. The plan has more than 20 development targets, for which 52 measures have been defined. The measures include themes such as promoting the skills of personnel and event organizers, communication, pre-assessment of the effects of decisions that take gender and equality aspects into account, accessibility mapping, and the safety and accessibility of sports facilities and sports services. (Tampereen kaupunki, 2023d)

The experience economy development program for the years 2021-2025 is one of the programs implementing the Tampere City Strategy. Experiences and events are an important part of the city's business and attraction, and the main goal of the program is to make Tampere internationally known for its experience economy. (Tampereen kaupunki, n.d.c; Elämystalouden kehitysohjelma, 2023)

The development program is divided into three areas, which contain concrete measures and goals and they are designed to meet the needs of stakeholders and operators. The three areas are:

- 1) From competence development to competence concentration
- 2) New business from the developing environment
- 3) Sustainability and renewed attraction from events and experiences (Tampereen kaupunki, n.d.c)

The first area includes the goal of strengthening the responsible experience economy and is relevant to this context. The objective of the program is for example to develop facilities for a responsible experience economy and increase operators' responsibility and accessibility skills. The third area includes the goal of a renewing event city and includes measures of development of venue management and targets of for example the suitability of the facilities and venues for modern events, streamlining the booking process, and the support services of event operators. The measures and goals related to the event facilities are also essential for this context. (Elämystalouden kehitysohjelma, 2023)

Another program, which has specific goals in this context is the Five-Star City Centre 2018-2030, Development Program, which is an overall view of the city center's development goals and development activities. The city aims to increase the number of residents in the center of Tampere and the number of jobs, which creates development needs in the downtown area. The goal of the development program is to increase the attractiveness and competitiveness of the city and to create conditions and platforms for different activities. Essential goals for organizing sports events include goals related to the Tampere Stadium, such as promoting sustainable mobility in the area and developing the Ratina area in cooperation with different service groups to identify the potential and expand the operational possibilities of the area. One goal of the program is to modernize

the Stadium to increase the number of spectators and the usability of the Stadium. (City of Tampere, 2018b; Tampereen kaupunki, 2018)

The city has prepared the Guidelines and Priorities for Event Activities for the development of event activities in Tampere and long-term goals, which support the event planning actions and create a common basis for event activity policies of different service departments of the City. The document follows and considers for example above mentioned programs; the Tampere City Strategy, the Mayoral Program, and the Climate Neutral Roadmap, and supports the Five-Star City Centre Development Program and the Development Program of Experience Economy. One of the four focus points of the Event Guidelines is to create operating models that promote the organization of sustainable events. The focus point includes concrete goals that for example promote the safety, sustainability, and equality of events, and goals that aim to make event facilities more accessible and responsible. (Tampereen kaupunki, 2023f)

In addition to city-level plans, service groups have their plans and instructions for certain functions and services. In the year 2021 as a part of the KIERTO project, the city has created an Action plan for circular economy and sustainable development of the Sports and Youth Services of the City of Tampere. The action plan includes, for the selected facilities, a facility description, an analysis of the current state of ecological, economic, social, and cultural sustainability, and an action plan for the selected facilities. Energy consumption, material flows, water consumption, waste management, facilities (occupancy rate, usability level, and adaptability of the facilities), and logistics are considered in the analysis of ecological and economic sustainability. Environmental communication and attitude change are analyzed as a part of social and cultural sustainability. (Tampereen kaupunki, 2021)

2.1.2 The Current Situation of Sustainability

The City of Tampere has done significant work to promote sustainability and has been part of international cooperation already from year 2009 when the city joined first time the European Union's climate initiative. Tampere has received recognition for its climate actions and is among the top 100 European cities striving for climate neutrality. (Tampere City Board, 2022)

The United Nations' Sustainable Development Goals (SDGs), which will be discussed later, are the task of states and governments, but municipalities have a remarkable role locally and as global influencers. The City of Tampere is committed to implementing the SDGs, and evaluates, reports, and communicates its implementation transparently. In the year 2022, the city prepared the Voluntary Local Review of the UN Sustainable Development Goals, which is a local assessment of the achievement of the goals. By preparing and delivering local reviews to the UN, Tampere strengthened its position in the international network of responsible cities. (Tampereen kaupunki, 2022d)

The first local assessment prepared by the city is limited to the City of Tampere Group's activities and describes the actions and solutions taken to realize the SDGs. The main goal is to describe the objectives of the action program to different operators and to contribute to the implementation of the SDGs locally. The report highlights the implemented measures for each of the 17 SDGs, as well as case examples of the city's development entities, such as the Sustainable Urban Mobility Plan, which aims to influence for example transportation mode choices and equality. (The City of Tampere, 2022a)

In addition to all plans and strategies that take sustainability into account, the City of Tampere has invested in improving the sustainability of event activities and guidelines have been drawn up to facilitate the organization of sustainable events. Comprehensive event planning guides and instructions are available for operators on the website of the City of Tampere guiding on organizing the event from the first idea to post-event responsibilities. When organizing an event, it is necessary to apply for the necessary permits and prepare official licenses. In addition to official permits, other permits are applied for if necessary, such as a land use permit or street permit from the City of Tampere. The number of permits depends on the type and size of the event in question and event permits also include criteria and recommendations regarding the events' environmental responsibility measures. (The City of Tampere, 2022b; The City of Tampere, 2023c)

Think Sustainably service for event operators and local companies is a guide created in cooperation with Visit Tampere. The guide gives information on sustainable development measures and provides sustainability criteria to support and encourage operators to make more sustainable choices. The service includes criteria for events and venues, but also other service categories like attractions, accommodation, and restaurants. The criteria's components include, among others,

energy, food and service, and social sustainability. The operator becomes part of the service when it meets the minimum number of criteria set for the service category in question. The service is voluntary for operators, but they benefit from it in terms of marketing, in addition to making their operations more sustainable and responsible, as Visit Tampere markets the operators being part of the Think Sustainable service. (Visit Tampere, n.d.a; Visit Tampere, n.d.b)

With all plans and instructions, the city strives for concrete sustainable actions, and numerous implementations have already accumulated, of which it is worth highlighting a few as an example. Measures to reduce the amount of plastic waste during major events in Tampere received positive international attention when, instead of handing out disposable water bottles, 2,500 athletes, staff, and volunteers were given refillable bottles at the 2018 IAAF World U20 Championships at Tampere Stadium. The “Water without waste” solution also served as excellent marketing for Tampere and Finland as a clean and sustainable sports event organizer and travel destination. Exemplary sustainable actions were also implemented during the event, for example in the field of transportation, accommodation, food, energy, and material use. (World Athletics, 2018; Yle, 2018)

Another concrete example of responsible operation is the joint ticket for Tampere regional transport (Nysse) and events. The joint ticket means the opportunity to travel with an event ticket to an event on Nysse buses, trams, and VR trains before and after the event. The combined ticket started as an experiment with the ice hockey matches of Tappara and Ilves (local hockey teams playing in the league) in 2021, and the practice has continued for the following years. In the year 2022, the joint ticket was used a total of almost 300,000 times. In the upcoming hockey season, the event ticket is available for league and CHL matches of Ilves and Tappara, but also for a few other events in Tampere and surrounding cities, where the Tampere regional transport Nysse is operating. The policy aims to increase the use of public transport instead of private cars and reduce congestion in the downtown area but also to make it easier and faster to get to events. (Nysse, 2021; Nysse n.d.; Tampereen kaupunki, 2023b)

In addition to sustainable solutions related to traveling to events, sustainable improvements have also been made in sports event facilities and related functions. In various sports facilities, water use has been enhanced with water-saving devices and energy efficiency has been increased, for example, by changing the lighting to LED lights. In addition, the possibilities for recycling materials

have been improved, the reuse of goods has been enhanced, and the competence of the personnel has been improved by advertising and by giving training on sustainability themes. (Tampereen kaupunki, 2023c).

The city has firmly taken sustainability into account in its operations and plans and implemented measures and guides to help and encourage event organizers to more sustainable solutions. Nevertheless, the city still has a lot to do to strengthen responsible event operations, implement and achieve the SDGs, and achieve its goal of being a carbon-neutral city in 2030.

2.2 Sports Events in Co-operation with the City of Tampere

Events have significant economic effects directly through the business of producing events, but also for example through event tourism (for example accommodation, restaurant, and transport services) and other consumption by event visitors in the event environment. Events also have a significant impact in the Tampere region, and the combined turnover of the events in Tampere is almost 600 million euros, part of which consists of sports events, but also includes, for example, cultural events. (Business Finland, 2021; Tapahtumateollisuus ry, n.d.b)

COVID-19 has strongly affected the events industry in recent years. For example, Tampere's regional economy has lost hundreds of millions of euros because of events canceled due to the COVID-19 pandemic. In addition to financial losses, many jobs have disappeared from the sector and temporary workers have become unemployed. In the spring of 2022, the business restrictions were removed and the recovery of the industry from the effects of COVID-19 could begin, and year 2023 will be the first year of full event capacity operation after the pandemic. (Talouselämä, 2020; Tapahtumateollisuus ry, n.d.a)

The City of Tampere has published an impact assessment of events for the year 2022, which shows that the number of visitors to events has increased by 68% (approximately 1.8 million visitors) compared to the previous year. Sports league matches and home matches, museums, and movies are the events where the number of visitors increased quantitatively the most. According to the impact assessment, the event's experience of equality and environmental friendliness has also improved. (Tampereen kaupunki, 2023b)

A wide array of both domestic and international sports events take place in Tampere every year. Events include smaller lower league matches as well as major events. The last two years' international sports events in Tampere are shown in Figure 2, and a more comprehensive list of previous years' events can be found on the city's website.

2023	2022
<ul style="list-style-type: none"> • World U23 Wrestling Championships 2023 (transferred elsewhere) • ITF Taekwon-do World Championships 2023 • European Masters Games 2023 • Dynamic Billiard European Championships & Euro Tour 2023 • IIHF Ice Hockey World Championships 2023 	<ul style="list-style-type: none"> • World Masters Athletics Championships 2022 • FIBA World Cup Qualifiers Finland - Israel • CEV Euro Volley Qualifiers Finland - Austria • UEFA Women's World Cup Qualifiers Finland-Sweden • IIHF Ice Hockey World Championships 2022

Figure 2. International Sports Events in Tampere (adapted from The City of Tampere, 2023d; Suomen Painiliitto ry, 2023)

In addition to international sports events, there is a large number of domestic sports events and activities organized each year in Tampere. As an example, during the year 2019, which was the most recent event year without the impact of COVID-19, there was a total:

- 750 Finnish baseball matches,
- around 800 volleyball matches,
- 816 basketball matches,
- 7000 football matches,
- 2000 floorball matches,
- over 1700 ice hockey matches,
- around 150 other international and national level events, and
- participatory events for example in cross-country skiing, running, rowing, and urban adventure. (Liikuntapalvelut, 2021)

Events in general have both positive and negative impacts on the city and surrounding areas. In addition to the economic effects, the events have other positive effects, such as on the city's image and the area's well-being and community. Events are for example a good way to make Tampere and the Tampere region known internationally, which is one of the missions of the tourism strategy drawn up by Visit Tampere in cooperation with various parties. (Tampereen kaupunki, 2023f, August 21; Visit Tampere, n.d.c)

Events and large numbers of visitors naturally also cause negative effects, such as substance use, and violence, and environmental effects, such as noise nuisance and littering. Improving the sustainability of events is one of the important current themes, which cannot be ignored if the target is to succeed in the event industry. For example, according to the results of the Tapahtumateollisuus ry's research, both event subscribers and the public expect events to take sustainable development and corporate responsibility into account in the future. (Tapahtumateollisuus ry, n.d.a)

It is self-evident that negative effects must be prevented, and the situation improved so that the event industry can continue to flourish in the future. The plans and policies of the City of Tampere and its partners aim to reduce the negative effects of the targeted growth in visitors and events. This thesis also aims to help to achieve goals from the perspective of event sustainability.

2.3 Sport Event Facilities of the City of Tampere

There is a wide selection of both privately owned and city-owned sports facilities for practicing different sports in Tampere and organizing events. The City of Tampere manages sports facilities for both indoor and outdoor activities. Maintenance is divided between different service groups of the city, and the Sports Services manages around 640 different training facilities to which customer service allocates over 110,000 pieces training shifts per year, and there are over four million visitors per year in the facilities. (Liikuntapalvelut, 2021; Henttonen, 2023)

Sports facilities and areas managed by the Sports Services include for example ice rinks, swimming pools, sports halls and indoor arenas, stadiums, pitches and playing fields, outdoor gyms, and athletics fields. Sports facilities are situated in different parts of the city and enable training, competition, and the organization of sports and other events. (Tampereen kaupunki, n.d.b) Two traditional and most central sports event facilities of the City of Tampere have been chosen as the targets of this study; Tampere Exhibition and Sports Centre and Tampere Stadium.

