Part 2

Cultural Significance Survey

By Willem Elskamp, Marloes Drijver, Sara Szulc & Qiyang Tao

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Heritage & Architecture, Revitalising heritage: Faro Convention Lab

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Abstract

The role of nature in historic cities has been a growing debate in creating healthier environments as society pays more attention to mental and physical health. The relation between nature, city, and community is growing in understanding but still limited in practice.

Recent research evidenced the high cultural values of green places, where people like to spend time, positively impacting their well-being. Moreover, investigation of this topic showed that community well-being is connected to the presence of nature because of strong emotional attachment to areas attributed to natural heritage.

This paper focuses on the neighborhood Estação in Faro, Portugal, which nowadays contains few green areas and lacks connection with the Ria Formosa National Park (lagoon). These natural elements primarily convey, e.g., aesthetic and ecological values but may also bring a broader cultural significance to the community of Faro. Hence, how to restore nature in the neighborhood of Estação by conveying community values?

Participatory methods, in particular gaming, are used to reveal the values of the community. Gaming is a participatory method that enables co-creation in redesigning the urban landscape. Both sides can learn by engaging the local community in research about values and the redesign process. Four participatory methods are developed to be suitable for all different age groups. The methods consist of: A walking tour, cultural mapping, a card game, and Minecraft (video game). 86 participants took part in the research, divided into four different age groups.

The results of each method were coded using the values framework of Pereira Roders and the attributes typologies of Veldpaus. By comparing the results of the different age groups, it can be concluded that for all age groups, the ecological, social, and economic values are the most important. When further breaking down these values, the most significant overlap between younger and older generations can be seen in the secondary (social) emotional-collective and (ecological) spiritual values. However, when looking at the attributes, a significant difference can be seen as younger generations feel more attached to tangible attributes since they might perceive the environment through more visible and physical aspects. On the other hand, the older generations are more attached to intangible attributes as relation attributes consisting of memory, meaning, and identity.

By understanding the local community's values, an approach can be made to restore nature within the neighborhood of Estaçào by designing guidelines. These guidelines can be used to develop a strategy for implementing value-based redesign to improve the living environment of different age groups. This research aims to create a method that could be applied in other cities.

Keywords: cultural significance, heritage values, public participation, healthy cities

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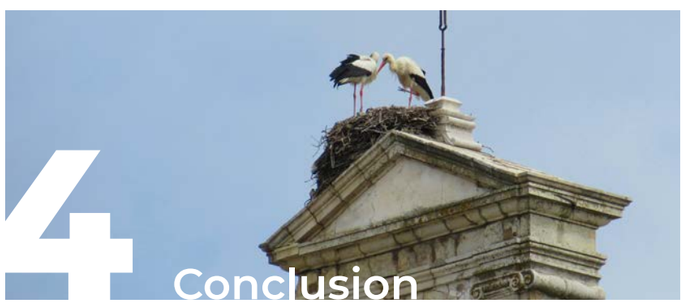
Delft, The Netherlands

Obrigado !

Figure 1: Members of the projectteam in Faro.



Chapter 1

Introduction

In this chapter, the grounds of this research will be explained, and the general topics of nature, well-being, intergenerational and emotional attachment will be elaborated. The values-based approach will be presented. Additionally, an introduction to the case study will inform the reader about the context of this study.

1.1. General introduction to the topic

In this chapter, the grounds of this research will be explained, and the general topics of nature, well-being, and intergenerational and emotional attachment will be elaborated. The values-based approach will be presented. Additionally, an introduction to the case study will inform the reader about the context of this study.

1.1. General introduction to the topic

The role of nature in historic cities has been a growing debate about creating healthier and climate-proof environments. In economic and health crises, where stress and depression increase, society pays more attention to mental and physical health. After decades of disciplinary isolation in architecture and heritage, the relationship between nature and society is growing in understanding what contributes to society's well-being. [1] Earlier research evidenced the value of nature in places where people like to spend their time, which positively impacts their well-being. Walking in green spaces, considered of high natural and heritage values, significantly reduced feelings of anger, depression, tension, and confusion. [2]

Moreover, exploration of the topic showed that community well-being is connected to the presence of nature because of stronger emotional attachment to local areas attributed to the nature of the heritage environment. [3] This paper aims to research the values of nature in the city of Faro in Portugal, to understand the relationship between nature and people. Barrio Estação, a neighborhood in Faro, contains some green areas conveying aesthetic and ecological values to the local communities, but they are getting abandoned and making the city "sick." It is believed these areas can tell much broader cultural values, largely unknown. The driving force for this research is the admiration of nature and the desire to explore intangible relationships between nature, people, and heritage. Therefore this cultural significance survey will investigate and understand local communities' values on nature and heritage. Because the complexity of the theme requires investigation of various perspectives within the community, the participatory practice will be divided into different age groups and will be examined with several methods.

1.1.1. Theoretical framework

The presence of nature in the city enhances peaceful feelings and provides spaces for relaxation, exercise, and meeting with other people, according to Kim and Miller's (2019) research. [4] Additionally, it helps to reduce anxiety and supports thinking and reflecting. Nature makes people proud of the place where they live and make them care about their neighborhood—taking those environmental and social aspects into account when designing cities is an essential factor in enhancing the health and well-being of the users. Urban green spaces are a crucial catalyst for "the quality of the environment and human health and well-being" in cities. [5, p.23] Trees and green spaces participate in filtering air pollution, stabilizing ground surfaces, enhancing biodiversity, and lowering the temperature, which is especially meaningful in climate change. Walking in a green environment raises social interaction and "increases the ability to function better at work and home." [5, p.24] Furthermore, green spaces can support economic regeneration by creating more attractive spaces for new employers, and as a result, new employment opportunities are generated.

Heritage is considered to have a distinctive ability to contribute to physical and mental well-being on an individual and social level. For example, in a survey described in the Heritage Alliance Report [3], 94% of adults admitted that caring about heritage is very important, underlining the value of heritage for people and their place of living. In addition, National Trust [2] research indicates that 74% of the respondents value the presence of nature in areas where they like to spend their time, which positively impacts their wellbeing. Other research [6] proved that walking in green spaces, considered of high natural and heritage value, significantly reduced feelings of anger, depression, tension, and confusion.

Another concept that is used for this research is place attachment. Place attachment is a bond between an individual or group and a place that can vary in terms of spatial level, degree of specificity, and social or physical features of the site. Because this concept is focused on places with a high level of agreement, it is mainly associated with positive emotions and experiences of people. [7] In addition, emotional attachment is derived from place attachment because it says something about the symbolic relationship that an individual can have based on cultural, social, and individual bonds with a place. This relationship describes the experiences and memories of an individual based on their perception of the area. [8] However, place attachment may also lead to adverse effects, such as prejudice against other regions or neglecting the potential risks around the neighborhood. [9] What does the place of place attachment mean? Previous studies have proposed several different models to clarify the definition of place. Based on research, we could assume that place is a geographic scale [10] as the collection of three factors to which people can directly feel attached to activities with people [11], physical settings, and meanings of conceptions. [12] According to the extended attribute typology of Veldpaus (2015), physical setting belongs to tangible attributes, social network belongs to intangible societal attributes network, and meaning belongs to intangible relation attributes.

Because this research is conducted among different stakeholders, the term intergenerational needs more elaboration. Intergenerational reflects something involving people of different generations. The term focuses on involvement in which there is an interaction between the different generations. [13] This means a relation or connection is present between these generation groups. Within this research, the different generation groups will be divided into categories based on the work of P. Laslett. [14] This system aims to understand the life rhythms of each generation. "Age groups" are not separated due to a specific age but by a period characterized by lifestyle and needs.

Figure 2: Intergenerational division of stakeholders. Diagram based on the word of the work of P. Laslett.

