



HELSINGIN YLIOPISTO
MAATALOUS-METSÄTIETEELLINEN TIEDEKUNTA

What is the value of Helsinki archipelago for the visitors – is biodiversity essential?

Jukka-Pekka Hares

University of Helsinki

Master's Programme in Forest Sciences

Forest Bioeconomy Business and Policy

June 2022

Faculty: Faculty of Agriculture and Forestry

Degree programme: Master's Programme in Forest Sciences

Study track: Forest Bioeconomy Business and Policy

Author: Jukka-Pekka Hares

Title: What is the value of Helsinki archipelago for the visitors – is biodiversity essential?

Level: Master's thesis

Month and year: June 2022

Number of pages: 70 + 3

Keywords: Values, valuation, biodiversity, Helsinki, archipelago, urban green space, participatory planning, urbanization

Supervisor or supervisors: Florencia Franzini and Anne Toppinen

Where deposited: Helsinki University Library – Helda / E-thesis (opinnäytteet) ethesis.helsinki.fi

Additional information: Part of the Co-Creation lab project by Helsinki Institute of Sustainability Science (HELSUS) and conducted in collaboration with the City of Helsinki.

Abstract: The archipelago is a unique urban green space and a popular place to visit in the city of Helsinki. Nevertheless, multiple factors, such as urban expansion, recreational and environmental values create pressure on the development of the Helsinki archipelago. Visitors form an important group of stakeholders considering the development and future of the area. This qualitative interview study examines what do the visitors value in the Helsinki archipelago and what value the islands' biodiversity has for them.

A value framework by Himes and Muraca (2018) was applied as a theoretical framework in this thesis. The values of visitors are divided into categories of instrumental, relational and intrinsic values. The data were collected via 20 semi-structured interviews at three different islands in Helsinki archipelago. The interviews were conducted in August 2021. The results are analyzed with thematic method and are supported with quantified data analysis by applying the co-occurrence analysis with Atlas.ti 9.0 software.

For the visitors interviewed, the most frequently emphasized value of the Helsinki archipelago is related to nature. In general, the islands are seen as an accessible recreational day-trip destination,

where nature provides an environment to relax and recover. Many visitors enjoy sharing the experience with family or friends – sometimes even with strangers. A contrast to the constructed urban environment is important for the urban residents. Bridges to, or excessive infrastructure on the islands are not desired. The main value of biodiversity in Helsinki archipelago emerges via new experiences that are different from elsewhere in the urban environment. Additionally, biodiversity facilitates an immersive nature experience that supports well-being. Biodiversity in the archipelago has also intrinsic value: The archipelago is a valuable place for the ecosystems and biota to flourish. For the visitors, the archipelago is a pristine natural environment worth maintaining as it is.

Tiedekunta: Maatalous-metsätieteellinen tiedekunta

Koulutusohjelma: Metsätieteiden maisteriohjelma

Opintosuunta: Forest Bioeconomy Business and Policy

Tekijä: Jukka-Pekka Hares

Työn nimi: What is the value of Helsinki archipelago for the visitors – is biodiversity essential?

Työn laji: Maisterintutkielma

Kuukausi ja vuosi: Kesäkuu 2022

Sivumäärä: 70 + 3

Avainsanat: Arvot, arvottaminen, biodiversiteetti, luonnon monimuotoisuus, Helsinki, saaristo, viheralue, osallistava suunnittelu, kaupungistuminen

Ohjaaja tai ohjaajat: Florencia Franzini ja Anne Toppinen

Säilytyspaikka: Helsingin yliopiston kirjasto – Helda / E-thesis (opinnäytteet) ethesis.helsinki.fi

Muita tietoja: Toteutettu osana Helsingin yliopiston kestävyystieteiden yksikön (HELSUS) Co-creation lab -projektia ja yhteistyössä Helsingin kaupungin kanssa.

Tiivistelmä: Helsingin saaristo on ainutlaatuinen viheralue ja suosittu vierailukohde. Silti esimerkiksi kaupungin laajeneminen sekä virkistys- ja ympäristöarvot luovat osaltaan painetta alueen kehitykseen. Helsingin saariston vierailijat ovat tärkeä sidosryhmä alueen kehityksen, suunnittelun ja tulevaisuuden kannalta. On oleellista tietää, mitä Helsingin saaristo heille merkitsee. Tämä laadullinen haastattelututkimus selvittää, millaista arvoa Helsingin saaristo tuottaa vierailijoilleen ja millainen arvo saarten biodiversiteetillä on heille.

Tutkielman teoreettisena viitekehyksenä sovelletaan Himesin ja Muracan (2018) arvokehystä, jossa arvot on jaettu välineellisiin, suhteellisiin ja piileviin. Tutkielman aineisto koostuu 20 puolistrukturoidusta teemahaastattelusta. Haastattelut toteutettiin kolmella eri saarella Helsingin saaristossa ja kolmena eri viikonpäivänä elokuussa 2021. Haastatteluaineisto luokiteltiin koodaamalla se Atlas.ti 9.0 -ohjelmalla. Tutkielmassa analyysin lähestymistapa on teoriaohjaava ja analyysimenetelmänä on teema-analyysi. Lisäksi analyysiä on täydennetty yksinkertaisilla määrällisillä analyysillä, joka toteutettiin Atlas.ti 9.0 -ohjelman co-occurrence analysis -ristiintaulukointimenetelmällä.

Haastatteluaineistossa luontoon liittyvät asiat korostuivat Helsingin saaristoon liitetyissä arvoissa. Yleisesti ottaen Helsingin saaristo on haastatelluille ennen kaikkea helposti saavutettavissa oleva päiväretkikohde, jonka luonto auttaa rentoutumaan ja palautumaan arjen keskellä. Monet haastatelluista vierailevat Helsingin saaristossa pääsääntöisesti yhdessä ystävien tai perheenjäsenten kanssa. Toisinaan arvokkaat kokemukset jaetaan jopa tuntemattomien kanssavierailijoiden kanssa. Toisaalta monille Helsingin saaristo on paikka, minne mennään nauttimaan omasta rauhasta. Saariston muodostama vastakohta rakennetulle kaupunkiympäristölle on arvon kannalta tärkeä tekijä. Siltoja tai runsasta infrastruktuuria ei saarille kaivata. Biodiversiteetin tärkein arvo haastatelluille ilmenee sen tarjoamien elämysten kautta. Tämä tarkoittaa ennen kaikkea erilaisia kokemuksia muuhun kaupunkiympäristöön verrattuna. Monet nauttivat kasvien, eliöiden ja ympäristön tarkkailemisesta. Lisäksi haastatelluille on arvokasta, että Helsingin saaristossa he voivat tuntea olevansa keskellä monimuotoisen luontoa, millä on myönteinen vaikutus hyvinvointiin. Biodiversiteetillä on vierailijoille myös piilevää arvoa: saaristoa arvostetaan ympäristönä, jossa ekosysteemeillä ja eliöillä on tilaa elää. Haastatelluille saaristo on ainutlaatuinen luonnontilainen ympäristö, joka on arvokasta säilyttää sellaisenaan.

Preface

This thesis was made in collaboration with the City of Helsinki and as a part of a Co-creation project by Helsinki Institute of Sustainability Science (HELSUS).

Florencia Franzini and Anne Toppinen, my supervisors, thank you very much for all your support and great advice throughout the whole process!

1. INTRODUCTION.....	1
2. CONTEXTUAL BACKGROUND – REVIEW OF THE LITERATURE.....	5
3. THEORETICAL FRAMEWORK.....	15
3.1 <i>The three categories of values – instrumental, relational and intrinsic</i>	15
3.2 <i>Intrinsic values</i>	16
3.3 <i>Relational values</i>	18
3.4 <i>Instrumental values</i>	19
4. DATA AND METHODS.....	20
4.1 <i>Development of the interview guide</i>	20
4.3 <i>Data analysis</i>	21
4.4 <i>Sampling and data collection</i>	25
4.5 <i>Reliability and validity</i>	28
5. RESULTS.....	32
5.1 <i>Codes, categories and interrelationships</i>	32
5.2 <i>Instrumental values</i>	35
5.3 <i>Intrinsic values</i>	40
5.4 <i>Relational values</i>	44
5.5 <i>Interrelationship between biodiversity and values</i>	49
6. DISCUSSION.....	56
6.1 <i>The value of the Helsinki archipelago for visitors</i>	56
6.2 <i>The value of biodiversity for the visitors of Helsinki archipelago?</i>	62
7. CONCLUSIONS.....	69
8. REFERENCES.....	71
9. THE APPENDIX.....	82
<i>Appendix A. The interview guide</i>	82
<i>Appendix B. Consent letter</i>	83

1. Introduction

The city of Helsinki is the capital and the biggest city of Finland with 658 564 inhabitants (in the end of the year 2021) (OSF, 2022). The city is located by the Gulf of Finland, Baltic Sea. Helsinki has around 300 islands and 130 kilometers of shoreline (Helsingin kaupunki, 2022). Helsinki is growing fast. According to the forecast of the city of Helsinki, there will be 700 000 inhabitants in the year 2028 and 820 000 inhabitants by 2050 (Sinkko & Vuori, 2021). Moreover, there are a few significantly constructed areas, where the growth is strongest. Six out of eight of these areas are coastal areas or islands: Kalasatama area (+16 000 inhabitants), Kruunuvuoren ranta and Laajasalo (+11 800), Jätkäsaari (+8 000), Vuosaari (+8 700), Hernesaari (+6 200) and Lauttasaari area (+4 300) (ibid). Thus, there is a big growth pressure in maritime areas of Helsinki.

Helsinki is a relatively green city in Europe (European Environment Agency, 2022). The urban planning of Helsinki tries to combine a dense city and a green city (Hautamäki, 2019) and the archipelago is an unique part of the city having an important recreational and environmental value (Helsingin kaupunki, 2022; Sipilä & Tyrväinen, 2005). In the world of changing climate a favorable urban structure is a densely built and efficient city with good connections (Hannikainen, 2019). The ratio of green and constructed space is a common dilemma emerging from the pressure of densification in urban planning (Wang et al. 2019).

Attitudes towards urban green space has been changing remarkably in Helsinki during the past decades (Hautamäki, 2021b). The most current master plan of Helsinki (2016), emphasizes dense city structure rather than a coherent green structure, the shift of tone from emphasis on green to density is notable (Hautamäki, 2019: 21). However, Helsinki was ranked as one of the greenest capital cities in Europe in 2022 (European Environment Agency, 2022). The focus is on ecology and sustainability, but as the city expands and available land area is limited, preserving the green space becomes more difficult. (Hannikainen, 2019).

Nature and the maritime environment of Helsinki are considered as an essential element of the city image (Hautamäki, 2019). The expansion of the city on green space (owned by the city) is opposed by many residents, which can be seen in the impetuous debate regarding the plans for curbing the Central park area in Helsinki (Hautamäki, 2021a: 888). The city council, the city board and the city planning department are the main operators in urban planning. The residents also have a right to participate. (Hannikainen, 2019). The City of Helsinki surveyed occurrence of threatened habitat

types in 2017–2020. Altogether 455 sites in 45 islands were inventoried in the archipelago. Most of the sites, altogether 215, belonged to the least concern (LC) category, but 117 were threatened (CR = critically endangered, EN = endangered or VU = vulnerable) and 98 near-threatened (NT). Additionally, the recreational use of the archipelago causes degradation. This can be seen for example on the rocks and the forests in the middle of the islands. (Erävuori et al., 2022).

The urbanization of Helsinki, started to accelerate after the second world war in 1940's-1950's along with the rapid industrialization. There were more people moving to urban areas and sub-urban areas emerged in the cities. First the ideal was a garden city, of which Tapiola area is a renowned example. In the 60's the trend moved towards a forest city, where the resident buildings were built loosely and they were embedded in nature. Nature played a big role in urban planning as people moved from countryside to cities. (Hannikainen, 2019). In the 70's a dense urban structure took place at the expense of green spaces. The ideal was to build a city, where people meet each other and services are close by. Whereas, in the 80's-90's the green space become appreciated in the urban structure; smaller buildings with green courtyards in between became a trend. Climate change began to have a bigger impact on urban planning in 2000's. The new ideal urban structure became a dense, energy efficient city with good connections. (ibid). Additionally, the cities are moving from one center city to polycentral (Granqvist et al., 2019). Helsinki is planning to expand the growing city also on the green spaces, one debated example of this are the central boulevards, highways leading to city transformed into urban boulevards with houses, good public transportation and light traffic lanes (Hautamäki, 2021b). At the same time, the importance of urban green space has grown as they counterbalance the prevailing constructed environment. (Tiitu, 2018).

The urban green areas improve the quality of life (World Health Organization, 2021) and they are important for public health (e.g. Houlden et al. 2021). The reciprocal harmony of green and urban structures is essential for a healthy and livable city (Hautamäki, 2019: 20). Climate change strengthens for example the urban heat island phenomenon, which means that the built areas heat up excessively (Räsänen et al., 2019), and the green space becomes even more important for residents to get relief from the heat (Nieuwenhuijsen, 2021). Moreover, all the green areas in urban environment are valuable for the biota: they provide valuable living environment and also the connections between ecosystems. Green connections are important for maintaining interconnected habitats for species; they support biodiversity. However, the urban development may be harmful for the ecosystem services. (Niemelä et al. 2010). In addition, the growth of the urban areas, and also their densification, pose a threat on both well-being of people, as green space has positive health

impacts and biodiversity as the natural areas disappear. Thus, the interface between people and the biodiversity is in the core of planning urban areas good for both the residents and the biodiversity. (Botzat et al., 2016)

For planning and developing urban green space, it is important to understand what do the visitors consider valuable (Sipilä & Tyrväinen, 2005). Cooperation with stakeholders is crucial for the sustainable recreational use of the area. The local community should be involved in planning and decision making. In case the island is not inhabited, the views of the visitors should be mapped out and taken into account when developing the sites. It is essential to know what do the visitors think about the plans and how do the plans impact on their motivation to visit the archipelago. In strategical planning of the islands as a tourism destination, the value of the islands for the stakeholders, including the visitors, is in central role. (Kuldna et al., 2021).

Kuldna et al. (2021) emphasize that the visitor surveys provide good source of information for developing island destinations. Their report highlights the importance of understanding the visitors' "motivation, perception of islands' values and visiting experience satisfaction. Surveying the visitors at harbor, pier or ferries either by a questionnaire or an interview enables to gain meaningful information about the thoughts and expectations of the visitors of different profiles. (ibid.). The importance of mapping the values of the key stakeholders for green infrastructure planning has also been emphasized by Vierikko and Niemelä (2016). Additionally, the vision for the development of islands is based on the core values of the islands (Kuldna et al., 2021). This said, this thesis mapping out the value of the Helsinki archipelago for the visitors is well justified for the urban planning and development of the Helsinki archipelago and also the areas nearby.

The topic of this thesis is currently relevant as Bele and Chakradeo (2021) note that people-biodiversity connections, and the role of urban biodiversity in people's daily life still requires further research. In addition, particularly the waterfront spaces need more research in this sense (ibid; World Health Organization, 2021). The relation between biodiversity and human well-being remains vaguely understood (Houlden et al., 2021). In addition, it is still open how exactly urban nature benefits the urban residents and which elements of urban nature effect on positive social benefits (Botzat et al., 2016: 229). There is also a need for a research about valuation and perception of urban green space (Wang et al., 2019).

This thesis is done in cooperation with the City of Helsinki, who initiated the topic. This study aims to assess what do the visitors value in the Helsinki archipelago and how valuable is biodiversity in the Helsinki archipelago for the visitors. This is significant because in the discussions with a representative of City of Helsinki it came up that the city has not mapped out the value preferences of the archipelago visitors about the destination and the biodiversity of the archipelago. Because residents are one important group of stakeholder in the urban planning, the views of the visitors of the urban green space are important for developing a livable city under the pressure of building a dense urban area (Hautamäki, 2019). This said, this thesis aims to explore the following questions:

- What is the value of the Helsinki archipelago for the visitors?
- What is the value of the biodiversity of the Helsinki archipelago for the visitors?

2. Contextual background – review of the literature

The background literature focuses on the benefits of biodiversity for the people as well as the value of urban green space (UGS) for the residents. The second part of this chapter discusses participatory planning of urban green space.

2.1 Benefits of urban green spaces for the residents

According to the works of Yli-Pelkonen (2013) the residents of Helsinki value the UGS for their recreational dimension. Apart from this study, research about the value of nature for Helsinki residents is limited. Good feeling in nature seemed to be associated to exercise, such as walking or more high-pace sports, or then only being in nature, feeling it and relaxing at the same time. The residents emphasized the importance of the accessibility to the green areas. Conservation of UGS supports the recreational values of these areas, which motivates visitors to favor conservation. In addition, landscape and diverse nature in UGS increase the value for the residents, who enjoy various landscape and encounter animals. Additionally, experiencing the surrounding nature with all senses, from feeling the scents to observing the biota, provide value for visitors of UGS. Particularly observing the birds in UGS is popular. Moreover, people experienced that it is easier to breath in a forest. (Yli-Pelkonen, 2013)

The wilderness in urban areas help urban residents to connect with nature and natural environment. The UGS also support the conservation of biodiversity. The urban wilderness has an important role for both the residents and conservationists. (Kowarik, 2018). On the other hand, the residents may perceive the wild nature negatively (World Health Organization, 2021). However, recreational values and support for biodiversity are not necessarily conflicting features of nature sites (Sacher et al., 2022). For example, the amount of deadwood in forests does not impact on the people's choices of recreational sites. Some quality attributes of deadwood have a positive impact on people's preferences regarding the recreational site. Enhancing the habitats for rare and endangered species is considered important. (ibid).

Aesthetics and tranquility are preferred features in urban green areas (Qui et al., 2013). On the other hand, dead wood, dense shrubs or swampy landscape were elements people did not feel belong to parks. Moreover, indicators of human impact on the landscape raise negative feelings among people. Infrastructure or artificial feeling of natural elements were experienced negatively. (ibid). Dushkova

et al. (2021: 21) found similar positive values: Elements people appreciate the most in UGS are: aesthetic values, physical and mental health, social interactions, and sense of place in urban green space. These can be called as cultural ecosystem services (Dushkova et al., 2021). In addition, the case study in an urban park environment (Moscow, Russia and Xi'an, China) presented the study of Duskova et al. (2021) shows that people value parks as “an escape from urban busy life”. Additionally, the park visitors went there for social interaction and for active and passive recreation (ibid).

According to the works of Ives et al. (2017), people relate several different values to UGS: “*Aesthetic/Scenic (e.g. places that are visually attractive), Activity/Physical Exercise (e.g. places valued because they provide opportunities for physical activity), Native Plants and Animals (e.g. places valued for the protection of native plants and animals), Nature (e.g. places to experience the natural world), Cultural Significance (e.g. opportunities to express and appreciate culture or cultural practices such as art, music, history or indigenous traditions), Health/Therapeutic (e.g. places valued for mental or physical restoration), Social Interaction (e.g. opportunities for you to interact with other people)*” (Ives et al., 2017: 34). Constantinescu et al. (2019) researched the dimensions of quality of life related to park visits. They identified six categories in quality of life dimension, which are ranked as: Health, connection with nature, social interaction, freedom, family life and education and culture. Noteworthy, the perspective is a bit different from the other literature reviewed here; the connection with nature is connected with relaxing on park lawn and going out to restaurant, club or terrace. Freedom here refers to activities such as going to festivals, fairs or work with laptop. Education is considered as participating events or reading.

2.1.1 Health impacts of Urban green space

The positive impacts of the UGS on human well-being is emphasized in the literature. Nevertheless, the different mechanisms, which promote the well-being is not unambiguous, for instance the impact of the level of biodiversity in the UGS is not clear (Sandifier, 2015: 10). A report by the World Health Organization (2021) concerns nature and accessible blue and green environments provide both direct and indirect benefits for human well-being. Those relaxing places enable people to forget their everyday stress. All kinds of UGS are detected to have a positive impact on current feeling. In long term, most green space types improved the quality of life and mental health, especially exposure to the coastal blue-green space appeared to contribute positively to mental health. (World Health Organization, 2021).

People have difficulties to express how do they benefit nature in terms of well-being, or to describe the valuation (Stålhammar and Pedersen, 2017). Nature experience is linked with memories or associated to other people. The authors highlight the value of nature as a holistic entity that is related to the good life, eudaemonia, which nature contributes closely. (ibid). Moreover, the role of emotions crucial for value formation, they help to understand the perceived meanings, which Stålhammar and Pedersen (2017) interpret as values. Additionally, the values are experienced as feelings and the experiences in nature are unique and incommensurable (ibid).

Atiqul Haq et al. (2021) say that inevitable spending time at natural environment that is beautiful relieves stress and promote relaxation. Tyrväinen et al. (2014) detected that even short-term visit to urban nature areas relieve stress, whereas time spent in highly constructed city center environment decreases positive feelings. Sandifer et al. (2015: 4–5) summarizes several benefits for health that being in nature has, for example: *“decreased depression, fatigue and stress, increased creativity, happiness and calmness, improved cognitive function, better general health, reduced blood pressure and obesity, increased social interaction, enhanced spiritual well-being, awareness of sustainability and pro-environmental behavior”*.

2.1.2 Benefits of urban biodiversity for well-being

The health-benefits of the UGS are widely acknowledged and the biodiversity is good for physical, mental and social health (Marselle et al., 2021). Already in 2007, Fuller et al. argued that the psychological health benefits increase along increased level of biodiversity in UGS. The restorative benefits of biodiversity is evident, and people visit the urban green space for several health benefits (Bele and Chakradeo, 2021). Furthermore, besides being good for the mental well-being, biodiversity has an positive impact also on physiological health. Additionally, people experience scenic beauty and natural planting restoring and relaxing. (ibid). Nevertheless, it is difficult to distinct, which are the positive health impacts of the UGS itself and which are caused by the biodiversity there (Sandifer et al., 2015: 10). Though, it is still unknown how does the biodiversity affect in well-being and health, the research concerning the actual mechanisms of the positive effects of biodiversity to well-being is less covered (Houlden et al., 2021; Marselle et al., 2021; Sandifer et al., 2015).