The Sports Services of the City of Tampere manages most of the sports facilities of the city, and therefore the Sports Services is one of the key entities in enabling sustainability in organizing sports events in the facilities of the City of Tampere. Other main entities are the Event Services of the City of Tampere, and event organizers, which most commonly are sports clubs. Also, the Real Estate and Housing Policy of the City of Tampere, which manages the city's property management and management of property assets, and Tampereen Tilapalvelut Oy, which manages the maintenance of the city's facilities, plays a significant role in terms of the functionality, maintenance, and sustainability of the facilities. Furthermore, in Tampere Exhibition and Sports Centre, there are in addition, other private operators, and the main role of the management of the operations in the facility relies on Tampereen Messu- ja Urheilukeskus Oy. (Tampereen kaupunki, 2022a; Tampereen kaupunki, n.d.b)

The sports facilities and sports halls of the City of Tampere are of different ages and the state of sustainability varies between the facilities. The aim is to improve the sustainability of the facilities and the activities that take place in them by the city's strategy and plans. New buildings and other sports facilities are built to be as sustainable as possible, and sustainable improvements and repairs to older facilities are made gradually and in connection with overhauls.

2.3.1 Tampere Exhibition and Sports Centre

Tampere Exhibition and Sports Centre (hereinafter 'TESC') is one of Finland's largest exhibition and sports centers. TESC is a versatile complex of five halls, where meetings, fairs, concerts, and other large events are organized. There are 1,500 seats in the stand of the largest hall (A-hall), and in meeting usage, the facilities in A-hall can be sized for 10,000 people. The oldest hall was built in 1927 and the newest in 2013. The ownership of TESC is divided between the City of Tampere and

Tampereen Messut Oy. Tampereen Messu- ja Urheilukeskus Oy manages the operation of the center, but the sports facilities are managed by the Sports Services of the City of Tampere. The TESC is located about seven kilometers from the center of Tampere, and it is easily accessible by public transport, own car, and by bicycle. (Tampereen kaupunki, 2022a; Tampereen kaupunki, 2021; Tampereen Messut -konserni, n.d.a; Tampereen Messut -konserni, n.d.b; Tampereen Messut -konserni, n.d.c)

TESC is a training and competition center for athletics, football, futsal, and floorball. TESC has, among other things, a 300-meter, six-lane running track, and a full-sized soccer field. Also, there is a hammer throwing cage, grass fields for football, and two sand fields for playing baseball and cricket outside the center. The operating year of the center is divided into fair and sports seasons, but fairs and sports events are organized on the premises all year round. The length of the sports season is five months, from the end of November until the end of April. Almost a hundred fairs and sports events are organized in the center every year. (Tampereen kaupunki, 2022a; Tampereen kaupunki, 2021; Tampereen Messut -konserni, n.d.b)

The level of sustainability of TESC is analyzed in the Sports and Youth Services' Action Plan for circular economy and sustainable development. In the plan, it is mentioned that the facility is easily accessible by public transport as well as private cars and bicycles. Waste management includes recycling for cardboard, plastic, metal, and mixed waste, but some of the waste must be transported to separate waste collection stations. Regarding water consumption and energy consumption, it has been mentioned that there is a need for improvement, but measures have been taken for both. The need for increasing environmental communication in the facilities and improving the skills of the personnel has also been identified. In the plan, TESC's facilities are mentioned to be very versatile and have a high utilization rate, but the need for development has been identified in different programs. For example, in the Mayoral Program, it is mentioned that "The Tampere Exhibition and Sports Center must be developed into an even more versatile sports venue." (Tampereen kaupunki, 2021; Tampereen kaupunki, n.d.a)

2.3.2 Tampere Stadium

Tampere Stadium (hereinafter 'the Stadium'), located in the center of Tampere, was completed in 1966, and the renovation of the Stadium was completed in 2004. Sports and entertainment events

can be organized at the Stadium all year round and it is suitable for small indoor sports events and large outdoor sports events and concerts. The Stadium's grandstand capacity is about 16,000 seats and, for example, at concerts, about 30,000 people, when the field area is in use. The Stadium includes a football field that meets international football standards, high-level athletics venues, and indoor sports facilities. The indoor sports facilities include conditions for example indoor exercise, gymnastics, and ballet. Around 100 summer season athletics competitions and football matches have been organized at the Stadium every year. (Tampereen kaupunki, 2022b; Tampereen kaupunki, 2022c; Tampereen kaupunki, 2023h)

Tampere Stadium is not included in the Sports and Youth Services' Action plan for circular economy and sustainable development, and the current level of sustainability has not yet been analyzed, and an action plan has not been drawn up for the Stadium. However, sustainability is promoted in practical planning and operations in accordance with the strategy of the city of Tampere. The thesis aims to identify critical development areas to promote the sustainability of the Tampere Stadium.

Due to its central location, the Stadium is easily accessible by foot, bicycle, and public transport. The facility is not fully accessible, but for example, events are possible to arrange accessible. During the year 2023, a wider accessibility study will be carried out by Tampereen Tilapalvelut Oy on the premises to find out the accessibility status and possible development areas. The research conducted in this thesis also aims to identify possible development targets of social sustainability and accessibility. (Liikuntapalvelut, 2023)

3 Sustainable Development

Sustainability is a topic that globally affects all activities and actions in all sectors. Sustainability and challenges of sustainable development appear in the news and media every day. Increasing pollution, loss of nature, and insufficient equality are examples of challenges that should be solved in all sectors. To solve sustainability challenges at the operational level, it is important to define sustainable development and theories around it.

The literature is full of different theories and definitions for sustainable development, so it is impossible to come up with one absolute definition. The idea of sustainable development goes back a long way in history, but in the early stages, it was strongly focused on economic growth and enabling it. It was only after the 1950s that environmental issues emerged more strongly alongside economic growth, and sustainable development as a concept became established at the end of the 20th century. (Halonen et al., 2022, 16-19%)

Sustainability is defined as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” by the United Nations Brundtland Commission, in 1987. (United Nations, n.d.b) Sustainable development is continuous and organized social change, which takes place at all levels; locally, regionally, and globally. The goal is to reconcile the preservation of social and ecological balance and economic growth. (EUR-Lex Access to European Union Law, n.d.; Ympäristöministeriö, 2023)

To study the level of sustainability of sports event facilities and the possibilities for organizing sports events sustainably, it is necessary to first define the principles of sustainability, the framework to apply in the study, sustainability in sports event facilities, and how sustainability has been considered in the plans and implementation of the case study target, which is the City of Tampere.

3.1 The Principles of Sustainability

The Brundtland Commission understood sustainable development as vague and relatively open. The way of structuring the economic, ecological, and social dimensions as equals was established based on this understanding, as well as a basic model of sustainable development, which is shown in Figure 3. In this traditional model, sustainability is in the central area, and it is realized only if sustainability is achieved in all three dimensions. (Halonen et al, 2022, 16-19%)

When sustainability is defined according to this traditional model, it is difficult to achieve sustainable development in the long run. In practice, when using this model, the focus has often been on only one sustainable development goal and the whole has been ignored. (Halonen et al., 2022, 16-19%) The traditional model was developed later as a three-pillar model (Figure 4.), which still shows where the different dimensions are connected, but it is easier to interpret whether and for how long one dimension can be ignored without jeopardizing the others. (Dixon, 2022, 13%)

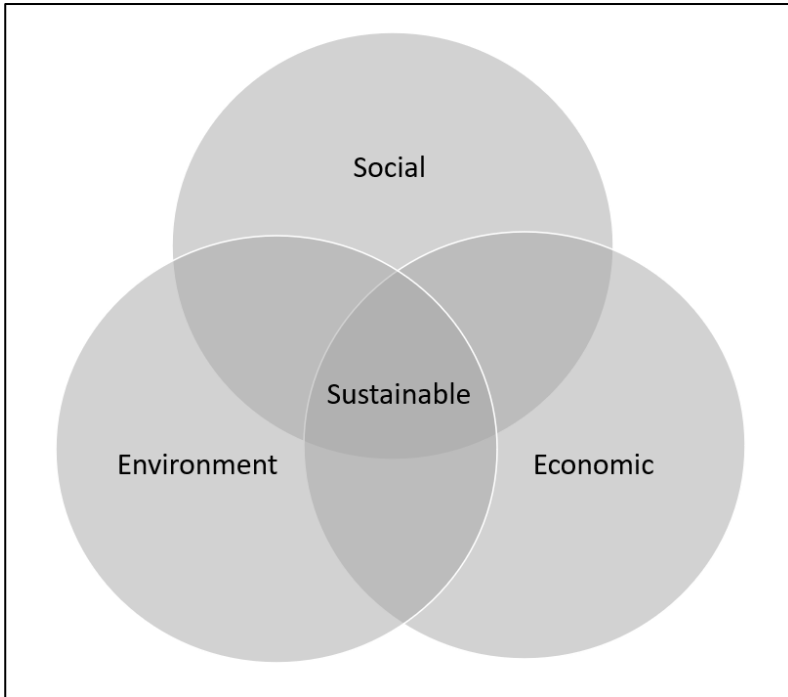


Figure 3. Basic model of sustainability (adapted from PakTech, 2019)

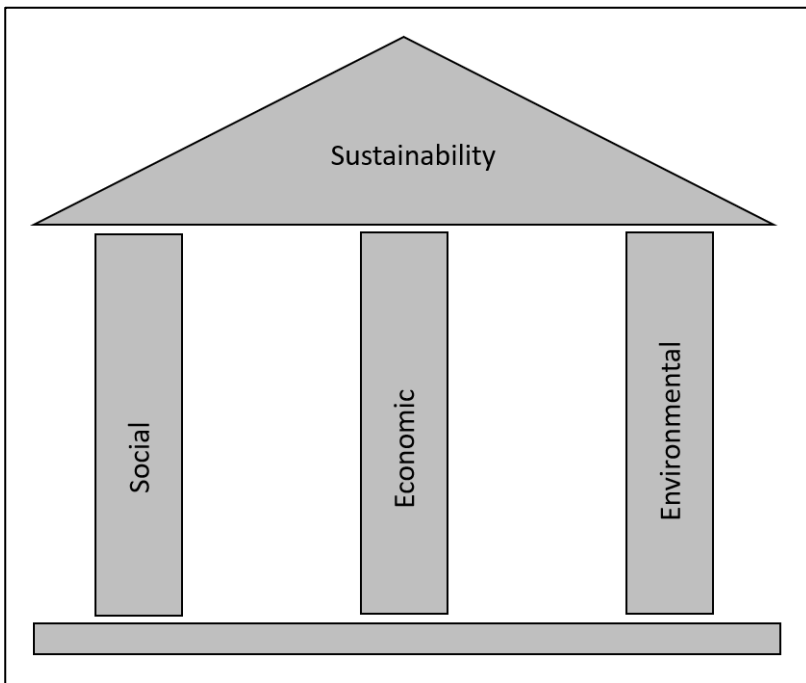


Figure 4. The three pillars of sustainability (adapted from NorthMist, 2022)

The three dimensions are interconnected and affect each other's realization. **Environmental sustainability** is the most obvious and the most considered of the dimensions of sustainable development. At the center of environmental sustainability is the preservation of natural resources and biological diversity. The basis is also to adapt material and economic activity to the sustainability of nature in the long term. When implementing environmental sustainability, the risks, disadvantages, and costs must first be assessed, and in addition to this, the combating and prevention of harm must be considered. However, it is not sustainable to focus only on the environment, but it requires both social development and economic growth. Social sustainability is important for all parties; for organizations, including companies, and society and individuals. (Browne, 2022; OpenLearnCreate, n.d.; Ympäristöministeriö, 2023)

Social sustainability aims to guarantee the transfer of well-being conditions from one generation to the next, for example by improving the quality of life of all members of society by improving access to healthcare and education and reducing poverty. The basic idea of social sustainability is that opportunities should be distributed righteously, and everyone is equal. (Fischhoff et al., 2021; OpenLearnCreate, n.d.; Ympäristöministeriö, 2023)

Economic sustainability means the ability of the economy to grow in a balanced way without long-term debt and loss of resources. A sustainable economy is the basis of social sustainability, and it is important in societies when many sustainable initiatives need funding and a strong economic base. (Browne, 2022; Ympäristöministeriö, 2023) According to the Prime Minister's Office of Finland, ways to achieve economic sustainability are, for example, increasing the circular economy and material efficiency, as well as the sustainable use of natural resources. (Valtioneuvoston kanslia, n.d.a)

Economist Kate Raworth has created a visual framework for sustainable development “Doughnut Economics” in 2017 (Figure 5.). The model describes the comprehensive sustainability whole and the connection of different dimensions in a more multifaceted way than the previously mentioned traditional models. The outer ring of the doughnut describes the ecological limit, and the things placed on the ring are essential for ecological sustainability. The central part of the donut is where the essentials of social sustainability are located, and if a person drifts behind the social foundation in the middle part, then the person's well-being suffers and the person is left with, for example, income or food. The uniform circles, which are the darker grey areas in the donut in Figure 5 (ecological ceiling, regenerative and distributive economy, and social foundation) describe a situation where people's well-being is realized within the limits of the earth's carrying capacity. The economy has also been placed in this area, and it creates the basis for social well-being, but on the other hand, it burdens the environment. Raworth mentions (O'Brien, 2023) that the central ideas of the donut should not depend on economic growth, but people should be able to succeed, and the economy should distribute wealth fairly and renew the resources it uses. (O'Brien, 2023; Valtioneuvoston kanslia, n.d.a)