Furthermore, this research is organized around a values-based design approach developed by Pereira Roders and Tarrafa Silva (2012). [15] The foundation of this approach is the cultural significance of heritage. Cultural significance considers two elements: values and attributes. The value of heritage is referred to as importance. It is understood as “the importance or worth of something for someone.” [16] Attributes refer to “a quality or characteristic that someone or something has.” [17] Cultural significance is defined as: “Aesthetic, historical, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places, and objects. Places may have a range of values for different individuals or groups.” [18] However, Pereira Roders expanded the list of values with additional ones: economic, political, age, and ecological, and assigned other secondary values to them. [19]

The question what? is answered by the attributes, while the question why? is linked to values.According to the attributes taxonomy made by Veldpaus, attributes are divided into tangible and intangible. [20] The tangible attributes are divided as follows:

- asset: building, building elements, urban elements, a natural element
- area: ensemble, context, setting, area
- landscape: landscape, layering

Intangible attributes are the following:

- product: concept, artistic tend, relations to context, character
- practice: use, function, knowledge, traditions, customs, relation to meaning, community, people
- process

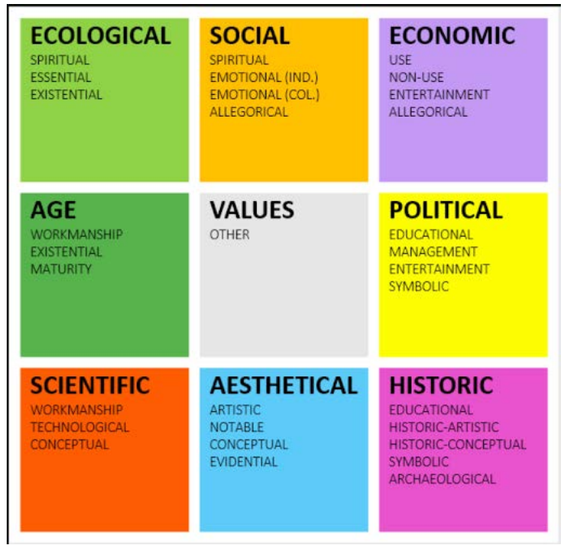


Figure 3: Values framework by Pereira Roders. [21]

1.1.2. Relevance

There is still a gap in using participation methods during the design process in architecture and heritage research. Avrami [21] stated that it is generally agreed that bottom-up participation by the community will lead to better choices for values-based conservation, but the applications are still largely understudied. This values-based approach aims to reveal the interests and perspectives of different stakeholders in terms of the cultural significance of places by assessing the values held by different generations.This research will add to the development of new methods in participatory practices, and particular gaming will be used to explore stakeholders’ values. Gaming is a participatory method that enables co-creation in redesigning the urban landscape. Both sides can learn by engaging the local community in research about values and the redesign process. We, as future architects, can learn to understand the needs of people better. Citizens can learn about the importance of the quality of their living environment and enable them to be part of the design process. [22]

The municipality of Faro supports this research to underline the importance of the Faro Convention for cultural heritage for society. This framework aims to put people and human values at the center of cultural heritage management and underline the potential of cultural heritage as a source for sustainable development and the well-being of the community. [23] The outcomes of this study will lead to inspiration for the community and raise attention for the Faro Convention.

1.2 Case Study

1.2.1 Introduction Faro - Estação

The research focuses on the neighborhood of Estação in Faro, Portugal. It is a neighborhood adjacent to the lagoon on the north side of the historical center of Faro. Various problems have gradually accumulated in this neighborhood with the urban development, and the coexistence of challenges and opportunities draws our attention to this site.

Originally Estação was built on the 'Horta da Carreira,' one of the three private gardens in the city. With the advent of the train station in 1889 and the emergence of industrialization, they transformed the green area into housing, and the urban development of the neighborhood increased rapidly. In 1920 they started building the milling factory on the northside of the neighborhood, which became a landmark building. Eventually, the flow of people and goods in the area caused more traffic, which became a problem. [24] Four north-south roads crossing the neighborhood connect the city's main entrance from the north to the historic city center. Based on our own observation and confirmed by the locals, this causes parking and logistic problems for the residents.

Another problem, derived from our personal knowledge, because of the train station's development is the barrier created by the railway tracks between the Ria Formosa National Park and the city. The city was always focused on the inner side, and therefore the waterfront was only used for industrial purposes. As a potential result, there are only a few places where the railway track can be crossed, which resulted in a disconnection between the Ria Formosa and Estação.

Based on our observations confirmed by locals and the municipality, the majority of the people living in the neighborhood are elderly. Most of them live in one or two-story-high self-owned houses built around 1925. Therefore, they still own their properties when they eventually need to go to an elderly home. This, in combination with the financial crisis, caused a high number of vacant buildings in the area compared to the rest of the city. Also, the vast plot of the factory building has been left vacant for many years. Nowadays, a renovation plan to demolish the entire industrial block for high-rise dwelling buildings will happen. [25]

1.2.2 History timeline

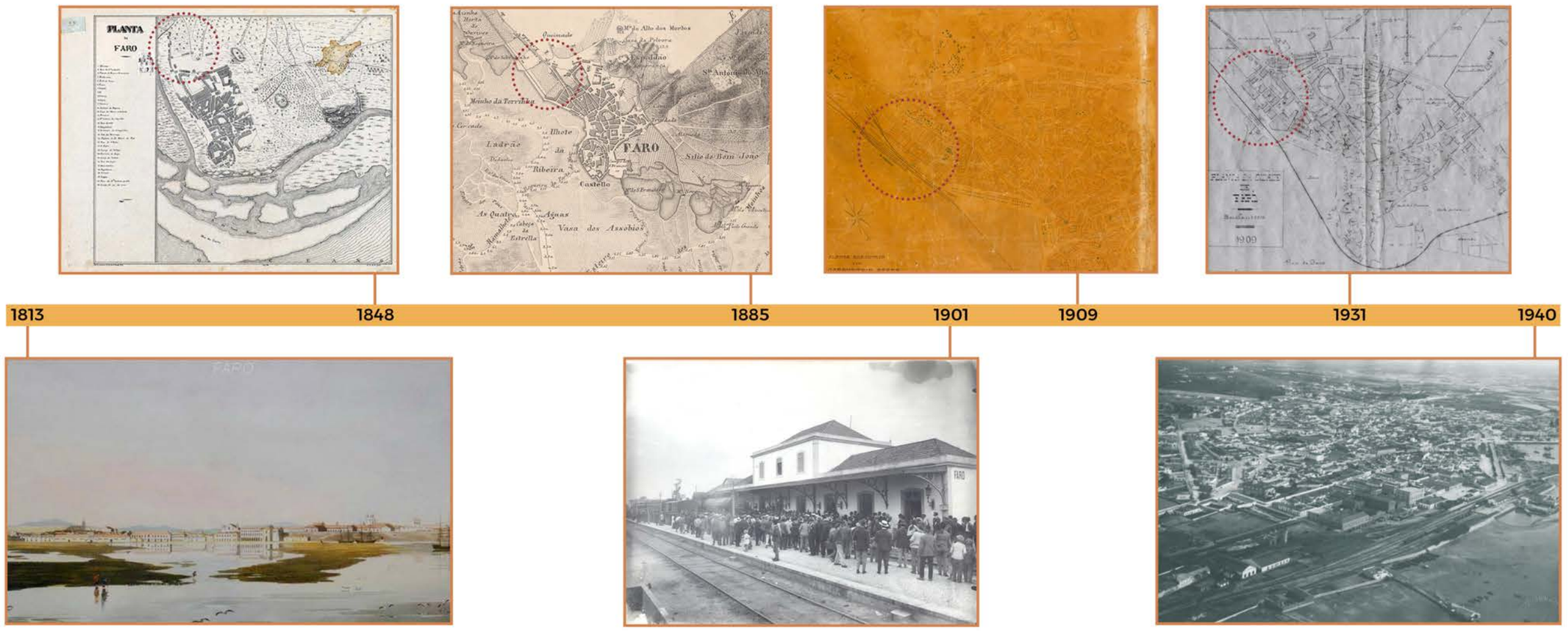


Figure 4: Historical timeline of Estação. [25]

2

Chapter 2

Research approach

This chapter will explain the problem statement of this study and will be followed up with the research questions. It will also show the four different methods used to find answers to the questions and how these complement each other. Each game will shortly be explained in the methodology paragraph.

2.1 Research Framework

2.1.1 Problem statement

People living in cities need a greener environment to stay healthy and fulfill their social needs. The necessity to spend time and relax in nature and green spaces became especially urgent in the context of pandemics that the world has been facing in recent years. Additionally, problems related to climate change, like rising temperature in the cities, are issues that future urbanists and architects need to address.