The health benefits derived from biodiversity are gained in multiple ways as the figure 1 adopted from Sandifer et al. (2015) illustrates.

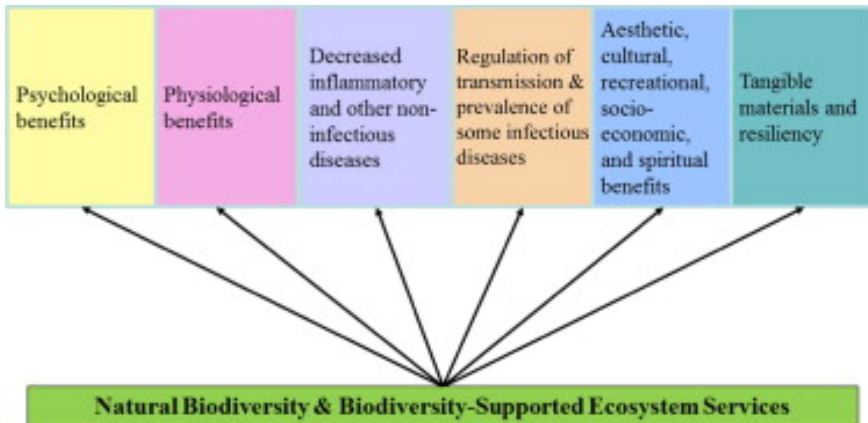


Figure 1. Various positive impacts on health of biodiversity (Sandifer et al. 2015: fig. 1).

The figure 1 shows the many ways biodiversity benefit human health. In addition to relaxation and good feeling, it has also physical health benefits, such as reduced risk for infectious, cardiovascular, intestinal and respiratory diseases. (Sandifer et al., 2015). The UGS also enhance social interaction between people (Botzat et al., 2016) .

There is a connection between floral biodiversity and self-perceived well-being. For the other biodiversity impacts the previous research, which is still limited, has not found anything consistent (Houlden et al., 2021). The diversity of birds near people’s homes was detected to increase satisfaction (Hepburn et al., 2021). One possible challenge in the research is that people might not be familiar with the meaning of biodiversity. Nevertheless, according to Qui et al. (2013), people recognize the rich biodiversity environment within urban green areas. However, they did not find connection between rich biodiversity and preferences of people. In their research both the urban green area with rich biodiversity and urban green area with low biodiversity divided opinions of people, they were both liked and also disliked. (ibid). In a research conducted in Archipleago sea in South-Western Finland, biodiversity is a feature valued throughout all the different type of habitats (Viiret et al., 2019). Additionally, a positive connection was detected between biodiversity and aesthetic landscape. (ibid).

Nature is appreciated when it is pristine and not man modified (Stålhammar & Pedersen, 2017). Despite the appreciation of pristine characteristics, nature should be accessible and available for people (Botzat et al., 2016). The eternal characteristics of nature and human being as a part of nature were contemplated. Moreover, people regard nature calming and a place to feel good in. Some even

describe it magical. Spirituality is also one dimension in perception of value of nature. (Stålhammar & Pedersen, 2017).

Swartz et al. (2014) made an experiment and they enhanced the biodiversity in urban parks of Paris and researched whether that has influence on perception of biodiversity of the visitors. They did not find any difference before and after the manipulation. Moreover, according to them, people are inconsistent in their appreciation of biodiversity: diverse flowers are appreciated but insects are to be avoided, and birds and trees are perceived more neutral. (ibid). This may have something to do with the appreciation of aesthetics, which is an important aspect for people (e.g. Botzat et al., 2016; Viirret et al., 2019). Moreover, there are also subconscious effects involved in biodiversity interaction. These subconscious benefits of biodiversity for well-being may be important motivator for visiting urban green space. (Swartz et al., 2014).

The visitors of urban parks are interested in learning more about the species diversity, and thus there could be more signs and labels to provide information about the plants (Talal et al., 2021). On the other hand, people value biodiversity because it provides recreational benefits (Bele and Chakradeo, 2021: 17). On the other hand, recreational activities are often contradictory with biodiversity conservation (ibid). However, it is not unambiguous whether recreational activities and conservation support or oppose each other (e.g. Yli-Pekonen, 2013). What is more, the support for biodiversity conservation is connected with the benefits people gain from biodiversity (Bele and Chakradeo, 2021). However, higher level of knowledge means also higher urge for conservation. The increasing the number of visitors in urban green spaces also means increasing support for conservation, because through the visits the knowledge about biodiversity improves and interest towards green space grow. (Bele and Chakradeo, 2021: 18).

The peoples' perception of uniqueness is positively dependent on the biodiversity, at least in urban forests. Moreover, the residents seem to understand the high level of biodiversity of urban forest environment, even if the biodiversity is not particularly mentioned. Urban people seem to appreciate the birds as a group of animals with most conservation value within urban forests. (Wang et al. 2019). According to the results of Wang et al. 2019 the residents of Helsinki appreciate the forests in the densely built areas. They think this is partly due to the recreational values of green areas for the residents.

People are not able to describe the value of nature experience to them. It is difficult to describe or it simply is important. They noted that people could not elaborate it further, but saying that is makes them happy. Moreover, they received replies such as “we would be poorer without nature” and “it is quality of life to go for walks in nature”. (Stålhammar and Pedersen, 2017). In addition, as said in the beginning, the actual mechanism of how biodiversity impacts on health is not clear. Nature, biodiversity and green space are overlapping with each other and especially for an urban lay-people they might mean practically the same thing. However, as Sandifer et al. (2015) summarizes, nature is not the same as biodiversity, but nature surely includes biodiversity. People have difficulties to give the definition of biodiversity when asked (Bernardo et al., 2021). Additionally, because of that people easily think of other concepts, which are close such as “nature”, “wilderness” and even “no urbanization”. Nevertheless, people can well identify places with rich biodiversity and they have a “rich mental representation of biodiversity”, which enable them to identify the biodiversity and its features. (ibid).

2.1.3 The Urban Green Spaces and Cultural Ecosystem Services

The concept of Cultural Ecosystem Services (CES) is closely related to the residents’ perceived benefits of the UGS. The Cultural Ecosystem services are ecosystem services that provide well-being in broad sense. (Dushkova et al., 2021). They are for example recreational services, spiritual services, health benefit services and recovery services. One of the most frequently experienced benefit of the CES is the sense of place of people (ibid). Thus, the valuation of the UGS, in this thesis the Helsinki archipelago, and its biodiversity is closely linked with the CES. (ibid). However, Stålhammar and Pedersen (2017: 1) question the relevance of linking directly the CES and values based on peoples’ own description of benefits of nature.

Ahtianen et al. (2019) researched the CES provided by the Baltic Sea marine environment and they note that the existence of habitats for plant and animals are particularly important for ecosystem services. Finns and Germans are most environmental oriented among the research survey respondents, who were from Germany, Finland and Latvia (Ahtianen et al., 2019). As for all the nationalities recreation, landscape and habitat are the three most important cultural ecosystem services, with the most emphasis of recreation. For Finns each of their share is quite the same with habitat being almost as important as recreation. (ibid). Spiritual experiences, inspiration, education, and historic and cultural places are not found as important cluster of cultural ecosystem services as others in their research. Nevertheless, this cluster is not at all meaningless. (Ahtianen et al., 2019).

There are similar findings among recreational visitors in the Archipelago sea in South-Western Finland (Viiret et al., 2019). The different habitats provide many significant ecosystem services (ibid). Some supporting ecosystem services seem relate a habitat for species and maintenance of biodiversity (Botzat et al., 2016). Similarly than in the paper of Ahtianen et al. (2019), Viiret also found out that the recreational opportunities and aesthetic sceneries are the most motivators for visiting the Archipelago sea region.

CES are not easy to “value, measure or quantify” because the definition is not unambiguous (Dushkova et al., 2021: 2). Additionally, the most applied indicators refer to recreation, tourism, aesthetics and nature experience (ibid). Furthermore, Dushkova et al. (2021:5) identified the following indicators for the CES: “education and training, natural heritage, cultural significance, use for entertainment purposes, symbolic significance of nature, spiritual and religious significance of natural element and intrinsic value of nature”. In addition, they noticed that the value of nature for future generations is rarely taken into account in the reviewed literature (ibid).

Some people find a spiritual dimension in the urban nature, which can be perceived as a religious experience, or a soothing and meditative environment (Riechers et al., 2016). Moreover, the UGS function as a place to clear one’s mind and to think. Some feel a deep kinship towards nature (ibid). Spiritual and aesthetic values are involved in ecosystems and these values are not well measured with instrumental approach. The spiritual dimension is often linked with connectedness to nature. (Cooper et al., 2016). Moral responsibilities people have concerning nature derive from these values, which are more important than the tangible benefits. The moral aspect derive from nature-human relationship, the humans are considered having a special role in nature and this role also causes moral responsibility. In addition, the authors recognize both explicit and implicit spiritual values. Implicit ones are indirect and explicit ones are straightforwardly about spiritual dimension such as religious aspect. (Cooper et al., 2016).

Natural environments are fruitful for learning, either individually or together with others. Education is also a CES. The educational CES can be further categorized as informal and formal. (Riechers et al., 2016). The informal is education that comes along tourism or visits to nature sites. Formal education means courses and official forms of education. (Mocior & Kruse, 2016). Riechers et al. (2016) emphasized the meaning of educational CES for the children. Mocior and Kruse (2016) observe education as an ecosystem service in a way that ecosystems provide a facility for teaching and learning that humans can exploit. For nature-based education from nature, one needs to get into

nature. The educational aspect can be enhanced with infrastructure, which can be as simple as signs with information.

2.2 Value of participatory planning in the urban green space development in Helsinki

Participatory planning is a planning process that involve stakeholders, such as residents, in decision-making process initiated by the decision-makers or other stakeholders. In participatory planning, the residents are seen as active participants, not only a passive group of people and users of services. (Jauhiainen, 2002). In participatory planning, the plan involves stakeholders brainstorming the ideas with various methods. (Dodge & Bennett, 2011:33).

Participatory planning in urban green space is beneficial, as the people value the UGS in various ways (Ives et al., 2017). Thus, one format should not be applied to the UGS. The urban green space governance involves many stakeholders and the participation of residents bring a valuable perspective to decision making and planning. (ibid). Top-down strategy in UGS planning is not an adequate approach to develop a livable urban environment (Huang et al., 2021). The information gained from the residents is experimental and based on personal perspective whereas the information produced by the professionals is more based on their expertise. The resident views can provide aspects otherwise missing. (Faehnle & Tyrväinen, 2013). The authors stress the significance of knowledge and values for decision-making. One crucial aspect in participatory planning is that it should benefit also the residents participating. (ibid). Faehnle and Tyrväinen (2013) lists four criteria that a participatory planning process should fulfil: “1. improve the knowledge and value base of planning 2. support involvement that is meaningful for residents, 3. be operational in the governance system and 4. help in guiding the area development in a sustainable direction.”

The residents’ perception of the Urban green Space (UGS) is one important aspect in urban planning (Wang et al. 2019). Understanding the public perceptions of the UGS is necessary in order to conduct proper planning, management, implementation and protection of them (Wang et al. 2019; Atiqul Haq et al. 2021). The perceptions of the users are important concerning the multifunctionality, usefulness and popularity of the urban green space (Atiqul Haq et al., 2021). Active participation of the key stakeholders and analysis of their values are necessary for a successful green infrastructure planning. Examination of values of key stakeholders help to form an overall perception of the value of the area. Local visitors/green space users are one important group of stakeholders. (Vierikko & Niemelä,

2016). The involvement of users in planning helps to develop the UGS in a user preferred way. Moreover, participation makes users more satisfied (Fors et al., 2015).

Participatory planning of the UGS has relatively long traditions in Helsinki. It has been used in strategic planning of the urban forest owned by the municipality since 1995. Moreover, the majority of both the authorities and residents regarded participatory planning important. (Sipilä & Tyrväinen, 2005). The resident participation may be helpful in development of urban green infrastructure to satisfy demands on them. Residents can be involved in even large planning projects of urban green infrastructure, such as designing of green corridors. Active participation of residents benefit both the greenspace and the residents themselves as well as the administration. For instance, the participatory activities may enhance biodiversity, social cohesion and environmental awareness. (ibid). Nonetheless, the residents may lack expertise and skills needed to operate within institutional environment or a particular type of greenery (Buijs et al., 2019). In addition, according to Konsti-Laakso and Rantala (2018) the participatory planning process decreases critics prevents conflicts after the decisions. The residents accept the decisions derived from a participatory process even if they do not agree with them. (Konsti-Laakso & Rantala, 2018).

One challenge in participatory urban planning is to use the residents' input in planning. Despite that it is essential to understand the residents' perceptions and values concerning living environment. (Faehnle et al. 2014). The information arising from residents is valuable for development as it reveals the residents' preferences (Sipilä & Tyrväinen, 2005). Nevertheless, in terms of ecological aspects the residents' priorities may contradict the ones of decision makers (Faehnle et al., 2014). Moreover, the participating residents are interested in concrete work and to see their contribution soon after the planning. However, the focus of the participatory process can be more on upper level decisions that are difficult to understand by the residents. (Sipilä and Tyrväinen, 2005).

The Urban green spaces are multidimensional sites for planning as they pose many different roles: they are places for people, biota and ecosystems. Thus many different aspects and institutional boundaries need to take into account in planning of the UGS. (Faehnle et al., 2011). The information needed for planning is multifaceted (Figure 2.). Purely technical information is not enough for successful planning. Residents' or user/visitor insight is a valuable part of information as otherwise their values, needs and experiences is easily ignored, because planners do not have the experience based information. Moreover, involvement of the residents in UGS planning is necessary because the UGS have a direct impact on residents health and well-being. Planning is based on predefined values

and for defining them the residents perspective is important. (Faehnle et al., 2011). The UGS planning requires technical, experience-based and value based information. The technical information is most tangible and then experience-based is more abstract and the value-based information is the most abstract of them. This has an impact on planning. (Glicken, 1999)

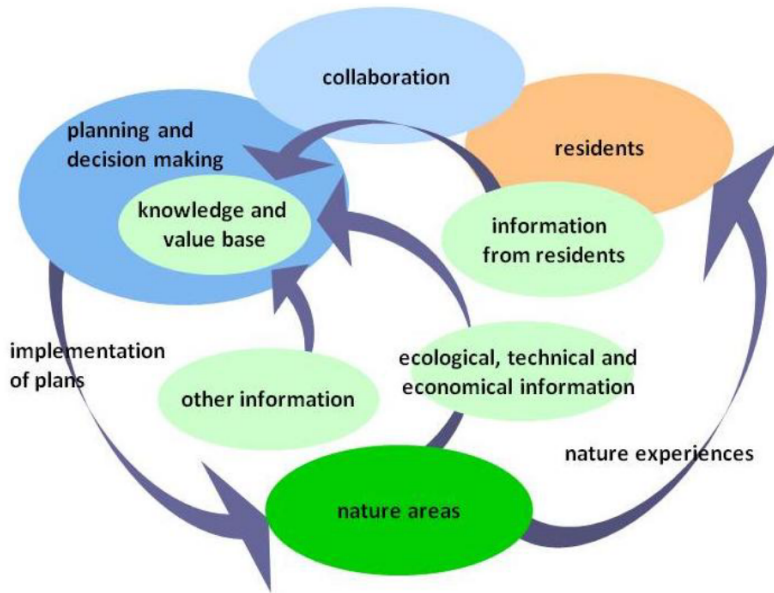


Figure 2. A complex set of information is needed for urban green space planning (Faehnle et al. 2011).

3. Theoretical framework

The concept of values is multifaceted and the values can be measured and interpreted in different ways. Also the different types of values are intertwined and sometimes difficult to differentiate from each other. (O'Connor & Kenter, 2019). The complexness of the value concept is highlighted by Chan et al. (2018: 3), who note a confusion: “concepts had become muddled”.

This thesis divides values to three types of relational, instrumental and intrinsic values. All of them are observed from non-monetary perspective. Himes and Muraca (2018: 4) provides a broad distinguishing feature between these three: “Instrumental values are substitutable while relational and intrinsic values are not.”

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) discusses the different dimensions of valuation in its report (IPBES, 2015). The report acknowledges the multifaceted meaning on value: “It can refer to a *principle* or a *social norm*, a *preference* someone has for something/a particular state of the world, the *importance* of something for itself or for others, or a *measure*.” Moreover, the report states that values are intangible in nature: “Values are plural because they can be considered from diverse perspectives, and need to be assessed in pluralistic ways. These plural values can be incommensurable and thus they cannot easily be reduced into a single metric or be compared and weighed against each other.”(ibid)

Himes and Muraca (2018: 2) make difference between the process of valuation and content of valuation. The process of valuation depicts how something becomes valuable to people and content of valuation emphasizes on what is valued and “how the value is attributed and articulated”. This thesis is focused more on content of valuation than process on valuation. Valuation emerges both subjectively and objectively.

3.1 The three categories of values – instrumental, relational and intrinsic

The theoretical framework is built around the different dimensions of values of nature, which are Instrumental, Intrinsic and relational (Himes & Muraca, 2018) as Figure 3 shows.

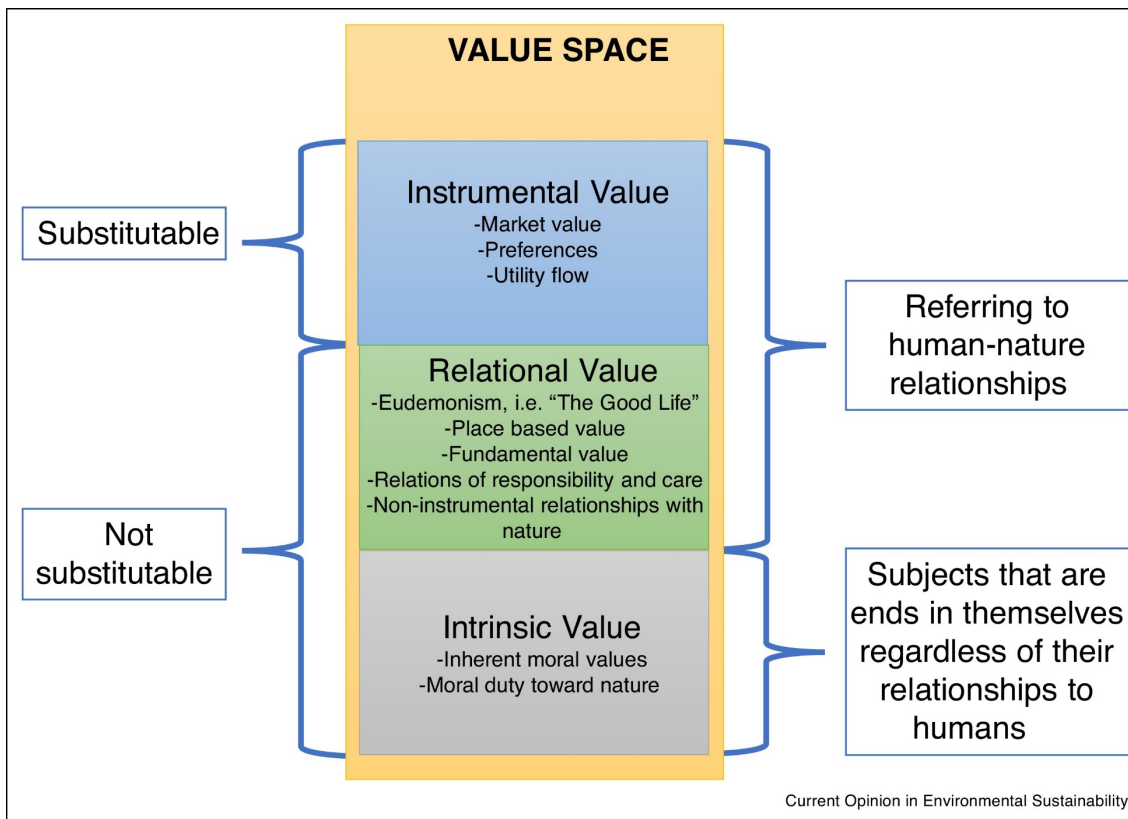


Figure 3. Distinction between instrumental, relational, and intrinsic values of nature. Adopted from Himes and Muraca (2018). “

As IPBES (2014) say, the value types are not clearly delimited. This means that a valued object can be categorized in more than one value type category. This is also applied in this thesis, many parts are analyzed under different value types regarding the perspective. Overlapping exists especially between relational values and other types. (ibid)

3.2 Intrinsic values

The common definition of intrinsic value of nature is following: Nature is valuable per se, and the value is independent on its benefit to humans (e.g. O’Connor & Kenter, 2019). Additionally, intrinsic values represent something that is morally worth valuing, even though the valued object does not provide any direct benefit to human – not even in terms of well-being (O’Connor & Kenter, 2019). The intrinsic values are detached from human needs, meanings and preferences, which differentiates them from the non-instrumental and relational category (Himes and Muraca, 2018). In addition, the intrinsic value can be both subjective and objective (O’Connor & Kenter, 2019; Butler & Ascot, 2007). Humans are subjects, who place value on nature and on the other hand nature is seen to have

value independent of human valuator (Butler and Ascot, 2007: 152). Objective approach consider there are evaluative properties independent of a valuer. Additionally, weak objectivity means that there is value that has nothing to do with humans. Whereas, the strong objectivity means that a human values evaluate value that is not related to human, something possesses value only for the object without any human reference (O'Connor & Kenter, 2019). IPBES (2014: 9) defines intrinsic values strictly: something that emerges without any human experience or evaluation. Thus, the intrinsic values are something beyond human control. Intrinsic values exists and they are possessed by something; humans can only identify intrinsic values, not have an impact on them. (ibid.). If something exists possessing intrinsic value, we have moral duty to consider its well-being. Additionally if something is having intrinsic value people may be ready to pay for it to exists also in future. (Davidson, 2013). Additionally, the intrinsic value is tied to our moral relation to nature (Piccolo, 2017).

The intrinsic value is a vague concept without an unambiguous definition (Vilkka (1997). The intrinsic values are independent to human, which is problematic in sense that the values are something that humans possess (Diaz et al., 2015). Himes and Muraca (2018: 3) think that despite the intrinsic values are something separate from anthropogenic interests and preferences, they can still be defined and judged by humans. Piccolo (2017) argue that all life on earth belong inside the circle of intrinsic values, and so do the human-beings. Because of complexity, the policy makers often find intrinsic values impractical (O'Connor and Kenter, 2019).