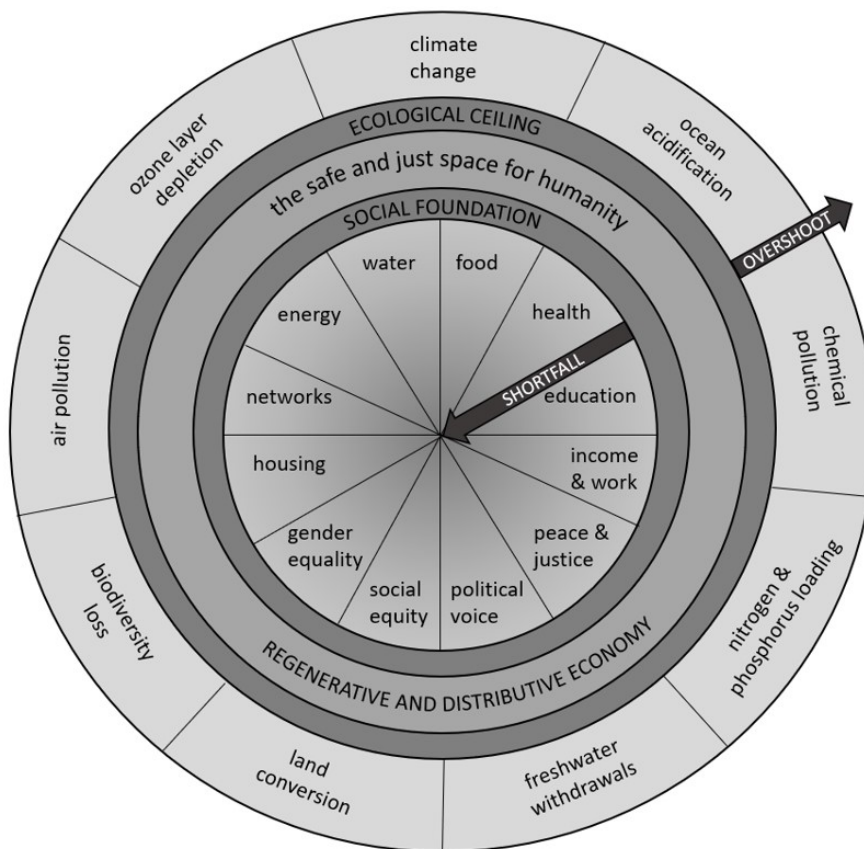


Figure 5. Kate Raworth, Doughnut Economics (adapted from University of Cambridge, n.d.)

In this study, the goals, and implementations of each dimension of sustainability will be researched to promote better implementation of sustainable development in sports events. Sustainability in sports events and sports event facilities is examined in the next chapter. A globally known framework, which considers all dimensions and has clear goals for sustainable development is the United Nations Agenda 2030 for Sustainable Development. This framework and its connection to sports will be examined in chapter 3.3.

3.2 Sustainability in Sports Events and Sports Event Facilities

Tangen (2021) states in his article “Is Sport Sustainable? - It Depends”, that the sustainability of sports depends on what is already known about sports and sustainability, as well as how they and the relationships between the environment, society, and sports are defined. Tangen also mentions that if society changes from striving for efficiency to a more sustainable way of operating and managing, also sports could be more sustainable.

There is little evidence between the organization of sports events and the increase in sports, and therefore the social positive impact of the events cannot be directly emphasized. In addition, sports events are often destructive to the environment when, among other things, they involve a lot of transportation and building facilities from scratch. Consuming resources and producing waste are examples of unsustainable effects when creating events. If all event organizers plan events from a sustainability perspective, in addition to striving for efficiency, significant cumulative results in the field of sustainability will be achieved. When the sustainability of sports is seen as dependent on the way it is defined, it is essential to identify the areas and ways in which sustainability can be seen and realized in sports, and in this context, in sports events and sports event facilities. (Desbordes & Hautbois, 2023; Jones, 2010, v; Tangen, 2021)

In addition to preventing harmful effects on the environment and minimizing greenhouse gas emissions, there are other reasons to improve the sustainability of events and event facilities, like improving the experience of participants for example by improving transportation and accessibility. Social pressure is one reason for improving sustainability, but other motives presented by researchers include new marketing opportunities and image improvement, as well as gaining a competitive advantage and strengthening partnerships. Also, cost savings can be gained by reduced energy and water consumption and enhanced waste treatment. (Corthouts et al., 2021; Ministry for the Environment, 2010)

In terms of sustainability, the most important impact areas in events are accessibility (including for example transport, signage, and toilet facilities), power supply, management of water and sanitation, waste management, material procurement, and personnel skills. All these also apply when examining the sustainability of sports event facilities. (Getz & Page, 2020, 382; Jones, 2010, 3-5;

Wagen & Whiye, 2010, 44-45) The effects of the construction, use, and maintenance of sports facilities on nature include among other things waste from spectators and construction of facilities, consumption of resources (both natural and non-renewal), consumption of fuel and electricity, and resulting Greenhouse gas emissions, and pollution generating from light and noise. (Mallen & Chard, 2012)

King et al. (2020) mentions large sports facilities (for example ice rinks, swimming pools, and other indoor facilities) traditionally lag behind other facilities in terms of sustainability and energy efficiency. In addition, sports facilities are often more narrowly defined for different uses than many other public buildings. Evolving sustainable and cost-effective planning options and approaches related to sports facilities can promote the improvement of sports operations and better protect, for example, the natural environment. (Geneva Environment Network, 2023; King et al., 2020) Susanne et al. (2016) mentions that when the use of buildings is important and has an impact on many challenges and areas of sustainable development, it is also important how the facilities are managed and operated. Also, in the strategy seminar of the City of Tampere, it was mentioned that it is important that the buildings that are expensive to maintain are kept in as efficient and diverse use as possible to gain and maintain an economically strong position. (Tampereen kaupunki, 2023g)

Mallen & Chard (2012) present ways to promote environmental sustainability in sports facilities by including consistent thinking in all decision-making, implementing consistent evaluation and measurement processes, and involving different stakeholders in planning and decision-making. Adaptive management influences promoting sustainability, but also sports facility-specific strategies should be developed to achieve sustainability promotion. When preparing the strategy, the means of achieving the goals and the persons responsible for the implementation of the strategy should be precisely defined. In addition, sustainability communication should be part of the daily operations of sports facilities, along with sustainability communication in event production and new construction. To minimize the ecological consequences of sports facilities and events, there is a growing need for more sustainable planning. (Geneva Environment Network, 2023; Mallen & Chard, 2012)

From the point of view of the facilities, the sustainability of events can be strengthened with, for example, structural solutions (for example, by building multi-purpose facilities from sustainable materials) and with efficient energy and water management. Reducing energy consumption, using renewable energy such as solar and geothermal energy, reducing water consumption, and adding water-saving devices, and drinking water standpipes are ways to improve sustainability. (Jones, 2010, 20, 182; Dale & Hassanien, 2013, 207; Valtion liikuntaneuvosto, 2023)

Construction in general, and therefore also the construction of sports facilities, is governed by law, and in 2025 the new Land Use and Building Act will enter into force in Finland, which will strengthen the measures and tools to combat climate change. The law takes into account, among other things, the life cycle thinking of buildings, as well as essential issues in terms of sustainability, such as the adaptability and longevity of buildings, and strengthening the circular economy of construction. (Valtioneuvosto, 2023)

Large amounts of waste can be generated from the running of sports facilities and the implementation of events. One single cause of waste in sports is single-use plastics because the use of plastic is widely relied upon in the sports industry. Events can be carried out more responsibly when it is possible to have reasonable waste management and recycling possibilities in the facilities. Visitors can be engaged in recycling for example through signage and promotions. During the event, it is important to ensure recycling stations can be used correctly and that those work efficiently. Responsibility is increased, when access to the premises is facilitated by public transport, on foot and by bike. Sustainable transportation can be promoted by encouraging and informing about the possibilities, as well as reducing energy and water consumption and increasing the efficiency of recycling can be improved by increasing awareness through campaigns and environmental communication. Then, an essential part of promoting the sustainability of events and event facilities is the competence and substance knowledge of the personnel; these increase the opportunities to improve existing services and facility conditions. (Geneva Environment Network, 2023; Hassanien, 20, 325; Jones, 2010, 13, 20, 309; Ministry for the Environment, 2010)

Smith (2009) examines the social sustainability of major sporting events and mentions that the positive effects of sporting events are often short-lived and many sporting events have a negative impact on the community. In the article, it is pointed out that rapid event implementations as a

negative feature, while social sustainability would benefit more from gradual growth and well-planned development. In the article, it is mentioned that one of the negative social effects of major events is the reduction of access to sports facilities, for example, swimming pools, during the events. This problem could be prevented, or the effects reduced for example by long-term planning and increasing the multi-purpose use of sports facilities. (Smith, 2009; Valtion liikuntaneuvosto, 2023)

In addition to accessibility in sports events and sports event facilities, social sustainability means, among other things, the opportunity for different population groups to participate in sports, reducing inequality and increasing safety when using sports facilities. These can be promoted, for example, by accessibility surveys and the implementation of the measures that appear in them, as well as bringing into use the principles of a safer space in sports facilities. (Valtion liikuntaneuvosto, 2023)

It is important to consider environmental issues and develop sustainability both in major events and in the smallest sports events. For major events, these issues are already considered in the bidding phase, when bid documents require detailed plans for future implementations. Research indicates that when it comes to the realization of sustainability, larger events outperform their smaller counterparts. (Corthouts et al., 2021; Wagen & White, 2010) For smaller events, the realization of sustainability is highly dependent on the possibilities of the sports facilities.

An essential part of the realization of sustainability and its development in sports events and event facilities involves impact assessment. Sustainability should be evaluated based on their long-term cumulative effects, and evaluate, for example, ecological impact, social responsibility, and economic profitability. Measurement of events should be done both during and after the event, and for both visitors and stakeholders. In the evaluation, it is important to measure the achievement of the goals and the realization of the prepared plans. In addition, feedback on the evaluation results should be given to all stakeholders related to the event and the event facilities, so that it is possible to take improvement measures based on them. (Getz & Page, 2020, 398-399; Ministry for the Environment, 2010)

3.3 The United Nations' Sustainable Development Goals

Internationally agreed upon and implemented a worldwide framework for sustainability is the United Nations Sustainable Development Goals (hereinafter 'SDGs'). The SDGs are a global agenda that can be applied in different fields, also in sports, and by applying the goals the challenges of sustainable development can be mitigated and a more sustainable future can be created for both the planet and people. (Wijdoogen, 2020, 11-14)

The Sustainable Development Goals (SDGs) are part of the 2030 Agenda for Sustainable Development, which was agreed by the United Nations' member states in 2015. (Ulkoministeriö, n.d.). The agenda has been formulated in the long term and is based on previously concluded agreements. The first example of previously concluded agreements is Agenda 21, which was agreed upon in 1992 at the Earth Summit in Rio de Janeiro, and then in 2000 the Millennium Development Goals (MDGs) were prepared and agreed upon at the Millennium Summit in New York. (United Nations, n.d.)

MDGs aimed to improve the situation of extreme poverty and so is the main goal of the Agenda 2030 to end extreme poverty, but also to secure well-being in a sustainable way for the environment. The agenda includes 17 sustainable development goals, 169 sub-targets, and a Political Declaration, but also an implementation plan and a plan for monitoring the implementation. The 17 goals of sustainable development cover all three principles of sustainable development: social responsibility, economic, and environmental. (Ulkoministeriö, n.d.)



Figure 6. The global goals for sustainable development. (Agenda 2030 -logot, n.d.)

The 17 goals of sustainable development are shown as icons in Figure 6. above, and the content of the objectives in brief is: “

1. End poverty in all its forms everywhere.
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
3. Ensure healthy lives and promote well-being for all at all ages.
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
5. Achieve gender equality and empower all women and girls.
6. Ensure availability and sustainable management of water and sanitation for all.
7. Ensure access to affordable, reliable, sustainable, and modern energy for all.
8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.
9. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
10. Reduce inequality within and among countries.
11. Make cities and human settlements inclusive, safe, resilient, and sustainable.
12. Ensure sustainable consumption and production patterns.
13. Take urgent action to combat climate change and its impacts.
14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.
15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development.” (Ministry for Foreign Affairs of Finland, n.d.)

The main responsibility for implementing the goals rests with the states, but to achieve the goals the participation of the public sector in general, the private sector and citizens is needed. The progress of SDGs is reported and presented annually by the UN Secretary-General. The report is compiled in cooperation with the UN system, which includes the UN itself, but also programs, specialized agencies, and funds. The data for the report is collected also at the regional level. In Finland, the progress of SDGs is reported to Parliament every four years and The Government reports on the progress further to the UN. (Ulkoministeriö, n.d.; United Nations, n.d.)

