



# The multidimensionality of urban nature: The well-being and integration of immigrants in Finland

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## ABSTRACT

Activities in natural environments greatly enhance human well-being and can support the integration of foreigners into a new country. This article explores how residents from different ethnic backgrounds in Turku, Finland appreciated and engaged with urban natural environments and how this engagement benefitted their well-being and, ultimately, their integration. Individuals enjoy activities in nature in particular ways, which may vary according to a person's physical, social, and psychological characteristics. This is especially true for immigrants who apply traditions from their home countries to the ways in which they interact with their new environment and enjoy activities in nature. Three dimensions of nature experience—social, emotional, and normative—emerged from the research, which, in turn, supported well-being and different types of integration: interactive, identificational, and cognitive. We argue that because these dimensions are an integral part of a person's identity and cultural background, familiarity with them may prove pivotal to constructing more welcoming and intercultural urban natural environments. Different approaches to engaging with nature should be considered in the design of urban environments and urban nature, as well as in integration programmes, to enhance the well-being and integration of foreign-background populations.

## 1. Introduction

This article studied a small group of immigrants' relationships with nature in Turku, Finland, focusing on how nature affected their well-being and how well-being derived from nature experiences ultimately supported their integration into the host country.

Being in nature greatly enhances human well-being (Berman et al., 2008; Brymer et al., 2014; Loureiro and Veloso, 2014; Barton et al., 2016; Lawton et al., 2017). Walking or cycling in a city's parks, wandering through a forest, or simply resting one's eyes on natural scenery improves an individual's cognitive capacities (Berman et al., 2008). Natural environments make individuals feel 'at home' because they relate 'pleasurable sensations in the experience of landscape to environmental conditions favourable to survival', and 'natural settings have discernible well-being benefits... as they conform better to our biological structures, cognitive functions, and evolutionary adaptations' (Mallgrave, 2013, p. 75). All people bring their own physical, social, and

psychological experiences and characteristics to urban nature, and this is especially true for immigrants (Buijs et al., 2009; Leikkilä et al., 2013), with differences between and within ethnic groups (Kloek et al., 2017). Sociocultural and emotional backgrounds influence the development of a sense of attachment and belonging to places (Curry et al., 2001; Rishbeth and Powell, 2013) and ways of being in and experiencing nature; hence, nature can foster both well-being and integration (Rishbeth and Finney, 2006; Lovelock et al., 2011; Gentin et al., 2019).

In Nordic countries, immigration is a particularly urban phenomenon (Righard et al., 2015). In Finland, most immigrants live in urban municipalities, and their numbers are increasing rapidly (Heino and Jauhiainen, 2020). The different physical, social, and psychological approaches of individuals with foreign backgrounds can become barriers, hindering interactions with the new environment and enjoyment of nature activities in the new country (Seaman et al., 2010; Jay et al., 2012; Kloek et al., 2017). These barriers are often not physical; rather, they are different perceptions of how urban nature can be experienced.

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Therefore, a more multidimensional and intercultural approach by municipal actors might make urban nature more enjoyable for everyone (Lovelock et al., 2012; Leikkilä et al., 2013; Ordóñez-Barona, 2017). Enjoying and being in urban nature can enhance immigrants' well-being (Castaneda and Kuusio, 2019; Birch et al., 2020; Finnish Institute for Health and Welfare, 2022).

Integration is a broad issue concerning different aspects of an immigrant's life and has been studied elsewhere (e.g., Rauhut, 2010; Zrinščak, 2011; Laurentsyeva and Venturini, 2017; Wessel et al., 2017; Bakar, 2020); this article focuses on how immigrants relate to urban nature. This is especially relevant in Nordic countries, where nature permeates citizens' everyday lives and is fully integrated into city landscapes. Nature cannot be separated from urban spaces. Because nature is inextricably intertwined with cities, potential barriers to accessing nature may hinder people's movements in urban green environments.

Innovative methods are required to mitigate the lack of access to nature and to improve the well-being and integration of immigrants (Jauhiainen, 2017). Activities in nature can enhance physical and mental well-being (Brymer et al., 2014; Jabbar et al., 2021). Moreover, considering different cultural perspectives on urban nature may add value and meaning to urban nature, thereby contributing to the well-being of the entire population (Kloek et al., 2017) and allowing 'natives' to find new ways of appreciating local urban nature when interacting with immigrants. Finding ways to help immigrants enjoy local nature while preserving and respecting their cultural backgrounds can pave the way for integration policies that foster interculturalism and improve living in urban spaces (Seaman et al., 2010; Leikkilä et al., 2013; Gentin et al., 2019). This article contributes to the literature on the relationships between nature, well-being, and immigrants' integration in urban contexts, particularly in Nordic countries.

Using a mixed-methods study, we investigated how small groups of individuals belonging to some of the largest foreign-background populations (Arabic-, Russian-, and Somali-speaking) in Turku, Finland enjoyed and understood the city's urban nature in their everyday lives and how this contributed to their well-being and integration. The participants, who were mostly first-generation immigrants—people who were not born in Finland but moved to the country later in their lives—interpreted the value of nature from a variety of meanings and perspectives (Ordóñez-Barona, 2017).

Our research questions were as follows: 1) How do the (Arabic-, Russian-, and Somali-speaking) foreign-background populations in Turku experience nature? 2) How does nature contribute to their well-being and integration?