The intangible and non-anthropogenic feature of the intrinsic values makes them most difficult to measure of all value types (Vilkka, 1997). In this thesis the intrinsic values are regarded as something intangible and something that does not provide direct benefit to oneself. Intrinsic value is for example value of natural environment for the biodiversity, not for the human recreation. (O'Connor & Kenter, 2019). Moreover, intrinsic value is also something valuable for the upcoming generations, not directly for the valuer (Piccolo, 2017). This thesis strives to cover both strong objective and subjective intrinsic value. The weak intrinsic value is less covered, because the results are based on visitor interviews. (O'Connor and Kenter, 2019). One feature of an intrinsic value is the intangible nature, the valuer cannot necessarily consciously think the value or the valuer may not be able to put the value into words or say where does it derive from. Or then the value is connected with a moral duty towards something experienced by the person (Davidson, 2013).

3.3 Relational values

The concept of relational values was developed to complement the concepts of instrumental and intrinsic values (Klain et al., 2017). The relational values are anthropogenic – human centered – similar to the instrumental values. At the same time they are still non-instrumental similar to the intrinsic values. The relational values are in between instrumental and intrinsic values (Himes & Muraca, 2018). IPBES (2014: 21) defines the relational value in following way: “Values relative to the meaningfulness of relationships, including the relationships between individuals or societies and other animals and aspects of the lifeworld (all of whom may be understood as conscious persons), as well as those among individuals and articulated by formal and informal institutions.” The *eudemonistic*, i.e. the good life values are one group of relative values. Those include considerations of principles and virtues, as well as actions and habits that are conducive to a meaningful and satisfying life. The good-life aspect is in the core of relational values (Chan et al., 2018).

The relational values differ from instrumental values in a way that the value is not seen only as a mean to an end, but it involves a relationship that leads to value and that relationship makes it relational (Chan et al., 2018). The relational values fill the gap left by instrumental values, because all the human centered values are not substitutable. Additionally, they are not possible to transform into monetary value. (Himes and Muraca, 2018). However, According to Chan et al. (2018) eudaemonic aspect in relational values is the factor that differs the relational value from instrumental values, as also instrumental values can be not-substitutable. For example of (entirely) non-substitutable instrumental a tree planted to commemorate birth or death, but the tree also provide needed shade (Chan et al. 2018).

Shared, social and cultural values are mostly relational. When something is experienced, enjoyed or valued together with others, the value becomes many times relational as the others become part of the value. Nevertheless, not all relational values are shared, there are also relational values held by individuals. (Chan et al., 2018).

In this thesis the relational values are values that are experienced in the Helsinki archipelago, but they also relate to some third factor. The relational values can relate for example to other people, the good life factors, relationship with nature, spiritual dimension or an educational value, relaxation and recovery particularly experienced in the Helsinki archipelago. Additionally, symbolic value of the archipelago is also categorized in relational values, as well as value emerging from taking care of the

archipelago. It is important to note that the relational values are not substitutable, for example they are strongly connected to a particular place, company or some other object such as learning.

3.4 Instrumental values

A common definition of instrumental values is “things that are means to some external end.” (Himes & Muraca, 2018: 2). Instrumental values are anthropogenic (ibid). Even though instrumental value is more tangible than other value types, and the instrumental value can be quantifiable, it cannot be simplified to mean only monetary value, because of more versatile characteristics (Justus et al. 2009). Nevertheless, instrumental is subjective value in sense that it depends on the valuer opposite to the intrinsic value (ibid).

Notably, the instrumental values do intertwine with relational values as they are both anthropogenic, but many times there is a difference in substitutability. For instance a tree may have instrumental value, but if there is some memory related to the particular tree, then the value is relational. (Chan et al., 2018). Himes and Muraca (2018) categorize instrumental values so that they are substitutable. The substitutability is questioned by Baard (2019: 184), and he also asks “what conditions impact on the extent of instrumental value”? The instrumental values may be difficult to distinguish from the relational values, which makes them ambiguous. The same object may hold both instrumental and relational value. One of the things that differ them is the matter of perspective, the substitutability of the object. (See et al., 2020). As the example by Chan et al. (2018) demonstrates, the shade of a tree may be instrumental if just thinking the shade, but if the particular tree shade includes some memories or emotional value, then the value is relational. Just a shade can be replaced with a shade of another tree, but if there are some memories involved then the shade of another tree may not be the same. And when the case is not as straightforward, for instance when it comes to ecosystem services, such as cultural values, also the distinction of certain value types becomes more complex (See et al., 2020).

In this thesis the instrumental value is considered as a material, substitutable value can get from the Helsinki archipelago. The value can be tangible, such as berries, a place for swimming, a nice cup of coffee, a day-trip destination but also immaterial such as recovery. The perspective is anthropogenic, human is in the core of instrumental values. Moreover, the instrumental value is substitutable: for example there are other places for picking berries, or go swimming or spend a day off. In this thesis the instrumental values are more direct than relational values. The instrumental values are experienced without intermediary parties, such as other people or some emotional meaning.

4. Data and methods

This chapter presents the applied methodological approach of this thesis and it opens up the data.

4.1 Development of the interview guide

The thesis applies qualitative research method to discover the origins of valuation and understand the perspectives of people more comprehensively. As Snape and Spencer (2003: 5) point out, qualitative approach is suitable for this thesis: “qualitative methods are used to address research questions that require explanation or understanding of social phenomena and their contexts.”

Moreover, qualitative research tend to emphasize the researcher’s interpretation of social world in building understanding of the subject. Qualitative research takes different aspect of peoples’ lives into account. Psychological, social, historical and cultural factors influence significantly the way people perceive the world. Qualitative research strive to provide an overall outlook of peoples’ views and actions. Moreover, qualitative research is flexible in nature, it can explore unexpected issues if encountered. (Snape and Spencer, 2003; Lewis, 2003).

The data is collected with semi-structured interviews. This was chosen, because the study strives to find out evidence of people’s experience of a service or a program, information needs to be provided to keep the interview in topic (Arthur and Nazroo (2003: 111). Additionally, the structure is quite loose to give space for people bring up their own values and perceptions (Hirsjärvi & Hurme, 2011). The similar guideline was also followed by Cast et al. (2008) in their research mapping people’s values. Following the definition of Tuomi and Sarajärvi (2018), the interview method of this thesis can be also defined as thematic interviews following the thematic analysis, because the interview guide is built around the three value types of the framework. This view is supported by Hirsjärvi and Hurme (2011), who say that in thematic interview the interview is focused on certain themes, which are discussed about. In addition, the thematic interview is closer to unstructured than structured interview. Theme interview is half-structured, because the themes of the interviews are the same for all. It is not a strictly defined format (ibid.). In this thesis the questions and also the order of the questions were pre-defined, though there were a little variability depending on the interview situation.

The interview guide of this thesis consist of 12 individual questions. Moreover, there are three background questions in the beginning: age, zip code and whether the current visit in Helsinki archipelago is the first one or not. The interview guide in its entirety is found from the [Appendix A](#). The first four questions and the last two questions are more general. The questions after the background are built around the value types of the theoretical framework based on Himes and Muraca (2018): instrumental, relational and intrinsic. As the interview guide structure is not strictly defined in semi-structured interviews, and particularly the number of follow-up questions depends on the need (Kallio et al., 2016: 2960), the number of questions varies a bit in the interviews. Moreover, the order the questions were asked varied to some extent in the interviews. In addition, the concept of biodiversity of the thesis is shortly explained before the questions concerning it. The biodiversity is explained as a the diversity and abundance of all the living things, the animals and plants.

After the semi-structured interview guide is composed, it should be tested to ensure it is relevant and it covers sufficient themes (Kallio et al. 2016). The test enables to ensure the high level of research ethics, if weaknesses are detected it is possible to improve the guide. The interview guide can be tested via internal testing within the research team, expert assessment by letting an external expert to assess the guide or field-testing it with potential study participants. (ibid). This interview guide was tested internally and in the field: the initial guide was approved by with the thesis supervisors and it was tested in the field with the first interviewee. The interview guide was proven to be relevant without issues in research ethics and there was no need to amend the interview guide.

4.3 Data analysis

The methods for analysis applied in this thesis are theory-driven approach and thematic analysis. Thematic analysis is a process that can be applied with most qualitative methods (Boyatzis, 1998). Thematic analysis is a useful and systematic way to enhance accuracy and sensitivity in attempt to understand and interpret observations about people (ibid). This makes it appropriate for this thesis. Additionally, thematic analysis eases communication about the findings (ibid), which is useful as this thesis is conducted in cooperation with the City of Helsinki.

Thematic analysis is considered as a relatively flexible type of analysis. There are no strict rules about how should it be conducted. (Hirsjärvi & Hurme, 2011). Typical elements from content analysis, such as classifying the data (Eskola & Suoranta, 1998) , in this study coding and subsuming it, are used in

this thesis. In addition, the results are discussed by reflecting them through themes. (Tuomi & Sarajärvi, 2018: 141).

Tuomi and Sarajärvi (2018) find the division of deductive and inductive approach too narrow. In deductive approach, the data is observed from the perspective of existing theory, whereas in inductive approaches the study is built around the data without any initial theoretical background. The analytical approach can be also divided further into three types: data-based, theory-based and theory-driven (ibid). The data-based is inductive approach going with data first, theory-based is inductive observing the data through theory and theory-driven includes elements of both. In theory-driven approach existing theory can be used as a framework or guideline, but it is not following the theory as rigorously as theory-based. (ibid). In theory-driven analysis, the basis of analysis is chosen based on theory, but the meaning of existing information is not for testing the theory but to open up new ways of thinking (Tuomi and Sarajärvi, 2018: 109). This thesis is following the theory-driven approach, as the data is observed through the theoretical framework of value types, but the results of the data are observed first without existing theoretical background. The prior research is revisited in the discussion.

The thematic analysis can be also seen as a process for encoding qualitative information (Boyatzis, 1998). The coding starts from recognizing patterns out of the data (Boyatzis 1998: 3-4), which is how the coding was done in this study. The coding is a way to observe the data through the lens shaped by the ideas the researcher has concerning the data (Coffey and Atkinson, 1996). In this thesis the ideas are based on the theoretical framework (Himes and Muraca, 1998), the research questions and the needs of the City of Helsinki.

Atlas.ti 9.0 was used in coding and quantifying the data. The different attributes of value types form basis for how the related codes were determined. The interviews are coded in a way that each value type code is in its own segment, so that the number of coding of each value type are comparable with each other. The coding is useful for thematization as well, as Eskola and Suoranta (1998) say that a researcher needs to find and then separate the topics relevant for the research problem. Moreover, for relevancy, thematization requires interaction between theory and empirical data (ibid.). This is taken into account by applying the value framework both in building the coding framework and in the result analysis.

The distinction of different value types is regarded vague in the previous literature (e.g. Chan et al, 2018), so coding of the data accordingly is challenging. The following guidelines are used for the coding according to the value types: The instrumental value codes are based on the tangible value providers for the visitors such as berries, fish or plants for the collection. Additionally, substitutability of value attribute is used as a guideline, the instrumental values are considered substitutable in this thesis. The substitutability is emphasized particularly in the immaterial values such as easy recreation, outdoor life and recovery, which are close to relational value codes. The guideline for identifying instrumental values is the idea of being a mean to an end. Additionally, instrumental values are not unique, related to the exact location, companion or such factor that would make the value relate to some other factor.

A guideline to coding the relational values, is that the values are related to a third factor such as particular place, companion, environment or some distinct features related to relational values such as the eudaemonism, the attributes for good life. For instance, some interviewees perceived the Helsinki archipelago improving their standard of living, thus the Helsinki archipelago is an important contributor of good life.

Out of the three value types, the coding of intrinsic value is the most a matter of subjective interpretation. This is due to the intangible and even vague nature of the value (Vilkka, 1997; Butler and Ascot, 2007: 152). Additionally, it is a value that people are not necessarily consciously aware of (Vilkka, 1997) and also difficult to express (O'Connor & Kenter, 2019). In order to identify the intrinsic values, the interviews need to be interpreted through the indirect messages. However, some features of intrinsic values, such as moral duty towards nature functioned as more straightforward guide for coding.

Ultimately, the value types can overlap each other (Chan et al., 2018). It is thus complicated to decide the exact code groups for each codes. If many features applied, the codes were categorized based on, which characteristics seemed most identifiable for the particular part. Once the data was coded, the codes were subsumed into bigger categories (Figure 6). These categories form the themes for analysis of the results.

The thematic approach enables analysis of qualitative data also with quantitative methods (Boyatzis, 1998; 4). This is supported by Tuomi and Sarajärvi (2018: 135), who say quantitative analysis can be applied after classification and categorization of the data. Hirsjärvi and Hurme (2011) also emphasize

that the data gathered by thematic interview is suitable for both quantitative and qualitative analysis. By expanding the qualitative analysis with quantitative methods the perspective expands as well (ibid). Quantification can be done by counting how many times something comes up in the data (Eskola & Suoranta, 1998), in my case how many times the interviewees mention something.

The qualitative results are complemented here with some simple co-occurrence tables made with the Atlas.ti 9 for Mac. The value type categories, subsumptions and the second research question, the value of biodiversity, were used as a basis for a few simple cross-tabulations. Cross-tabulations were applied to examine the relation of value for biodiversity with the three value types: instrumental, relational and intrinsic. This is approached with two different tables: first relation between the main categories and second the relation of main category of biodiversity value is related to the subsumed categories of each value type codes. The co-occurrence table compares the occurrence of chosen codes in the data. The Atlas.ti co-occurrence table counts the cases (Figure 4), where the coded segment are the same (AND), overlap each other (OVERLAP) and/or are enclosed within the other (WITHIN). (Atlasti.com).

The following figure illustrates explicitly how the co-occurrence table is conducted:



Figure 4: The logic behind the co-occurrence table on Atlas.ti. (Atlasti.com)

4.4 Sampling and data collection

The sampling of this thesis is conducted by applying different methods. The sampling does not have to rely only on one method, but a suitable combination can be used (Palinkas et al., 2015). The sampling method of this thesis is following purposeful sampling principles: The interviewees were selected according to certain predefined criteria and for possessing certain qualities in order to provide an information-rich sample. (Koerber & McMichael, 2008; Patton, 2015). In addition, sampling elements of the utilization-focused sampling (Patton, 2015) are applied: the selection is made considering that it is relevant for the topic and relevant for the key stakeholders of the study. In this thesis the latter is the City of Helsinki, with whom the thesis is conducted in cooperation. Additionally, the sampling applied has characteristics of a intensity sampling (Patton, 2015), which seeks a cases that represent the phenomenon intensely but not the extremes and maximum variation, which strives to cover as various cases as possible. Thus, the interviewees (see Table 1) were selected on the spot among the visitors of the Helsinki archipelago aiming to cover wide range of different profile visitors, but within the following boundaries: the interviewee is living in the capital region of Helsinki and the current visit to Helsinki archipelago is not the first one. Otherwise the interviewees were selected to represent wide variety of visitors: different age group, different gender, different zip code, different companion and also visitors travelled to the archipelago by public ferry or by their own boat. The educational level, profession or socio-economic status were not taken into account. The interviews were conducted face-to-face on the islands or during the ferry trip. The interviews were continued until the point of saturation was reached.

The islands of Pihlajasaari, Harakka and Vartiosaari were chosen as interview locations, because they all are accessible by a public ferry, each islands has a distinct profile and they locate geographically in different parts of Helsinki. Pihlajasaari, which is the westernmost of the locations, features a long sandy beach, restaurant, places for grilling and camping, playground for children, restaurant and cafe and saunas. The recreational facilities are developed. Pihlajasaari attracts approximately 40 000 visitors yearly (Helsingin Kaupunki, 2021).

Harakka is located right off the coast of Kaivopuisto park in Southern Helsinki. The profile of the Harakka island is foremost a nature destination. The island boasts with its diverse biota with particularly abundant flora. There are nature paths both for summer and winter. Additionally, there is a Nature Centre providing information about nature in archipelago, Baltic sea and sustainable lifestyle. Moreover, Harakka island hosts art exhibitions and there are work spaces for artists. The

exact number of yearly visitors is not known, but according to estimation there are 10 000 visitors yearly (Helsingin kaupungin rakennusvirasto, 2014).

Vartiosaari is located east from Laajasalo island. The ferry trip is only a few minutes over a narrow straight. Vartiosaari is a relatively large island with 82 hectares, and it has a diverse nature. There is also a nature path, sheep at summer time and some geological specialties such as a pothole. Moreover, there is one of the best preserved colony of old villas. Seasonal restaurant and café services are also available in Vartiosaari. The number of visitors is not available. (Vartiosaari.fi, N/A).

The interviews were recorded and also notes were written. A permission for recording was requested from each interviewee. The data was transcribed 2–5 days after the interviewees using Microsoft Word transcribe application. Additionally, all the interviews were listened and transcribed interview documents were read through by the researcher. The documents were supplemented accordingly.

Table 1. Information about interviews and interviewees

Interviewee (age)	Place of residence	Date	Location of interview	Duration
Woman, pensioner (N/A)	00200, Helsinki	6.8.2021	Pihlajasaari	5 min 25 sec
Male (56) with a spouse (female, 52)	0200, Helsinki	6.8.2021	Pihlajasaari	7 min 18 sec
Female (45) with her son	00670, Helsinki	6.8.2021	Pihlajasaari	10 min 54 sec
Female (38)	00100, Helsinki	6.8.2021	Pihlajasaari	6 min 19 sec
Female (43) with three children	00790, Helsinki	6.8.2021	Pihlajasaari	6 min 10 sec
Male (51) with spouse	02230, Espoo	6.8.2021	Pihlajasaari (own boat)	12 min 15 sec
Male (19) with friends	02700, Kauniainen	6.8.2021	Pihlajasaari	10 min 30 sec
Male (42) with family	N/A, Espoo	6.8.2021	Pihlajasaari (own boat)	8 min 44 sec
Female (24) with a friend	00550, Helsinki	6.8.2021	Pihlajasaari	8 min 43 sec
Female (45)	00140, Helsinki	10.8.2021	Harakka	12 min 23 sec
Female (32) with a friend (male, 35)	00530, Helsinki	10.8.2021	Harakka	11 min 34 sec
Female (76)	00920, Helsinki	10.8.2021	Harakka	7 min 51 sec
Female (40) with her son (3)	00820, Helsinki	13.8.2021	Vartiosaari	12 min 15 sec
Male (56) with spouse (female,46)	00840, Helsinki	13.8.2021	Vartiosaari	33 min 28 sec

Female (77) with a friend (female, 81)	00840 and 00590, Helsinki	13.8.2021	Vartiosaari	19 min 36 sec
Female (69)	00870, Helsinki	13.8.2021	Vartiosaari	14 min 7 sec
Female (30) with a baby, a dog and a spouse (male, 28)	00840, Helsinki	13.8.2021	Vartiosaari	9 min 8 sec
Female (47) with friend (female, 49)	00700, Helsinki and 04200, Kerava	13.8.2021	Vartiosaari	15 min 53 sec
Male (38)	00350, Helsinki	15.8.2021	N/A, Own boat	14 min 26 sec

4.4.1 Research ethics

This thesis is following good research ethics, which are related to the good scientific practice: the methods applied are generally accepted in science and the researcher is honest (Tuomi & Sarajärvi, 2018). Additionally, the research is transparent and other research is respected and the data is gathered following ethical principles, results are presented in honest way carefully based on the data, permissions for data gathering are got and the interviewees are respected (Eskola & Suoranta, 1998: 52).

The interviewee privacy is respected in this study. All the interviewees are anonymous in this thesis, any individual cannot be recognized. Nevertheless, the gender of the interviewee is published. In addition, the interview recordings are not used in any other purposes and they are not shared with any other parties. The personal information gathered about the interviewees was kept in minimum, only information relevant for this thesis was gathered. Before each interview the interviewees were explained the purpose of the interview, short background about the thesis project and that the information gathered is not used in anything else and the interviewees can leave at any point they want, even in the middle of the interview and the interviewees do not have to answer any question they do not want. Additionally, the permission to record the interview was asked before every interview. In addition to the oral briefing concerning the privacy issues, the interviewees were offered a written consent letter (Appendix B), which any interview did not want to receive. In consent letter contains the same in written form: a short explanation of the thesis and co-creation lab project with the city of Helsinki, the anonymity of every interviewee, the information that is published about the interviewees, the information that the interviews are recorded and the recordings are not used in any other purpose or given to any other party. Additionally the background information collected is explained and that it is not used in any other purpose and that the interviewee can stop the interview at any point and one does not need to answer any questions the interviewee does not want.

The process and methods of the thesis are transparent and they are explained in a detailed manner in the thesis. The methods are applied in a generally accepted manner. Moreover, other researchers work is respected and applied according to the good scientific practice. The results are presented in honest manner aiming to the objective perspective.

4.5 Reliability and validity

The validity of a research means the ability of the research to study the phenomenon what is meant to research (Hirsjärvi et al., 2007: 216). This study is following the initial research plan. The sample was chosen to be taken among the visitors of the Helsinki archipelago, though the city of Helsinki wished for possibly versatile take to cover the citizens possibly effectively. However, due to limited resources and to maintain focus, the sample was taken among the visitors of the archipelago at the selected days of interviews. Validity can be divided further into internal and external validity. Internal validity means the consistency of the theory and conceptual definitions. Internal validity indicates researcher's scientific skills and competency of the scientific field the research represents. (Eskola & Suoranta, 1998: 213). External validity means the relational competency between interpretations, conclusions and data. A research finding is said to be externally valid when it depicts the research objective exactly as it is. (ibid). In terms of internal validity is should be taken into account that this study is a master's thesis and, thus, the researcher is not yet experienced. In terms of external validity, this study aims to examine the data objectively and give a realistic impression of the researched topic.