3.3.1 Agenda 2030 and Sport Event Facilities

As mentioned before, SDGs can apply also to sports and sports event facilities. According to the Agenda 2030 for Sustainable Development “the sport is an important enabler of sustainable development”. (Lemke Wilfried, 2016) Through sports, it is possible to for example achieve gender equality, promote the inclusion of cities and communities, and promote the well-being of people of all ages. However, sports also have several challenges in realizing sustainability, when corruption affects sports and racism and violence are often seen in sports events, as well as single-use event facilities built for major events and increased littering and pollution in event environments. (Connolly, 2016; Lemke Wilfried, 2016)

The United Nations’ sustainability goals and the sport itself have serious implications from the goal of sports to always produce better results in every area, including for example equipment, events, performances, and companies in sport. (Tangen, 2021) Sustainability does not occur automatically but needs specific arrangements and energy to integrate sustainability in sports events and facilities. This chapter examines the actions related to the SDGs that can be used to promote the realization of sustainability in sports events and sports event facilities.

Each of the 17 SDGs can be implemented in the field of sports, but some of them can be implemented more strongly than others, especially when these are examined from the perspective of sports facilities and events. In a study of this scope, it is not possible to examine all SDGs, therefore it is examined the goals that, according to preliminary studies and the theoretical framework, have emerged as essential for examining the sustainability of sports event facilities. The role of sports in the realization of goals that are left outside the scope of examination has been identified as mainly indirect, such as disease prevention and improved learning results with the help of

sports. Some of the goals, which is left out of the study, include direct implementation possibilities also from the point of view of the facilities, and some of these will be investigated indirectly through other goals. Also, the need for a separate, broader investigation has been identified for some of the goals, for example, event security, which includes risk management and emergency, safety, and security management, and which corresponds, among other things, to the realization of goal number 16. The goals of sustainable development, which are not included in the research are 1, 2, 4, 8, 9, 14, 15, 16, and 17. (Kellison et al., 2022; Sport and the Sustainable Development Goals, n.d.)

All the SDGs can be promoted through sports by raising awareness and offering a promotion platform for different values and goals. Galen and McCullough (2020) point out in the research on "Marketing sustainability through sport" that gaining more positive attitudes towards sustainability and campaigns requires an understanding of the attitudes of the target groups of the campaigns. Then in addition to promotion, another targeted activity that serves all goals is the special expertise related to sustainable development of event organizers and facility maintenance personnel. These two perspectives are considered in the research as a common factor in the promotion of goals. (Corthouts et al., 2021; Galen & McCullough, 2020; Kellison et al., 2022; Sport and the Sustainable Development Goals, n.d.; Sustainable Development Goals for Events, n.d.)

The SDGs included in the study and researched through interviews are: 3, 5, 6, 7, 10, 11, 12, 13. These goals also support the sustainability goals of the Tampere City Strategy and the goals of event operations. However, the goals are not completely separate from each other, so studying or implementing one goal can also contribute to the realization of other goals. In addition, different sources classify the means of implementation in different ways under different goals. Table 1 describes examples of factors and areas that can contribute to the realization of the SDGs under study in sports events through the characteristics and possibilities of sports facilities. (Kellison et al., 2022; Sport and the Sustainable Development Goals, n.d.; Sustainable Development Goals for Events, n.d.; The Commonwealth, 2017; Valtion liikuntaneuvosto, 2022)

Table 1. Examples of factors that have an impact on the realization of SDG goals in sports event facilities. (Kellison et al., 2022; Sport and the Sustainable Development Goals, n.d.; Sustainable Development Goals for Events, n.d.; The Commonwealth, 2017; Valtion liikuntaneuvosto, 2022)

GOALS	MEASURES
3) Ensure healthy lives and promote well-being for all at all ages.	<ul style="list-style-type: none"> • Sustainable construction of sports facilities. • In the promotion of equality in sports, the elderly and persons with disabilities are taken into account. • Consideration of diverse well-being in event spaces, e.g., by creating a quiet space.
5) Achieve gender equality and empower all women and girls.	<ul style="list-style-type: none"> • Creating an inclusive, safe and fair environment where all genders are welcome. • Gender impact assessment in decision-making. • Involvement of different genders and gender experts from other sectors in planning, decision-making and evaluation.
6) Ensure availability and sustainable management of water and sanitation for all.	<ul style="list-style-type: none"> • Increasing water-use efficiency with water-saving devices and using heating and cooling technology that uses less water. • By enabling the use of refillable drinking bottles and raising awareness and changing the behavior of those attending events by limiting or banning single-use plastic bottles.
7) Ensure access to affordable, reliable, sustainable, and modern energy for all.	<ul style="list-style-type: none"> • Energy efficiency of buildings and using renewable/clean energy sources • Increasing energy efficiency during events by giving instructions and informing about the possibilities or limitations of use.
10) Reduce inequality within and among countries.	<ul style="list-style-type: none"> • Supporting and improving equal opportunities for people (disabled, elderly, etc.), e.g., by making accessibility survey of facilities and identifying measures that require improvement. • Involvement of different user and participant groups in planning and decision-making regarding sports events and sports facilities.
11) Make cities and human settlements inclusive, safe, resilient, and sustainable.	<ul style="list-style-type: none"> • Increasing the versatility and utilization rate of sports facilities. • Ensuring and improving accessibility by public transport and encouraging the use of public transport. • Reducing the environmental impact of facilities by choosing low-carbon building materials.
12) Ensure sustainable consumption and production patterns.	<ul style="list-style-type: none"> • Increasing the responsibility and sustainability of procurement • Reducing, reusing and recycling materials • Future improvements by developing data collection and reporting successes and areas for improvement
13) Take urgent action to combat climate change and its impacts.	<ul style="list-style-type: none"> • Taking environmental responsibility into account when selecting partners and using local businesses. • Reducing the carbon footprint in construction, consumption, event-related travel, transportation etc.

For each SDGs examined in this study, example factors that are seen as essential and feasible in sports events and sports event facilities based on the literature review, have been listed in Table 1. The left-hand column contains the SDGs under study, and the right-hand column contains examples of measures implementing the goals. The SDGs are naturally implemented with the same measures as ecological, social, and economic sustainability in general. Examples of the measures contain concrete structural and operational examples, as well as examples related to planning and decision-making.

4 Methodology and Implementation

The focus of this section is on research methods and implementation of the research. First, the objectives and research questions of the study and chosen research methods are described. Hereafter, the data collection, and analysis, as well as the validity, reliability, and limitations of the study, are described.

4.1 Research Objectives and Questions

The objective of the research is to get a comprehensive understanding of the state of sustainability and the implementation of sustainable development goals in the sports event facilities of the City of Tampere, as well as to find out how sustainably sports events can be organized in these facilities. The aim is to find development targets that can help to improve sustainability in sports events and to give suggestions to reinforce sustainability. To achieve the aim the following research questions (main question and two sub-questions) will be addressed in this study:

How can the realization of the United Nations' Sustainable Development Goals be reinforced in sports events through the sustainability of the sports event facilities of the City of Tampere?

- **How well is sustainability currently realized in sports event facilities?**
- **What factors should be developed to achieve more sustainable sports events?**

The research questions aim to find concrete factors that strengthen and weaken sustainability in sports events and sports event facilities, as well as the views of different stakeholders on the current state of sustainability.

4.2 Research Design and Methods

The research design consists of a set of research problems, methods, and empirical materials, but also theoretical framework and key concepts are seen as part of the research design. (Saaranen-

Kauppinen & Puusniekka, 2006, 12; Vuori, n.d.) The research design of this study is presented in Figure 7. A Qualitative research strategy is used in this study, as the goal is a deep understanding of the researched topic and there is a need to collect a large amount of detailed information. A qualitative approach enables a full understanding of behavior, attitudes, and the situation under consideration. In qualitative research, the interest is in meanings, for instance, how people experience and see the real world. (Aaltola & Valli, 2010, 75; Kananen, 2017, 35; Veal & Darcy, 2014, 39)

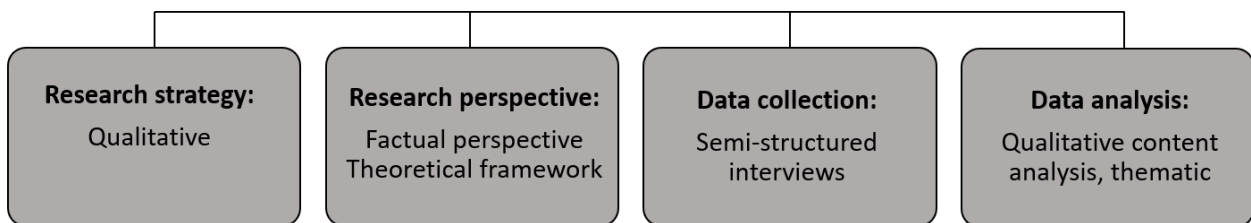


Figure 7. The research design

The research is structured from a factual perspective and is based on observations and findings from the theoretical framework. In the factual perspective, the interest is in the facts and information that the sources convey about the matter under study, and the task of the researcher is to get as close to the reality under study as possible. (Jokinen, n.d.) In this study, the aim is to find out the state of sustainability through data collected from the expert interviews, and the theoretical framework of sustainability, and local organizational aspects support the interpretation of the collected data.

The collection of data in qualitative research can be done with different methods. Methods can be for example interviews (structured, semi-structured, unstructured), observation, or analysis of textual data or visual materials. (Eriksson & Kovalainen, 2008, 77-78) In this research, it is used observation of the facilities (Tampereen stadion and TESC) and sports events (for example European Master Games 2023 and Taekwon-Do World Championships 2023), as well as preliminary semi-structured interviews to gain a better understanding of organizing sports events in the facilities of the City of Tampere and sustainability factors in the process. In other words, the purpose of the preliminary studies was to get closer to the reality under study.

The information obtained from the subjects of the survey is expected to vary, as the interviewees represent different stakeholder groups, such as sports clubs as organizers of sports events or the management staff of sports facilities. Due to this, the actual data collection has been carried out in a semi-structured way. In addition to seven expert interviews from different stakeholder groups, written responses were collected from one representative of the sports event organizer to complement the data obtained from the interviews.

Semi-structured interviews are usually carried out for a small number of subjects, do not contain an actual questionnaire, but subject areas, and aim for a deep understanding of the subject under investigation. The nature of the interview is conversational and includes additional questions and a more detailed explanation of the answers. (Veal & Darcy, 2014, 256-257) In this study, a structure and questions were created for the interviews (Appendix 1), from which it was easy to monitor whether all the planned themes were discussed.

In qualitative research, there is no generally agreed-upon model for performing data analysis. In qualitative analysis, it is typical to look for emergent themes and to code and categorize the data. These can be considered forms of content analysis. (Günther et al., n.d.; Veal & Darcy, 2014, 430-431) In this research, the analysis has been conducted as a content analysis, with the help of coding and thematization. After classifying and structuring the collected data, the material has been interpreted and key issues have been found in terms of the research problem.

Qualitative research often has a recursive approach and a flexible relationship between the research elements. Data collection and theory are interactive, and even when all relevant material

has been identified, the literature exploration usually continues throughout the research project. The researcher herself is seen as a data collection tool and it is natural that interpretations and views also develop as the process progresses. It is common in qualitative research that both the theory and the material collection are supplemented as the process progresses. (Aaltola & Valli, 2010, 76-80; Veal & Darcy, 2014 254) Figure 8 describes the research process of this thesis and illustrates the flexibility of the process to return to the previous stage. In this study, the theoretical framework was supplemented between and after the interviews, as well as during the analysis process.

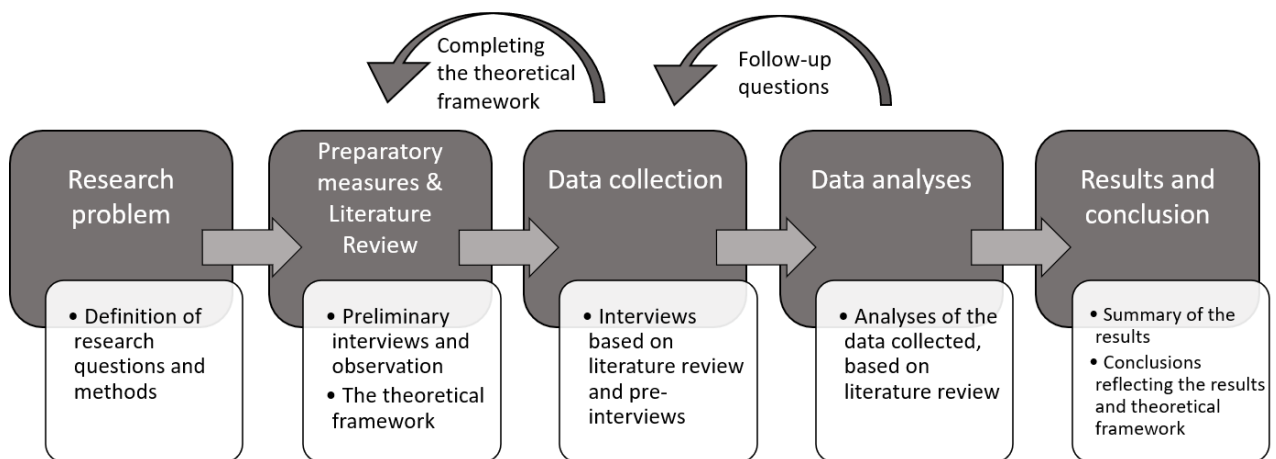


Figure 8. The research process

4.3 Data Collection

In qualitative research, it should be collected so much material that the researcher understands the phenomenon and the research problem is solved. (Aaltola & Valli, 2010, 78; Saaranen-Kauppinen & Puusniekka, 2006, 50) To understand better the phenomenon, the subject to be studied, and the operating environment, the preliminary interviews were conducted between February 1 and September 8, 2023. All interviewees in preliminary measures work in the same organization as the researcher, and interviewees (manager of indoor exercise facilities, supervisors of employees working in indoor exercise facilities, sports facility janitor, and customer service officer) were chosen from different levels of the organization to gain a wider perspective of the process of organizing sports events in the facilities of the City of Tampere and the sustainability aspect in the process.