The next section presents the main theories concerning the relationship between urban nature, well-being and integration, paying particular attention to barriers to accessing nature. The 'Materials and methods' section describes the mixed methods underpinning the empirical research of the study, and the 'Results' section highlights the findings, showing how they may contribute to a more multifaceted and intercultural conceptualisation of access to nature in Turku. Finally, the 'Discussion' and 'Conclusions' sections discuss the results and make recommendations for urban policies that could enhance the well-being and integration of foreign-background populations in Turku.

## 2. Well-being, integration, and urban nature

### 2.1. Well-being and urban nature

Being in urban nature greatly benefits immigrants' well-being (Castaneda and Kuusio, 2019; Birch et al., 2020). Immigrants and particularly refugees can often be stressed when moving to a new urban environment and new cultural context. Addressing factors that support immigrants' well-being, such as urban nature, is thus crucial for successful integration (Finnish Institute for Health and Welfare, 2022).

Walther et al. (2021) found that mental health struggles can severely

disturb a refugee's ability to engage in activities that support integration. In addition, the struggles of learning a new language, xenophobia, and social and cultural differences can severely affect immigrants' well-being (Close et al., 2016; Finnish Institute for Health and Welfare, 2022). Recent studies have suggested that there is a bidirectional relationship between well-being and integration (Castaneda and Kuusio, 2019; Walther et al., 2021; see Fig. 1). In this article, we define well-being as an optimal psychological experience and functioning (see, for example, Deci and Ryan, 2008). Specifically, we refer to subjective well-being research (Diener, 1984). Factors enhancing well-being operate through both instant benefits, such as relaxation and a positive mood, and long-term effects, such as the feeling of living a meaningful life or actualizing one's potential (Ryff, 1989; Deci and Ryan, 2008).

There are various theories regarding the widely accepted research-based evidence that nature and well-being are strongly connected (Wilson, 1984; Kaplan and Kaplan, 1989; Ulrich et al., 1991). Attention restoration theory (Kaplan and Kaplan, 1989) is based on the notion that directed attention is a limited resource that becomes fatigued after time, leading to negative emotional states such as tiredness, irritability, and lower cognitive performance (Capaldi et al., 2015). Natural environments provide opportunities to get away from everyday stress, engage involuntary attention with rich stimuli, and allow people to act without constantly monitoring their behaviour (Kaplan and Kaplan, 1989).

The biophilia hypothesis is based on the idea that people feel better in nature because humans developed in natural conditions as a species (Wilson, 1984). Kaplan and Kaplan (1989) supported this evolutionary view: since people have been living in urban environments for a relatively short time, the need to connect with the natural environment is inherent. Similarly, stress-reduction theory (Ulrich et al., 1991) states that exposure to unthreatening natural environments that have been evolutionarily beneficial prompts a variety of stress-reducing psychophysiological responses.

Various studies have highlighted the importance of nature for well-being, specifically in urban contexts. As Jabbar et al. (2021) pointed out, the advantages of green cities are varied, and green areas provide socio-economic benefits in urban areas by enhancing human well-being. Although nature has vast potential for supporting immigrants' well-being in urban contexts, it is important to specify that it is not a cure-all or a substitute for quality mental health services and other institutional services related to well-being (Birch et al., 2020).

### 2.2. Urban nature supporting integration

Relationships with nature can support foreign-background populations' well-being and their integration into society (Germann-Chiari and Seeland, 2004). The literature has shown that 'nature contributed to integration by enhancing the immigrants' well-being and quality of life'

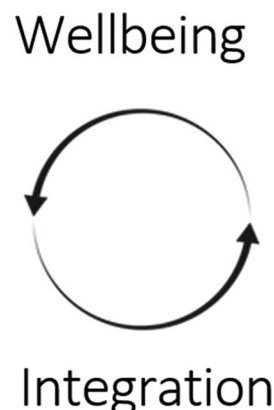


Fig. 1. Well-being and integration.

(Massey and Akresh, 2006; Gentin et al., 2019, p. 4; Pappas, 2019). Similarly, Rishbeth and Finney (2006) maintained that ‘a positive impression of the local environment and meaningful participation in it can be a useful component of integration into a new society’ (p. 281). Hordyk et al.’s (2015) study of immigrants’ everyday practices in nature in Montreal emphasised that these people often ‘accessed urban nature to minimize the effects of inadequate housing, to strengthen social cohesion and reduce emotional stress’ (p. 74). Emotional responses to nature may foster a sense of belonging (Lovell et al., 2011, 2012) and reduce the negative feelings associated with the difficulties of settling in a new place.

A sense of belonging means an emotional bond with a place (Jay and Schraml, 2009; Derrien and Stokowski, 2014); it refers to ‘subjective, emotional, experiential, and affective dimensions of humans’ relationships with places and landscapes’ (Egoz and De Nardi, 2017, p. 78). Jay and Schraml (2009) highlighted the emotional bond between foreign-background populations and nature, whereby ‘the symbolic attachment and emotional ties that individuals develop in connection with urban forests can represent ... the expression of emotional or spiritual bonds stemming from identificational integration’ (p. 286), which may pave the way for integration into society (Gentin, 2011). In their review of the nature-based integration (NBI) of immigrants in Europe, Gentin et al. (2019) claimed that the relationship between nature and integration can be understood in four ways: structural, cultural, interactive, and identificational (see also Leikkilä et al., 2013):

1) Structural integration describing access to common resources and main institutions of society; 2) cultural integration with acquisition of knowledge and competences, cultural aspects, common practices, general rules of behaviour; 3) interactive integration describing friendships and social interactions; 4) identificational integration with emotional bonds to other groups and places. According to the results, nature can be understood as a means to integration but also as a resource that should be equally accessible to all. (Gentin et al., 2019, p. 1).