Reliability means how repeatable the research is (Tuomi & Sarajärvi, 2018; Hirsjärvi & Hurme, 2011). One definition of a reliable research is that the research does not have contradictions (Eskola & Suoranta, 1998: 213). Nevertheless, assessing the reliability and validity of a qualitative research is not as unambiguous as of a quantitative research (Tuomi & Sarajärvi, 2018). The reliability and validity are dependent on the researcher, and the assessment of these concern the whole research process (Eskola and Suoranta, 1998). The qualitative research is subjective, which means that researcher mood and personal feeling is impacting on the interpretation (Boyatzis, 1998). One way to enhance reliability is to use indicators, which are using several researchers to make observations, conduct the empirical data collection in several different sets and change indicators, which mean assessment of the phenomenon from different perspectives to prove the congruence (Eskola & Suoranta, 1998). Nevertheless, the interview data is always related to the context and the interview occasion, which means that the interviewees may talk differently in another place, time and occasion. This means that a researcher must be careful in making generalizations based on the data. (Hirsjärvi

et al., 2007: 196). In this thesis the reliability is biased in terms of the number of researchers, because data is analyzed and interpreted only by one person and at one point of time. The meaning of making the observations within several different times is to pursue to verify the accuracy of data gathering method (Hirsjärvi et al., 2007). Additionally, it is used to ensure that the phenomenon is not only temporary (ibid). In this thesis the data was collected from three different locations, three different days and different interviewees. All the data collection days were in the middle of week and within one week time period in August.

In qualitative research reliability and validity are enhanced when the methodology and execution of the research are explained carefully (Hirsjärvi & Hurme, 2011; Hirsjärvi et al., 2007). This chapter about the methodology strives to describe the research carefully to give a realistic description of the research. Three major factors that bias the thematic analysis: projection, sampling and mood and style. Projection means that the researcher interprets the another person too closely from researcher's perspective. (Boyatzis, 1998; 12). This is tackled in this thesis by being consistent in coding and strive to create explicit coding based on the theoretical framework.

The coding of data is always matter of subjectivity. The researchers background, previous theory and the aim of the research influence the interpretation of data (Eskola & Suoranta, 1998:156). Additionally, Eskola and Suoranta (1998 :157) explain that the coding may be different if conducted for second time after a while. Or in case there are multiple persons coding the data, the interpretations are more diverse and become more complicated to conclude (ibid). In this thesis the coding was conducted by one person and only for once. Considering what Eskola and Suoranta (1998: 156) state, the researcher's subjective views, background and the aim of the study influenced on the interpretations of this thesis. As reliability measures the repeatability of a research (Tuomi & Sarajärvi, 2018), this subjectivity of coding also biases weakens reliability. What makes following objectivity in coding challenging is that the value types can overlap each other (Chan et al., 2018). Different value types can be found from the same sentence. In some cases it was complicated to decide, in which code a part belong to. In these cases, the codes were chosen based on which features seemed more dominant for the particular part.

There is a validity issue involved in examining the interrelations between different value categories. It is done based on the frequencies of the occurrence and times that the segments are overlapping. The aforementioned does not tell accurately how deeply are the two overlapping values interrelated. In addition, some segments may overlap due to some expression related to both, but the

interrelationship is not necessarily as deep as it appears. Moreover, the frequency of occurrence may be emphasized due to reasons, which are not related to the importance of the factor. Such a reason is the location of the interview (the islands of the archipelago), which impacts on what the interviewees see around them. The current conditions may bias the answers and emphasize importance of value factors to appear more significant than they are.

The bias in sampling was minimized with careful planning beforehand and collecting the data from large enough sample that reached saturation point. The validity of the research can be enhanced by applying multiple methods. (Hirsjärvi & Hurme, 2011: 39). In this research quantified data based on codings is used to support the analysis. One method to quantify the qualitative data is possible to quantify by using frequencies (Eskola & Suoranta 1998: 165). The quantification in this thesis is based on the codings, which are based on the frequencies of different phenomena emerging in the data. The qualitative research validity is enhanced by assessing the qualitative data in quantitative methods conducting simple cross-tabulations with Atlas.ti 9.0. program.

In qualitative research always a sample represents larger group and qualitative sample is rather evaluated by its quality than the quantity (Eskola & Suoranta, 1998: 18). A discretionary sample (non-random) can be biased in several ways. The level of representativeness is always a question, but a researcher should avoid systematic bias. (Hirsjärvi & Hurme, 2011: 60) The selection bias is a bias related to selecting the participants and how inclusive the selection is. The selected sample can be biased in multiple ways and thus the limits of representativeness of the sample should be taken into account. Purposeful sampling is a way to avoid selection bias, because the sample is refined to fulfill the aim of the study. (Smith & Noble, 2014). Sampling error is the difference between the results got from the sample and the results what would be got if used the whole population that the sample represents (Oppong, 2013; Thompson, 1999). There are certain issues in this thesis related to the data collection method, because the data collection and analysis resources were limited. The interviewees were chosen among the ones visiting the Helsinki archipelago at the moment, therefore everyone interviewed had already made a decision to visit the archipelago. Moreover, as the interviewees were all visited the archipelago already before, there were no voices of first-timers heard, or the ones who do not visit the archipelago. Therefore the interview data is emphasized to the positive attitudes towards the archipelago and city investing on them. Moreover, the interviews were conducted within relatively short period of time: 6.8.2021, 10.8.2021 and 13.8.2021. Additionally, the interviews were conducted face-to-face reducing willingness to bring up negative aspects (Eskola & Suoranta, 1998). And as semi-structured interviews can be a little bit vary what comes to order of questions and

additional questions the data from each interviewee can be, thus, a bit different from one another. Furthermore, thematic coding analysis results are dependent on the perspective of analyzer, there is possibility that something is yet left out, not found or excluded. In qualitative research it is impossible to define a sufficient sample size (Eskola & Suoranta, 1998: 215). The sample size of this study is limited and its generalizability can be questioned for that reason. Nevertheless, the principle of saturation was applied in this thesis. It means that the interviews are carried as long as no additional information emerges. (Hirsjärvi & Hurme, 2011: 60). Nevertheless, this point is very difficult if not impossible to define exactly. The amount of findings depends on the experience and competence of the researcher and a researcher cannot be absolutely sure that no additional information emerges if interviews were continued. (Hirsjärvi et al. 2007: 171).

5. Results

The result chapter shows the results found from the interview data of this thesis.

5.1 Codes, categories and interrelationships

In this thesis I have analyzed the interview data according to the value division to instrumental, incremental and relational value (Himes & Muraca, 2018). The values are coded as presented on Table 2. Each code is determined according to the features of each value type dividing the main categories into smaller entities. Under each value type there is also category “Others”, which are scattered topics and thus they cannot be categorized in more detail. The share of “Others” under each value type is large enough that they are meaningful to include.

Table 2. Codes per value category and their frequencies in brackets.

5.1 Instrumental value codes:	5.2. Intrinsic value codes:	5.3 Relational value codes:
5.1.1 Easy recreation (32)	5.2.1 Preserve (34)	5.3.1 Nature (92)
5.1.2 Outdoor life (24)	5.2.2 Value per se (23)	5.3.2 Shared experience (84)
5.1.3 Restaurant and café (16)	5.2.3 Moral (17)	5.3.3 Eudaemonism (64)
5.1.4 Swimming (13)	5.2.4 Intangible (17)	5.3.4 Transfer (58)
5.1.5 Recovery (11)	5.2.5 Fear of losing (14)	5.3.5 Relaxation (59)
5.1.6 Boating (9)	5.2.6 Eternal (7)	5.3.6 Unique (49)
5.1.7 Camping & grilling (8)	5.2.7 External perspective (7)	5.3.7 Education (18)
5.1.8 Picnic (8)	5.2.8 Other (6)	5.3.8 Spiritual dimension (13)
5.1.9 Culture & history (8)		5.3.9 Responsibility and care (13)
5.1.10 Picking (6)		5.3.10 Other (10)
5.1.11 Fishing (4)		
5.1.12 Geocaching (3)		
5.1.13 Other (12)		

The codes are bundled into eight larger subsumed code categories under each value type. These subsumed categories are:

Instrumental values:

Subsumed category: **Hobby**, which consist of the following codes: Swimming, Boating, Culture & history, Picking, Fishing and Geocaching

Subsumed category: **Day-trip**, which consists of the following codes: Easy recreation, Outdoor life and Recovery

Subsumed category: **Food and eating**, which consist of the following codes: Restaurant and café, Picnic and Camping & grilling.

Relational values:

Subsumed category: **Common good**, which consist of the following codes: Shared experience, Education and Responsibility & care

Subsumed category: **Well-being**, which consist of the following codes: Nature, Eudaemonism, Relaxation, Spiritual dimension.

Subsumed category: **Symbolic**, which consist of the following codes: Transfer, Unique.

Intrinsic values:

Subsumed category: **Latent**, which consists of the following codes: Value per se, Intangible and External perspective.

Subsumed category: **Will to maintain**, which consist of the following codes: Conservation, Moral duty, Fear of losing and Eternal.

Figure 5 illustrates the relationships between the subsumed value types. The value types of instrumental, intrinsic and relational are formed according to the categorization by Himes and Muraca (2018). The Sankey diagram describes the co-occurrence derived from Atlas.ti. The diagram shows the number of codes of each group, and then co-occurrence is where they overlap. The bolder the connecting line is, the stronger is the co-occurrence. The relation between the different categories are intertwined with each other. According to the diagram, value is relational in the most cases. This observation is also supported by the number of the relational value codes (460), which is clear bigger than one of the instrumental values (154) or intrinsic values (125). The diagram shows the clearest relation between the “day-trip destination” category on instrumental values and the “Well-being” category of the relational values. The value of Helsinki archipelago as a day-trip destination is important for the for the interviewees concerning experienced well-being related to the archipelago. The relational value categories are stronger connected with each other than are the other value categories. “Well-being” has a bold connection with “Symbolic” and “Common good”. Both intrinsic value categories are connected the strongest with the relational value category of “Well-being”. “Will to maintain” category of intrinsic values has a clear connection with “Common good” category of relational values. This reflects the interviewees willingness to maintain the archipelago for common good, not particularly from individualistic perspective.

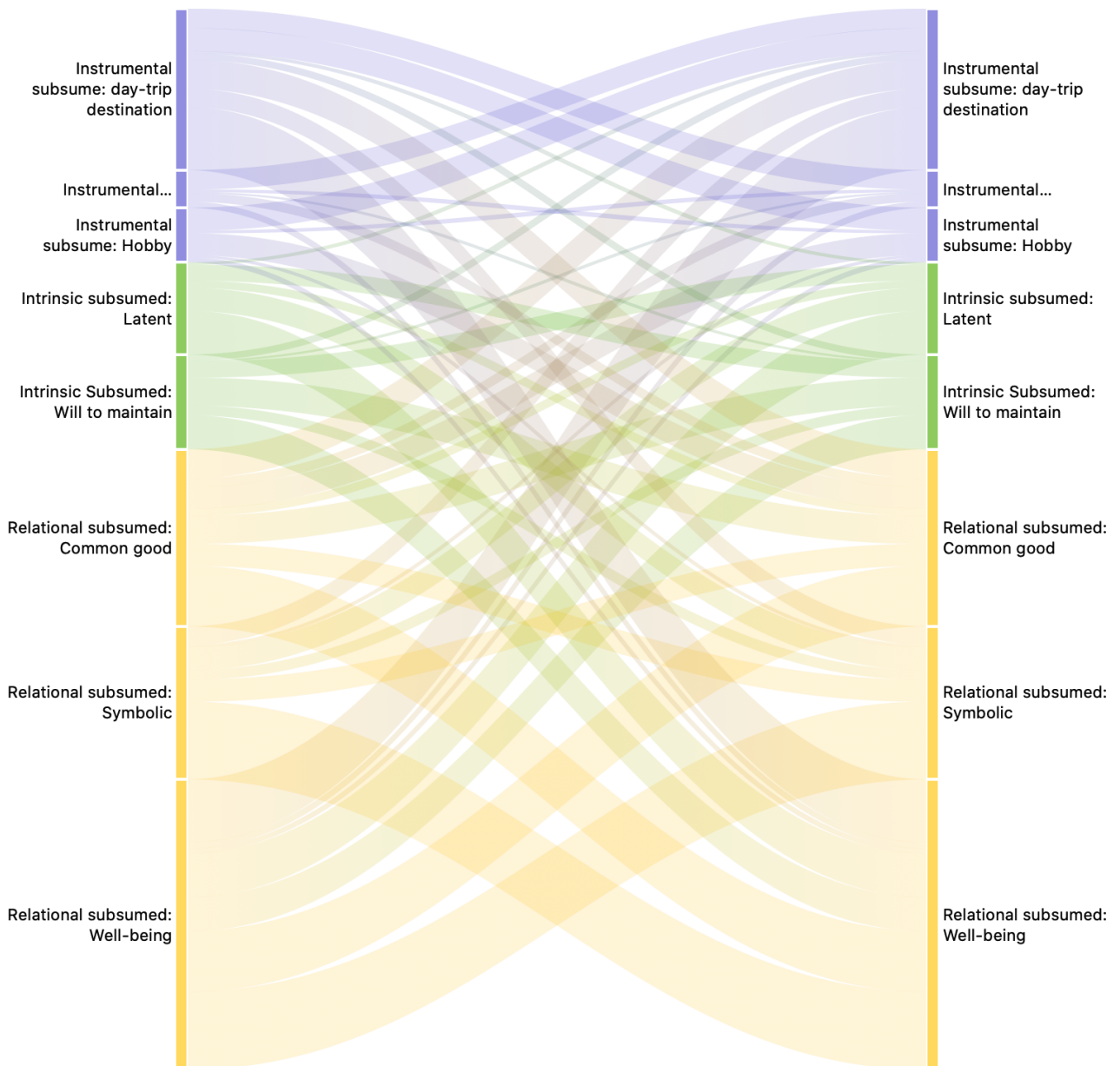


Figure 5. A Sankey diagram about the co-occurrence between the subsumed value categories.

Table 3. The Co-occurrence between the subsumed value categories and value for biodiversity.

	● Instrumental subsume: day-trip destination	● Instrumental subsume: Food & eating	● Instrumental subsume: Hobby	● Intrinsic subsumed: Latent	● Intrinsic Subsumed: Will to maintain	● Relational subsumed: Common good	● Relational subsumed: Symbolic	● Relational subsumed: Well-being
● Value of biodiversity, Research Q2	15	2	3	18	45	39	36	82

Table 3 shows the same information as the Figure 5, but in numerical format. The numbers show how many times the subsumed categories of values overlap the biodiversity related codes either partly or entirely. Well-being category under the relation values has the strongest connection. The factors the interviewees experience leading to improved well-being are clearly linked with biodiversity. Additionally, the Will to maintain category under the intrinsic values shows the second strongest connection with biodiversity in the table. The interviewees find biodiversity related value attributes important to maintain.

5.2 Instrumental values

In this research the instrumental value is divided in 12 different actual value codes (Table 4), which are attributes for the value. These 12 codes are subsumed into three larger categories, which are “Food and eating”, “Hobby” and “Daytrip destination”. “Food and eating” consists of codes “picnic”, “restaurant and café”, and “camping and grilling”. “Hobby” consists of “swimming”, “boating”, “geocaching”, “fishing”, “picking”, and “culture & history”. The “day-trip destination” category includes “easy recreation”, “outdoor life” and “recovery”.

Table 4. Codes for instrumental values and their frequencies under their subsumed categories.

Instrumental value codes:	Frequency
Day-trip destination	
5.1.1 Easy recreation	32
5.1.2 Outdoor life	24
5.1.5 Recovery	11
Hobby	
5.1.4 Swimming	13
5.1.6 Boating	9
5.1.9 Culture & history	8
5.1.10 Picking	6
5.1.11 Fishing	4
5.1.12 Geocaching	3
Food and eating	
5.1.3 Restaurant and cafe	16
5.1.8 Picnic	8
5.1.7 Camping & grilling	8
5.1.13 Other	12
Total:	154

5.2.1 Helsinki archipelago is a recreational day-trip destination

Helsinki archipelago is mostly a day-trip destination for the visitors. It is closer to a day in a park than a trip to wilderness, even though the visit to the archipelago is about getting into nature and away from the stressful urban every-day environment. Codes “easy recreation”, “outdoor life” and “recovery” are all related to archipelago being a destination for day-trip. The archipelago is one of the day-trip destinations in the capital region. It is among other alternatives to spend leisure time instead of for example other recreational green areas, parks or cinemas, museums, shopping and amusement parks. To sum up: people appreciate the Helsinki Archipelago as an easy-going recreational destination to spend a relaxing day out. Moreover, it is easy to access without having to plan carefully or invest plenty of money and effort.

Many interviewees describe their visits as day-trips with no actual agenda, they enjoy only to wander around or sit on beach or rocks. For many the archipelago provides another place for spending time outdoors. The soothing atmosphere of the archipelago and closeness of the sea are among the key factors, people enjoy the scenery and explore the islands in the Helsinki archipelago. The level of exercise is rather easy paced than sweaty sport. For half of the interviewees eating snacks or picnic meal is an essential part of the day outdoors in Helsinki archipelago.

The recovery aspect is an important of a day-trip to Helsinki archipelago. The trips do not include any particular aims, but the recovery from the every-day life. Nature in the archipelago functions as an attribute to recovery. Nevertheless, the interviewees do not necessarily think consciously the reason why they experience the Helsinki archipelago as a good place for recovery.

“[The Helsinki archipelago means] An interesting possibility to spend free time and enjoy nature with low effort. No need to spend a lot of money or travel far. One can make a spontaneous visit and spend time there [at the islands]”

- Female (32) with a friend (male, 35), Harakka.

5.2.2 Food and eating out as part of the visits to the Helsinki archipelago

The food and eating out is an essential part of the visit to Helsinki archipelago for most of the visitors. The codes “restaurant and café”, “camping and grilling” and “picnic” are included in this subsumed category.

Eating and enjoying food is an activity that many interviewees brought up. Either enjoying a meal or coffee at a restaurant or cafeteria at Helsinki archipelago is producing instrumental value. This can be the main reason for going there. Moreover, eating out at picnic or grilling in the archipelago seem to play an important role for many interviewees and a primary reason for the trip. Most interviewees mention that they often take some food with them and enjoys picnic or snacks at the archipelago. It is not necessarily a primary purpose of the visit for all the interviewees – for some it is – but it is an essential part of the trip.

“We are usually going for a daytrip for a picnic or a coffee and stroll around enjoying the weather and the scenery.”

– Female (45) with her child, Pihlajasaari

For bringing the value, the idea is what counts. People highlighted that they do not want anything fancy. A modest place serving simple things is enough. This is much in line with all the services people wish to have in the archipelago, rather something that is blend in the natural landscape and not anything spectacular architecture. The following quote of senior aged ladies summarize the thoughts of many interviewees:

“If there is some restaurant, then the visits can be longer[...] then [if there is a restaurant] we don’t necessarily need to carry own food [...] The construction must be done in terms of nature. Rather hide these places for dining.”

– Female (77) with a friend (female, 81), Vartiosaari

The interviewed visitors coming by their own boat seemed to be eager to use the café and restaurant services. The value of being able to enjoy restaurant services seem to be important as one interviewee even said that they do not understand people having their own food with them because instead the visitors should support the restaurants. The interviewee is worried that the restaurant services important for him could disappear without customers willing to pay.

There is also a social aspect for many interviewees involved in visiting the cafés and restaurants in Helsinki archipelago. This can be seen also as a relational value. Even though, the interviewees were not too eager to contact any strangers. The interviewees emphasized that they want to respect the own space of others and also enjoy their own space. Nonetheless, the cafés and restaurants seemed to be an environment, where the interviewees feel comfortable to talk with other visitors or the staff.

5.2.3 Helsinki archipelago as an environment for hobbies

Helsinki archipelago is a place to practice hobbies. The codes “swimming”, “boating”, “geocaching”, “culture & history”, “fishing” and “picking” are thus subsumed in a “Hobby” category.

Swimming is a popular activity the interviewed people value to do in Helsinki archipelago. Many interviewees go to Helsinki archipelago for swimming. In this case the value is quite purely instrumental. Nevertheless, for most interviewees swimming is an important part of the visit in the Helsinki archipelago, even though in case it is not the primary purpose of the visit. When the interviewees list the activities they like to do in the archipelago, many mention swimming. Especially, for the ones with children swimming plays a big role.

“We swim of course, or we go just for boating. We spend time by the water.”

– Male (38) with own boat.

Two of the interviewees mentioned also geocaching as an activity they enjoy during their visits. One mentioned the geocaching even as the primary purpose of the visit. The geocaching spots are everywhere around the Helsinki area and the archipelago provide one place to go for them. The instrumental value comes from finding the caches, for which the archipelago provide a good environment.

Boating is an obvious hobby, for which Helsinki archipelago provides a diverse environment. One of the interviewees express explicitly that without islands it would be boring to go boating. Interviewed boaters like to stop by the islands of the archipelago and enjoy the day. Two interviewed boaters mention that they stay overnight at islands. Some interviewees discussed that they appreciate free-of-charge docking facilities. The actual value of the archipelago for the boaters consist of the same elements than for the other visitors, they enjoy the relaxed atmosphere and nature. However, for the

interviewed boaters the boating is in the core, the archipelago is an environment for boating. The other values come aside, but they make the Helsinki archipelago a valuable environment for boating.

Enjoying art, culture and a history is also a hobby. The visitors see the archipelago as a valuable venue for art events. Many of the interviewees praised the Helsinki Biennale, which was taking place in Vallisaari during the time of interviews¹. The interviewees appreciated that such a high-level art event was held in an interesting environment. In addition to the art experience, people liked being able to visit places that are normally closed to the public². Moreover, the history of the islands are a reason for visit providing instrumental value. The biennale seemed to provide a new perspective to explore the archipelago, and also instrumental value as the art is a reason itself for a visit.

Instrumental value that people experience at the Helsinki archipelago include fishing, berry or mushroom picking or collecting plants or stones. These are all activities people get something tangible from. Nevertheless, the interviewees rarely visited the archipelago to pick berries, plants or such. The interviewees, who mentioned berry picking, said that they only eat berries spontaneously straight from the shrub, but do not take them home. Particularly the interviewees with children said that they pick berries and eat them on the spot. One of interviewees mentioned that she have collected plants for her child's school assignment in Vartiosaari. Fishing is an activity that was mentioned as the main reason for visit by the few interviewees, who mentioned fishing anyways. Nonetheless, one interviewee who went regularly fishing said that getting fish and eating it is a valuable aspect in fishing, which is an instrumental value.