The neighborhood of Estação in Faro, in Portugal, was chosen as the graduation project case study due to its location and the challenges this place faces. The municipality of Faro developed a rehabilitation program in 2018 for the city, with intense concentration for the city's waterfront. [27] The neighborhood of Estação is part of an area called Frente Ribeirinha, which means riverfront. This area directly borders the Ria Formosa Natural Park. It, therefore, has a privileged territorial and landscape framework that needs recognition during the requalification process of the riverfront. Furthermore, the railway station and tracks are physical obstacles between the city and nature and may prevent the population and visitors from enjoying the city's proximity to the Ria Formosa.

Additionally, the neighborhood of Estação lacks green spaces where citizens can meet and spend time in the public realm. Furthermore, the neighborhood does not take advantage of its connection to the national park, which harms people's well-being and understanding of nature values. Furthermore, in the demolition program of the old factory, such rapid renovation on the block with conspicuous volume and historical value might negatively affect the legibility of the neighborhood and the place attachment of the community. Furthermore, high-rise dwelling buildings appear due to the city's rapid growth, which will cause little interaction and separated values between older and younger generations.

2.1.2 Research questions

The research aims to understand the values on nature of the different stakeholders in the context of emotional attachment and how this knowledge can serve in the following redesign phase. The research question is formulated below, and the following sub-questions are meant to support answering the main question.

How can the values on nature of different generations influence the emotional attachment to Estação, Faro and support the redesign of a vacant building?

Sub-questions:

1. *How can an intergenerational relation be created by using the values on nature of the local community of Estação?*
2. *How could the tangible and intangible attributes affect different generations' place attachment to Estação?*
3. *How does the younger generation feel emotionally attached to nature in Estação?*
4. *How can children's values on nature be applied to redesigning vacant buildings?*

2.1.3 Aims and expected results

With the above-stated arguments, this research expects to identify the value of nature in the current urban renovation. The research aims to determine the values and attributes relevant to the natural asset in Estação, Faro, and how this influences different generations' emotional attachment to the neighborhood. Furthermore, the research sets out to gather information about all age groups with the most suitable participatory gaming methods. It empowers participatory gaming for decision-making in design processes (see figure 4). As for expected results, the hotspot map will support the choice of redesigning buildings. The detailed attribute–value diagrams will answer the research question, supporting the master plan's design decision.

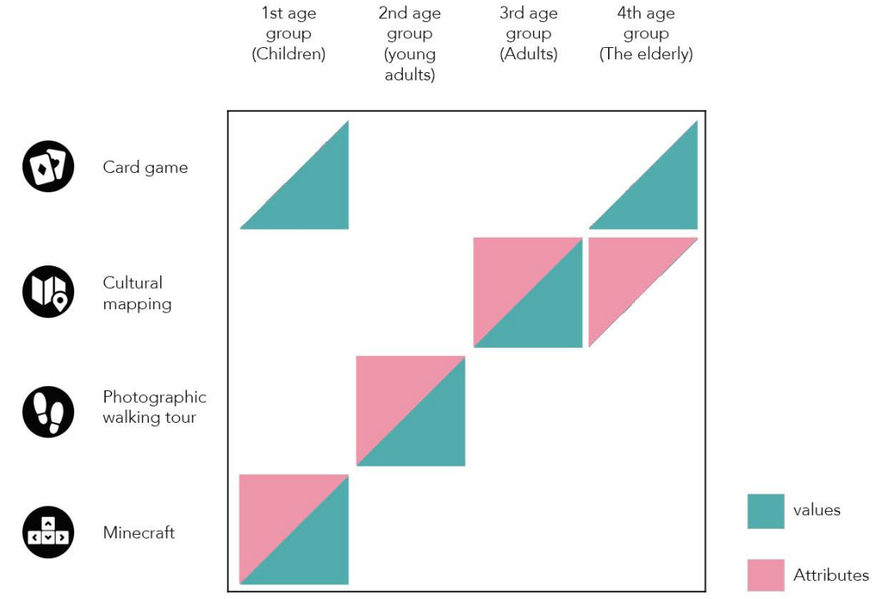


Figure 5: Diagram with different generations and methods.

2.1.4 Ethics

Research involving human subjects requires ethical and responsible discernment. As researchers, we are obliged to obey rules according to the field research executed with the participation of people. Following documents were established to fulfill ethical requirements: Ethics Review checklist, Data Management Plan, and Informed Consent form. These documents consider the possible risks associated with the study, the exact plan, and how the data obtained in the survey will be used. Furthermore, the preparation of the HREC application (Human Research Ethics Committee) was made as recommended by the Delft University of Technology.

2.2 Methodology

Due to the complexity of methods and stakeholders, symbols are assigned to each method. It will help the reader track the method used per type of stakeholder.

2.2.1 Card Game

The card game was made (based upon the existing game of “Reigns”) [28] to understand the values of both children and the elderly. The game is set around a set of proposal cards that need to be accepted or declined. In total, 72 cards have been made that each is containing a proposal for the city of Faro. Each card is linked to a value type (in total, 9 cards per value type) and a secondary value. Participants will play the game in groups of 4 to 6 people. One person will play as the “mayor” and decide which proposals to accept, while the other players will be their “advisors” and choose which cards to propose. Participants will be asked to explain their choice of a particular card and then negotiate with the group over which cards they find essential. The game also contains a board with sliders linked to the values on the back of each proposal card. The board has been added to increase the game aspect and allow for more engagement in the game.

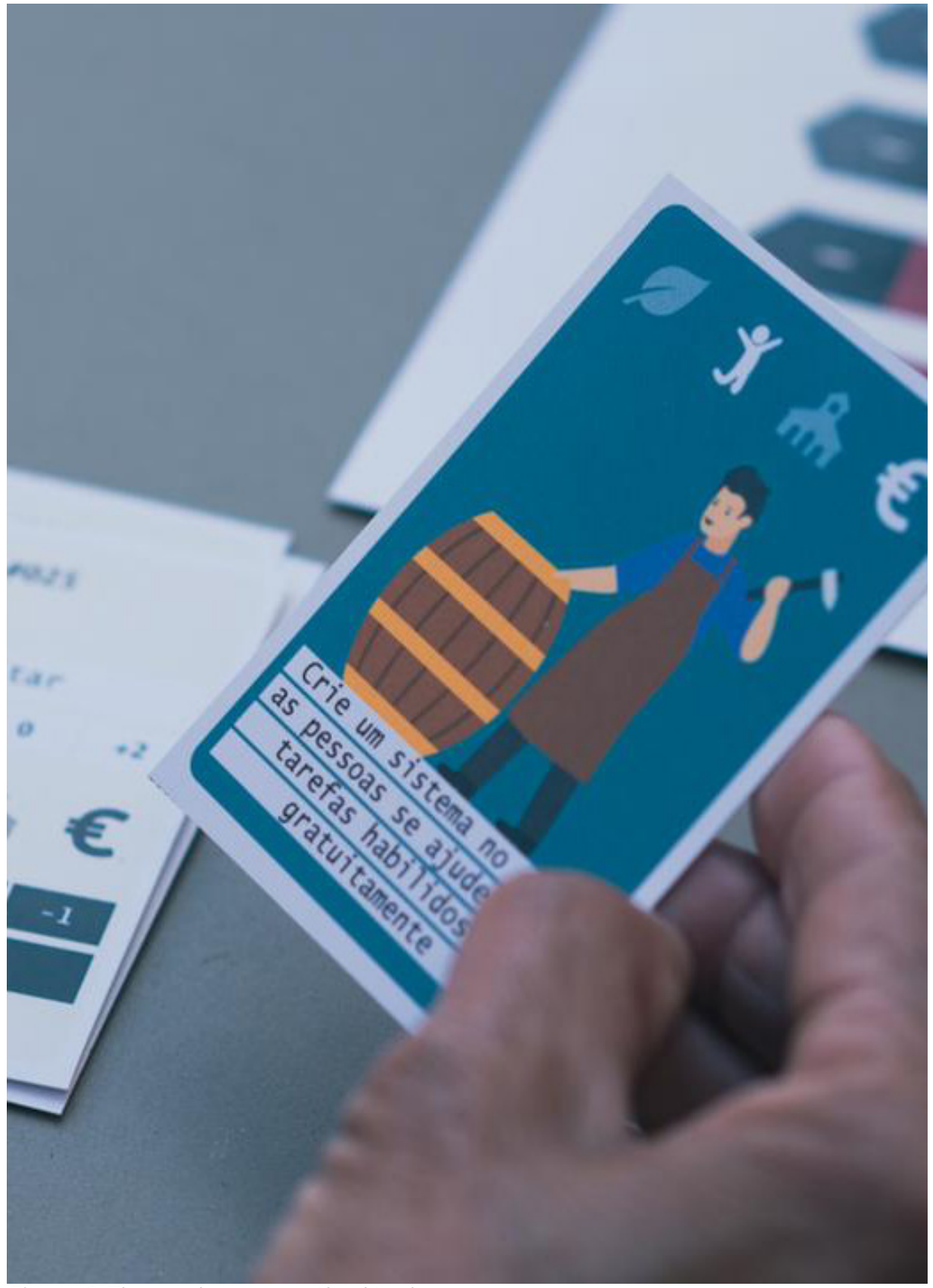


Figure 6: The card game method tool.