NBI blends all four of these elements, fostering individual experiences of local nature by incorporating people’s understandings of the rules and norms necessary to enjoy nature (cultural integration), providing a social (Peters, 2010; Stodolska et al., 2017) instead of a solitary experience (interactive integration), and connecting emotions related to nature in the home country and memories from childhood (Asah et al., 2012) with the new country (identificational integration). Having a voice in the planning of urban nature is a sign of structural integration and something immigrants would value, as shown in Leikkilä et al.’s (2013) study on enhancing intercultural understanding in urban greenery planning in Finland. Citing Schultze (1992), Leikkilä et al. (2013) referred to cognitive rather than cultural integration, highlighting the importance of immigrants learning ‘life skills (Schultze, 1992) that include, for example, distinguishing public from private spaces in the host society’ (p. 184).

In Nordic countries (Pitkänen et al., 2017; Koponen and Simulainen, 2020; Singleton, 2020), NBI is a specific programme that aims to integrate newcomers by involving them in activities in nature (see also Banaś, 2019). However, it has been noted (Singleton, 2020) that in some NBI programmes, the value of nature was not co-constructed through an intercultural understanding of how nature is experienced by both foreign-background and autochthonous populations. Instead, it tended to be a top-down process teaching foreign-background population what to do, rather than being an inclusive process where both populations are learning together. In this article, we emphasise the importance of intercultural understanding by focusing on the emotional, social, and cognitive dimensions of the immigrant population’s relationship with nature, as crucial factors for their integration and well-being.

### 3. Materials and methods

This study was conducted in Turku, a city on the southwest coast of Finland. Of the city’s 194,000 inhabitants, 12.6% have a foreign

background (Statistics Finland, 2020a). Russian, Arabic, and Somali are the most frequently spoken foreign languages in Turku (Statistics Finland, 2020b). Urban nature is present in the city, with 19% or 48, 5 km<sup>2</sup> of Turku’s land surface covered by forests (City of Turku, 2019, p. 39).

The study used mixed methods, including a survey, interviews, and probes, to provide a holistic view of the research topic (Morgan, 2017; Flick, 2018). The study’s data protection and privacy guidelines were made available to all viewers online, and we explained them verbally to the participants.

#### 3.1. Survey

A survey was used to obtain background information about the topic. It consisted of 41 questions targeting Arabic, Russian, and Somali speakers. The questions were grouped into four sections: general information about the participants, the ways in which the respondents spent time in a natural environment in Turku, the relationship between nature and well-being in Turku, and digital services related to natural environments and well-being. For the purpose of this article, only some of the questions and replies from the first three sections were analysed. Examples of the topics addressed in the survey include the following: types of activities carried out in nature, the various emotions (i.e. stress, happiness, boredom...) emerging from one’s relationship with the natural environment, ways in which the natural environment supported (or not) one’s social life, and knowledge about everyman’s rights in Finland. When relevant, these topics were used as background information for this article. The survey was distributed in both paper and electronic formats and translated into the research participants’ languages. The paper forms were distributed through preschool language teachers, organisations working with immigrant populations, and different city services (e.g., social, cultural, and sports facilities). The electronic survey was posted on the Webropol platform, and the link was distributed via email lists and social media groups for immigrant populations and expatriates in Turku. The survey remained open from September 2020 to April 2021. The Somali speakers were initially difficult to reach, but after we found a gatekeeper for the community, the number of responses increased. Ultimately, we received 294 responses (55% from women and 45% from men) from three language groups: Arabic (84, 28%), Russian (89, 29%), and Somali (131, 43%).

#### 3.2. In-depth interviews

Interviews were used to deepen our understanding of the relationship between nature and the well-being of foreign-background populations and to clarify issues that emerged from the survey. We conducted 13 interviews, each of which took approximately one hour. Of these, two were group interviews, while the rest were in-depth individual interviews (Table 1). One group comprised four Somali women, and the other included three people of different languages. Individual interviews were conducted with two Arabic speakers, three Somali speakers, and four Russian speakers. We also interviewed two teachers who worked with immigrant women with limited English and Finnish language proficiency. The interviews were conducted in English or Finnish according to the interviewees’ language skills. Some interviews were recorded and transcribed in full, but for others, notes were taken during the interviews and written up later: we wanted to make the interviewees feel comfortable, and recording can scare people who are unfamiliar with research practices. During the interviews, we discussed, for example, the barriers preventing the person from accessing nature; the past and the present of their nature relationship (e.g., the experience of nature in the home country vs. the experience of nature in Turku); everyman’s rights; and how nature was affecting the ways they were settling/had settled in the new country.

**Table 1**  
Interviewees from the three immigrant groups.

Pseudonym	Language	Sex	Age (years)	Stay in Finland (years)
Abdul	Arabic	M	20–30	4
Yusuf	Arabic	M	50–60	25
Ugbad	Somali	F	20–30	10
Shamshi	Somali	F	20–30	29
Leylo	Somali	F	20–30	20
Group (Ayaan, Waris, Yasmiin)	Somali	F	20–60	1–4
Sofia	Russia	F	30–40	15
Anastasia	Russia	F	30–40	4
Dmitri	Russia	M	40–50	5
Vasily	Russia	M	30–40	5
Group (Amburo, Ekaterina, Ava)	Mixed	F	20–40	1–4