“Last time my elder son collected plants for the school assignment [...] our boys like to pick bilberries here, it is a good island for that. ”

– *Female (40) with her son (3), Vartiosaari*

-
1. The popularity of the event is also proved by numbers: Helsinki Biennale, held 12.6.2021–26.9.2021, attracted 145 000 visitors (Helsinkibiennaali.fi, 2021) despite the corona pandemic times.
 2. Many of the old buildings, e.g. old barracks or other buildings served the ones employed at the islands in the past.

5.3 Intrinsic values

The intrinsic values are divided here in seven different code categories plus the other category (Table 5). These codes are divided in two greater categories: will to maintain and latent value. The will to maintain category consist of the following codes: conservation, fear of losing, eternal and moral duty. These codes are all related to people’s urge to maintain the Helsinki archipelago as it is and as it has always been. People value the pristine and rugged environment of the archipelago. On the other hand, people value the rich biodiversity of the Helsinki archipelago, and most importantly, biodiversity that is different from what is found around their homes or inland nature destinations. The latent value category includes the following codes: value per se, intangible and external perspective. The codes are about the value of the archipelago that is difficult to elaborate or categorize. This is value people are not actively thinking of and value they may take for granted and become aware only when it is not available for them.

Table 5. The codes for the intrinsic values and their frequencies under the subsumed categories.

5.2. Intrinsic value codes:	Code frequency
Will to maintain	
5.2.1 Conservation	34
5.2.3 Moral duty	17
5.2.5 Fear of losing	14
5.2.6 Eternal	7
Latent	
5.2.2 Value per se	23
5.2.4 Intangible	17
5.2.7 External perspective	7
5.2.8 Other	6
Total	125

5.3.1 The visitors want to maintain the Helsinki archipelago as it is

Majority of the interviewees find valuable the rugged island environment that has remained almost the same for thousands of years. The interviewees want to keep them the same as the islands are, they consider further development rather as threat than an opportunity. The contrast to the built environment is valuable for the interviewees, because it enables them can enter to a totally different atmosphere by only taking a short ferry trip. The interviewees express their concern that the

expanding urban city reaches also the archipelago, they often refer to construction plans for some islands and development in coastal areas.

Moreover, the originality of Helsinki and its nature is intrinsically valuable and people do not want that to disappear, there is value for the sake of the environment. Many interviewees mention that they would keep the archipelago for the upcoming generations, meaning that there is no direct value for them, as untouched as possible. A few interviewees in different islands said that the rocks, shores and old trees remind them of their roots, being part of nature. Many interviewees that they feeling connected with nature at the archipelago. They highlight the value of the environment, where they can be part of the landscape and feel the sea, rocks and trees.

“I feel connection [with nature], I listen to the sound of waves and when I walk on rocks with bare feet, then I really feel strong connection.”

– Female (38), Pihlajasaari

As the authentic island environment is highlighted by the interviewees, many are also concerned that the Helsinki archipelago, as they know it, will be lost, either by developing them or by people destroying nature. Almost all the interviewees say that they are worried that the city will expand to the archipelago and islands will not remain such nature sites as they still are. Most of the interviewed visitors emphasize that they find important to maintain nature of the archipelago. The visitors bring up their deep concern about nature being under threat of excessive building or masses of people eradicating nature. Many defend this argument with simply noting that they are important places. In addition, some of the interviewees are afraid of the archipelago to become a commercial destination. Some interviewees express their concern that Helsinki will not respect nature values of archipelago and it is harnessed for other purposes.

The interviewees felt moral responsibility to maintain the natural originality of the Helsinki archipelago. A few mentioned that they try to collect other people’s trash for the sake of nature and environment of archipelago to preserve. Many interviewees stress the importance of their own duty to clean the trash. Some interviewees say that it is significant to maintain the archipelago for the future generations, and link it to the current struggle against climate change. Some interviewees say that we need to take nature into consideration, and maintain the archipelago as feasible environment for the plants and animals. We need to think also other (living organisms) besides ourselves, we are living here side by side as one of the interviewees in Vartiosaari concluded:

“We need to take the all the creatures into account – and the birds. Everything else besides only ourselves. We live here side by side.”

– *Female (77) with a friend (female, 81), Vartiosaari.*

The urge to conserve the Helsinki archipelago is evident, as the other perspectives above show. The willing to preserve the islands and not ruin them by building or eradicating. Many mentioned also the importance of teaching children to take care of the archipelago. One of the interviewees suggest organized visits for kindergartens and school children to transfer the environmental consciousness to the young generations so the island nature is protected also in future. Some of the interviewees think that the more visitors go to the Helsinki archipelago the stronger will there is to protect the islands. These interviewees believe that the more familiar people are with the archipelago and the closer relation they have to it the more active they are in conservation. Interestingly, at the same time many interviewees are concerned about the stress for the environment the big amount on visitors create. Many were already now concerned that the current number of visitors is not sustainable for the sensitive nature and biodiversity of the archipelago. This is particularly a concern in Pihlajasaari.

The prevailing opinion among most of the interviewees is that all the development in the Helsinki archipelago need to be done in nature terms. Majority of the interviewees prefer that there should not be any massive infrastructure in the archipelago. Moreover, a few interviewees think that the development done shall support nature values instead of eradicate them. However, none of the interviewees would want to make the Helsinki archipelago such a conservation area, where visitors are not allowed. For all the interviewees the recreational value of the archipelago is significant.

“It is really meaningful that we have these kind of places. That we have these islands, which are not inhabited and they are for recreational use. Huge meaning. Really, really huge.”

– *Male (56) with a spouse (female, 52), Pihlajasaari*

5.3.2 The latent value of archipelago

For many interviewees the value of the Helsinki archipelago is intangible: the interviewees strongly highlighted the importance of the archipelago for them, but they did not find words to describe the value and what makes the archipelago valuable. A few interviewees turned it other way round, they said if there were no archipelago, they were closed or did not exist, it would be a remarkable loss.

Moreover, some interviewees mention that it is valuable that the archipelago is there, even though they do not visit there that often. One of the interviewees phrased explicitly that the value is already in that the archipelago is there even though one would not go there, but they are part of the landscape. The interviewees unanimously consider it valuable to maintain the archipelago for the upcoming generations. The intangibility can be seen in answers, because many interviewees cannot find words for what exactly they would maintain: They simply want to preserve everything in the Helsinki archipelago

“I find it difficult to express it with any word what it [the Helsinki archipelago] means to me, but I can say it is important”

– Male (19) with friends, Pihlajasaari

In addition, as mentioned, nature of the archipelago is the key element providing value for the visitors, but many times the visitors could not say what kind of connection they feel with nature. Even though people ponder the question from their own perspective making it relational, the fact that they are not able to express the value of nature for them, but they say that nature is valuable part of the archipelago tells that there is also intrinsic value of nature for the sake of itself. The value is often something people are not consciously aware of, they take the archipelago for granted. It is something they feel valuable, but they simply do not think the value until they are asked about it.

Sometimes people understand the value when it is not available for the. Some of the interviewees, who had lived abroad had understood the value and uniqueness of the archipelago at abroad. These interviewees emphasize how unique and great it is that in there is archipelago that is open and accessible for the public. Moreover, the other factor the interviewees lived abroad stress is the peace and possibility to be there on one’s own without having to rush with other people.

“We used to live in London before... It is so amazing, such an asset that there are these islands and the archipelago and nature nearby, which one can access without having to travel say one hour by car! [...] During the years in England I realized that pine forest is my own national landscape, it is soothing”

– Female (40) with her son (3), Vartiosaari

Additionally, some interviewees reflected the value of the archipelago thorough their experience with foreign people. One of the interviewees told an anecdote about his friends from Israel, who admire

the peace and beauty of Helsinki archipelago, which is totally different from their home country. The same interviewee stress the value of openness of Helsinki archipelago saying that in some other country such place could be fenced. Moreover, one of the interviewees, who had lived in Paris, say that the Helsinki archipelago is the main reason living in Helsinki.

5.4 Relational values

The value Helsinki archipelago provides for the visitors is most commonly relational. The relational values is divided in nine actual codes and the others group represent miscellaneous related quotes (Table 6). The results these nine codes represent are elaborated here under three main categories of common good, well-being and symbolism. In many cases the value seem to derive from being able to share the experience with others, most typically to closest ones. Visitors with children experienced value deriving from mutual experience and sharing some moments of fun or learning together. Nature plays a big role in common good category, as it does also in all the other categories.

Table 6. The codes for the relational value and their frequencies.

5.3. Relational value codes:	Code frequency
Well-being	
5.3.1 Nature	92
5.3.3 Eudaemonism	64
5.3.5 Relaxation	59
5.3.8 Spiritual dimension	13
Common good	
5.3.2 Shared experience	84
5.3.7 Education	18
5.3.9 Responsibility & care	13
Symbolic	
5.3.4 Transfer	58
5.3.6 Unique	49
5.3.10 Other	10
Total:	460

5.4.1 Well-being from immersive nature experience and attributes of good life

The codes nature, spiritual dimension, relaxation and eudemonism are all related to well-being. The Helsinki archipelago possess a place-based value providing well-being for people; in other words people relate particularly Helsinki archipelago to well-being. This well-being is related to relaxing atmosphere, empowering natural environment and even spiritual dimension representing something

greater. All these are also attributes of good life, eudemonism. The value of good life is evident as some interviewees regard Helsinki archipelago as a factor improving the standard of living – one even say it is the primary reason for living in Helsinki.

For all the interviewees the Helsinki archipelago is valuable as a place for peace and relaxation. The archipelago as an environment different from the urban city is something they value. Being surrounded by the sea and getting immersed in nature is what most interviewees find valuable. It helps to relax, recover and forget the everyday stress. Many interviewees consider the archipelago, as a place itself, as a relaxing environment, where one can only focus on the atmosphere and feel nature around.

“[The mental meaning] is kind of... soothing empowering. These are such a bombastic things.”

– Male (56) with a spouse (female, 46), Vartiosaari

Nature of the archipelago is valuable as it an opposite environment of built urban setting. The interviewees enjoy being in nature: sitting on the rocks, watching the see, exploring the islands and wander the paths around the islands. Many interviewees mention the sea surrounding the archipelago something providing value. Many of them say that they enjoy the smell of sea and watching the waves. The natural environment and the biodiversity in the archipelago provide different experience from what the interviewees can get at their immediate home environment, as many of them mention.

Majority of the interviewees say that they enjoy to observe different animals, plants and landscape at the archipelago. Interestingly, it turned out that nature is most important source of value in the archipelago even for the three interviewees, who say that they are particularly not nature-oriented persons. One of them, who said being mainly interested in arts, join nature excursions and observe different plants in order to have new experiences. Most interviewees highlight that it is valuable that all this is possible be taking a ferry from the city center and travel for a few minutes. However, getting into nature is not necessarily what some interviewees consciously think as a reason to go to the archipelago – four of them realize only during the interview the importance of nature for them in archipelago.

Helsinki archipelago contributes to good life. For all the interviewees the Helsinki archipelago is an important place. Many interviewees stress that the Helsinki archipelago something that makes life better and a place that enhances well-being. They emphasize the importance of the archipelago for

themselves, and some ponder that it would be a significant loss if there was no archipelago in Helsinki.

In addition to pure recreation the archipelago mean also something more profound for a couple of interviewees: meditation, spiritual well-being and mental growth are important elements. Two interviewees say that the island environment can even have a sacred dimension. Three of the interviewees say that experience the archipelago as a place where they experience a mental growth. For them the archipelago clearly represents something bigger than a nice atmosphere to get some fresh air. Three of the interviewees the Helsinki archipelago provide a meditative environment, where to focus on the place and moment. In many answers the sea was seen as an important element that exudes a soothing atmosphere.

“[--] it feels good to be out in nature, and also relaxing and calming. In addition, it is nice that there is not any hustle around and you can simply look around”

– Female (30) with a spouse (male, 28) and a baby, Vartiosaari

5.4.2 Symbolism – transfer to another world and an unique asset

The Codes unique and transfer both represent the symbolic value of the Helsinki archipelago. The archipelago is something Helsinki has what others do not have. The archipelago is a significant part of the characteristics of Helsinki, which some interviewees say they are proud of. The Helsinki archipelago is an unique place next to city center and – most importantly, what the most interviewees underline being valuable – it is a place effortless to access with impressive nature and an environment different from urban areas. Thus, six interviewees refer it a transfer to another world.

“10–15 minutes by a ferry and you can access to totally different kind of world or atmosphere.”

– Male (19) with friends, Pihlajasaari

Particularly the two interviewees, who have lived abroad, value the Helsinki archipelago as a magnificent nature site next to city center, where one can be on one’s own. Both of the those interviewees describe their experience from abroad, where they needed to travel long time to get nature site, and then they needed to move there close with other visitors. Additionally, three interviewees mention it as an important part of the Helsinki’s nature-centered and maritime image. One interviewees in Vartiosaari describe the scenery how Helsinki looks when approached from sea.

She describes Helsinki as a white city, the pearl of the Baltic sea. The interviewee tells this, when asked her to describe what makes the archipelago so magnificent. For her the archipelago is a part of the city silhouette and then next she praises nature of the archipelago, especially the rocks and pines.

Two interviewees acknowledged a commercial value for Helsinki archipelago as an attraction for tourists. Moreover, two interviewees told about their encounters with foreigners, who were amazed by the peace and nature of them. These interviewees had a positive attitude towards foreign tourists and were happy to guide them. On the other hand, at the same time many interviewees expressed their concern about the resilience of the island nature under the pressure of growing number of visitors.

“We lived in London before [--] In England we used to walk in a row with everybody else at nature destinations, but here there is plenty of space.”

– Female (40) with her son (3), Vartiosaari

5.4.3 Common good from sharing experience with others, learning and responsibility

Codes shared experience, education, and responsibility and care relate to common good. These codes connect the value in cases when the experience is shared, something is learned or felt good gained via acting responsibly. Sharing the experience is the essential factor in this category, many segments of text coded with these codes relate also to shared experience – for the interviewees valuable are especially the experiences with the closest ones. For the seven interviewees with children sharing the experience is an important part of the visit. Only one of the seven interviewees with children do not particularly mention the value of sharing the experience with them. Additionally, most often the experience the interviewees refer is related with nature at the archipelago.

Six interviewees, who visit the archipelago with children when interviewed or having visited with children before, mention it is valuable for them to have a chance to discover nature and environment together with their children. The same four interviewees also find valuable to simply watch their children explore and enjoy the island environment. Moreover, the interviewees experiences with children want to show these wonderful places to their offspring and share positive experience visitors enjoy at the Helsinki archipelago.

Even though shared experience is important for many visitors, people do not actively contact strangers. Nonetheless, the visitors of the archipelago find easier to approach strangers on islands as

people were considered being more relaxed and in good mood. People feel fellowship with the co-visitors, they find the other visitors like-minded with similar interests. Sometimes, visitors enjoy sharing a special experience with strangers, such as an early morning swim in a refreshing sea at a beautiful setting. In general the visitors mostly relate to the co-visitors in a somewhat reserved manner but foremost politely. People want to respect others' own personal space and willing to be on their own; not to disturb anyone in any case. Furthermore, the archipelago must not be overly crowded, the visitors also want to have their own space and feel being immersed in nature.

Interestingly, even though people go to Helsinki archipelago to seek for peace, relaxation and time on their own in nature, many of the interviewees emphasized that the islands of Helsinki archipelago should be available for everyone. The interviewees are concerned that the public islands are not within everybody's reach because the ferry tickets may become too costly for families with lower income and many highlighted the importance of affordable ferry tickets. In addition, a few interviewees highlighted the importance to provide possibility to visit the Helsinki archipelago for those with limited mobility.

Many believed that the residents, especially the young adults, are not aware of the islands because they experienced information being poorly available.

“When going to some island, there is a plenty of space for the kids to run around and see new things, which they don't see at home yard [...] It is great to watch kids swimming or exploring the stones on the shore, or whatever they do.”

– Male (38) with own boat.

The Helsinki archipelago provides learning experiences. Learning from nature was one important thing eight interviewees bring up. Especially the interviewees having visited the archipelago with children experienced that the environment in the archipelago provides excellent opportunity to learn from nature. As two of them refer, the actual natural environment provides a better way to learn about nature compared to studying from books. Moreover, also the interviewed adults enjoy themselves nature observation and spotting and identifying different plants and animals. A 76 years old lady in Harakka tell that she had participated bird excursions and she explores the plants in Harakka with a mobile application even though she says that she is mostly interested in arts and only sometime observe nature. For the interviewees diverse animals and plants, in other words the biodiversity, on

the archipelago is an attribute for learning as well as providing new and memorable experiences during the visits.

The experience in the archipelago can be also not entirely joyful: One of the interviewees told about experience of finding a dead seal from an island with his children. Even though the sight was a bit shocking for the children, the interviewee say the experience was valuable.

Some interviewees see Helsinki archipelago have a broader educational value than only exploring nature with the close ones. One of the interviewee sees that the school and kindergarten groups should utilize the archipelago for educational purposes and visit the islands, because when getting familiar with the archipelago and their nature the more there is willing to protect and preserve it. Two other interviewees also emphasize the importance to teach their children to respect nature and keep the environment as it was before the visit. Two interviewees, young adults, say picking trash from nature gives good feeling of acting in a responsible and useful way.

In addition, a few interviewees expressed their concern about the erosion in the island nature caused by excessive number of visitors. This came up particularly in Pihlajasaari. Moreover, the interviewees saw the building of the archipelago confronting their recreational value.

“If you think about the biology lessons, this is actually it [a biology lesson] at its best, when you see some animals, or whatever butterflies, the content of the books becomes concrete. And it’s good for myself too... to watch birds, for instance. It looks different from the pictures in books.”

– Female (47) with a friend (female, 49), Vartiosaari

5.5. Interrelationship between biodiversity and values

The interview data is coded also in terms of biodiversity; the concept of biodiversity is divided into five actual codes plus the others group. These codes are listed on Table 7.

What is noteworthy is that only a few interviewees talked about the biodiversity directly, but all the interviewees emphasize the value of nature. Nevertheless, the interviewees also value biodiversity, because many of them enjoy watching birds, animals and plants. Moreover, many were concerned about degradation of the nature at the islands, which means that when that happens the biota gets less diverse. At least 11 interviewees highlight they like experiencing difference of biota in archipelago

compared the biota around their homes. In addition, three interviewees, who say that they are not nature oriented at all, emphasized most the value related to nature in the archipelago. Moreover, vast majority of the interviewees were worried that the archipelago will not remain the same, a somewhat pristine nature site open for visitors. Biodiversity is very interrelated with other value categories. Some of the sub-groups within the biodiversity and different values are the same, which indicates the intertwined relation.

Table 7. Codes for the biodiversity and their frequencies.

Codes for biodiversity valuation:	Code frequency:
5.4.1. Experience the richness and difference	38
5.4.3. Conservation	26
5.4.2. Immersed in nature	23
5.4.4. Learning	14
5.4.5. Well-being	7
Total:	108

The Sankey diagram (Figure 6) shows relation between different categories of coded value for biodiversity and the subsumed value categories following the division by Himes and Muraca (2018) into instrumental, intrinsic and relational values. The Sankey diagram is based on the co-occurrence of the coded segments. The diagram is retrieved from Atlas.ti. The bolder is the connecting line, the stronger is the co-occurrence.

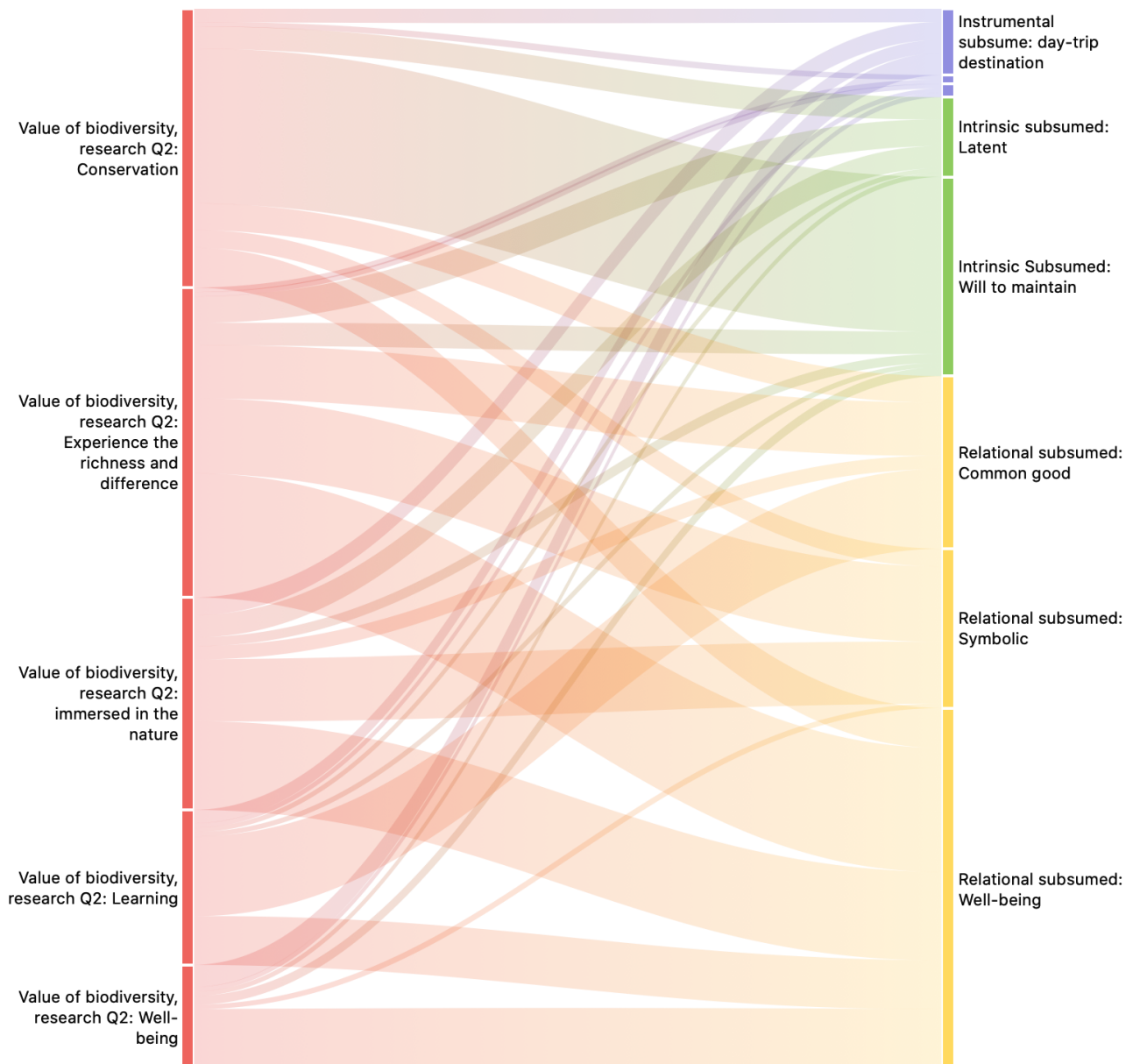


Figure 6. The relation between value categories of biodiversity and the subsumed value categories.