2.2.2 Minecraft

Gaming is used in architecture to enable co-creation in redesigning the urban landscape. Minecraft as a tool for visualization and collaboration can provide possibilities for opening a debate between children and architects. [29] The workshops based on the use of Minecraft engage children to provide their perspective on their neighborhood and provide input for architects to develop more inclusive designs. The workshop aims to determine which values and attributes are essential for children. Firstly, each child will be given a set of cards with pictures of different places in the neighborhood, focusing on nature, vacant buildings, and public spaces. The selection of the pictures was based on the diversity of attributes in the neighborhood. Children have to answer the question “How important is the element in the photo?” and “Why?”. The purpose of the cards is to learn about the values and attributes essential to children. Secondly, children will be redesigning the vacant building and its area using the game Minecraft. Children will be asked to make the building and the area greener, and to give a new function to the building.

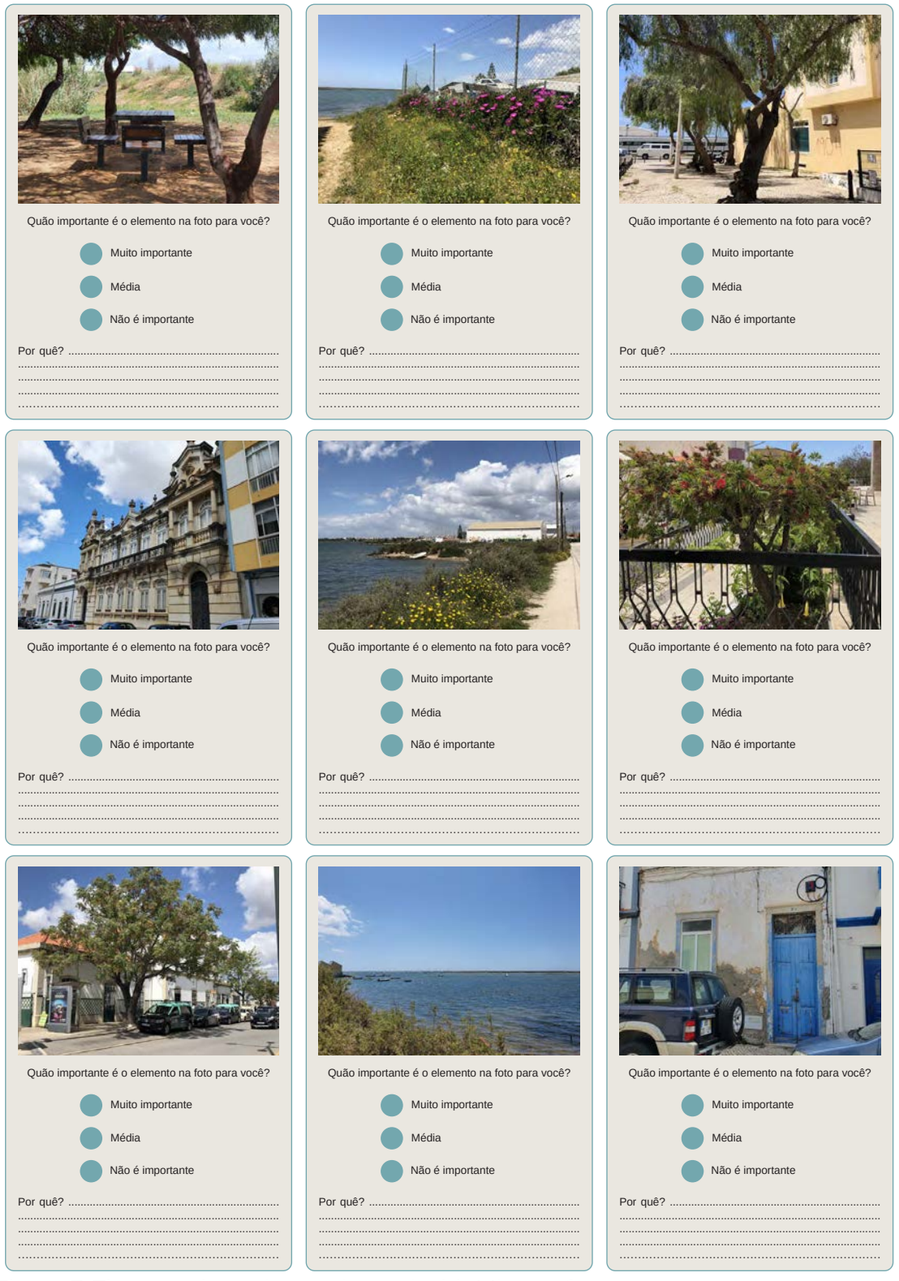


Figure 7: The questionnaire cards used with Minecraft.

2.2.3 Cultural mapping

Cultural mapping is a method suitable for adult and elderly participants familiar with the Estação neighborhood. During the cultural mapping street interview, the participants will be asked first to write down what they like or dislike in the area from three perspectives: environment, activity, and meaning. They will write the answers on sticky notes, simultaneously marking them on the map. Then, participants will answer “yes” or “no” to five questions measuring their level of place attachment, like “whether I want to stay in Estação.” Based on the number of “yes” and “no,” they need to choose only five positive or negative attributes that support the choice from the list they wrote at the beginning and explain the reason. In this way, the attributes related more to place attachment can be coded.

Figure 8: The cultural mapping method tool.

2.2.4 Photographic walking tour

The focus of the photographic walking tour will be to identify the relationship between emotional attachment and natural attributes in the area. People will be asked to take photos using the app ‘Wikiloc’ of natural elements in their neighborhood to which they feel emotionally connected based on their memories. Emotions and memories can be both positive and negative. During the introduction of the tour, the five different senses wherewith nature can be observed will be explained to make the participants aware of the different perspectives. They will also be asked to add a short description to each photo to explain why the specific photo was taken. In this way, both attributes and values of emotional attachment towards nature will be derived during the tour. The tour will lead through Estação for approximately 45 minutes (see figure 9).

Figure 9: The route of walking tour method.

3

Chapter 3

Empirical research

This chapter first explains the engagement process with stakeholders. Then, for each age group, there will be a description of how they were engaged and which games they played. Furthermore, the research results will be shown by comparing the four different methods. This is divided into values and attributes.