### 3.3. Probes

Probes, an ethnographic method, were used to gain deeper insight into the participants' daily relationships with nature. These consisted of 'individual packages of mixed-media materials that [were] given to research participants to allow them to document and record elements of their daily lives and thoughts' (Robertson, 2008, p. 2). Probes allowed for distant observation, which was necessary due to the COVID-19 pandemic. Thirteen participants volunteered to record their daily lives and keep diaries for 14 days (May–June 2021). We selected two men and two women from each language group, and the Russian-speaking group included an additional man (Table 2). The probes had three phases: 1) preparing the instructions and materials for the research participants, 2) the 14-day activity period, and 3) post-probe interviews. The materials included a notebook, pens and pencils, an eraser, a pencil sharpener, a city map, and written instructions. The participants had two daily tasks: to record what captured their attention and/or made them uncomfortable in their environments, and to explain how they oriented themselves in the city and whether they needed help with that. The participants wrote notes, took photographs, recorded voice messages, and made drawings according to their preferences. All of them chose to use WhatsApp to communicate with us during the probes. The communication was personal: each group had a single research participant and two researchers (13 WhatsApp groups in total). The groups were used to answer questions and clarify doubts.

### 3.4. Data analysis

The survey data were analysed using IBM® SPSS® software. We used descriptive analysis with some statistical testing, as descriptive statistics are helpful for explaining the basic features of data. Pearson's chi-squared test was used to analyse the strength of the observed correlations between variables and differences between groups (e.g., *I go out in the natural environment with friends* produced statistical differences between language and gender groups).

The written data (e.g., transcribed interviews, notes, diaries, and WhatsApp communication), pictures, and photographs were analysed using thematic content analysis (Nowell et al., 2017) using the NVivo® program. The aim of the method was to identify key themes and capturing the complexities of meaning within the data. In the first phase, we familiarised ourselves with the data and discussed the content. Next, we created initial codes and coded the data accordingly. Thereafter, we identified, reviewed, and adjusted themes and created sub-themes (Nowell et al., 2017; Braun and Clarke, 2019). Material concerning integration, emotions, sociality, norms, and well-being was strongly evident in the data. Specifically, from the data the themes related to the three dimensions of experiences of nature—social, emotional, and normative—that can foster the well-being and integration of immigrant populations clearly emerged.

**Table 2**  
The probe participants from the three immigrant groups.

Pseudonym	Language	Sex	Age (years)	Stay in Finland (years)
Farah	Arabic	F	20–30	4
Aisha	Arabic	F	30–40	15
Adil	Arabic	M	30–40	4
Hakim	Arabic	M	50–60	>20
Alina	Russian	F	50–60	>20
Mischa	Russian	F	30–40	>20
Alexander	Russian	M	30–40	12
Mark	Russian	M	20–30	<1
Leonid	Russian	M	20–30	4
Idil	Somali	F	50–60	12
Sahra	Somali	F	20–30	4
Shermake	Somali	M	30–40	7
Aaden	Somali	M	20–30	4

#### 4. Results

The data analysis showed that the research participants experienced nature in different ways. We divided these experiences into social, emotional, and normative dimensions. These different dimensions of nature experience, which support different types of integration (interactive, identificational, and cognitive), are explored in the ‘Discussion’ session, where we also show how each dimension supported well-being. The participants were assigned pseudonyms (see Tables 1 and 2 for pseudonyms, ages, genders, and language groups).

##### 4.1. Social dimension (interactive integration)

Nature is seen as either a place to spend time alone or an opportunity to socialise with others. For the Somali-speaking participants, being in nature was a social experience, and although the quantitative and qualitative data showed that the other two language groups could be in nature without a specific purpose, most Somali-speaking participants clearly indicated that they needed a purpose to be in nature, such as a gathering with friends, picking berries, or going out with the children (Shamsi, a Somali-speaking female). Playing football in a park was an important outdoor activity for Aaden (Somali-speaking male). He had a passionate interest in football, and playing with friends enhanced his well-being. Unlike the other language groups, they did not seem interested in enjoying nature alone or without engaging in a specific activity.

The survey asked the respondents to indicate with whom they went out in nature. The statistical difference between language and gender was clear ( $p < 0.001$ ) when the claim was *I go out in nature alone*. In particular, the Somali- and Arabic-speaking females were not willing to go out alone.

However, during the interviews and in the probes, some research participants, especially Arabic (females Farah and Aisha and males Abdul, Adil, and Hakim) and Russian speakers (females Alina, Mischa, Anastasia, Ekaterina, and Sofia and males Alexander, Mark, and Leonid), emphasised that they enjoyed experiencing nature alone. For some Arabic-speaking females, being alone in nature meant choosing places they considered ‘safe’; otherwise, they would not be willing to go out alone. They mentioned stress relief, especially when enjoying a natural scene alone: ‘There are places, like in Kupittaa, close to my workplace, where I can go and be alone, as I know that there will be few people and I can be at peace, relax, and get relief from stress’ (Farah, Arabic-speaking female).

However, the social dimension of integration also seemed to be positively supported by nature, for example in activities linked with urban agriculture:

[During the probes] I noticed my neighbour walking the dog in the forest. Finally, I understood where my neighbour goes to walk the dog! ... And another neighbour ... rented a piece of land from the city for cultivation, as did my husband. They often discussed this while working in their fields. (Farah, Arabic female)

Arabic-speaking female Aisha explained that she enjoyed sitting on a bench under a tree near the river with a friend. It was her favourite place to sit and reflect, and, as it was quiet and peaceful, important for her mental well-being. Furthermore, going out in nature was an essential everyday activity for the research participants with children. All the language and gender groups indicated in the survey that going out in nature was often an activity done with children or friends; thus, the social dimension was important for supporting immigrants' experiences of urban nature.