Table 8 shows the co-occurrence and coefficient of each value type related to the biodiversity. The Coefficient figure indicates the strength of relation between the two codes. The Coefficient It is calculated as follows: $c = n_{12} / (n_1 + n_2 - n_{12})$, n_{12} = number of co-occurrences for code n_1 and n_2 . The coefficient is also only a indicative case, because it has distortion when the code frequencies differentiates strongly, then the Coefficiency is smaller than the potential significance of the co-occurrence. The table 11 shows the number of codes of each subsumed value types that overlap with biodiversity related code groups. Additionally, it shows the coefficient figures of each individual subsumed value type categories and total number of biodiversity related codes. The intrinsic value has the closest link to value of biodiversity, the relational value has the second closest link and the instrumental value the weakest.

Table 8. The co-occurrence of each value type (instrumental, relational and intrinsic) and the value of biodiversity added with the coefficient.

	● Instrumental values		● Intrinsic values		● Relational values	
	Count	Coefficient	Count	Coefficient	Count	Coefficient
● Value of biod: Research Q2	23	0,10	65	0,39	157	0,38

According to the both the Sankey diagram (Figure 6) and the Table 8 the biodiversity has very strong co-occurrence with the relational values. Under the entire category of relational values, the strongest co-occurrence with biodiversity is with “Well-being” category. The strongest the connection is with “Experience the richness and difference” and “Immersed in nature”. One of the most emphasized value of biodiversity, the category “Experience the richness and difference” is connected with many categories. The strongest the connection is with the relational value categories of “Well-being”, “Symbolic” and “Common good”. Biodiversity value category “immersed in the nature” has the strongest connection with the relational value categories “Well-being” and “Symbolic”. Being able to get immersed in the nature contributes the experienced well-being the interviewees have in the archipelago of Helsinki. This feature has also distinct symbolic value. Biodiversity value of “Learning” connects the strongest with relational value categories of “Well-being” and “Common good”. Learning experience is important for the interviewees and one essential facility of the archipelago. The “Well-being” category of biodiversity is most connected with the “Well-being” category of the relational values. The “Conservation” category of biodiversity is co-occurrent with all the relational value categories, but not as much as the other categories of biodiversity.

The coded segments for biodiversity are the strongest co-occurrent with intrinsic values (Table 8.) out of the main code groups, even though the number of overlapping codes is much bigger with relational values (157). Biodiversity value category “Conservation” is the strongest connected with “Will to maintain” category of intrinsic values. These both categories are related to the value of maintaining the archipelago in the future. Nature of the islands is the element most emphasized by the interviewees that they want to maintain as it is. The intrinsic category “Latent” has strongest co-occurrence with the biodiversity categories of “Conservation”, “Experience the richness and

difference” and “Immersed in nature”. The “Latent value” category has significantly weaker connection than “Will to maintain”, but still a relatively strong one compared with the instrumental values.

The coded segments for biodiversity has the weakest co-occurrence with the instrumental values, according to both the Sankey diagram and Table 8. The categories of biodiversity is the strongest co-occurrent with the subsumed category of “day-trip destination”. “Learning” under the biodiversity has weakest of them, others are very equally strong. The co-occurrence between biodiversity segments and subsumed categories of “Food and eating” and “Hobby” under the instrumental values are only modestly co-occurrent.

5.5.1 Role of biodiversity for well-being?

The interviewees talk about nature, but only a few about actual biodiversity. None of the interviewees use the actual term. It is worth noting that all of them say that nature is important. For many interviewees nature is also a source of well-being, many talk about relaxing, recovery and a few talk about higher spiritual dimension. Many interviewees stress the difference the natural environment in the archipelago is to the built, urban environment. It is important to be able to get immersed in nature: 11 interviewees say they enjoy to be able to be surrounded by nature. Some describe how they enjoy sensing the sea, rocks, waves of simply nature around them. One of the interviewees gives an example that nature experience is stronger in Helsinki archipelago than in many rural areas, where nature is often harnessed to the needs of human, the landscape is dominated by cultivated forests and managed fields. Some interviewees also add an descriptive adjective in front of nature, such as wild.

“It is relaxing to get away from the urban hustle. I guess there is a connection of some kind to nature. You can feel it. You can just smell the air. You can be more focused and sense the environment with all the senses: sense of sight, hearing and smell. Then you simply observe more.”

– *Female (47) with a friend (female, 49), Vartiosaari.*

Five of the interviewees say they feel that nature in the archipelago is relaxing and 14 interviewees say they calm down in the archipelago, and nine of them say that nature in the archipelago is the element they experience calming. One of the interviewees gives a detailed description how it is relaxing to stop to observe the landscape, animals and plants and focus on the environment with all senses. One of the interviewees ponders the wider meaning of the biodiversity and say that in the

large perspective it is a matter survival of the mankind. Another interviewee bring up similar perspective. The first mentioned interviewee also reflects the meaning from everyday life perspective and say the biodiversity enables to observe all kinds of animals with her son. One of the interviewees sees pine trees as empowering and she likes to hug them. One interviewee assimilate the being in nature to the possibility to swim and relief on a hot summer day.

“It feels good to be in nature, and relaxing and calming. It’s nice that there is not any fuss and you can just look around”

– Female (30) with a baby, a dog and a spouse (28)

5.5.2 Biodiversity worth conserving

The richness of biodiversity provide something different from what people can experience near their homes: many interviewees say they enjoy to observe different animals and plants that are different from what they see around their homes. At least 13 interviewees find valuable that they are able to have great nature experience within accessible distance. One of the interviewees approach the value of biodiversity from instrumental value point of view: she says that if there was no diverse nature, there would be no possibilities to berry and mushroom picking either. For another interviewee the biodiversity is more intrinsic, she finds valuable that the archipelago provide a living environment for diverse birds, insects and animals and stress that the archipelago environment should remain unmodified so that there are conditions for different biota and ecosystems to flourish.

Seven interviewees highlight the opportunity to be able to learn from nature. Many of them say, they can spot animals and plants new to them, or animals and plants they do not encounter too often. Moreover, two interviewees tell that the diverse natural environment at the archipelago facilitate learning experience as one can experience different nature types in one island and within the same visit. For the interviewees with children, almost all stress that the archipelago is a great environment to learn from nature with children and share the joy of exploring. Moreover, four interviewees stress that the archipelago provide a nice environment to help their children to learn from nature and about nature in concrete way. Moreover, three interviewees tell that they observe the indicators of well-being of nature, such as algae. One of the interviewees tell that he watches invertebrates underneath stones and teach children that fishes eat them. The same interviewee tell that he has taught his children that bladder wrack is an indicator of the well-being of the sea. Another interviewee boating with family stress that the importance of cleanliness of the sea water.

Practically all the interviewees share a concern about nature in Helsinki archipelago, the urge for conservation is strong. When asked what the interviewees would preserve in Helsinki archipelago for the upcoming generations, the most popular answer is nature, and the original environment of the archipelago. Almost all the interviewees (16) say that they don't want any big construction projects to Helsinki archipelago. The interviewees highlight that they wish future generations are able to enjoy nature of the archipelago. Additionally, they would like to see the Helsinki archipelago in future as they are currently without any big changes in the landscape or environment. Eight interviewees wish development is done prioritizing nature keeping it as authentic as possible.

The other threat the interviewees see on the archipelago is excessive number of visitors. Particularly the interviewees at Pihlajasaari were concerned about degradation of nature and litter left by visitors. Interestingly, at the same time many interviewees wish for more affordable ferry tickets, longer season or more islands to explore. They argue this by saying that people would be more spread to the archipelago easing the stress on current ones. What is more, some interviewees believe that if there were more visitors in Helsinki archipelago, there would a bigger interest to conserve them, and a higher threshold to build.

“I would keep nature as authentic as possible, not to build too much that also the future generations get to enjoy the original Finnish archipelago landscape and experience different biota, species and their diversity and to learn about the Finnish nature.”

– Female (24) with a friend, Harakka

6. Discussion

This chapter elaborates the main results of this thesis, provides answers to the research questions and reflects the findings with the previous literature.

Figure 7 summarizes the values of Helsinki archipelago for the visitors under each value type. Moreover, the figure is taking the thesis to the next chapter, discussion as it already has shortly summed up answers to the research questions.

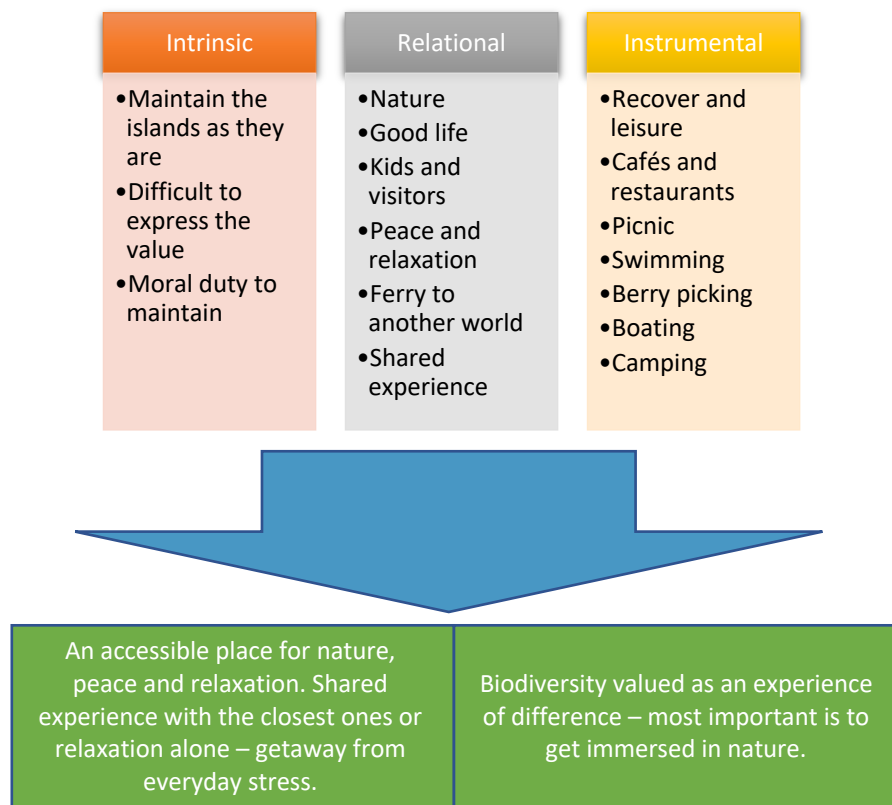


Figure 7. Summary of the main results.

6.1 The value of the Helsinki archipelago for visitors

This chapter discusses the findings related to the first research question of this thesis: what is the value of the Helsinki archipelago for the visitors? The results of this thesis are consistent with previous research (such as, Yli-Pelkonen, 2013; and Stålhammar and Perderson, 2017). Strongly conflicting results were not found, although there are some anomalies, especially concerning the social dimension of the urban green space.

Nature in Helsinki archipelago is strongly emphasized by the interviewees related to value they experience. The natural environment of the archipelago provides a contrast to constructed urban landscape. The islands of the Helsinki archipelago remain relatively pristine and the infrastructure does not dominate the landscape anywhere while the natural atmosphere prevails. It is an important place for relaxation and recover. Accessibility is one of the most important features of the Helsinki archipelago, it is located right next to the downtown. For example, the ferries to Pihlajasaari, Harakka, Vallisaari and Isosaari depart right from the city center area. Many previous studies, such as Yli-Pelkonen (2013), Qui et al. (2013), Ahtianen et al. (2019) and Viiret et al. (2019), mention the value of landscape and aesthetic features of the UGS for the users. Based on the results of this thesis, visitors go to the archipelago for experiencing another atmosphere; some interviewees referred it descriptively as a transfer to another world. Because the contrast is so important for the people both physically and mentally, all the interviewees were strongly against building bridges to the recreational islands. The ferry trip allowed the visitors to leave their every-day stress behind, change the physical atmosphere and also mindset to focus on what is around. Dushkova et al. (2021) point out that people value the urban park environment as “an escape from busy urban life”, which is what the interviewees of this thesis repeated.

The relational eudaemonic concept – good life – is strongly connected to the Helsinki archipelago by the interviewees. Many emphasized the strong relation of possibility to visit the Helsinki archipelago and well-being, it was even mentioned as a reason to live in Helsinki. The previous literature supports the perspective of the positive impact of the UGS on the current feeling (World Health Organization, 2021). The elements of good life can be identified: relaxation, recovery and meditative, even a spiritual dimension for some. The archipelago as an element for good life derives from the aforementioned. In long term, most green space types improved the quality of life and mental health, especially exposure to the coastal blue-green space appeared to contribute positively to mental health (ibid). The archipelago that is open for everyone was seen as a valuable asset of Helsinki. It provides a “safe haven” where to escape the city hustle and bustle, everyday stress or to relax and recover. On the one hand, many enjoy visits to the archipelago alone, but on the other hand, for many interviewees it is also an important place to share experiences with the closest ones.

People often enjoy the Helsinki archipelago either on their own, especially when they often seek for peace, relaxation and recovery. Unlike the studies of Botzat et al. (2016), Ives et al (2017) and Dushkova et al. (2021) point, the visitors of Helsinki archipelago are not looking for social contacts from their visits, they go there to relax in their own space or then many visit the Helsinki archipelago

with the children, family members or close friends. The social aspect of the visits in archipelago is to share an experience with the close ones, the other visitors are more statist. Many interviewees said that they also feel fellowship with the other people visiting at the same time. Sharing special experiences even with strangers is valuable. Nevertheless, often the most times the visitors enjoy to explore the island with their children sharing good moments and having quality time without external distractions. Many visitors with children enjoy to observe nature, biota and learn about it together with their children. People apparently want also to familiarize their children with the archipelago as a place for good time and nice nature. The archipelago environment is also fruitful for learning. The visitors experience is an environment where nature phenomena becomes tangible and thus it is educational. This view is supported in previous literature, for example Mocior & Kruse (2016) emphasize the educational value of the UGS, particularly for children.

The Helsinki archipelago is a beloved recreational place for most interviewees. This is in line with Yli-Pelkonen (2013), who discovered that the accessible local green space has a great recreational value. Particularly swimming at the islands is a popular activity among visitors. Yli-Pelkonen (2013) write that the good feeling in nature is associated to either high-pace activity or only being there. The results of this study does not provide evidence that people value sweaty activities in the archipelago, but value of walking and relaxing in the natural environment is clearly apparent. The sea has a broader value for many visitors in addition to being a facility for swimming. The sea is experienced as a calming element, and also more extraordinary than typical forest landscape. The positive impact of maritime environment is supported in the report by Worlds Health Organization (2021), which indicates that time spent at a coastal blue-green space contributes positively to mental health. Besides swimming, the day trip often includes a picnic. The archipelago is also a good environment for boating. For boaters, it provides a versatile landscape and various islands to stop by. Possibilities for swimming, picnicking and boating are instrumental values for the visitors of Helsinki archipelago. However, the instrumental values were in many cases difficult to distinct from the relational values. As one characteristic of relational values is being place-based (Himes & Murca, 2018), recognizing the instrumental values is sometimes subject to interpretation.

The most emphasized instrumental value was accessible recreation, outdoor and exercise facilities and café and restaurant services. Particularly the instrumental values of recreation, outdoor and exercise facilities overlap with the relational values. Nevertheless, since in this research the aforementioned is interpreted to be substitutable (Himes & Muraca, 2018), so they were placed under the instrumental value category. When it comes to restaurant and cafeteria services, a basic level is

desired. The interviewees emphasize that it should be affordable and simple. Food and eating plays a significant role in people's visits to the Helsinki archipelago. Many enjoy a simple meal or a cup of coffee in a restaurant or then picnicking is popular. An important part of the trip is to eat their own snacks and food along the visit to the archipelago. Nonetheless, the visitors appreciate some level of services, such as laid-back and cozy cafés and restaurants, which are rather build to be part of nature than anything pompous and fancy.

Possibility of getting immersed in nature is another essential point regarding the value of the archipelago for the visitors. The similar phenomenon was found by Yli-Pelkonen (2013), who researched the recreational ecosystem services in Helsinki, note that experiencing the surrounding nature with all senses is important at the UGS. The Helsinki archipelago is foremost a day-trip destination, where people go only to enjoy a nice day outdoors, without any special plans. Many interviewees described how they simply enjoy to observe the sea, rocks and trees at the islands. The visitors experience natural environment soothing and relaxing. Nature is closely connected to well-being. This view is widely supported in the previous literature (e.g. Sandifer et al., 2015; Atiqul Haq, 2021). Many interviewees also wish for enhanced accessibility in terms of extended season, more islands opened for visitors and more affordable tickets. Moreover, the animals and biota of the archipelago provide something to observe and to learn from. The interviewees think they have a close connection to nature when they are visiting the Helsinki archipelago. Wilderness in urban area helps people to connect with nature (Kowarik, 2018). Commonly, the interviewees were not able to describe further why it is so (ibid). Stålhammar and Pedersen (2017) present similar idea in their paper, their interviewees were not able to describe the value of nature and they simply said it means much or it makes them happy. This suggests that the archipelago holds intrinsic value, which is not consciously thought, the value may be for nature itself, not exactly for the humans (e.g. IPBES, 2014).

The kinship to nature is emerging from the visitors views about preserving the archipelago in its current state. The interviewees see the archipelago as a pristine environment and a concern is evident about the city expanding to the islands. When asked about what to preserve for the upcoming generations, the interviewees wanted to maintain the archipelago as it is, and especially its nature. As some interviewees bring up, the expanding and densifying city of Helsinki made people to be concerned about the construction to reach the archipelago as well. The new massive residential areas of Kalasatama, Jätkäsaari and Kruunuvuorenranta are all coastal areas, and what is more, partly built on sea (Sinkko & Vuori, 2021). The debated plans to build in Vartiosaari had also an impact, as some interviewees mention.

According to the results, the visitors of the Helsinki archipelago do not desire any high-profile services. They are rather worried about excessively developed infrastructure. The basic-level of services are enough, the interviewees wanted only the essentials for spending a nice day outdoors. However, what the visitors want is even better accessibility, longer season to visit and affordable ferry tickets. The importance of accessibility emphasized already in the study by Yli-Pelkonen (2013). At the same time, many visitors raised their concern about the degradation in the islands caused by masses of visitors, this appeared particularly in Pihlajasaari. Additionally, the visitors valued peace and relaxation high in the archipelago and, thus, the wish for more islands to open for visitors is understandable. Though, none of the interviewees complained about the rush in the archipelago that there would be space for everyone. The interviewees rather said the opposite that there is plenty of space for everyone to find a spot. One point was that the more people have positive relation to the archipelago the more there is support for keeping them unbuilt and open for audience.

Many interviewees were familiar with the Helsinki Biennale at Vallisaari and mentioned either having visited there or were planning a visit. Despite the deep valuation of nature and low-profile infrastructure, the events and art was widely praised by the visitors. In addition, four interviewees, of whose three are younger adults, think that there is not enough information available about the archipelago for visitors. They feel that people are not aware of that there are public island in Helsinki archipelago accessible with public ferries. Some thought that if there were more islands accessible with public transportation ticket, more people could find them and get familiar with them. Perhaps there could be more information available in the channels favored by the young adults.

Many feel a moral responsibility to preserve the archipelago. Perhaps these times of the loss of the biodiversity and climate make people think that there is a moral obligation to maintain at least nature spots nearby. Moreover, the interviewees experienced the archipelago as a place that has remained quite unchanged for ages and they feel a duty to preserve it. The moral responsibility was also identified by Cooper et al. (2016), according to whom the moral responsibilities derive from the human-nature relationship and humans have a special role in nature, which brings along the responsibility. Similar views were presented by the interviewees of this thesis. Cooper et al. (2016) refer that we need to protect nature as there is already climate change and other crisis taking place. The interviewees in Helsinki archipelago perceived it crucial to save the archipelago to the future generations as it is. Dushkova et al. (2021) mention that the value of nature for the future generations

is rarely taken into account. The results of this thesis indicate that it is an important factor for people, and a source of feeling of moral duty towards nature.

The visitors see the archipelago as an essential part of the image of Helsinki. It is a unique place and the interviewees seemed to be proud of it. Especially the ones, who had either lived abroad or experiences with foreigners in the archipelago emphasized the uniqueness of the place. When they lived abroad, the interviewees did not have an opportunity for an easy access to nature without a rush of other people. The external perspective makes them to understand the real value of the Helsinki archipelago, which the ones who had lived only in Finland, may not understand, because they take it for granted. One even said the archipelago is perhaps the primary reason for living in Helsinki.

There are some interrelations between the different value types and categories. The interrelatedness is understandable as the different value types tend to overlap each other (e.g. Himes & Muraca, 2018; Chan et al. 2018). Relational values are the most emphasized value type by the interviewees and the most interrelations are with relational values. Particularly the “Well-being” category is emphasized in this sense. It is interrelated the strongest with “day-trip destination” category under instrumental values and, both “Latent” and “Will to maintain” categories of intrinsic values and with other relational value categories.