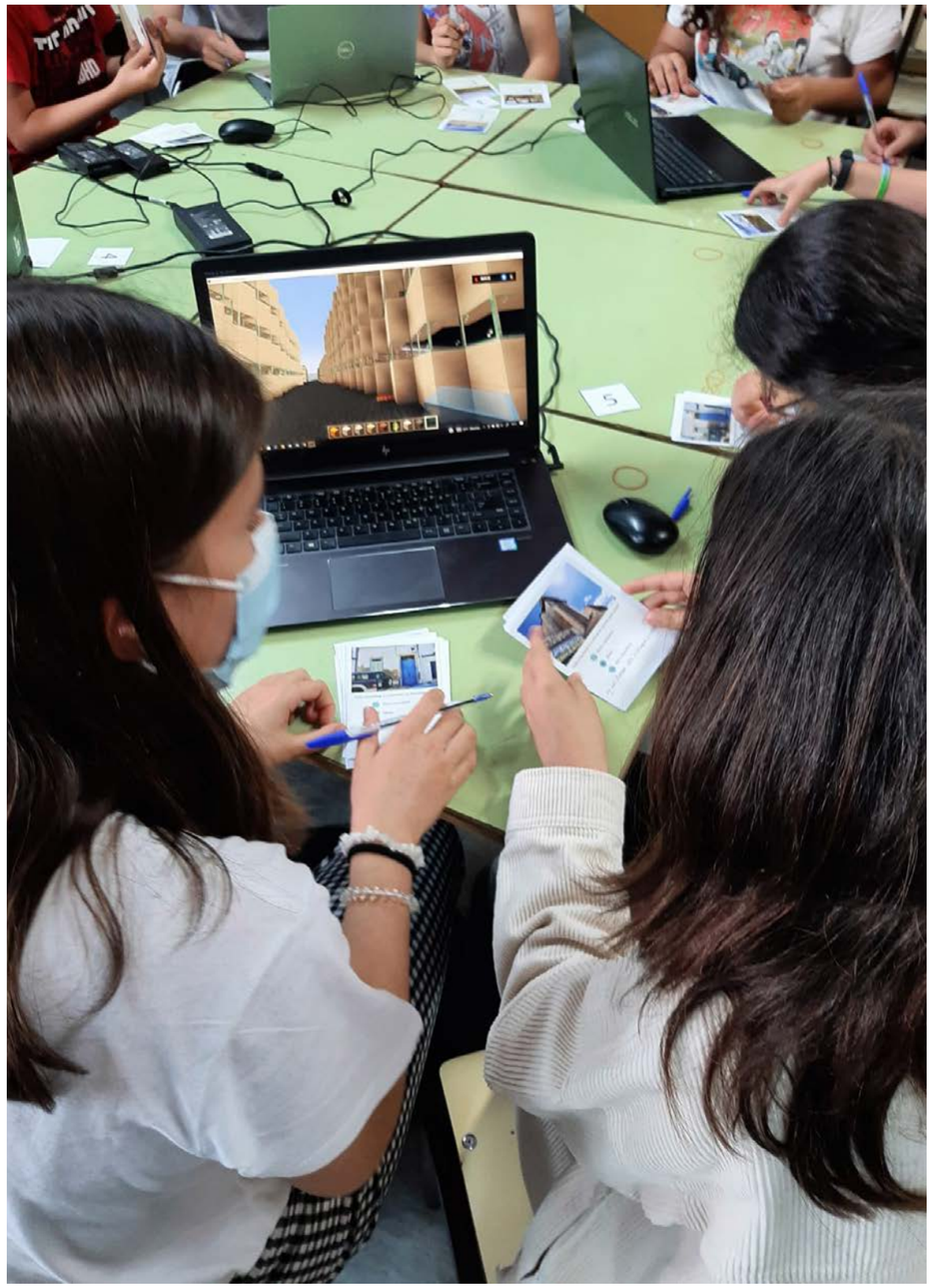
3.1 Applications

3.1.1 Engagement with 1st age group

Children were considered relevant stakeholders because their perspective is hardly ever considered in urban planning. The group consisting of 22 children was divided into two groups. The total time of the workshop could not exceed 90 minutes due to the school's decision. Therefore, the workshop was divided into two slots every 45 minutes. In this way, it was possible to play the card game and Minecraft simultaneously. Then, each group exchanged so that everybody could experience working with a different method. The time constraints influenced the final results because some of the questionnaires were incomplete, and children could not finish their designs. Nevertheless, analysis of the collected data made it possible to identify values and attributes.

The children played the card game as intended in groups of 5 to 6. After a quick explanation of the game, they played for about 30 minutes. Afterward, the results were discussed to understand better why they had chosen specific cards.

Figure 10: Workshop with children.



3.1.2 Engagement with 2nd age group

The group of young adults is vital for this research because of the growing aging population in Estação. By accessing them, the research can reveal their desires and needs in terms of values on nature and eventually lead to a more sustainable neighborhood for their future. First, the photographic walking tour was promoted by flyers and posters on the streets in Estação, trying to reach the young adults living in the neighborhood. However, it was hard to find participants because of the high population of elderly and the quiet streets. Then, the focus of promoting the event locally in the neighborhood switched to more general throughout the city of Faro. Eventually, with the help of volunteers, the Municipality of Faro, and social media, six local participants applied for the walking tour. Still, this number was too small, so it was also decided to run the walking tour with six non-locals. The result of this engagement arose an interesting opportunity to compare the results of the locals and non-locals.

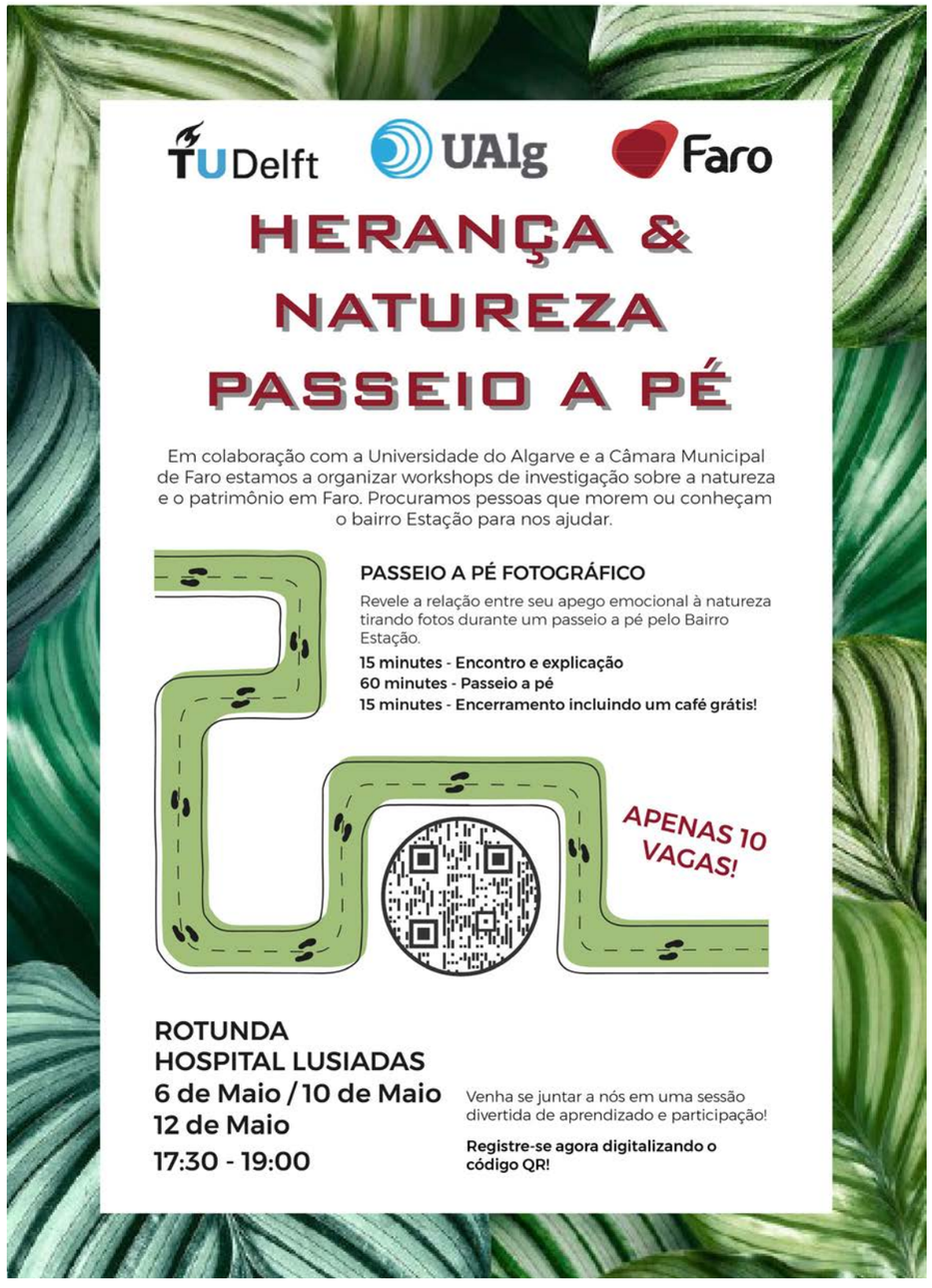


Figure 11: Poster and the walking tour with young adults.