The social dimension of nature was vital for the participants' well-being. Nature offered the possibility to build new and maintain old social relationships, which is essential for mental well-being. For them, it was simple things, like meeting other parents at a playground, talking to neighbours in the backyard, taking a walk, playing, sitting on a bench with a friend, or sharing experiences in a cultivated patch.

#### 4.2. Emotional dimension (identificational integration)

In the participants' words, nature is frequently connected with memories of childhood and emotions that return a person to their home country, to the places they were attached to and their cultural and religious values. As per the definition, identificational integration is based on emotional bonds with other people and places. During the post-probe interviews, the Arabic-speaking women mentioned feelings of nostalgia and made clear emotional connections with their home countries. One mentioned the blue flowers, *sinivuokko* (round-lobe hepatica), that grow in Finland. She took a picture, saying, 'The reason is that a similar type of flower grows in Syria as well. Their smell is a bit different from the ones growing in Finland, but the similarity still reminds me of my home country' (Aisha, Arabic-speaking female). She enjoyed walking in Turku and the urban green areas, but she explained that the forest, which is fully part of the urban landscape, was a very special place for her, and she normally went to places where she knew she would meet few people:

I feel that forests are like a family, so when I want to be alone, or I need to cry in peace and be by myself (because I miss my sister and my family in Syria), I go to the forest, the 'family'. So, going to the forest needs special planning and a special reason. (Aisha, Arabic-speaking female)

She explained that nature was a place where she could express emotions, which was important for her well-being. After visiting the forest, her mental state improved.

During another post-probe interview, Farah (Arabic-speaking female) described how she walked down a street with strange trees, which she had taken pictures of, on her way to the university in the winter. Because she walked there in winter and spring, she observed how the trees changed during the different seasons. The first time she noticed them (in winter), they seemed ugly:

They reminded me of a verse in the Koran where similar trees are described growing in hell called Heads of the Devil. But then I changed my mind because as soon as the spring came, they became very beautiful, with leaves and flowers. (Farah, Arabic-speaking female)

During both the interviews and the probes, the Russian-speaking participants shared many memories of their home countries and their families, mentioning specific elements in the Finnish landscape that reminded them of their lives in their home countries:

One day, walking home, I noticed flowers growing by the bridge. There were many species, and they grew wild there. One of the flowers was a *keltamo* [greater celandine]. I remembered my ... grandmother, who taught me that the liquid from the *keltamo* is used to treat wounds. (Alexander, Russian-speaking male)

On the other hand, Alina, a Russian-speaking female, had been

interested in insects and small animals since childhood and sent us many pictures of them, while another Russian-speaking female, Mischa, habitually played with flowers as a child and made dolls out of them. These connections with and memories of nature gave the participants feelings of pleasure and joy when they saw things that were meaningful to them. These positive feelings were significant for their well-being and gave them the energy to cope with everyday life.

The qualitative data showed that childhood experiences with nature correlated with interactions with nature in the new country. Participants paid more attention to nature, were more willing to experience natural environments, and became more attached to nature in the new country if the experiences resembled those that took place in their home countries. However, 87% of the participants reported that they were from cities, not rural areas, so nature was an unfamiliar environment for them. The interviewees brought up the same issue, since some megalopolises in which they used to live have no trees or other natural elements.

In carrying out the probe tasks, the Somali-speaking group expressed their emotions regarding nature in a completely different way. While the Arabic-speaking participants seemed to experience mentally processed nostalgic emotions and had specific spatial, religious, and cultural memories relating to them (e.g., females Farah and Aisha and males Yusuf, Adil, and Hakim), the Somali-speaking participants had a more physical way of conveying these emotions. As a teacher working in an intercultural association for immigrant women explained during an interview:

They greatly use their senses. They are also very sensitive in terms of smell. I was struck when one of them, out of the blue, told me something like 'I smell cold'. She indicated her nose and the fact that she was smelling something different from the summer.

The Somali-speaking participants were also very visual. During the post-probe interviews, they reported, for example, that seeing green, referring specifically to the colour green, gave them visual pleasure, claiming that 'a green landscape is good for the eyes' (Idil, Somali-speaking female). They used such physical expressions while talking. The Somali group seemed to be comfortable in the natural environment, particularly in summer when the weather and nature offered pleasurable, tactile feelings. For example, they enjoyed going to the forest to pick blueberries, but they did not like to be outside in the cold:

Ayaan is not happy with winter: too cold and dark... and, to try to be clearer when she says *kylmä* [cold], she makes the gesture to 'signify' it. This means that she rubbed her arms with her hands—an action one instinctively does in an attempt to get warmer in cold environments. (Notes from a group interview with Somali-speaking women)

Physical sensations and the use of their senses seemed essential for many participants' well-being. For example, Russian-speaking female Anastasia said, 'When I think nature, I think wind, breathing fresh air, different colours'; she continued, 'Nature gives me mainly emotional and mental benefits. Nature is a place for tranquillity; I can concentrate better and think my own things.'

The research participants shared the view that nature is beneficial to one's well-being. Many said that walking in nature was their way of relieving stress after work or studies. Being in nature also elevated their moods. In particular, observing animals made them happy. Other feelings that they related to nature were calmness and vitality. A younger Somali-speaking female, Leylo, stated, 'In nature, I can spend my own time and enjoy myself. I can just be there. Nature makes me feel peaceful and joyful.' Similarly, Yusuf, an Arabic-speaking male, explained, 'I always try to find my way to nature to go jogging or walk to a forest path to search for peace.'