There are attributes of instrumental values that could fit into relational category, especially within the “day-trip destination” category hence it can be interpreted as place based. Interrelatedness of “Well-being” and “day-trip destination” is explainable with the well-being impacts of the UGS (e.g. Sandifer et al. 2015), because the interviewees regard the Helsinki archipelago strongly as a nature destination. Moreover, elements of relational value of good life (one category in subsumed Well-being category) are linked with the day-trip destination: the archipelago is a place for relaxation and recovery, which are also elements of well-being for many interviewees. “Common good” category of relational values and “day-trip destination” of instrumental values are also interrelated. Many interviewees do day-trips with family or friends, so this is related to the shared experience and also educational value. Instrumental value category “Hobby” is also interrelated with “Common good” of relational values: many interviewees hobby together with family or friends at the archipelago.

Intrinsic value categories are interrelated with “Well-being” of relational values. The interrelatedness of “Latent” category may tell that the nature related values have also intangible value difficult to explain, as many interviewees say that they are not able to explain the value. Additionally, relaxation

and eudaemonism are related to the value per se and intangible. These are not easy to point out and they are experienced for multiple reasons. One part of the “Common good” category under relational values is “Responsibility & care”, which is logically related to the “Will to maintain”, because the interviewees feel that the archipelago should be maintained for future generations, it is a moral duty. Moreover, the educational value (part of “Common good”) is related with the urge for conservation as many times the education is focused on the environment or nature of the archipelago.

As a final take away, and the answer for the first research question, what is the value of the Helsinki archipelago for the visitors, is that the visitors of the Helsinki archipelago value it as an accessible nature destination where to recover and relax. Nature in the archipelago is important for the visitors and enables them to transfer to another world, in other words environment and mindset. This makes also the ferry trip valuable. The archipelago is also valuable as a place for shared good time with close friends or family members. The recreational aspect is also valuable, the archipelago is a marvelous day-trip destination to enjoy nature, swimming and some food either at picnic or a restaurant.

6.2 The value of biodiversity for the visitors of Helsinki archipelago?

This chapter discusses the findings of the thesis on the basis of the second research questions: what is the value of the biodiversity of the Helsinki archipelago for the visitors? The results indicate that the visitors of the Helsinki archipelago prefer to experience the diverse biota at the Helsinki archipelago, where it differs from what is found around their homes. The biodiversity provides thus new kinds of experiences for the people. The experiences related to biodiversity are special for urban residents, who are not necessarily involved in nature in their everyday lives. This type of value derives perhaps from the same source than the value that comes from being immersed in nature. It is likely that the pristine feel in the archipelago enhances connectivity with nature. When focusing on the animals and plants, it makes one’s mind to focus on the exact moment, which is a meditative experience.

The value of nature is evident based on the results of this thesis, but the value of biodiversity is a more complex question. Many interviewees speak about the biodiversity, but none of them used the exact term. The concept of biodiversity was shortly explained within the interviews, but it is a good question how the interviewees’ perceived biodiversity. Do they regard nature and biodiversity as synonyms? To what extent diverse biota at the archipelago is important for valuation. And do people

put more weight on some parts of biodiversity than others, I would assume that an extinction of some bird species would be more devastating for the visitors than extinction of some moss or lichen? Nonetheless, this kind of speculation is questionable, because the extinction of a species have cascade effects and thus it could concern the people even though an extinction of one non-spectacular species would not seem that concerning. Bernando et al. (2021) noted that people have difficulties in understanding the concept of biodiversity. They mix it with other related concepts such as nature, wilderness or even no urbanization. Nevertheless, according to their study people recognize the places with rich biodiversity. These results support also to the results of this thesis. As pondered above, it is not sure what the interviewees perceive with biodiversity, but all the interviewees understood nature values of the Helsinki archipelago and the need for conservation. Moreover, the interviewees were concerned about degradation and erosion caused by excessive number of visitors, which shows that they recognize the biodiversity value there. Additionally, presumably if loss of biodiversity or some part of it would affect in the recreational value of the islands, such as swimming, animal observation or similar activities, then the visitors would most likely be concerned. Anyway, this is just speculation as these aforementioned is not covered in the interviews.

Even though, the value of biodiversity is not that explicit among visitors according to the interview data, there is some obvious evidence. Many interviewees said they enjoy to spot or observe plants, animals or birds at the archipelago. That clearly depends on biodiversity. Yli-Pelkonen (2013), discovered that Helsinki residents eagerly observe birds in the UGS. Many of the interviewees of this thesis mentioned that they prefer bird watching at the archipelago. According to Hepburn et al. (2021), the diversity of birds near people's homes increases satisfaction. However, there is not much research indicating the consistent connection between biodiversity and well-being, besides with floral biodiversity and self-perceived well-being. The interviewees of this thesis seemed to enjoy much when they could observe different animals and plants. Additionally, they emphasized the different environment of the Helsinki archipelago compared to their home surroundings, so at least the biodiversity provide new experiences and nature exposure for the urban residents, which seemed to increase happiness. Nevertheless, mechanism of the positive impact of biodiversity to the health and well-being remain open after this thesis as well as previous literature (e.g. Marselle et al., 2021; Houlden et al., 2021).

Using biodiversity as an object for learning is one function placing value on it. In addition, biodiversity offers visitors experiences that differs from the ones they can get around their homes, and in the densely built downtown area. The interviewees enjoy observing various animals, one of

the interviewees highlighted that they managed to spot an elk one time. Another one told a story about a trip they found a dead seal, which was a shocking but also an educating experience. Moreover, the visitors enjoy feeling nature around them. Many seem to understand the value of the biodiversity, even though they do not necessarily talk explicitly about it: One interviewee mentioned the importance of clean water in the Baltic sea, other said she would like to take magnifying glass and see what kind of creatures are found from dead wood. These remarks can be reflected with the study of Kowarik (2018), who emphasize the role of the UGS as places for residents to connect with nature. Observing the natural environment and feeling it enhance the sense of connection and being part of nature.

The biodiversity value is related to the value of shared experience with children. The visitors with children enjoy observing and learning together about the plants and animals in the archipelago. The educational value is also identified in the previous literature. Ahtiainen et al. (2019) observed it as an cultural ecosystem service and they detect the education as an important cluster of CES. In their study, the recreational dimension was the most important. Talal et al. (2021) noted that the urban park goers are also interested in biodiversity and they appreciate the information about it. Riechers et al. (2016) and Mocior and Kruse (2016) emphasize the role of nature in educational purposes for children. The results of this thesis are aligned with this: many interviewees enjoyed learning about nature at the archipelago together with their children. One of the interviewees also emphasized the importance of taking school and kindergarten children to archipelago to learn. Riechers divides the education into formal and informal. Formal is using directly nature site as a place for education, an example of this are the visits of school classes. And then, informal education is experienced within the visits, where education is not a purpose. The informal educating aspect can be seen in the results of this thesis. The visitors are eager to observe nature and the info sheets at nature paths are praised.

The urge to conserve the archipelago indicates the valuation of the biodiversity. The visitors want to keep the islands as they are and nature as pristine as it is. This is opposite to Botzat et al. (2016), who claim that people prefer managed landscape to natural one. From this can be interpreted from this that people place value for the biodiversity at the islands. The most popular activities at the archipelago support also the valuation of the biodiversity as people see contrast to the urban environment, a transfer to another world. If there were poor natural values, this function would not be as strong. Some interviewees also add a descriptive adjective in front of nature, such as wild. This probably means that they appreciate unmanaged nature, and thus also the biodiversity.

Relaxation and recovery are important motivators for visiting the archipelago. The previous literature supports the relaxing and restoring impact of the biodiversity (e.g. Marselle et al., 2021, Houlden et al., 2021, and Bele and Chakradeo, 2021). Moreover, the aforementioned studies provide evidence concerning the all-encompassing positive health-impacts of the biodiversity, such as physical, physiological and mental well-being. Nevertheless, the connection between biodiversity and the relaxation is not clear. This may have something to do with the intangible intrinsic value of the archipelago. Many of those who emphasized the importance of the archipelago for them, could not express what makes it so important. The intrinsic values were perhaps the most difficult to identify due to the intangible nature of them. According for example to IPBES (2014), the intrinsic values are something non-anthropogenic, things that are valuable despite they do not provide any value for people. I found it also challenging to map out through the interview, because it is challenging to ask people about values that are not values by people. The intrinsic value has a problematic characteristic of being a highly abstract concept with no clear definition (O'Connor & Kenter, 2019: 1252). The well-being aspect of biodiversity varies from instrumental from relational to intrinsic. Some of the interviewees associate nature and the biodiversity with leisure and a facilitator of free time, in this sense biodiversity is part of the framework for good times. On the other hand, people value the possibility to spend good time with children in nature, where they can focus on the wonders of biodiversity around them without external distractions. Additionally, the well-being value can be intrinsic, something intangible the diverse environment has, which feels good but is difficult to elaborate.

Biodiversity and versatile natural landscape are an evident part of the archipelago, but this thesis does not reveal what is the connection. The value of biodiversity relate strongly to the well-being within the relational value category, meaning it relates with nature experience, eudaemonism, spiritual dimension and relaxation. Nature experience is most likely stronger in an environment with rich biodiversity, there is more to observe. Maybe rich biodiversity enhance feeling of connectivity, the environment feels comfortable and attractive, so it is easier to think of being part of it.

Some relate nature to spiritual or religious dimension, which is important part of selfhood. One of the interviewees compared nature to church and some talked about meditative atmosphere they experience. The spiritual dimension of the UGS and nature is covered in previous literature quite widely. Dushkova et al. (2021) and Ahtiainen et al. (2019) categorizes it as one of the CES. Whereas Sandifer et al. (2015) perceive enhanced spiritual well-being as one positive health impact of nature. Riechers et al. (2016) and Cooper (2016) contemplate that the spiritual dimension related to the UGS

can be even religious. Moreover, Riechers et al. detected UGS as a place, where to clear mind from other thoughts and experience a meditative moment. Cooper et al. divide the spiritual dimension into implicit (indirect) and explicit (direct), which both can be identified in this thesis as the interviewees discussed the spiritual experience and others described how they feel kinship with nature in the archipelago and experience the atmosphere relaxing in a way they can focus on environment with all senses. The same was detected by Riechers et al., (2016), who referred the UGS as places for clearing ones' mind, meditate and think. Cooper (2016) writes that the spiritual dimension is a relational value rather than instrumental, the same way it is categorized in this thesis. A place-based value is an important dimension of the relational value, perhaps the visitors of the Helsinki archipelago connect the biodiversity to the archipelago as they are used to experience rich nature there.

Experienced biodiversity within the visits to Helsinki archipelago is important for well-being of the interviewees. All the categories of biodiversity are clearly co-occurrent with "Well-being" category of the relational values. The strongest the connection is with "Experience the richness and difference" and "Immersed in nature". Moreover, the "Symbolic" category of relational values has the strongest co-occurrence with the aforementioned biodiversity categories. It seems that a possibility to visit in a different natural environment right next to the city center is valuable for well-being, which is also important for experience of good life. And a possibility to quickly transfer to a different world, as some interviewees describe the experience, supports well-being. The experience of being in a different world when going to Helsinki archipelago tells about the drastic contrast it provides to the constructed urban area. The emphasis of "Experience the richness and difference" category indicates that the biodiversity and different natural environment is a significant part of this experience. It is relaxing to be able to get immersed in a natural environment that is detached from the urban environment, but still very accessible. Considering this, the importance of ferry connection is very understandable, because it provides both mental and physical transfer from the busy urban everyday life.

The "Learning" category of biodiversity is strongly connected with "Common good" and "Well-being". Additionally, there is a co-occurrence with "Day trip destination" of instrumental values. A possibility to learn from the biodiversity is important for the interviewees. It provides also valuable shared experience, which are both educating and fun. Especially the interviewees with children appreciate this possibility, but also many interviewees on their own emphasized the good experience they get by observing the animals, plants and natural environment at the islands. The importance of shared educational experience is also part of the taking responsibility of the archipelago. New

generations learn there the importance of nature on the spot. Some interviewees mention that the visits support well school and provide a fruitful environment to have tangible understanding of what is read from the books. Co-occurrence between “Conservation” category of biodiversity and “Well-being” of relational values also supports this perception.

The intrinsic value categories are co-occurrent with biodiversity categories, but only “Will to maintain” is very strongly connected, and with the category “Conservation”, which is obvious as they are derived from very similar elements. The intrinsic category “Latent” has strongest connections with the biodiversity categories of “Conservation”, “Experience the richness and difference” and “Immersed in nature”. This indicates that biodiversity has value per se for the interviewees and the archipelago is valuable natural environment for the biota, also from the non-anthropogenic perspective. The interviewees’ tendency to talk about nature besides biodiversity may be because the concept of biodiversity is not that familiar, but it may also relate to the intangible value of biodiversity. Nature may seem like a more general concept to talk about when the value is not easy, or even possible, to pin-point on anything particular.

Instrumental values seem to have weakest relation with biodiversity. Perhaps it is related to strongly anthropogenic perspective. Additionally for example restaurant and café services, which were instrumental value providers emphasized by the interviewees has are relatively detached from biodiversity. Nevertheless, it is visible that the biodiversity is important element of value within the day-trip in the Helsinki archipelago.

As a conclusion, the answer for the second research question, the value of biodiversity for the interviewed visitors of the Helsinki archipelago is mainly the different experience from what they can get elsewhere in urban area. Additionally, the interviewees value the possibility to get immersed in nature, which many feel good for well-being. Nevertheless, the value for biodiversity is less explicit as the overall value. Biodiversity holds intrinsic value, it is valuable as itself. It is experienced important that the animals and plants have their places to grow and ecosystems to flourish. This type of value can be intangible and not considered consciously and thus difficult to verbally express. Moreover, the visitors prefer nature and biota in Helsinki archipelago as provider of different types of experience than what they can get around their homes. The interviewees enjoy observing the animals, plants and natural environment at the archipelago. Additionally, some interviewees, particularly the ones with children, value the natural, diverse environment fruitful for learning. The archipelago provides an environment, where to experience connection nature. Conservation of the

archipelago, which many consider relatively pristine, is supported by many interviewees.

7. Conclusions

Based on the findings, Helsinki archipelago is an important place for the interviewed visitors and nature is what they emphasized the most. Moreover, nature is the most emphasized factor also by those, who say that they are not nature-oriented. The archipelago is valuable as an accessible day-trip destination, where to relax, recover and enjoy the day with the closest ones or some own space in the natural setting. A quick ferry trip is a transfer to another world for many – both physically and mentally. This is valuable for the interviewees, and bridges to, or large scale infrastructure at the archipelago is not desired. Biodiversity in terms of connecting with nature and observing animals provide experience different from what urban residents can have around their homes. The main value of biodiversity in Helsinki archipelago emerges via new experiences different from elsewhere in the urban environment. Biodiversity relates to the immersive nature experience the interviewees value in the Helsinki archipelago. The sea is a relaxing element for many. Additionally, there is intrinsic value related to the biodiversity: the archipelago itself is a valuable place for the ecosystems. For the interviewed visitors, the archipelago is a pristine natural environment worth maintaining as it is. The interviewees are afraid of excessive construction and that the city expansion reach the archipelago. Moreover, the degradation of nature because of great number of visitors raises concern. Despite of, or perhaps because of that the visitors wish for more islands to opened up for audience and extended season. Additionally, more information should be available both about the archipelago and at the archipelago about nature.

The results of this thesis show valuation is multidimensional, but mostly relational. It is place based, shared experience and related to good life and well-being. Additionally, there is intrinsic value, especially in terms of nature conservation and also instrumental value, such as place for swimming.

There is still a need for further research related to valuation of the biodiversity and the resident perspectives related to the UGS and biodiversity. The generalizability of the results of this qualitative thesis may be questioned, because it covers only a small sample. It would be reasonable to expand the survey to cover for example the people, who are not visiting the archipelago at the time of the interview and ones, who have more negative attitude towards using the resources of the city of Helsinki on those islands. Additionally, a natural next step for further research would be to conduct a quantitative, survey based research on the basis of this thesis. There also is a need for research about what is the mechanism how the biodiversity affects positively on the well-being and health of people. An interesting topic for research would be how familiar the residents of Helsinki are with the concept

of biodiversity and what does it mean for them. Another meaningful opportunity would be to map out the valuation and views of the decision-makers of the city of Helsinki concerning the archipelago and its biodiversity.

There are certain limitations involved in this thesis. A research of values or valuation of people about the archipelago and biodiversity is not straightforward and there is no exact definition for what the value of nature consists of. There are still open epistemological and ontological questions involved in foundations of people's value for nature. The framework applied in this thesis provides only one approach to the topic. The value is a multifaceted concept and it can be approached from different angles. The sample of this thesis consist only from a limited number of people happened to visit the certain three islands of the Helsinki archipelago in the middle of week-day in August. Thus, the interviewed visitors can be more devoted for the archipelago than an occasional week-end visitor. Moreover, in there were no other interviewees than the visitors of the archipelago. The results could be different if interviewed people in the other parts of the city or at different type urban green space. Additionally, the resources for this thesis were limited to an effort of a single person, and thus the sample size and timeframe were limited according to resource capabilities. It is conceptually problematic this research does not cover what people perceive as biodiversity. In addition, this thesis does not provide information about does the degradation of biodiversity concern people if it does not have an immediate impact on the experience at the archipelago. In addition, using frequencies of occurrence as a measure for, which values are emphasized may be problematic, for example because the interviews on the location can effect on the content.

8. References

- Ahtiainen, H., Liski, E., Pouta, E., Soini, K., Bertram, C., Rehdanz, K., Pakalniete, K., & Meyerhof, J. (2019). Cultural ecosystem services provided by the Baltic Sea marine environment. *Ambio*, 48(11), 1350–1361. <https://doi.org/10.1007/s13280-019-01239-1>
- Arthur, S., Nazroo, J. (2003). Designing Fieldwork Strategies and Materials. Pg.109-137. In: Ritchie, J, Lewis, J. *Qualitative Research Practice –A guide for Social Science Students and Researchers*. SAGE Publications. London.
- Atiql Haq, S. M., Islam, M. N., Siddhanta, A., Ahmed, K. J., & Chowdhury, M. T. A. (2021). Public Perceptions of Urban Green Spaces: Convergences and Divergences. *Frontiers in Sustainable Cities*, 3. <https://doi.org/10.3389/frsc.2021.755313>
- Atlasti.com. (2020). *Co-occurrence Analysis with ATLAS.ti*. Published 12.5.2020. Retrieved 10.2.2022. <https://atlasti.com/2020/05/12/cooccurrence-analysis-with-atlasti/>
- Baard, P. (2019). The Goodness of Means: Instrumental and Relational Values, Causation, and Environmental Policies. *Journal of Agricultural and Environmental Ethics*, 32(1), 183–199. <https://doi.org/10.1007/s10806-019-09762-7>
- Bele, A., & Chakradeo, U. (2021). Public Perception of Biodiversity: A Literature Review of Its Role in Urban Green Spaces. *Journal of Landscape Ecology*, 14(2), 1–28. <https://doi.org/10.2478/jlecol-2021-0008>
- Bernardo, F., Loupa-Ramos, I., & Carvalheiro, J. (2021). Are biodiversity perception and attitudes context dependent? A comparative study using a mixed-method approach. *Land Use Policy*, 109, 1–14. <https://doi.org/10.1016/j.landusepol.2021.105703>
- Botzat, A., Fischer, L. K., & Kowarik, I. (2016). Unexploited opportunities in understanding liveable and biodiverse cities. A review on urban biodiversity perception and valuation. *Global Environmental Change*, 39, 220–233. <https://doi.org/10.1016/j.gloenvcha.2016.04.008>

Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Sage Publications. Thousand Oaks. Pp. 184.

Buijs, A., Hansen, R., Van der Jagt, S., Ambrose-Oji, B., Elands, B., Lorance Rall, E., Mattijssen, T., Pauleit, S., Runhaar, H., Stahl Olafsson, A., & Steen Møller, M. (2019). Mosaic governance for urban green infrastructure: Upscaling active citizenship from a local government perspective. *Urban Forestry & Urban Greening*, 40, 53–62. <https://doi.org/10.1016/j.ufug.2018.06.011>

Butler, W. F., & Acott, T. G. (2007). An Inquiry Concerning the Acceptance of Intrinsic Value Theories of Nature. *Environmental Values*, 16(2), 149–168. <https://doi.org/10.3197/096327107780474528>

Campbell-Arvai, V. (2019). Engaging urban nature: improving our understanding of public perceptions of the role of biodiversity in cities. *Urban Ecosystems*, 22(2), 409–423. <https://doi.org/10.1007/s11252-018-0821-3>

Cast, A., Macdonald, D., Grandgirard, A., Kalivas, T., Strathearn, S., Sanderson, M., Frahm, D., & Bryan, B. (2008). South Australian Murray-Darling Basin Environmental Values Report. *CSIRO: Water for a Healthy Country National Research Flagship*. ISSN: 1835-095X

Chan, K. M., Gould, R. K., & Pascual, U. (2018). Editorial overview: Relational values: what are they, and what's the fuss about? *Current Opinion in Environmental Sustainability*, 35, A1–A7. <https://doi.org/10.1016/j.cosust.2018.11.003>

Coffey, A., & Atkinson, P. (1996). *Making sense of qualitative data: Complementary research strategies*. Sage Publications, Inc.

Constantinescu, M., Orîndaru, A., Căescu, Ștefan-C., & Pachițanu, A. (2019). Sustainable Development of Urban Green Areas for Quality of Life Improvement—Argument for Increased Citizen Participation. *Sustainability*, 11(18), 4868. <https://doi.org/10.3390/su11184868>

Cooper, N., Brady, E., Steen, H., & Bryce, R. (2016). Aesthetic and spiritual values of ecosystems: Recognising the ontological and axiological plurality of cultural ecosystem ‘services.’ *Ecosystem Services*, 21, 218–229. <https://doi.org/10.1016/j.ecoser.2016.07.014>

Davidson, M. D. (2013). On the relation between ecosystem services, intrinsic value, existence value and economic valuation. *Ecological Economics*, 95, 171–177. <https://doi.org/10.1016/j.ecolecon.2013.09.002>

Díaz, S., Demissew, S., Carabias, J., Joly, C., Lonsdale, M., Ash, N., Larigauderie, A., Adhikari, J. R., Arico, S., Báldi, A., Bartuska, A., Baste, I. A., Bilgin, A., Brondizio, E., Chan, K. M., Figueroa, V. E., Duraiappah, A., Fischer, M., Hill, R., ... Zlatanova, D. (2015). The IPBES Conceptual Framework — connecting nature and people. *Current Opinion in Environmental Sustainability*, 14, 1–16. <https://doi.org/10.1016/j.cosust.2014.11.002>

Dodge, C. P., & Bennett, G. (2011). *Changing Minds : A Guide to Facilitated Participatory Planning*. International Development Research Centre. New Delhi.