The conducted preliminary interviews were guided and semi-structured with open-ended questions, as these types of interviews are mentioned to allow conversational and informal tone in the interview and work well if the interviewer is at least somewhat experienced. The recording of interviews could be done by taping it with a recorder and writing notes afterward or on the spot. (Eriksson & Kovalainen, 2008, 85-86). For preliminary interviews, the recording was done by writing notes on the spot during the interview, because it was the most convenient way for interviewees not to be reserved and uncommunicative by taping, but still get their ideas up immediately and avoid the risk of forgetting something.

Another preparatory measure before actual data collection was observation in the two chosen facilities under study. The Tampere stadium is already familiar to the researcher, as she has worked in the facility for seven years. In addition, the sustainability of the events held at the Stadium was observed in sports events (European Master Games 2023 and Motonet GP Tampere) in the summer of 2023. Tampere Exhibition and Sports Centre (TESC) was visited and observed in March 2023 and observed during Taekwon-Do World Championships 2023, in September 2023.

After the preliminary interviews and observation, to answer the research questions the research data was gathered from seven expert interviews and with one written answer on the researched topic. According to Saaranen-Kauppinen and Puusniekka (2014, 56), the selection of the interviewees should be considered carefully, and they should not be chosen randomly, but based on who

has the best available information on the topic under study. Interviewees in this study were chosen from different stakeholder groups to gain a wider understanding of the theme. The recruitment was easy in this study as the researcher knew the industry and she knew most of the interviewees beforehand. However, in the case of one interviewee, the recruitment was not successful, because they could not name one interviewee, but instead of interview, they wanted to provide written responses from several people. Table 2 describes the stakeholder groups and the nature of the interviews.

A semi-structured interview is sometimes also called a theme interview; in addition to the prepared themes, specific questions have been prepared. The questions and research themes should be chosen based on familiarity with the topic. (Saaranen-Kauppinen & Puusniekka, 2014, 56-57) For this study, the interview structure, and questions (Appendix 1) were prepared based on the literature review and preparatory measures. As the interviewees came from different levels of the organization, different departments, and organizations, the interview questions were modified during the interviews under the mutual thematic surroundings.

In semi-structured interviews, it is common for the conversations to differ from interview to interview, and issues that are not relevant to the research also come up in the conversation. The interviewer needs to ensure that the essential topics will be discussed, even if they are discussed in a different order than planned in the original interview structure. (Veal & Darcy, 2014, 258) In this study, the order of questions varied between different interviews, because they were asked in a natural part of the conversation. Some of the themes were also addressed by the interviewees on their initiative.

Questions or interview structure was not sent to interviewees beforehand, but during the recruit phone calls it was given the first background information about the thesis and the interviews. Again, at the beginning of the interviews, the basic background was given to the interviewees about the reason and structure of the interview. Sustainable development and Agenda2030 were discussed briefly to give the interviewees a basic idea of the research topic. The introduction was kept short, so the interviewees were not led too much before the interview. Since most of the interviewees already knew me through my position in the Sports Services, I brought up the interview's neutrality, impartiality, confidentiality, and the fact that I do not represent my employer

but am a neutral researcher. The interviews maintained a conversational, open, and confidential atmosphere.

Seven individual interviews were held from September 19 to October 2. Two of the interviews were held face-to-face at the Tampere stadium and five were conducted online using Microsoft Teams. All interviews were recorded and transcribed. The interviewees were asked for permission to record and transcribe before the actual interview began. The interviews were conducted in Finnish and translated into English by the author after analyzing the data.

Semi-structured interviews normally last half an hour or more, and it is usual to do re-interviews or follow-up questions. (Veal & Darcy, 2014, 256) In this study, the interviews lasted from 30 minutes to 45 minutes. Some interviewees were asked a few follow-up questions after all the interviews to ensure and strengthen the researcher's understanding of the issues raised in the last interviews.

The data collected was presented anonymously and coding for interviews was implemented. Table 2 describes the interview coding, and shows the stakeholder group, date, length, and form of interviews. Three interviewees represented the public sector and were from different levels of the organization of the Tampere City Sports Services, and two of the interviewees were experts from the private sector in the technical side of the facilities under study. Data was also collected from three sports event organizers, who had organized sports events in the facilities under study; one interviewee was from a sports club, and one was from the private sector, another sports club provided written answers through e-mail instead of an interview. Some interviewees had double roles and in addition to positions in the public or private sector, they also had a role in sports clubs and the event organizing sector. All the interviewees have several years of experience in the field.

Table 2. Interview coding

Responder	Stakeholder group	Date	Length	Form of interview
R1	Event organizer	19/9/23	40 min	Online video meeting
R2	Public sector	20/9/23	42 min	Online meeting
R3	Public sector	26/9/23	35 min	Face-to-face
R4	Public sector	27/9/23	30 min	Face-to-face
R5	Private sector	28/9/23	45 min	Online video meeting
R6	Even organizer	29/9/23	45 min	Online video meeting
R7	Private sector	3/10/23	30 min	Online video meeting
R8	Even organizer	16/10/23		E-mail

The saturation of the data was evaluated during the data collection process. According to Tuomi and Sarajärvi (2018, 99-100), in all qualitative research, it is not appropriate to aim for complete saturation. In addition to the similarity of answers, this research aims to find different development targets, perspectives, and experiences, and for that reason, complete saturation was not sought. The number of interviews was found to be sufficient to obtain answers to the research questions, because despite the entity represented by the interviewee, the information obtained was sufficiently similar, and sufficient saturation was achieved. The number of interviewees was also suitable to be carried out within the available tight schedule.

4.4 Data Analysis

Qualitative data usually consists of textual data, and there is no general formula for analyzing it, but its processing requires classification, comparison, and interpretation. (Aaltola & Valli, 2010, 111-113; Saaranen-Kauppinen & Puusniekka, 2014, 73) In this research, the collected data was recorded and transcribed with Microsoft Word's automatic transcribe tool. The automatically formulated transcriptions were read carefully and interview recordings were listened to after the interviews. Some corrections were made to the automatically formulated transcriptions.

In this research, the chosen analysis method is content analysis, which is an analysis model often used in qualitative research. In this analysis, the content of the material was coded and themed and the relationships between themes were examined. In theming and coding, the material is marked from the relevant starting points of the research questions and by this, it is aimed to clarify the content of the material. In the analysis, attention has been paid to the fact that the themes of the interviews do not get mixed up with the theming of the material resulting from the analysis, which is a common confusion in thematic content analysis. (Juhila, n.d.; Saaranen-Kauppinen & Puusniekka, 2014, 81)

After the thematization and coding of the data, the relationships between themes and sub-themes were examined to gain a more comprehensive understanding of the collected data. Observations were made about matters relevant to the research questions, the results were closely examined, and conclusions were drawn based on the results.

4.5 Validity and Reliability

The basic requirement in qualitative research is that there is enough time available to do the research. Trustworthiness in qualitative study can be assessed by whether the conducted research is reported in detail and, for example, by evaluating the results and conclusions of the study by informants or research colleagues. In scientific research, the assessment of trustworthiness is a central part, and the key concepts in the assessment are validity and reliability. In validity, it is assessed if the research measures what is intended, and in reliability, it is assessed the reproducibility of the research results. (Saaranen-Kauppinen & Puusniekka, 2014, 24-25; Tuomi & Sarajärvi, 2018, 160-165)

Validity can be assessed in qualitative research based on, among other things, whether the research has been thoroughly conducted and whether correct results and conclusions are obtained. Qualitative research does not conclude from the point of view of reproducibility or generalizability, but based on the phenomenon under study, perspective can be gained for other similar cases, for example of what is significant in the phenomenon, and what might be repeated in other studies. Generalizability and reproducibility in qualitative research depend, among other things, on how similar the studied environment and the new research environment are. Often duplication

and generalizations are not possible due to the diversity of reality. (Saaranen-Kauppinen & Puusniekka, 2014, 25, 51; Tuomi & Sarajärvi, 2018, 162)

The impartiality aspect should also be considered when analyzing the trustworthiness of the research. It could be evaluated for example by analyzing the researcher's impartiality, and how it is ensured that the communication is not affected by the researcher's framework. (Tuomi & Sarajärvi, 2018, 160)

Ethical questions are important in conducting research. The ethical questions of the research are related to, among other things, the acquisition of information, the protection of research subjects, and the researcher's responsibility for the applications of the research results. (Saaranen-Kauppinen & Puusniekka, 2014, 20) The ethical principles of JAMK University of Applied Sciences provide sufficient ethical guidance for the master's thesis. (JAMK University of Applied Sciences, 2018)

5 Results

In this chapter, I review the research results and the observations I made from the interviews. As mentioned in the literature review, promoting the United Nations' Sustainable Development Goals, and taking them into account in all activities, is the state's responsibility, but the participation of the public and private sectors, and citizens is needed. The interviews aimed to find out the level of sustainability and possibilities of sustainable sports events at the Stadium and TESC, as well as the challenges associated with the organization of the events and development opportunities in the facilities from the perspective of different stakeholders.

The interview structure can be found in Appendix 1. However, the themes of the analysis do not directly correspond to the structure and themes of the interviews, but rather I bring out the central issues from the interview materials in terms of the research questions. In the first paragraph, I present the results describing the current level of sustainability, and in the second section, areas of improvement. In addition to my own interpretation, I use direct quotes from the interviewees.

The interview coding is shown in Chapter 4.3, and in this chapter, the respondents are coded as R1-R8.

5.1 Current Level of Sustainability

All the interviewees had experience with sustainability in sports events and sports event facilities. All the respondents saw that measures regarding sustainability and responsibility have already been taken in the facilities, and some measures are currently being planned, but a considerable amount of effort is still required and challenges to overcome. The common view was that both facilities have a large repair liability and that with renovation and repairs, it would be possible to enhance the sustainability of the events organized in the facilities. Two interviewees mentioned that waiting for the progress of the plans and development programs around the Stadium and the downtown area slows down the measures implemented directly at the Stadium. Regarding TESC, the two interviewees who looked at the issue from different perspectives mentioned that there is ambiguity and different views on which entities are and should be involved in development and investments, and how much effort each entity is willing and able to put into the improvements.

Respondents R3 and R7 mentioned the new automation system for air-conditioning and heat management, and the introduction of LED lighting throughout the TESC as the most significant recent improvements. Respondents mentioned that the improvements have significantly reduced heating costs and energy consumption and made it easier to monitor consumption and air quality. Also, three other respondents mentioned the LED lightning as an example of measures to be considered in connection with repairs and renovation of facilities. Other improvements mentioned in the interviews, which are examined in connection with major repairs, and renewed, if possible, are the installation of water-saving fixtures, as well as increasing energy efficiency and the use of renewable energy.

At TESC, the roof of Hall C has been renewed, and as a result, there is no more heat loss in the hall than before. In connection with the roof renovation that will be carried out to the A-hall at some point, we will consider if it's possible to install solar panels on the roof. (R7)

As part of the renovations, water-saving systems and fixtures are tested, for example, waterless urinals. (R5)

R5 mentioned that when planning and implementing renovations, it is important to consider the total savings and to think about for example the remaining lifespan of the old lighting before renewing the lighting. It was also mentioned that sustainability thinking is still a developing area, and for example, there are still no ways to implement completely sustainable material choices when there are no valid calculation tools for life cycle thinking. Respondent R4 had similar thoughts and mentioned that the goal should be to keep the facilities healthy and maintain rationality in energy savings.

I have no information about the use of air conditioning in the Stadium at night, but it seems that it starts in the morning, and even if it consumes more electricity, I think it should start earlier so that the air is not completely stagnant when people come to exercise, and humidity does not negatively affect the building's structures. (R4)

All the respondents agreed that energy and water consumption is monitored only by the technical maintenance of the facilities, but several respondents wondered whether it would be necessary to carry out monitoring also by those who run the operations of the facilities. Respondents R1 and R2 mentioned that energy consumption is often discussed with event organizers before the event, but more to ensure energy sufficiency, and not to save energy. For the energy needs of today's events, the energy obtained from the premises itself is not always enough, but additional energy sources are needed. Respondent R8, had a different experience and mentioned that the use of water or electricity consumption has not been discussed, but these are promoted with the users' own instructions.

At events and concerts, the organizers have their backup power stations, because nowadays the need for energy is so high. In addition, for example, TV broadcasts affect the need for backup power sources when nothing can be delayed even due to a power outage. (R2)

There is no recollection of receiving any guidance about the use of water or energy, but the basic idea in the coaching and team management is that, for example, unnecessary loitering in the shower is avoided, and the lights in the locker rooms are switched off during training. (R8)

When asked about guidance and instructions regarding sustainability in the Stadium and TESC, all respondents shared the same view that it has not been implemented yet. Regarding the Stadium, several interviewees mentioned that there are no suitable spots or devices for communication,

but TESC has new LED panels, which enable modern advertising in the future, and it can also be used to give instructions. R2 mentioned that often in smaller events it is relied on the awareness of the participants, but in major events, the event organizer places particular emphasis on instructions both in the facilities and for example, in social media.