Thus, nature clearly improved the participants' mental well-being, and it also provided a healing element. As Sofia, a Russian-speaking female, explained, 'I experienced depression. This was the turning point for me. This is when I realised that when I am outside, in parks, woods, and especially near the water, it positively affects me'.

### 4.3. Normative dimension (cultural/cognitive integration)

Nature is not only a social and emotional experience; it is also a place where norms need to be abided by. Most of the Russian-speaking participants, during the in-depth interviews and the probes, paid particular attention to how urban greenery is organised (e.g., males Dmitri, Mark, Leonid, and Vasily). They did so by comparing the different ways of organising nature in Russia and Finland. Vasily told us during the interview:

Here, in Finland, you can really see that nature is cared for. The grass is cut ... everything is clean, and there are trees everywhere, but in Russia, it is not like this. Nature is not attended to; it is just left as it is, including in the countryside, and there aren't many trees ... People often leave trash there, which wouldn't happen in Finland. So, it is pleasant to be in nature here because everything is so clean and orderly.

However, he added, it would be much better if places where you can or cannot go were clarified for foreigners:

In Russia, when you move around, you need to figure out where you are actually allowed to go. You need to be very careful about where you go... but here in Finland, it is completely different. Finland is basically a big open space, but for a foreigner like me, it is troublesome, not knowing what you can or cannot do. You feel lost here.

Feelings of uncertainty and insecurity can be harmful to well-being. Of the survey respondents, 54% indicated that they knew some of the access rights, but these were unfamiliar to many who were in Finland for the first time. The right to access the outdoors and the knowledge of such a right should be available for everyone—not only for leisure but also for well-being.

Our qualitative data revealed that, for the Arabic-speaking participants, the feeling of not knowing the rules for being in nature represented an obstacle to enjoying it. As Yusuf, an Arabic-speaking man, explained, 'I know many who are from the East and enjoy the nature here, but the majority don't. They just don't know the nature'. The Somali-speaking group had similar issues. They were unaware of what to do in nature and why. Shamsi, a Somali-speaking female who had lived in Finland since childhood, stated, 'There is a need for more knowledge in one's own language about the health and mental health benefits of nature.'

For the Russian-speaking group, it was important to understand the rules of public green spaces, but Finnish nature was intrinsically familiar to them because it resembles Russian nature, especially for immigrants from St. Petersburg. Rather than finding it scary, they were accustomed to conducting activities in nature and knew how to enjoy them. For the Arabic-speaking population, however, not knowing the rules for being in nature and what they could and could not do greatly affected their experiences. They did not enjoy the wilderness, which seemed to scare them; they felt more comfortable in urban nature, where paths and directions were clear, and they were not at risk of getting lost:

During this research period [the probes], for the first time since I first moved to my current location... in 2019, I found the courage to go out and explore the forest behind my home. I went there, found a path on which I wouldn't risk getting lost—I always go where I know exactly where I am—and found rocks, big ones, where I could sit and relax. (Farah, Arabic-speaking female)

An Arabic-speaking man (Adil) similarly stated, 'What I like are the services in the city. Things that are organised and clear—not only nature, but a kind of mix between the built environment and nature'. He took pictures of bike lanes and pedestrian-only streets, which he greatly appreciated, saying, 'You don't want to be in the forest without paths; that is confusing and dangerous. You don't want to be there.'

Adil continued:

For example, once we were following a path, and there was a sign showing a dog. The sign was written in Finnish. My children translated it for me and explained that there was a guard dog, so I immediately told them to stop and go back because it was not a safe area. But the point is that I cannot read the signs in Finnish, and I don't know when something is dangerous.

Curiously, while the Russian-speaking group wanted to avoid breaking the law and trespassing, the Arabic-speaking participants added that they did not want to break the laws and habits of their home countries while in nature, so they were more comfortable when there were no other Arabic-speaking families or individuals around who might 'judge' what they were doing (Yusuf, Arabic-speaking male). They were also interested in knowing what Finns do. As Adil (Arabic-speaking male) explained, 'I want to follow what other people do—what Finns do—because they clearly know what to do and where to go, not only in summer, but in winter as well.'

When asked if they knew how to spend time in the natural environment in Turku, 56% of the survey respondents answered affirmatively, while 44% either did not know or were uncertain; thus, the normative dimension (knowing where one is allowed/not allowed to go) influenced their access to and activities in nature.

## 5. Discussion

### 5.1. Multidimensionality

From the data analysis, multiple dimensions of nature experiences in Turku emerged, which could be connected to the participants' paths towards well-being and integration. In this article, we analysed three dimensions. The first was the social dimension, as connecting with nature was either a solitary or collective experience. The social dimension of a nature experience can support interactive integration, as it can help develop new social bonds in the host country and reinforce old bonds. The second was the emotional dimension of nature experience. The research participants often reported how nature evoked memories of childhood, emotions related to places in their home countries, and their cultural and religious values. According to participants, cultural and religious values are an integral part of natural elements and places. This emotional dimension can support identificational integration. Indeed, as Jay and Schraml's (2009) study showed, 'strong emotional bonds appeared in the form of remembrance or having feelings of nostalgia' (p. 290), and Rishbeth and Finney (2006) emphasised that 'immigrants often frame new landscapes as a reminder of past landscapes' (p. 282). In this sense, 'affective responses to nature may facilitate attachment to new environments and places' (Hordyk et al., 2015, p. 75). The third was the normative dimension. The research participants had a personal understanding of the local norms and rules of access to nature. This normative dimension of nature experience supports cultural and/or cognitive integration, as it helps immigrants become acquainted with 'general rules of behaviour' (Gentin et al., 2019, p. 1) and norms regulating access to places in the host country.