3.1.3 Engagement with 3rd age group

As the third age group stakeholders, the adults are relatively easier to approach because they are able and willing to communicate in English. Since Estação is a neighborhood with a primarily elderly population, it is hard to find adults here during the day. As the solution, the cultural mapping street interviews focused on engaging people relaxing in cafes during the evening. It was always easier to approach people in a less formal way, through which people were more open to sharing their opinions and memories. Doing daily talk with people working in shops around the neighborhood was another interviewing strategy, which allowed us to conduct interviews with 12 adult participants.

Figure 12: Street and shop interview with adults.

3.1.4 Engagement with 4th age group

The elderly are the most common age group in Estação. We found it challenging to engage the elderly during the fieldwork and organize a workshop with them. Due to the language barrier, communication with them is possible only when translators support the interview. Therefore, the cultural mapping method was changed to a more simplified and efficient street interview method during the fieldwork. Similarly, the card game was also changed to be more suitable for short one-on-one encounters. Instead of asking the participants to pick cards and negotiate in groups, they were given half of the cards and asked to divide them into yes and no piles. Eventually, after three walking tours through the neighborhood and one workshop in an elderly home, the research concludes with 40 elderly participants in total.

Figure 13: Workshop with the elderly.

3.2 Results

3.2.1 Data processing

The data processing was conducted to combine the data from all four methods. Firstly, the value types were gathered by looking into why participants made certain decisions during the methods. For the walking tour and Minecraft, this was the text that participants wrote down with the pictures they made or that were on the cards. These texts were coded according to the values framework of Pereira Roders [19] to gain both primary and secondary value types. For the card game, the answers of all participants were counted and related to the value types and secondary values linked to each card. All three methods focussed only on the positive answers participants gave.

Then, the attributes coding mainly focuses on participants' choices made during the methods of the walking tour, cultural mapping, and Minecraft. Four sheets for different generations were made for coding and counting. The coding process strictly followed Veldpaus's attributes division of two categories (level 1), six categories (level 2), and eighteen categories (level 3). [20] From general to specific. The research developed the diagrams for high-frequency answers to the five most important attributes (level 4).

Eventually, the location information of the walking tour, cultural mapping, and Minecraft questionnaire is translated into one type of drawing. Through overlapping these drawings, a hotspot map for the location of place attachment with natural and non-natural elements was created (see figure 18).

3.2.2 Values

In the first part of the results (figure 11, bottom of the sheet), each value type is shown with the percentage of positive responses/decisions from each age group. From there, the average response to each value type is calculated. The highest-rated values on average are ecological, social, and economic. The most significant values per age group::

- 1st group: ecological and social;
- 2nd group: ecological and aesthetical;
- 3rd group: social and economic;
- 4th group: social, and almost at the same level ecological, aesthetical and economic.

However, there are still some significant differences between the younger and older age groups within these values. Therefore, these responses have been further broken down into secondary value types. In the pie charts, the division of the value type can be seen per age group. Although some value types have similar responses from all age groups, they differ in dividing secondary value types. The graph of the secondary value types shows the average of the four age groups.

Conflicts are visible between the 1st, 2nd, and 3rd groups. For example, when the ecological value is the most important for children and young people, it is the least significant for adults. This conflict might be an example of generational conflict when the children's perspective is enormously different from their parent's. In the context of the contemporary narrative of climate change and the disappointment of the young generation with past generations' decisions, the research results confirm this contrasting approach. Furthermore, the 2nd group considers social and economic values the least important, while for the 3rd group, those values are the most important. The difference in the context of social value between the 1st and 2nd groups seems meaningless since it is only 4%.

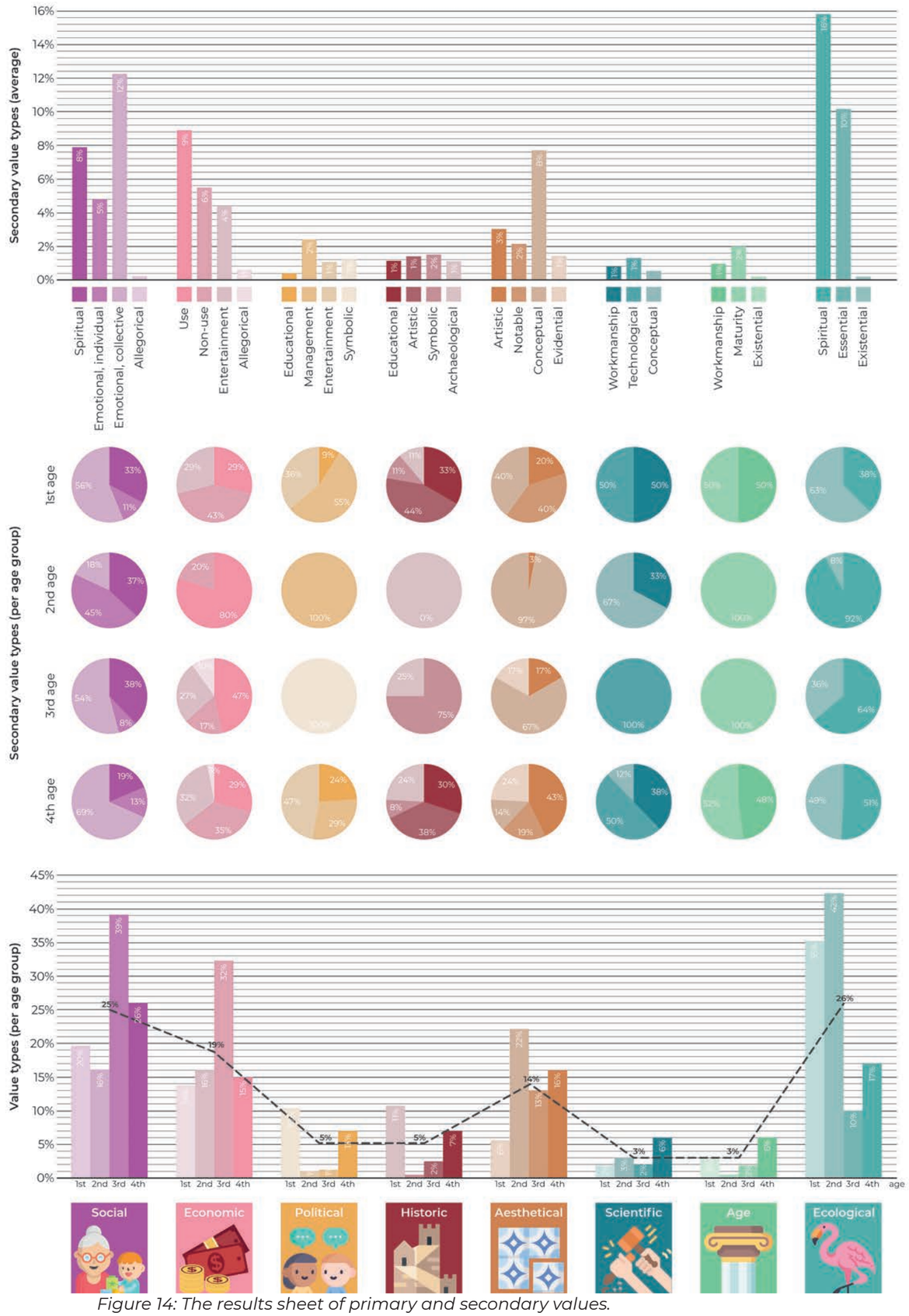


Figure 14: The results sheet of primary and secondary values.

3.2.3 Attributes

In the chapter on attributes, the results are presented from general to specific natural assets (see figure 12) and discussed from the intergenerational perspective to understand the similarity and differences between adults and the elderly. In the first level of attribute analysis, tangible attributes gain more attention than intangible ones in general. Most importantly, we could see that the older participants are, the more they feel attached to intangible attributes.