According to R1 and R2, there is no data available in aggregated form for the organization of events sustainably in the Stadium and TESC. R1 clarified that help for organizing events is available and general instructions for organizing events are available, but not enough facility-specific information. In addition, R1 mentioned several parties are working in TESC, and that makes it challenging to negotiate and agree on issues concerning coming events. Half of the respondents mentioned that even the personnel working in the facilities do not have enough information about the sustainable implementation of events. Then, R3 and R4 believe that the personnel have the skills to act sustainably, but things have not been agreed upon and committed to implementation.

It's easy to go the old way, and this sustainability is still quite a fresh thing. It's only been 10-15 years since we started talking about this more. The realization of sustainability does not depend on the number of employees, it does happen if there is information and things are planned and agreed upon. (R3)

I believe that there is enough interest and know-how if you are somehow forced to act. Employees also convey ideas about promoting sustainable development, but whether the ideas lead anywhere is a different matter. (R4)

Not all employees necessarily have a view on sustainability, as the generations have an influence, and the worldview of the older generations may be slightly different from the current general understanding. (R6)

All the respondents agreed it is important to communicate sustainability themes and highlight the facilities' and venues' possibilities. Half of the respondents mentioned the effectively marketed Finnish tap water purity and refillable water bottles as a good example of promoting sustainability through marketing and communication in connection with sports events held in the Stadium. However, three respondents expressed that filling water bottles is not yet completely uncomplicated at the Stadium, when, for example, the toilets do not have suitable water taps for filling a higher water bottle. The interviewees also mentioned that the changes and improvements in the facilities are not often sufficiently planned but carried out by chance by a third party.

The faucets that allow you to fill water bottles outside were accidentally created by the concert organizer. A very good thing, but when it hasn't been implemented in a planned way, instructions and signs regarding use have also not been taken into account. The faucets are used by those who happen to know about their existence. (R4)

In addition to effective communication and advertising, respondent R5 raises as an example the need for an increased number of staff to guide and give instructions during the events. Respondents R1 and R4 agreed that the presence and accessibility of the staff maintaining the facilities during events is important. Especially at the Stadium, the staff can make small repairs, for example, to leaking water fixtures, if necessary. R3 and R6 mention that the situation is more complicated at TESC, because the maintenance of the facilities is handled by a private company, and there is no maintenance employee present during the events.

Respondent R5 mentioned guidance as an important part of events also from the point of view of accessibility when the facilities themselves are not completely accessible. R5 also mentioned that when the events are very different from each other, accessibility should always be considered and ensured by the event organizers as well. The common view of the respondents was that the buildings are not designed and built taking into consideration accessibility and use for disabled persons. R2 and R5 reminded that the buildings are old and at the time of their construction the understanding of accessibility was different than it is today.

All the respondents agreed that accessibility is well-considered at TESC, as the sports and events facilities are on the first floor and the second floor is also accessible by elevator. R5 and R7 mentioned that several accessibility improvements have been made at TESC, for example concerning toilets, thresholds, and handles. The accessibility situation is more challenging at the Stadium, and according to six respondents, it is challenging to organize accessible events at the Stadium.

The accessibility of The Stadium is in bad condition, as there are no elevators, lifts, access ramps, or drop-off points. The Stadium has, for example, been brought up in a negative sense as an example of a facility where accessibility is poorly organized. (R5)

With a wheelchair, you can access the Stadium's different parts by detours, but it is also challenging for a person with mobility difficulties to get to the normal stands. Entering the facility is not smooth and it causes inequality. (R1)

Almost the whole stadium is accessible with a wheelchair, except for the second floor, but you must use detours and you need to know the right route beforehand. Athletes have direct access to the field through a service tunnel and locker rooms that can be reached without having to go up the stairs. (R6)

The comments of three respondents revealed that feedback has been received regarding both the Stadium and TESC that the level of accessibility has not been sufficiently described on the website. Respondent R2 mentioned that, regarding the Stadium, there has been a request to mark the wheelchair spaces in the stands, as there are currently no markings. Otherwise, feedback or wishes have not been received regarding this theme, and according to the interviewees, to improve accessibility, the need to carry out an accessibility survey in the Stadium has been identified, as a survey has not yet been conducted, but it is a work in progress. An accessibility survey has been carried out in TESC, and the desired changes have been made based on it.

In the interviews, signage was mentioned as an essential factor in promoting accessibility as well as in the achievability of facilities. As for TESC, no challenges were mentioned in terms of signage, but respondents R2 and R5 mentioned that for the Stadium, the signage should be updated and increased. Both mentioned the door signs on the front of the building as a successful improvement, which improves accessibility and safety, as it is easier to determine the location in case of an emergency. Respondent R1 agreed, that better signage is needed for the Stadium because the current situation causes challenges, especially for those who are visiting the city and region for the first time.

The views of the location and achievability differed minimally between the different interviewees. Both facilities were mentioned to be easily accessible by public transport, on foot and by bicycle. The Stadium was also mentioned internationally as a unique sports event facility due to its central location. Respondent R7 had a different experience and stated that TESC can be reached by public transport, but only by one local bus, and since the building is not located right in the center, shared transportation must always be arranged for events. In terms of event construction, the location of both facilities was mentioned as a challenge. In TESC, the challenge is caused by the fact that there is only one road leading to the destination, which easily becomes congested. The location of the Stadium in the center also causes congestion when events are being built. The building itself is not perfect from the point of view of event construction, as there is only one corridor leading inside the Stadium.

When asked how gender equality has been considered in the facilities and the events organized in them, six interviewees mentioned that the facilities can be easily modified to meet different needs and that event organizers have succeeded in using their imagination to meet the needs. R6 mentioned that gender equality may depend quite a lot on the nature of the sport, and in different sports gender equality is more present than in some others even though it is carried out in the same facility. Both facilities have changing rooms and toilets marked separately for men and women, but they can also be changed for other needs. For big events, the capacity of existing toilets in the Stadium is not enough, so the need is supplemented with portable unisex toilets. None of the respondents were aware of if a gender impact assessment had been carried out in the facilities.

In all the interviews, recycling and waste management created the most discussion. All the interviewees who were familiar with the operation of the Stadium agreed that there is no recycling in the facility and that any possible recycling at events must always be organized and considered separately. As a new exception and success, three respondents mentioned the bio-waste container required by Pirkanmaa Jätehuolto Oy for recycling lawn waste. Though, respondent R4 mentioned that the operation of the Stadium has improved a lot in terms of cleanliness, and equipment and property are taken better care of than before.

There are no waste separation possibilities at the Stadium, so waste from the event, like metals, plastics, and cardboard was sorted as far as possible in the back rooms and transported to the waste treatment centers by us. (R1)

All waste goes into the same collection container, whether it's mixed waste, the engine blocks, plastic, or cardboard. (R4)

According to R7, a waste management plan has been drawn up for TESC and there is also a separate section for events to give information about practices and possibilities. The respondent also mentioned that even if TESC has better waste recycling possibilities compared to the Stadium, the number and extent of waste disposal stations must always be considered separately for each event. However, as challenges of waste management in TESC three respondents mentioned the waste stations' leakage and odor problems, and the location of the waste stations, as the athletes pass through the waste collection area into the facility and carry dirt with them inside.

Three respondents reminded that sorting altogether has only grown to its current extent in recent years, and the current facilities are not sufficient for the required improvements when they are designed for significantly smaller and different use.

One of the Stadium's biggest challenges is the lack of a separate waste collection area, and the difficulty to find suitable locations for it. (R2)

The location of the current waste bins does not meet today's requirements. The plot boundary limits the establishment of separate waste points, as there is no space on the existing plot. (R5)

Most of the interviewees mentioned that in both facilities, sustainability is considered when procuring sports equipment and machines. However, the facilities still have equipment and machines in use that are not the most sustainable, but are still used, as they have a service life left.

Sustainability is taken into account in sports equipment, for example, the artificial turf filler is 100% recyclable material in TESC. (R3)

TESC has, among other things, shared ice machines for athletes, so there is no need for chemical bags. (R6)

In TESC it is still used an old cleaning machine, which produces exhaust, weakens air quality, and is not cost-effective. (R3)

When selecting the partners, it is aimed to take sustainability aspects into account, and for example, when building the environmental management system at TESC, partners have also been taken into account. According to the interviewees, the amount of waste and unsustainable purchases is reduced by the shared use and reuse of equipment. Several respondents mentioned that the City of Tampere has a surprising amount of equipment and material for the event organizer to use, and thus it is not necessary to purchase everything separately for each event. In addition, equipment and materials are recycled from one location and venue to another, which was seen as a reasonable and responsible way of operating.

When asked about the level of multi-use of the facilities, several respondents stated that both facilities are in efficient and versatile use. TESC was mentioned to be a unique facility in Finland, as the facility works regularly for both fairs and sports. As for the Stadium, the activity is focused on

the summertime, and there is not much winter use in the uncovered field yet. Regarding use during the summer, the respondents had different views about whether the use could be increased from the current level.

The number of events cannot be increased, at least for the summer season. Now, there are no desired days in between the events, when you would have time to bring stuff and transfer it to the next event, but everything is done hastily and in a terrible hurry. (R4)

It might be possible to organize even more events if the maintenance of the facilities was also involved in the bidding process. Unfortunately, often maintenance only participates when the event has already been granted to Tampere. (R2)

5.2 Areas of Improvement

During the interviews, many areas for development were discussed and areas of improvement were also asked separately at the end of the interviews. Interviewees from different stakeholder groups expressed that to reach the level of today's events and event management requirements, both in terms of sustainability and operations, structural changes must be made, especially in the Stadium. According to the interviewees, plans have already been made, but negotiations are still ongoing, and the final solutions have not yet been decided.

The passageway for event construction and maintenance and waste collection point were mentioned among the major structural change needs in the Stadium. Since the biggest changes cannot be implemented immediately, five respondents considered cardboard recycling at the Stadium as the most important improvement and, in general, the improvement of recycling in both facilities. Most of the respondents also pointed out that in terms of recycling, more attention should be paid to the waste masses generated at sports events. Regarding TESC, it was mentioned that the waste management company is being changed and that improvements are pursued as a result. Smaller improvements were mentioned, for example, an increased number of bicycle parking and better signage, as well as renewing the sales points at the Stadium to improve the possibility of more sustainable restaurant services during the events.

Most of the suggestions for improvement were related to information flow, communication, and guidance. It was discussed, that when improving communication, it should be paid attention to the accessibility of the signage and communication. Four respondents mentioned that signposts for entering the Stadium and the signage in the building should be created.

Five respondents emphasized that the internal information flow and interface discussion regarding facilities and events should be improved. The representative of the Sports Services should be included in the initial phase of the bidding process, and the information about the plans should be better communicated to those who need it. Several respondents also shared the same view that the goals, roles, responsibilities, and expectations of different parties should be discussed and a joint strategy for the operation should be created. In addition to sustainability, the discussion should also take place regarding other themes related to the use and maintenance of the facilities.

TESC is part of the city marketing, so it would be important to get information about what the city wants from the facility, and how the city can be involved in the development. (R7)

The challenge in TESC is that it is a huge complex, and there is no clear management by one entity. In addition, sports activities are in the facility as a renter, so the development of the facilities does not primarily take place from the point of view of sports. (R2)

In both facilities, there are ambiguities in the roles and responsibilities of the entities that maintain and manage the facilities. This causes different operating models among those working in the same facilities. (R5)

When information does not flow and the conversation between different parties is not uncomplicated, it causes challenges in the flow of events and concretely, for example, the poor condition of sanitary facilities, because the need for extra cleaning does not reach the right people at the right time. (R6)

In the opinion of six respondents, all communication and promotion of sustainability should be increased, both for personnel, event organizers, and visitors. Big events and key venues are seen as essential platforms for education and should be used even more strongly for education and marketing. Two respondents mentioned that before the enhancement of communication in the facilities and between the events, it is necessary to plan and agree on what, how, and at what stage to communicate so that the message reaches the desired target group.

In connection with the events, even more should be told about Finland's nature, Tampere as a sauna city, and for example things like the purity of the waters, status as the happiest and safest country, etc. (R5)

In my opinion, continuous promotion is not the best way to get the message across, but it should be implemented with campaigns to attract more attention. (R2)

Promotion is especially important in sports activities as often other things around the sport itself receive little attention. (R3)

According to the interviews, the guidance of the event organizers on, for example, waste management, and the possibilities of using electricity and water should be improved. Two respondents considered that the rules for the operation should be created with the main users of the facilities, and the rules should be included in the rental rules and terms of the facilities. It was mentioned to be important to ensure that the event organizers understand their role in implementing sustainability in operations.