For the sake of clarity, these three dimensions are listed separately here. However, in the participants' everyday lives, nature experiences, and stories, these dimensions intertwined and overlapped. Leikkilä et al. (2013) explained, 'For example, it is understandable that social interactions can contribute to the identificational integration by evoking feelings of being-at-home' (p. 184). Moreover, in the participants' personal experiences, well-being seemed to be the thread that positively supported and connected all three dimensions. As Hordyk et al. (2015) found, nature can be a buffer for stress, whereby 'both unexpected and planned nature encounters impacted ... emotionally, providing sudden "Aha!" moments of pleasure, offering respite from mental pre-occupations, or facilitating [immigrants'] states of relaxation' (p. 81). Regardless of whether it was emotional, social, or cultural/cognitive integration, or the associated stress or relief therefrom, the process of

settling in a new country seemed to be positively supported by experiences in nature.

Fig. 2 shows that nature experiences are multidimensional and often overlap. Different dimensions of nature experiences support different types of integration, yet they are also interlinked. The participants' well-being was supported by their nature experiences, which enhanced their integration.

Next, we discuss the various dimensions of the relationship with nature and how they support integration and well-being.

### 5.2. Integration

Nature is often seen as a platform for social interaction (Gentin et al., 2019) and as an element reinforcing emotional bonds to the hosting country. It is in this sense that it supports both interactive and identificational integration. Indeed, activities linked with urban agriculture seemed to reinforce social cohesion, the social bond between neighbours, and the sense of belongingness and attachment to a place (Lovelock et al., 2011). This kind of interactive integration was thus readily linked with the emotional dimension, leading to identificational integration: positive emotional bonds between the new country and the home country were established through nature and (for the Arabic-speaking participants) aligned with cultural and religious values. This resonates with Rishbeth and Finney's (2006) findings, which highlighted that 'recognition and familiarity in landscape appears to help migrants conceptualise their position in the new society' (p. 294). Emotions could also be expressed more sensorily, and, for example, warmth and greenery could be linked with memories of life in the home countries. This reinforced a sense of belonging, which is 'vital in informing place-based identities' (Rishbeth and Powell, 2013, p. 163) and, thus, integration.

The participants expressed a great need to increase their knowledge of how green spaces work and are organised. This resonates with Jay et al.'s (2012) and Egoz and De Nardi's (2017) studies asserting that discrimination in access to natural environments should be prevented. Indeed, it would be much better if the rights to common access (Jay et al., 2012) were clarified for foreigners. When comparing Russia with

Finland, some Russian speakers emphasised the need to know more about what distinguishes a private space from a public space and the access rules of each. In contrast, some Arabic speakers expressed fear of exploring unknown natural places because sparsely or non-urbanised spaces, such as the wilderness, were potentially dangerous (Buijs et al., 2009). Having better knowledge and understanding of the rules regarding access to nature seemed to support the participants' cognitive integration, in that it improved the research participants' awareness of the hosting country's general rules of behaviour, cultural aspects, and common practices (Gentin et al., 2019).

### 5.3. Well-being

As the results showed, the social, emotional, and normative dimensions of experiencing nature were clearly interwoven with both integration and well-being (Massey and Akresh, 2006; Gentin et al., 2019; Paparusso, 2019). As highlighted in the 'Well-being, integration, and urban nature' section, it is thoroughly documented that nature and well-being are inextricably connected, and humans need to connect with the natural environment (see the biophilia hypothesis; Wilson, 1984; Kaplan and Kaplan, 1989). Our study supports these existing results. The participants found that experiencing nature alone relieved stress, while carrying out communal activities in nature, such as picking berries with family and friends, generated happiness. Many participants mentioned relief from stress (see Ulrich et al.'s (1991) stress reduction theory), especially when enjoying a natural scene alone. Moreover, activities linked with urban agriculture seemed to reinforce social cohesion and well-being (Wan et al., 2021). Hordyk et al. (2015) mentioned the importance of nature experiences involving all five senses, as this positively impacts well-being. For the Somali-speaking participants, warmth and greenery conveyed feelings of pleasure. In general, a new nature 'place may have positive effects on migrants' wellbeing' (Egoz and De Nardi, 2017, p. 82) and may help actualise their potential, especially when it supports the various, often challenging, stages of integration in a new country. However, uncertainty about how to behave in nature may reduce some aspects of nature's restorative benefits in terms of well-being (see Kaplan and Kaplan's (1989) restoration theory). If one is