In the second level, with six categories of the attribute types, people focussed more on (I) societal attributes, (I) relation, and (T) asset attributes, while (T) landscape, (T) area, and (I) process gained less attention. This might result from participants' pragmatic attitude towards their social life. From the intergenerational perspective, the 1st and 2nd age groups considered the asset the essential attribute, while the 3rd and 4th age groups considered social and related attributes the same significance. Furthermore, there is a focus shift from (I) social attributes to (I) relation attributes between adults and the elderly.

The third level chart subdivides attributes on a more detailed level. Division describes eighteen subcategories of attributes. The six most important attributes are (I) Social – Community, (I) Social – Use, (I) Relation – Relation, (I) Relation – Character, (T) Asset - natural element, and (T) Asset – Building. From the intergenerational perspective, there is an upward trend in the proportion of community attributes with the increasing age. Secondly, when moving from younger to older generations, there is a shift from character attributes to relation attributes. Besides, a considerable decrease in natural assets occurred from the 1st age group to the 4th age group.

The last level of analysis clarifies four attributes relevant to nature in Estacao (natural asset, relation, use, community). The high-frequency answers about natural attributes are usually combined with the three types of attributes in the descriptions from stakeholders (see figures 13 and 14). As we can see from the table, the most high-frequency answers are sea, beach, park, trees, and plants for natural elements; family members, friends, and neighbors for the community; memory, meaning, and identity for relation; and exercising, drinking and talking for use.

The elderly feel more attached to intangible attributes than children. This is visible at levels 1 & 2 in the increase of (I)relation and (I) social attributes and the decrease of (T)assets. At levels 3 & 4, the older people are more attached to (I) relation-relation attributes because of memory, meaning, and identity. This result could point out that the elderly have more memories and life experiences than children. Level 2 of the attributes chart indicates that children are more related to assets since they might perceive the environment through more visible and physical aspects. On level 3 of the attributes chart, natural elements are high for young adults and children. This result might be linked to the choice and design of the methods. The Minecraft workshop and the walking tour were devoted to values and attributes related to nature that could influence the outcomes. Level 4 attributes indicate the most frequent natural elements: sea, beach, park, trees, and plants.

Figure 15: The results sheet of three category levels of attributes.

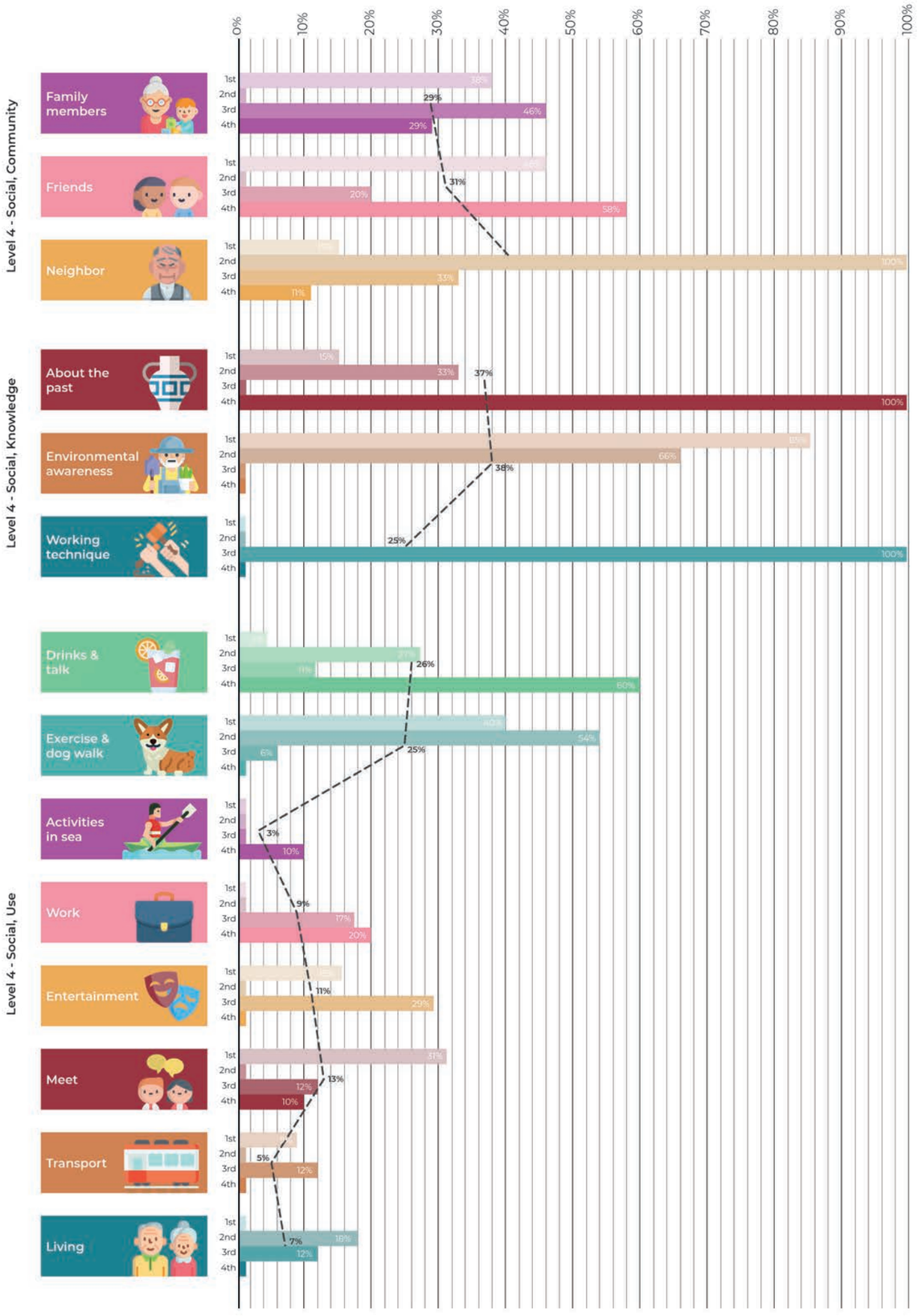


Figure 16: The high-frequency answers for five core attributes.