A common view was that more promotion is needed about gender equality, accessibility, and safer space policies. Two respondents mentioned that to promote an idea of safe space, safer space policies should be drawn up for both facilities, as well as accessibility surveys must be completed. Two respondents also mentioned that in terms of principles and equality, there needs to be a discussion between different stakeholders, about what is a sufficient and correct level in the operation, as from time to time it seems that in these respects it is even going to extremes as a fashion phenomenon. R3 and R5 mentioned that as there are already good experiences with a few events, the expert evaluation of the gender and safety aspects of events and competitions should be increased, and based on the resulting statements the operations could be developed.

Gender equality has not yet been sufficiently considered in sports and event fields, and it should be enhanced, as should the promotion of a safer space. (R7)

There could be contact information available in the facilities for reporting wishes and challenges related to accessibility and equality. (R8)

In the opinion of two respondents, the role of "eco-support persons" of the City of Tampere should be strengthened and informed better in the facilities, because not all respondents knew about such tasks beforehand. It was mentioned that the competence of the personnel working on

the premises should be developed and ensured in terms of managing the use of the existing equipment (for example, sound reproduction equipment) so that they could help in events if necessary. Strengthening skills was mentioned to promote the utilization rate of the existing equipment.

Even though the facilities are in versatile and efficient use, it was seen that there was room for more efficiency in both facilities. There were no concrete proposals for increasing use, but one idea was to increase the possibilities of low-threshold sports by municipal residents. R2 reminded both regarding the Stadium and TESC that when thinking about multi-use, it should be considered whether it is a sports venue or an event venue. During the events, the sports venues are not available for athletes, and this must also be considered when thinking about common goals.

Four respondents had a different experience with coordinating and scheduling sports and other activities or events at TESC. An agreement has been made about usage times, but it was considered necessary to monitor the implementation and refine the agreement. Two interviewees also highlighted the need to improve the use of TESC's sports facilities. Rules for the use of facilities should be drawn up and access control should be improved so that the premises remain in better condition and the sports equipment is kept in storage.

At TESC, for one reason or another, operations have been allowed to falter, and it should be able to take better care of the property of the sports services as now, for example, sports equipment is constantly disappearing. (R6)

TESC is like the Bermuda Triangle: when you take things there on Monday, they are no longer found on Friday. (R3)

The event organizer has the advantage of organizing events in the facilities of the City of Tampere as often the facility rental includes ancillary services, such as staff, electricity, event construction, and equipment. Three interviewees mentioned this as a challenge at times when event organizers who are used to organizing events in the facilities of the city assume that all services are included in the rent price. In addition to agreeing on the rules between different stakeholders, one development idea was a price to be considered for these services and offering possible additional services, which the organizer could buy in addition to the facility rent.

6 Discussion

This chapter summarizes the most important findings from the interviews and formulates the answers to the research questions. The views of the interviewees differed minimally between different stakeholder groups, but some opposing views can be found in the material between different respondents. The respondents agreed that sustainability is not yet at a sufficient level but requires more measures. The analysis of the qualitative data showed concrete factors that strengthen and weaken sustainability in sports events and sports events facilities. Section 6.1 includes a discussion of the main results of the study, 6.2 introduces the realization of SDGs and ways to promote them, and 6.3 includes the ethicality, trustworthiness, and limitations of this study.

6.1 Discussion of the Main Results

From the dimensions of sustainability, ecological sustainability is the one that emerged as the first and strongest theme in both the preliminary interviews and the actual interviews. Several clear and easy-to-implement improvements were found to improve ecological sustainability, although some of the mentioned improvements require larger structural changes and large financial investments. In terms of ecological sustainability, the themes that emerged most strongly were the circular economy and recycling, as well as curbing climate change and reducing the carbon footprint.

As the most critical factor in sustainability was seen the waste management challenges and the lack of recycling opportunities at the Stadium. The need to improve waste management was also seen in TESC as an essential factor to be developed. Waste management was also considered the most important part to develop to succeed in event biddings. Since a lot of cardboard waste is generated when organizing events, the possibility of recycling it was considered primarily the most important. To improve waste management, it is also necessary to draw up a waste management plan for the Stadium and discuss with and inform the necessary parties about the responsibilities of waste management.

A positive aspect is that during significant repairs of sports facilities, enhancements to building automation systems, utilization of renewable energy, and installation of water-saving fixtures are consistently taken into account. Solutions that save energy and water have already been made,

but the monitoring of the consumption could also be added for the management of the facility operations in addition to the supervision carried out by the technical maintenance department. Enhancements addressing energy consumption can concurrently impact financial sustainability.

Financial sustainability can also be promoted by improving good governance, and by developing the processes and operating models of sports events and sports event facilities. (Valtion liikunta-neuvosto, 2022) The results showed that the operating models and processes are not yet efficient and smoothly implemented. There is a clear need to develop and facilitate internal information flow and to clarify the responsibilities and roles of different parties in organizing events and maintaining facilities. Implementing these measures could streamline event planning and execution by establishing clear responsibilities in advance, ensuring everyone operates under the same set of rules. In addition, the repairs and development of facilities will be promoted when it is better defined what is the responsibility of the city and what is the responsibility of private operators.

As there is a growing demand for more sustainable planning for example to minimize the environmental impact of sports events and facilities (Geneva Environment Network, 2023), and as it is also mentioned before, it is essential to identify the areas and ways in which sustainability is realized in sports, it is important to agree what are the visions of sports facility sustainability and what is the sufficient level in implementing and promoting. The way of thinking in operations should be reformulated and coherent thinking should be included in all decision-making processes, thus it would be possible to ensure the application of new operating models. The research highlights the importance of establishing clear goals and targets for sustainability and as far as possible, to unify the goals of different stakeholders. The results showed that the city also lacks leadership in sports facility sustainability, and different stakeholders and facilities each operate most appropriate way from their point of view.

More organized and proactive operations would also lead to anticipatory and bold implementations, and the implementations would no longer take place under the compulsion of a third party or by chance, as occurred with before mentioned water bottle outdoor refillability and the bio-waste containers in the Stadium. The research highlights the importance of creating explicit facility-specific guidelines to make it clearer for all parties what ancillary services are included in the facility and venue rent, and what potential paid ancillary services might be offered. The unique

turnkey services of the City of Tampere in organizing sports events should be utilized more in management, as it gives also possibilities to monitor and promote the operation and sustainability of sports events and provides means to realize future event sustainability management and sports facility management more efficiently.

Another way to make management and leadership in sports facility sustainability easier and more efficient could be by creating a facility-specific strategy for the Stadium and reviewing TESC's strategy. Mallen & Chard (2012) presented an important way to achieve the promotion of sustainability by creating a strategy for each sports facility, which could also be reasonable in Tampere, even though the facilities are part of a larger strategic entity. As, sports facilities are often more narrowly defined for different uses than many other public buildings (King et al., 2020), it is important to study the possibilities for more versatile use of the facilities in Tampere. When increasing and diversifying the use of the facilities, consideration should be given to ensure that the primary use of the facilities is secured and enabled.

In the Sports Act, the responsibility of the municipality is to consult the residents in decisions regarding sports and to take care of the opportunities for the residents to participate and influence. (Finlex, 2022) In addition to the participation of stakeholders, it would be reasonable to consider whether a survey would be useful for event users or sports facility users in defining the goals of implementing the different dimensions of sustainability and thereby promoting sustainability.

By involving different target groups equality, accessibility, and gender equality could be facilitated in sports facilities and sports events. Based on the interviews, more measures should be taken to improve these aspects of social sustainability. The respondents of the interviews acknowledged that the realization of equality is largely up to the event organizers and requires them to use their imagination. Concrete measures are needed in facilities, but as mentioned in the theoretical framework, reducing inequality, and increasing safety when using sports facilities could be promoted by bringing into use the principles of a safer space in sports facilities and carrying out an accessibility survey in the Stadium. As gender impact assessment has not been implemented in the facilities, it should be considered to what extent it is necessary and where it should be implemented primarily.

In the interviews, it emerged that Tampere already has an educated and modern approach to event planning and organization of events, but it is personified, and good practices do not expand to other facilities. The interviews also revealed the difficulty of understanding, evaluating, and interpreting sustainable development. Raising the level of awareness, competence, and understanding of sustainable development is still necessary throughout the entire organization. The findings suggest that, for example, in the Sports Services, different sports facilities, and event activities, the work practices of the personnel should be examined and together with environmental experts, management, and personnel representatives, the possibilities of making changes should be discussed.

As mentioned before, one essential part of the development of sustainability in sports events and event facilities is impact assessment. The interviews did not discuss ways to measure and evaluate the level of sustainability in the events or facilities, so it would be reasonable to survey this in the future. Work may be needed to develop the best measurement methods and consistent reporting practices so that comparison between sports facilities and different events would be possible.

The results showed in the study of Corthout et al. (2021) that larger events outperform better than smaller events in the realization of sustainability. Also, the findings of this study indicate that in larger events, sustainability is better taken into account than in smaller ones. And especially for small routine events, where there is no large event organization behind them, the sustainability of the facilities creates the basis for event sustainability.

This thesis implements the City Strategy and several plans of the City of Tampere and serves both as a preliminary study for the implementation of the goals and implements the goals. This work contributes to the plan 'The Experience Economy Development Program for the years 2021-2025' by contributing to the development of support services available to event organizers to be of higher quality, the development of event venues to be more modern, and increasing the attractiveness and reliability of Tampere as an event city. The Climate Neutral Tampere 2030 Roadmap implements the SDGs and goals 7, 12, and 13 considered in this study are also among the goals the roadmap implements. As the Guidelines and Priorities for Event Activities include goals that for example promote the safety, sustainability, and equality of events and goals that aim to make event facilities more accessible and responsible, this thesis supports the implementation of these goals.

This thesis also supports the implementation of the Guidelines for Sustainable Tampere 2030 by for example recognizing and advising to development of the waste management of city facilities and enhancing conditions for biking. The themes of Equality and Non-Discrimination Plan of the City of Tampere emerged in the research and the results of the research support the plan's measures and their implementation. Also, the thesis supports the Action plan for circular economy and sustainable development of the Sports and Youth Services of the City of Tampere. In certain aspects, this research revealed the same strengths and challenges for TESC as the Action plan, but also measures which have been implemented after the plan was prepared and different themes than included in the Action plan, such as the development needs for facility management, internal communication, and contract management. Then, the Five-Star City Centre 2018-2030, Development Program was discussed in several interviews, and the development of the Stadium and the implementation of this development program were identified as both supporting and limiting each other. For example, the implementation of the development targets identified in the study would modernize the Stadium to increase usability and promote sustainable mobility in the area.

6.2 The Realization of United Nations' Sustainable Development Goals

The results showed that all the eight SDGs studied in this research are partly implemented in sports event facilities and sports events but all of them could still be realized more thoroughly. The realization of SDGs in sports events could be strengthened with the help of the development of sustainability in sports facilities. Below are presented the factors and measures that emerged from the interviews of how the SDGs are realized and how they could be strengthened in sports events.

As mentioned earlier, the realization of one goal can contribute to the realization of other SDGs as well. Then, all the SDGs can be promoted through sports by raising awareness and offering a promotion platform for different values and goals. This further leads to more sustainable activities for visitors, event organizers, and personnel of facilities and venues, and thus to even more sustainable events. Based on the results of the study all communication and promotion of sustainability should be increased.

A critical consideration involves the establishment and assurance of comprehensive signage, which would not only help to promote access to the facilities but also, for example, the use of the facilities for disabled persons, recycling, and waste management, and additionally, it would facilitate

the convenient refilling of reusable water bottles during events and could improve the event experience in general. Subsequently, enhancements could be achieved through the refinement of data collection processes, accompanied by the systematic reporting of achievements and areas which need improvement. This is included in goal 12 in Table 1, but it is another example of measures that can be linked to other goals as well. Whether it is waste management, electricity use, or the reuse of equipment and materials, collecting concrete data on implementations and reporting results can contribute to improving these in future events as well.

Goal 3: Ensure healthy lives and promote well-being for all at all ages.

Both the Stadium and TESC are old buildings and were built based on the knowledge of sustainability at the time. Construction and building repairs are governed by law, and with the new Land Use and Building Act entering into force year 2025 (Ympäristöministeriö, n.d.), sustainability will be taken into account in construction better than before. In the interviews, it was mentioned that in addition to construction and structure, good indoor air in the facilities, for example, is an essential factor in promoting the well-being of people using facilities. At TESC, the new automation system for the air conditioning has for example improved the conditions of the facility. Taking account of different age groups and user groups is also essentially related to promoting this goal. The realization of this goal could be strengthened if for example:

- The sustainable construction of sports facilities can be implemented in connection with repairs and the situation can be improved to meet the level of modern knowledge.
- Facility and event planning is implemented by taking into account different age groups and user groups, and more targeted services are offered.
- Diverse well-being in event spaces is considered, for example, by creating a quiet space. The Stadium and TESC are adaptable, and for example, arranging quiet spaces or other special elements for events can be implemented by planning and cooperation with different stakeholders.

Goal 5: Achieve gender equality and empower all women and girls.