Dushkova, D., Ignatieva, M., Konstantinova, A., & Yang, F. (2021). Cultural Ecosystem Services of Urban Green Spaces. How and What People Value in Urban Nature? In: Vasenev, V., Dovletyarova, E., Valentini, R., Cheng, Z., Calfapietra, C., Inostroza, L., Leuchner, M. (eds) *Advanced Technologies for Sustainable Development of Urban Green Infrastructure*. SSC 2020. Springer Geography. Springer, Cham, 292–318. https://doi.org/10.1007/978-3-030-75285-9_28

Erävuori, L., Kullberg, J., Lammi, E., Manner, J-P., Routasuo, P., Suominen, H., & Vauhkonen, M. (2022). Helsingin uhanalaisten luontotyyppeiden inventoinnit 2017-2020. *Helsingin kaupungin kaupunkiympäristön julkaisuja*. 2022:7. ISSN=2489-4230.

Eskola, J., & Suoranta, J. (1998). *Johdatus Laadulliseen tutkimukseen*. Vastapaino. Jyväskylä

European Environment Agency. (2022). *How green are European cities? Green space key to well-being – but access varies*. Published 1.2.2022. Retrieved 23.3.2022. <https://www.eea.europa.eu/highlights/how-green-are-european-cities>

Faehnle, M., Bäcklund, P., & Tyrväinen, L. (2011). Looking for the role of nature experiences in planning and decision making: a perspective from the Helsinki Metropolitan Area. *Sustainability: Science, Practice and Policy*, 7(1), 45–55. <https://doi.org/10.1080/15487733.2011.11908064>

Faehnle, M., & Tyrväinen, L. (2013). A framework for evaluating and designing collaborative planning. *Land Use Policy*, 34, 332–341. <https://doi.org/10.1016/j.landusepol.2013.04.006>

Faehnle, M., Bäcklund, P., Tyrväinen, L., Niemelä, J., & Yli-Pelkonen, V. (2014). How can residents' experiences inform planning of urban green infrastructure? Case Finland. *Landscape and Urban Planning*, 130, 171–183. <https://doi.org/10.1016/j.landurbplan.2014.07.012>

Fors, H., Molin, J. F., Murphy, M. A., & Konijnendijk van den Bosch, C. (2015). User participation in urban green spaces – For the people or the parks? *Urban Forestry & Urban Greening*, 14(3), 722–734. <https://doi.org/10.1016/j.ufug.2015.05.007>

Fuller, R. A., Irvine, K. N., Devine-Wright, P., Warren, P. H., & Gaston, K. J. (2007). Psychological benefits of greenspace increase with biodiversity. *Biology Letters*, 3(4), 390–394. <https://doi.org/10.1098/rsbl.2007.0149>

Glicken, J. (1999). Effective Public Involvement in Public Decisions. *Science Communication*, 20(3), 298–327. <https://doi.org/10.1177/1075547099020003002>

Granqvist, K., Sarjamo, S., & Mäntyselä, R. (2019). Polycentricity as spatial imaginary: the case of Helsinki City Plan. *European Planning Studies*, 27(4), 739–758. DOI: 10.1080/09654313.2019.1569596

Hannikainen, M. (2019). Planning a Green City: The Case of Helsinki, 2002–2018. In: Lemes de Oliveira F., Mell I. (eds) *Planning Cities with Nature. Cities and Nature*. Springer, Cham. DOI: 10.1007/978-3-030-01866-5_9

Hautamäki, R. (2019). Contested and constructed greenery in the compact city: A case study of Helsinki City Plan 2016. *Journal of Landscape Architecture*, 14(1), 20–29. <https://doi.org/10.1080/18626033.2019.1623543>

Hautamäki, R. (2021a). Constructing the green wedge in the planning discourse - a case study of Central Park in Helsinki, Finland. *Landscape Research*, 46(6), 878–893. <https://doi.org/10.1080/01426397.2021.1918653>

Hautamäki, R. (2021b). From Forest Towns to Nature-Based Solutions: In Search of Finnish Urban Nature. In K. Nilsson, R. Weber, & L. Rohrer (Eds.), *Green Visions: Greenspace Planning and Design for Nordic Cities* (pp. 64-85). Arvinus + Orfeus Publishing AB.

Helsingin kaupungin rakennusvirasto. (2014). Harakan saaren hoito- ja kehittämissuunnitelma 2015–2029. *Helsingin kaupungin rakennusviraston julkaisut 2014:5 / Arkkitehtuoriosasto*. ISBN: 978-952-272-726-8. https://www.hel.fi/static/hkr/julkaisut/2014/Harakan_saaren_hks_lowres.pdf

Helsingin kaupunki. (2021). Pihlajasaaren vesireittiliikenteen hankinta vuodelle 2021. Päätös. *Helsingin kaupunginhalinnon päätökset*. Published N/A. Retrieved 3.2.2022. <https://dev.hel.fi/paatokset/asia/hel-2020-012136/u480400vh1-2020-70/>.

Helsingin kaupunki. (2022). *Saaristossa*. Published 24.1.2022 Retrieved 22.2.2022. <https://www.hel.fi/helsinki/fi/kulttuuri-ja-vapaa-aika/ulkoilu/saaristossa/>

Helsinkibiennaali.fi. (2021). Published 28.9.2021. Retrieved 4.11.2021. <https://helsinkibiennaali.fi/story/helsinki-biennaali-toi-vallisaareen-145-000-kavijaa/>

Hepburn, L., Smith, A. C., Zelenski, J., & Fahrig, L. (2021). Bird Diversity Unconsciously Increases People's Satisfaction with Where They Live. *Land*, 10(2), 153. <https://doi.org/10.3390/land10020153>

Himes, A., & Muraca, B. (2018). Relational values: the key to pluralistic valuation of ecosystem services. *Current Opinion in Environmental Sustainability*, 35, 1–7. <https://doi.org/10.1016/j.cosust.2018.09.005>

Hirsjärvi, S., & Hurme, H. (2011). *Tutkimushaastattelu. Teemahaastattelun teoria ja käytäntö*. Gaudeamus Helsinki University Press. Tallinna.

Hirsjärvi, S., Remes, P., Sajavaara, P. (2007). *Tutki ja kirjoita*. Tammi. Helsinki.

Houlden, V., Jani, A., & Hong, A. (2021). Is biodiversity of greenspace important for human health and wellbeing? A bibliometric analysis and systematic literature review. *Urban Forestry & Urban Greening*, 66, 127385. <https://doi.org/10.1016/j.ufug.2021.127385>

- Huang, Y., Aguilar, F., Yang, J., Qin, Y., & Wen, Y. (2021). Predicting citizens' participatory behavior in urban green space governance: Application of the extended theory of planned behavior. *Urban Forestry & Urban Greening*, *61*, 127110. <https://doi.org/10.1016/j.ufug.2021.127110>
- IPBES. (2014). Preliminary guide regarding diverse conceptualization of multiple values of nature and its benefits, including biodiversity and ecosystem functions and services. *Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Report number: IPBES/4/INF/13
- Ives, C. D., Oke, C., Hehir, A., Gordon, A., Wang, Y., & Bekessy, S. A. (2017). Capturing residents' values for urban green space: Mapping, analysis and guidance for practice. *Landscape and Urban Planning*, *161*, 32–43. <https://doi.org/10.1016/j.landurbplan.2016.12.010>
- Jauhiainen, J. (2002). Kaupunkiliikkeet ja kamppailu osallisuudesta kaupunkitilaan. pg. 125–140. In Bäcklund, P., J. Häkli, & H. Schulman (eds): *Osalliset ja osajat: kansalaiset kaupungin suunnittelussa*. Gaudeamus. Helsinki
- Justus, J., Colyvan, M., Regan, H., & Maguire, L. (2009). Buying into conservation: intrinsic versus instrumental value. *Trends in Ecology & Evolution*, *24*(4), 187–191. <https://doi.org/10.1016/j.tree.2008.11.011>
- Kallio, H., Pietilä, A.-M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, *72*(12), 2954–2965. <https://doi.org/10.1111/jan.13031>
- Klain, S. C., Olmsted, P., Chan, K. M. A., Satterfield, T. (2017). Relational values resonate broadly and differently than intrinsic or instrumental values, or the New Ecological Paradigm. *PLoS ONE*, *12*(8), 1–21. <https://doi.org/10.1371/journal.pone.0183962>
- Koerber, A., & McMichael, L. (2008). Qualitative Sampling Methods. *Journal of Business and Technical Communication*, *22*(4), 454–473. <https://doi.org/10.1177/1050651908320362>
- Konsti-Laakso, S., & Rantala, T. (2018). Managing community engagement: A process model for urban planning. *European Journal of Operational Research*, *268*(3), 1040–1049. <https://doi.org/10.1016/j.ejor.2017.12.002>

Kowarik, I. (2018). Urban wilderness: Supply, demand, and access. *Urban Forestry & Urban Greening*, 29, 336–347. <https://doi.org/10.1016/j.ufug.2017.05.017>

Kuldna, P., Moora, P., Tuhkanen, H., Piirsalu, E., Harlio, A., Suomela, M., Airikkala, V., Reittu, N., Laager, M. (2021). Handbook for Developing Urban Eco-Islands with Smart Solutions. *Urban Eco-Islands project 2021*. Tallinn-Helsinki.

Lewis, J. (2003). Design Issues. Pg.47-76. In: Ritchie, J. Lewis, J. 2003. *Qualitative Research Practice –A guide for Social Science Students and Researchers*. SAGE Publications. London.

Marselle, M. R., Lindley, S. J., Cook, P. A., & Bonn, A. (2021). Biodiversity and Health in the Urban Environment. *Current Environmental Health Reports*, 8(2), 146–156. <https://doi.org/10.1007/s40572-021-00313-9>

Mocior, E., & Kruse, M. (2016). Educational values and services of ecosystems and landscapes – An overview. *Ecological Indicators*, 60, 137–151. <https://doi.org/10.1016/j.ecolind.2015.06.031>

Morgan, M., Granger, M. (2002). *Risk communication : a mental models approach*. Cambridge University Press

Niemelä, J., Saarela, S.-R., Söderman, T., Kopperoinen, L., Yli-Pelkonen, V., Väre, S., & Kotze, D. J. (2010). Using the ecosystem services approach for better planning and conservation of urban green spaces: a Finland case study. *Biodiversity and Conservation*, 19(11), 3225–3243. <https://doi.org/10.1007/s10531-010-9888-8>

Nieuwenhuijsen, M. J. (2021). New urban models for more sustainable, liveable and healthier cities post covid19; reducing air pollution, noise and heat island effects and increasing green space and physical activity. *Environment International*, 157, 106850. <https://doi.org/10.1016/j.envint.2021.106850>

O’Connor, S., & Kenter, J. O. (2019). Making intrinsic values work; integrating intrinsic values of the more-than-human world through the Life Framework of Values. *Sustainability Science*, 14(5), 1247–1265. <https://doi.org/10.1007/s11625-019-00715-7>

Official Statistics of Finland (OSF). (2022). Preliminary population statistics [e-publication]. Helsinki: Statistics Finland. Retrieved: 21.2.2022. ISSN=2243-3627. http://www.stat.fi/til/vamuu/index_en.html

Oppong, S. (2013). The problem of sampling in qualitative research. *Asian Journal of Management Sciences and Education*, 2(2), 202–210.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>

Patton, M. (2015). *Qualitative Research & Evaluation Methods*. Fourth edition. Sage Publications. Thousand Oaks.

Piccolo, J. J. (2017). Intrinsic values in nature: Objective good or simply half of an unhelpful dichotomy? *Journal for Nature Conservation*, 37, 8–11. <https://doi.org/10.1016/j.jnc.2017.02.007>

Qiu, L., Lindberg, S., & Nielsen, A. B. (2013). Is biodiversity attractive?—On-site perception of recreational and biodiversity values in urban green space. *Landscape and Urban Planning*, 119, 136–146. <https://doi.org/10.1016/j.landurbplan.2013.07.007>

Riechers, M., Barkmann, J., & Tschardt, T. (2016). Perceptions of cultural ecosystem services from urban green. *Ecosystem Services*, 17, 33–39. <https://doi.org/10.1016/j.ecoser.2015.11.007>

Räsänen, A., Heikkinen, K., Piila, N., & Juhola, S. (2019). Zoning and weighting in urban heat island vulnerability and risk mapping in Helsinki, Finland. *Regional Environmental Change*, 19(5), 1481–1493. <https://doi.org/10.1007/s10113-019-01491-x>

Sandifer, P. A., Sutton-Grier, A. E., & Ward, B. P. (2015). Exploring connections among nature, biodiversity, ecosystem services, and human health and well-being: Opportunities to enhance health and biodiversity conservation. *Ecosystem Services*, 12, 1–15. <https://doi.org/10.1016/j.ecoser.2014.12.007>

See, S. C., Shaikh, S. F. E. A., Jaung, W., & Carrasco, L. R. (2020). Are relational values different in practice to instrumental values? *Ecosystem Services*, 44, 101132. <https://doi.org/10.1016/j.ecoser.2020.101132>

Shwartz, A., Turbé, A., Simon, L., & Julliard, R. (2014). Enhancing urban biodiversity and its influence on city-dwellers: An experiment. *Biological Conservation*, 171, 82–90. <https://doi.org/10.1016/j.biocon.2014.01.009>

Sinkko, H., Vuori, P. (2021). Helsingin ja Helsingin seudun väestöennuste 2020–2060. Ennuste alueittain 2020–2060. *Tilastoja – Helsingin kaupunki, kaupunginkanslia, kaupunkitieto*. 2021:11. ISSN=2736-9560.

Sipilä, M., & Tyrväinen, L. (2005). Evaluation of collaborative urban forest planning in Helsinki, Finland. *Urban Forestry & Urban Greening*, 4(1), 1–12. <https://doi.org/10.1016/j.ufug.2005.06.002>

Smith, J., & Noble, H. (2014). Bias in research. *Evidence Based Nursing*, 17(4), 100–101. <https://doi.org/10.1136/eb-2014-101946>

Snape, D., Spencer, L. (2003). The Foundations of Qualitative Research.Pg.1-23. In: Ritchie, J, Lewis, J. 2003. *Qualitative Research Practice –A guide for Social Science Students and Researchers*. SAGE Publications. London.

Stålhammar, S., & Pedersen, E. (2017). Recreational cultural ecosystem services: How do people describe the value? *Ecosystem Services*, 26, 1–9. <https://doi.org/10.1016/j.ecoser.2017.05.010>

Talal, M. L., Santelmann, M. V., & Tilt, J. H. (2021). Urban park visitor preferences for vegetation – An on-site qualitative research study. *PLANTS, PEOPLE, PLANET*, 3(4), 375–388. <https://doi.org/10.1002/ppp3.10188>

Tiitu, M. (2018). Expansion of the built-up areas in Finnish city regions – The approach of travel-related urban zones. *Applied Geography*, 101, 1–13. <https://doi.org/10.1016/J.APGEOG.2018.10.001>

Thompson, C. (1999). If you could just provide me with a sample: examining sampling in qualitative and quantitative research papers. *Evidence-Based Nursing*, 2(3), 68–70. <https://doi.org/10.1136/ebn.2.3.68>

Tuomi, J. & Sarajärvi, A. (2018). *Laadullinen tutkimus ja sisällönanalyysi. Uudistettu laitos*. Tammi. Helsinki.

Tyrväinen, L., Ojala, A., Korpela, K., Lanki, T., Tsunetsugu, Y., & Kagawa, T. (2014). The influence of urban green environments on stress relief measures: A field experiment. *Journal of Environmental Psychology*, 38, 1–9. <https://doi.org/10.1016/j.jenvp.2013.12.005>

Vartiosaari.fi (N/A). *Vartiosaari-info*. Published N/A. Retrieved 3.2.2022. http://www.vartiosaari.fi/uudet_sivut/vartiosaari-info/

Vierikko, K., & Niemelä, J. (2016). Bottom-up thinking—Identifying socio-cultural values of ecosystem services in local blue–green infrastructure planning in Helsinki, Finland. *Land Use Policy*, 50, 537–547. <https://doi.org/10.1016/j.landusepol.2015.09.031>

Viirret, E., Raatikainen, K., Fagerholm, N., Käyhkö, N., & Vihervaara, P. (2019). Ecosystem Services at the Archipelago Sea Biosphere Reserve in Finland: A Visitor Perspective. *Sustainability*, 11(2), 421. <https://doi.org/10.3390/su11020421>

Vilkkä, L. (1997). *The intrinsic value of nature*. Rodopi.

Wang, Y., Kotze, D. J., Vierikko, K., & Niemelä, J. (2019). What makes urban greenspace unique – Relationships between citizens’ perceptions on unique urban nature, biodiversity and environmental factors. *Urban Forestry & Urban Greening*, 42, 1–9. <https://doi.org/10.1016/j.ufug.2019.04.005>

World Health Organization. (2021). Green and blue spaces and mental health: new evidence and perspectives for action. *Copenhagen: WHO Regional Office for Europe*. ISBN 978 92 890 5566 6. <https://apps.who.int/iris/bitstream/handle/10665/342931/9789289055666-eng.pdf>

Yli-Pelkonen, V. (2013). Importance of recreational ecosystem services in Helsinki, Finland. *Management of Environmental Quality: An International Journal*, 24(3), 365–382. <https://doi.org/10.1108/14777831311322668>

9. The Appendix

Appendix A. The interview guide.

Background questions

Age?

Place of living and zip code?

How often do you visit the Helsinki archipelago?

General questions

1. Describe your usual visit to Helsinki archipelago
2. With whom you usually visit the archipelago?
3. Tell me about the meaning of the Helsinki archipelago to you?
4. Tell me about the meaning of biodiversity in the Helsinki archipelago to you?

Instrumental values

1. What kind of things you do when visiting the Helsinki archipelago
2. Describe what makes your visit worth the money (travel costs, restaurants etc.) and effort?

Relational values

3. What kind of connection to nature you experience during your visit to Helsinki archipelago?
4. How do you relate the other people visiting the archipelago at the same time?
 - o Do you interact with them?
5. When considering the mental aspect, how does a visit to the Helsinki archipelago relate to that?

Intrinsic values

6. What would you preserve from Helsinki archipelago for the future generations?

End

7. How would you develop the Helsinki archipelago?
8. Free word – do you have something to add?

Appendix B. Consent letter

Haastattelu on osa Helsingin yliopiston Metsätieteiden maisteriohjelmassa tehtävää opinnäytetyötä. Opinnäytetyön aiheena on miten Helsingin saariston vierailijat arvottavat saaristoa ja millainen arvo sen biodiversiteetillä on vierailijoille. Opinnäytetyö on osa Helsingin yliopiston kestävyystieteen yksikön (HELSUS) Co-creation projektia, jossa Helsuksen lisäksi osallisena on Helsingin kaupunki.

Haastateltavilta kerätään taustatietoina ikä, postinumeroalue sekä se, onko tämä vierailut Helsingin saaristossa useammin kuin haastattelukerran yhteydessä tehdyn vierailun. Opinnäytetyössä kaikki haastatellut pidetään anonymoina. Suorien ja epäsuorien lainauksien lisäksi haastateltavista julkaistaan ainoastaan ikä ja sukupuoli sekä haastattelupaikka.

Haastattelunauhoituksia ei käytetä mihinkään muuhun tarkoitukseen tämän opinnäytetyön lisäksi, eikä aineistoa jaeta kenellekään muulle osapuolelle.

Haastateltavan suostumus haastatteluun on varmistettu ja ainoastaan haastattelussa kerättyjä tietoja käytetään. Haastateltavalle tehdään selväksi, milloin haastattelu alkaa ja loppuu. Haastateltavalta pyydetään lupa haastattelun nauhoitukseen, eikä haastattelua nauhoiteta, mikäli haastateltava ei anna lupaa. Haastateltavalla on oikeus olla vastaamatta kysymyksiin, joihin hän ei halua vastata. Lisäksi haastateltu voi päättää haastattelun omasta aloitteestaan missä tahansa kohdassa, vaikka haastattelu ei olisi vielä lopussa.

Opinnäytetyöntekijään voi halutessa ottaa yhteyttä haastatteluun tai tutkimukseen liittyen. Opinnäytetyöntekijän yhteystiedot:

Nimi: Jukka-Pekka Hares

Sähköposti: jukka-pekka.hares@helsinki.fi

The interview is part of a thesis in the Master's program in Forest Sciences at the University of Helsinki. The topic of the thesis is what is the value of Helsinki archipelago for the visitors – is biodiversity essential. The thesis is part of the Co-creation project of the Institute of Sustainability Science (HELSUS), in which also the City of Helsinki is involved.

The following was gathered as a background information: age, postcode area and whether he or she has visited the Helsinki archipelago before. In the thesis, all interviewees are considered anonymous. In addition to direct and indirect quotations, only the age and gender of the interviewees, and the location of the interview are published.

Interview recordings will not be used for any purpose other than this thesis, and the material will not be shared with any other party.

The interviewee's consent to the interview is confirmed and only the information collected during the interview is used. It is made clear to the interviewee when the interview begins and ends. The interviewee is asked for permission to record the interview, and the interview is not recorded if the interviewee does not give permission. The interviewee has right not to answer questions that he or she does not want to answer. In addition, the interviewee may end the interview on his or her own initiative at any point, even if the interview is not yet over.

If desired, the thesis maker can be contacted related to the interview or the thesis. Contact information:

Name: Jukka-Pekka Hares

Email: jukka-pekka.hares@helsinki.fi