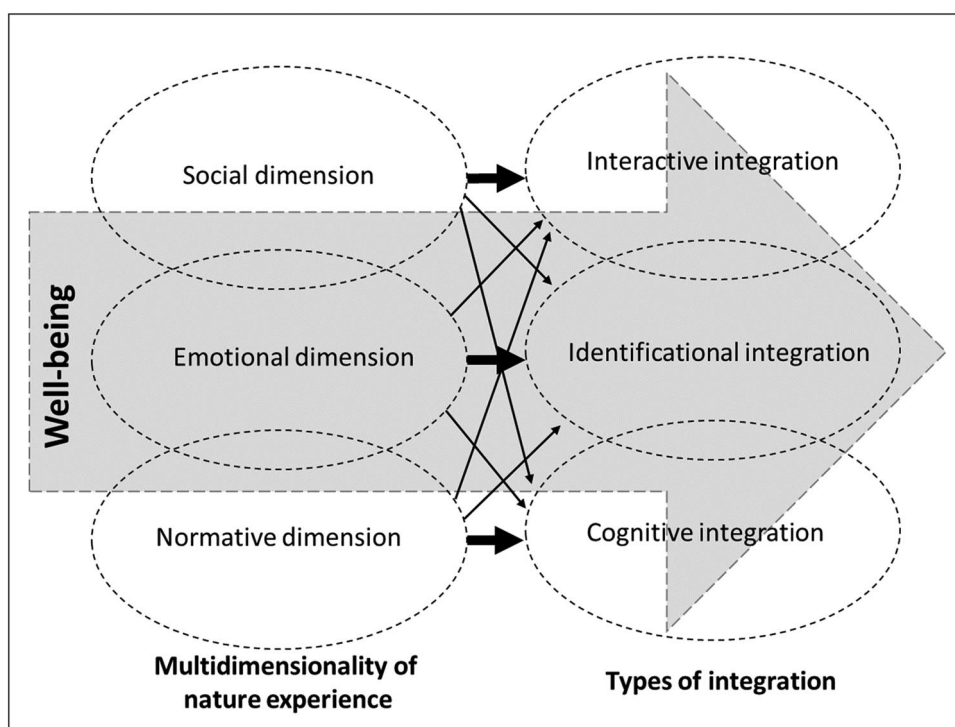


Fig. 2. Multidimensionality of nature experiences.

unsure of behaviour norms in certain natural areas, the restorative benefits may be undermined because of an increased awareness of one's behaviour. This confirms that nature should increasingly become 'a common good' and 'the infrastructure for wellbeing' (Egoz and De Nardi, 2017, p. 74).

Ulrich et al.'s (1991) stress-reduction theory claims that some of nature's well-being effects come from exposure to unthreatening natural environments. Making urban nature feel unthreatening for immigrants can be easy: one Arabic-speaking female reported that during the research period she 'found the courage' to explore the forest behind her home for the first time and found it relaxing. This exemplifies that even the slightest encouragement to explore urban nature—the encouragement here being participating in the study—can enhance immigrants' agency and feelings of autonomy in relation to nature. To design environments that are accessible and welcoming to different groups, planners must understand that what may seem safe to one person may appear threatening to someone from a different cultural background, such as the example of Adil being scared by a dog sign, even though, in the Finnish context, the dog was only a friendly family pet. However, such symbols may seem threatening to people who are unfamiliar with Finnish culture.

#### 5.4. Limitations of the study

One of the limitations of this study is that it largely used self-selecting participants (Lawton et al., 2017). Thus, it is reasonable to think that most participants were already interested in nature and possible activities therein. The study is biased in the sense that it was not able to capture (or it captured only partially) those who are not interested in nature, do not assign value to nature, and do not exercise in nature.

The second limitation of the study is the fact that the methods follow a Western approach, though they were tailored as much as possible with consideration for the target groups and their languages, needs, and views. However, difficulties were encountered: for some of the participants, the probe tasks were not understandable or were counterintuitive. To counterbalance these limitations, we accepted the participants' different interpretations of the tasks without forcing our own views.

#### 6. Conclusions

This study aimed to examine how some members of the foreign-background populations in Turku experienced nature and how nature contributed to their well-being and integration. Engagement with the urban natural environment may benefit foreign-background populations' well-being and integration if an intercultural approach to nature is considered in the design of the urban environment and the management of nature (Leikkilä et al., 2013). A better understanding of possible barriers to accessing nature would support policies that could strengthen peoples' identities and relationships with both their cultural backgrounds and their new country. The results of the study may also be of interest to those working in and studying NBI programmes in Nordic countries.

The literature shows that NBI approaches in Nordic countries tend to be top-down, telling the foreign-background population how to experience nature and teaching them how to behave in it (Singleton, 2020). A gap in the NBI literature is that the identities, values, cultural approaches, and religions of foreign-background populations are rarely considered, supported, or enhanced (Singleton, 2020). This study contributes interesting empirical material to debates that aim to include a multidimensional intercultural understanding of nature in the planning of urban green spaces or integration activities. We assert that multiple, diverse views of nature do not subtract value from the urban environment but instead actively increase the well-being and integration of the whole population.

Based on our findings, we can offer suggestions to Turku's city planners, which could also become topics of future research in this

direction. For example, NBI and well-being programmes and urban planning interventions that aim to redesign or enhance access to green areas in Nordic cities could consider using multiple languages, as well as images and sounds, for communication. In addition, it is important to clarify the rules and norms of access to nature and the activities possible therein. This could be done by, for example, placing signs on nature trails to reduce feelings of disorientation. Providing information on the equipment necessary for enjoying winter activities and publishing details about those activities might help people go out in winter as well. In general, involving the foreign-background population in the initial planning phases of some nature-based interventions in cities remains a good practice. Furthermore, integration programmes could take an open-minded learning approach, accepting different interpretations, views, and understandings of nature and the possible activities therein. In general, our research results reinforce the necessity of maintaining an intercultural approach, ensuring that all interventions are bidirectional and allowing foreign-background populations to contribute. The different ways of seeing, using, and being in an urban natural environment can provide opportunities to learn and increase unity in society. Our results also provide opportunities for the development of new lines of urban planning interventions and further integration research.

#### CRedit authorship contribution statement

**Miriam Tedeschi:** Conceptualisation, Investigation, Writing – original draft, Writing – review & editing, Funding acquisition. **Hanna Heino:** Conceptualisation, Investigation, Methodology, Writing – review & editing, Funding acquisition. **Johanna Jämsä:** Conceptualisation, Writing – review & editing. **Antti Klemetilä:** Writing – review & editing.

#### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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