The results showed that only a few wishes and feedback have been received about this topic. The realization of this goal in sports events could be strengthened, for example, by increasing awareness among both facility personnel and event organizers. In addition, by creating common rules and making use of the good practices of previous implementations and the possibilities of the facilities, the achievement of the goal could be promoted. Status of this goal and ways to strengthen it:

- Creating an inclusive, safe, and fair environment where all genders are welcome is possible both at TESC and at the Stadium but requires additional planning from the event organizer.
- It would be necessary to find out how the gender impact assessment could be added to decision-making and implementations as the results of the study did not reveal any information about implementations related to this.
- Some events have successfully used the help of experts to evaluate this theme and prepare suggestions for improvement. It would be wise to increase the participation of equality experts of different genders and other fields in planning, decision-making, and evaluation.

Goal 6: Ensure availability and sustainable management of water and sanitation for all.

It can be stated that this goal has been partially actualized and the condition consistently improves in conjunction with repairs and maintenance efforts. Measures that have already been taken:

- Increased water-use efficiency with water-saving devices.
- Improvements to the possibility of using refillable drinking bottles and raised awareness to change the behavior of those attending events by limiting or banning single-use plastic bottles.
- Success in increasing awareness of plastic pollution and the purity of tap water.

Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all.

Measures have been taken to increase energy efficiency in sports facilities, and with that, the energy efficiency of events has also been promoted. Means to strengthen the realization of this goal:

- Energy efficiency has been improved in the facilities and the possibilities of introducing renewable energy should be further explored in connection with repairs.
- Increasing energy efficiency during events by giving more instructions and information to event organizers.
- Expansion of energy consumption monitoring should be considered.

Goal 10: Reduce inequality within and among countries.

Accessibility is well-considered in TESC, but the situation is more challenging at the Stadium. The common view of the interviewees was that more measures should be taken to reduce inequality and increase the safety of the facilities and events. Examples of measures that have already been taken and means to strengthen the realization of this goal:

- Measures and improvements have been made in TESC to improve equal opportunities for people to participate.

- The preparation of accessibility surveys in the Stadium has started, which helps to identify measures that require improvement. Within TESC, an accessibility survey has been conducted, and subsequent modifications have been implemented in accordance with its findings.
- The opportunities and limiting factors emerging from accessibility surveys should be communicated to stakeholders, and the information should be added to the facilities' websites.
- The involvement of different population groups in planning and decision-making regarding sports events and sports facilities should be increased.

Goal 11: Make cities and human settlements inclusive, safe, resilient, and sustainable.

Both facilities are well located but the accessibility could be improved by different solutions and cooperation with different stakeholders. This goal could be also improved by paying more attention to building materials used in the facilities. Based on the research, however, this is not unproblematic, as there is an absence of appropriate tools for the comprehensive integration of life cycle thinking. Then, examining the versatility and utilization rate of the facilities is essential for the realization of this goal. Events can be organized with greater sustainability by strategically planning the event schedule during peak seasons. This involves scheduling consecutive events to optimize the shared use of structures and equipment whenever feasible. Examples of the current state, measures that have already been taken, and means to strengthen the realization of this goal:

- The versatility and utilization rate of the Stadium and TESC are already high, but efforts could be made to increase their use and to make the operation more logical through joint planning among different stakeholders.
- Urban planning and regional plans can influence the accessibility of the facilities even better by public transport. For example, if the tramway lines expand, TESC's situation in terms of accessibility will be improved.
- The events have been successful in encouraging the use of public transport.
- Adding bike parking and marking them better, could improve the accessibility of the facilities in more sustainable ways.
- Reducing the environmental impact of facilities by choosing low-carbon building materials.

Goal 12: Ensure sustainable consumption and production patterns.

The realization of this goal in sports events could be strengthened if the recycling possibilities are created in the Stadium and improved in TESC. Based on the interviews, there is still room for improvement in the sustainability of procurements, although sustainability factors are predominantly considered. In the procurement of certain devices and materials, sustainability cannot be demanded when there is only one supplier or manufacturer available. Concrete success factors and challenges regarding this goal that emerged in the research are:

- The responsibility and sustainability of procurements are already widely considered, but there is still room for improvement.
- Reducing and reusing materials is enabled by shared equipment.
- There is a need to develop ways to keep shared equipment safe in storage and good condition.
- Waste management and recycling practices in the Stadium do not currently meet today's standards or requirements.

Goal 13: Take urgent action to combat climate change and its impacts.

This goal is promoted by the actions connected to previous goals, by for example reducing the carbon footprint in different areas of facilities and events. In addition, this goal is essentially related to sustainability in procurements and the selection of partners. The realization of this goal in sports events could be strengthened by:

- Consideration of environmental responsibility more strongly than at present in the selection of partners and the use of local companies.
- Reducing the carbon footprint in construction, consumption, event-related travel, transportation, etc.

6.3 Ethicality, Trustworthiness, and Limitations

In the methodology section it is described the research methods, data collection and analysis of this study, and trustworthiness in qualitative study in general. The trustworthiness of this study is confirmed by the fact that the research process was conducted, described, and reported in detail, and it measures the things that were originally intended to be researched. However, the research results are not completely reproducible, which is common in qualitative studies, but in certain parts, they may also apply to other sports event facilities and processes of the City of Tampere.

Special attention was paid to the researcher's impartiality and the communication was not affected by the researcher's framework. To maintain impartiality the researcher took a neutral and impartial approach to the interviews and informed the interviewees that she did not represent the employer but was a neutral researcher. However, the researcher had a strong commitment to the

study and the topic of the thesis as she works in the field and will also benefit from the research personally by getting a wider understanding of the subject.

Ethical Principles of JAMK University of Applied Sciences (2018) are taken into account during the data collection and when processing the data. The research permit for the thesis has been applied for and received from the City of Tampere. Expert interviews were conducted with interviewees from different levels of organization and stakeholder groups, which made it possible to collect data from different perspectives. By pseudonyms and coding the anonymity of respondents was ensured. In the use of quotations, special attention was paid to preventing traceability, and permission to use certain quotations was asked from the interviewees. Furthermore, the translations of the quotations were carefully prepared as well as the translations of the interviews, as all of them were held in Finnish and translated into English.

The data was collected from public sources like different websites, e-books from the JAMK library and books from Tampere University Library, online databases of domestic and international academic publications and scientific articles, interviewees, and the sources of the City of Tampere. Before the interviews, permission for recordings and transcriptions were asked and the respondents were informed about the anonymity, the data protection, and the storage of the data. The recordings and transcriptions were saved as an original version to ensure the data was not accidentally changed and that the original data remained of high quality. All the data was stored in the author's personal account in the work computer, which is owned by the commissioner, and are located on the commissioner's server. Both the computer and the account are protected with a password. Data that was under analysis or converted and transferred was saved into different files than the original data. The data did not contain personal data, therefore special measures were not required for their processing. Information security is ensured by the information security unit of the City of Tampere. After the publication of the thesis the collected data will be deleted.

According to law, the data created as a result of the public sector, and administration official's activities is public. This has also been considered in the processing of the research material. The commissioner of the author's thesis, the City of Tampere, has strict rules and regulations according to data management, and these have been taken into account when processing data.

The thesis process has been done alongside the work and during holidays. This study has allowed the author to examine the operation of her work environment and industry more broadly than would have been possible within the framework of working hours. Conducting this research has increased the author's readiness to produce critical analytical thinking and to understand large entities, as well as increased her expertise in sports, facility, and sustainability management. There has been enough time to do the research, but to avoid the pressure and rush from work at the same time, it would have been good to take study leave and focus only on this theme and research.

The study is well conducted and reported and provides useful information, but it also has some limitations. Despite the precautions, some parts of the interviews could be biased because some of the interviewees knew the interviewer well and due to the person's current position in the organization. The research topic and the interviewees' wishes regarding the results and future measures and improvements may have affected the interviews and research results. Then, translating the interviews from Finnish to English may have caused communication gaps.

Furthermore, it should be noted that the theoretical framework only offered a general overview of sustainability theories and the sustainability of sports, sports events, and sports event facilities. In addition to these, there may be other theories and approaches that were not included in this study, but which could influence the results.

7 Conclusions and Development Proposals

Sport stands out as not only one of the most financially successful industries but also as one of the most widely embraced social activities globally. As described earlier, sustainability and the Agenda2030 goals affect physical activity and sports, and again physical activity and sports are important in improving sustainability and promoting the SDGs. Promoting the sustainability of sports facilities and sports events not only improves these, or implements already existing plans, but also helps to implement the Sports Act, for example by reducing inequality in sports and promoting opportunities for different population groups in sports to exercise and practice sports. There is also a growing demand for more sustainable planning for example to minimize the environmental impact

of sports events and sports event facilities. (Finlex, 2022; Geneva Environment Network, 2023; World Tourism Organization, 2021)

This study aimed to research the development areas to reinforce the sustainability and the realization of the United Nations' Sustainable Development Goals and the level of sustainability in the sports event facilities and the sports events arranged in the facilities of the City of Tampere. The study succeeded in finding the views of different stakeholders on the current state of sustainability in the Tampere Stadium and TESC, and the results of the study provide valuable information about the success factors, challenges, and practices that influence the development of sustainability.

To support already existing plans and reports, this research helps to get a more comprehensive understanding of the state of sustainability and the implementation of SDGs in the sports event facilities of the City of Tampere. The results show that the City of Tampere is already performing very well in many aspects of sustainability, both in sports events and in sports event facilities. This research and its background investigations confirmed that in the Event Services, the Sports Services, and other departments, good and developmental work is being done to implement more sustainable sports events. However, the results of the study showed that with certain improvements, events could be organized even more sustainably in the sports facilities of the City of Tampere.

In the research findings, the challenge of unclear goals and responsibilities was mentioned. The answer to this is to discuss the goals, roles, responsibilities, and expectations of different stakeholders and create a joint strategy for the operation. Sustainable planning and coherent thinking should be included in all decision-making processes. Additionally, improvements to information flow, communication, and guidance should be carried out, as most of the development proposals are related to these.

As conclusion, one of the most critical factors in sustainable development was seen in the waste management and the lack of recycling opportunities at the Stadium. This was also seen to affect the success of event biddings. The preparation of a waste management plan for the Stadium and the improvement of TESC's waste management problems were mentioned as essential. Then, to summarize the results, more measures should also be taken for equality, accessibility, and gender

equality. To enhance the factors of social sustainability, it is necessary to establish the principles of a safer space in both facilities. Additionally, exploring the potential implementation of a gender impact assessment in specific operational areas is crucial. Furthermore, conducting an accessibility survey for the Stadium and addressing the identified shortcomings is essential.

Even if all the aspects of sustainability have not yet been considered completely comprehensively in the facilities, based on the interviews, sustainability is considered and carried out more thoroughly in the sports events organized in the facilities. Even though it is necessary to make improvements in the facilities and to the activities of the personnel in terms of sustainability, it does not remove the responsibility of the event organizers to consider and promote sustainability in the future.

Since the progress of various plans and development programs affects the development of the Stadium and also of TESC, the areas, and measures that can be improved without conflicting with other developments should be determined. The possibility of resolving individual measures that cause great concern must be clarified promptly. These could be, for example, improvements related to recycling, such as organizing cardboard collection at the Stadium.

As improving sustainability is presented to improve the image and gain a competitive advantage and strengthen partnerships, the City of Tampere should not be satisfied with the current state of sustainability but continue to improve it and carry out further studies. A suggestion for further study in the future could be related to the sustainability of smaller events in the sports event facilities because studies have shown that sustainability is realized weaker in small events than in large events.

In this study, it remained unclear how much impact assessment and measurement of customer experience has been done about the studied themes. A customer experience as a competitive factor and placing it at the center of operations has been identified as one of the opportunities for the future of the event industry. (Business Finland, 2021) Due to these facts, it would be beneficial to study the theme of sustainability from the perspective of customer experience and find suitable measurement methods for impact assessment. In addition, it would be necessary to study and define the desired and sufficient level of sustainability in all its aspects.

As large sports facilities are recognized as not the most energy-efficient buildings and sports not the most sustainable activity, it is very important to make them as sustainable as possible. In the promotion of sustainable development, the active action of every community and individual is important, and everyone's contribution is needed to realize development. The city's resources are also limited, and therefore in the future the city should involve different stakeholders more strongly in cooperation.

By strengthening the SDG perspective in the management of sports event facilities and increasing the SDG understanding of the personnel, Tampere can gain added value to its work and appreciation in international forums by being able to describe its strengths and sports event activities through the widely recognized United Nations' Sustainable Development Goals.

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Appendices

Appendix 1. The interview structure and questions

1. Background information about the interview and the topic before
 - a. Structure of the interview
 - b. Sustainable Development Goals of the United Nations
2. Interviewee, background information of the interviewee
 - a. Who is the interviewee and what is his/her role in organizing sports events?
 - b. What kind of events/competitions the interviewee has organized at Tampere Stadium and TESC?
 - c. Cooperation and interaction between administrative sectors, as well as available information and existing know-how for organizing sustainable events in the facilities under study.
3. Implementation of the UN's Sustainable Development Goals in the sports event facilities of the city of Tampere
 - a. The condition of the facilities, repairs, and renovations
 - b. Realization of gender equality
 - c. Water consumption and monitoring
 - d. Electricity consumption and monitoring
 - e. Realization of accessibility and reducing inequality
 - f. Transportation and multi-functionality of facilities
 - g. Waste management and procurement practices
4. Promotion and raising awareness about environmental issues.
5. Strengths and successes related to the sustainable and responsible use of the facilities.
6. Suggestions for improvement and development.