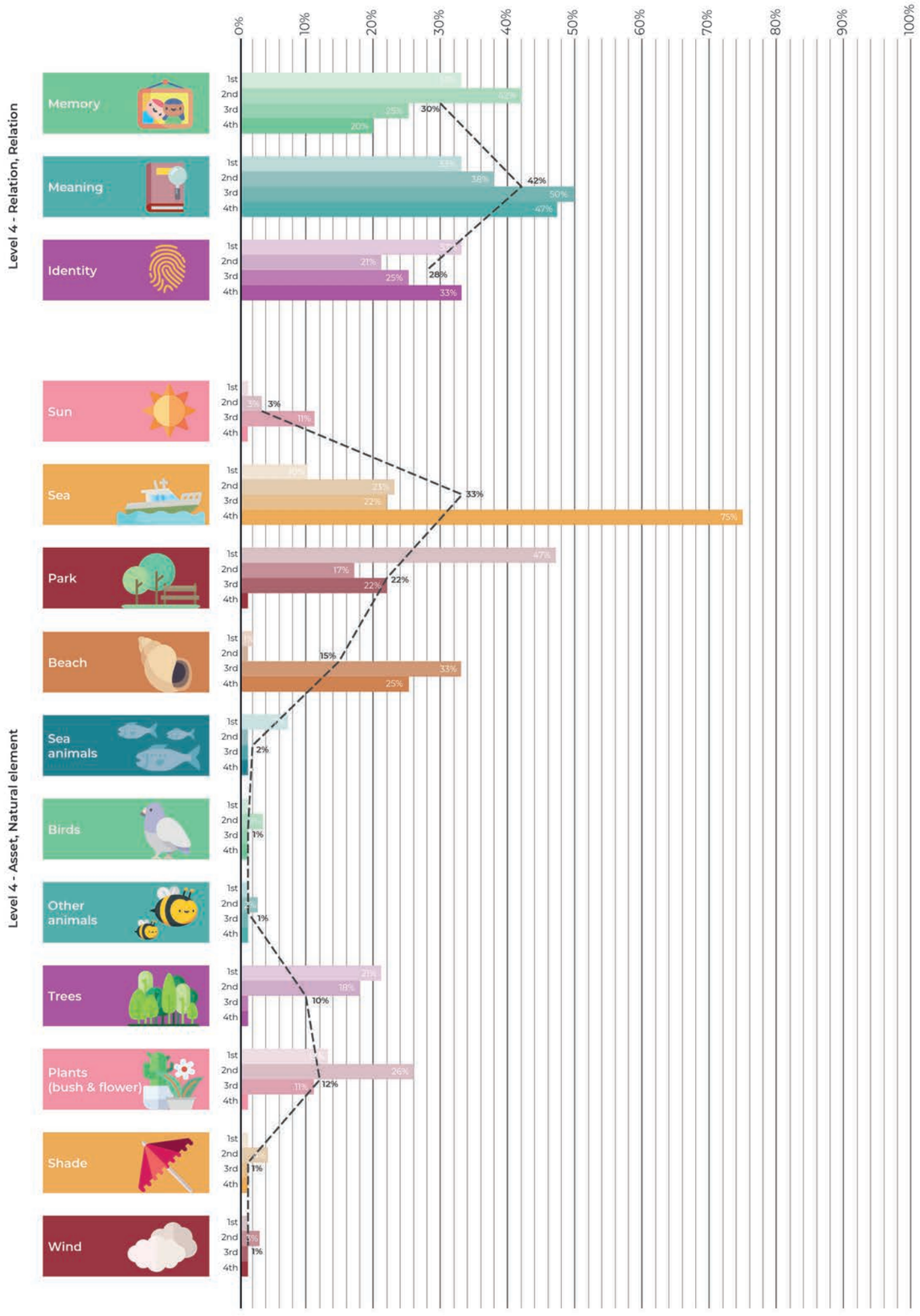


Figure 17: The high-frequency answers for five core attributes.

Then, where are the locations of these attributes? Through the hotspot map for place attachment with natural and non-natural attributes (see figure 18). We could find that people generally feel more attached to the edge areas of the neighborhood. For the northern edge of the neighborhood, natural and non-natural attributes are well combined. For the abandoned factory and southern edge of the neighborhood, people feel attached to the non-natural attributes like the outlooking of the buildings or the function they provide. Finally, people feel attached to natural assets only for the neighborhood's western edge with the sea.

Furthermore, when it comes to the coastline, participants feel more attached to the place when they first begin to see the sea. Figure 16 shows the timeline of the photographic walking tour with the attributes that people feel attached to positively. For example, we could find that people have a greater emotional attachment to specific areas with a higher concentration of greenery. People notice inconspicuous details, such as flowers in the cracks of the bricks and the plants on the balconies. They are also keen to explore nature in abandoned blocks through any opportunity for visual access.

Figure 18: The hotspot maps for place attachment.

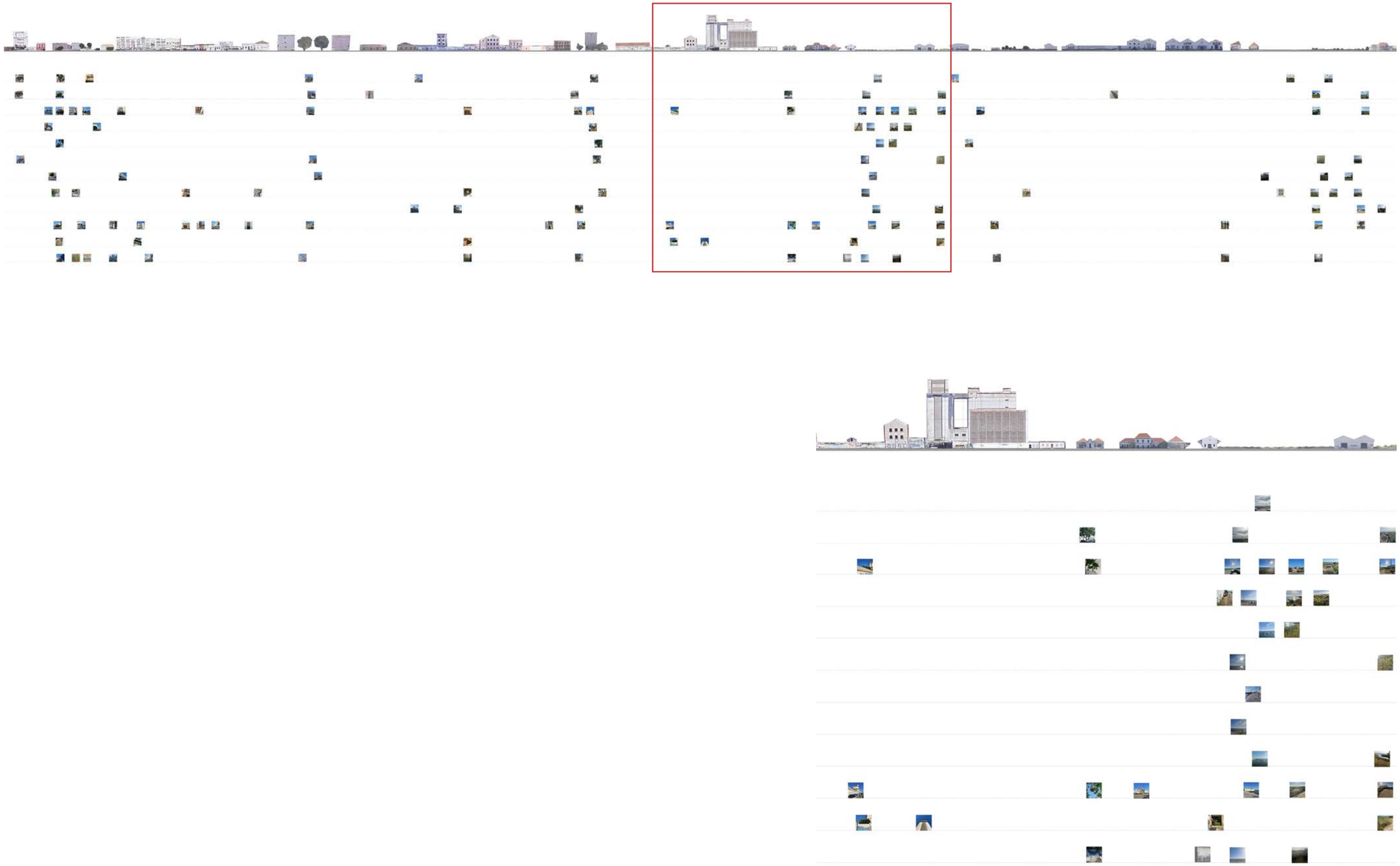


Figure 19: Attribute timeline of walking tour.

The chart shows attributes used by children in the redesign assignment during the Minecraft workshop (see figure 17). The use of natural elements overlaps with their choices in the questionnaire since the ecological value is the most important for them. Compelling is that attributes like water and sea animals were considered meaningful by children living in the neighborhood of Ria Formosa Natural Park. It can indicate their emotional attachment to their place of living and the natural characteristics of this place. Through this exercise, children express their need for the natural environment, allowing them to spend time in green public spaces and interact with others.

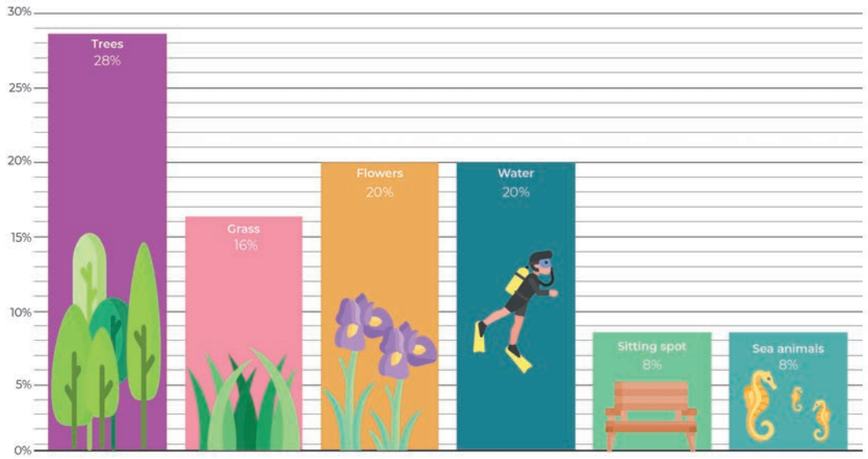


Figure 20: The comparison between Minecraft workshop redesign attributes.

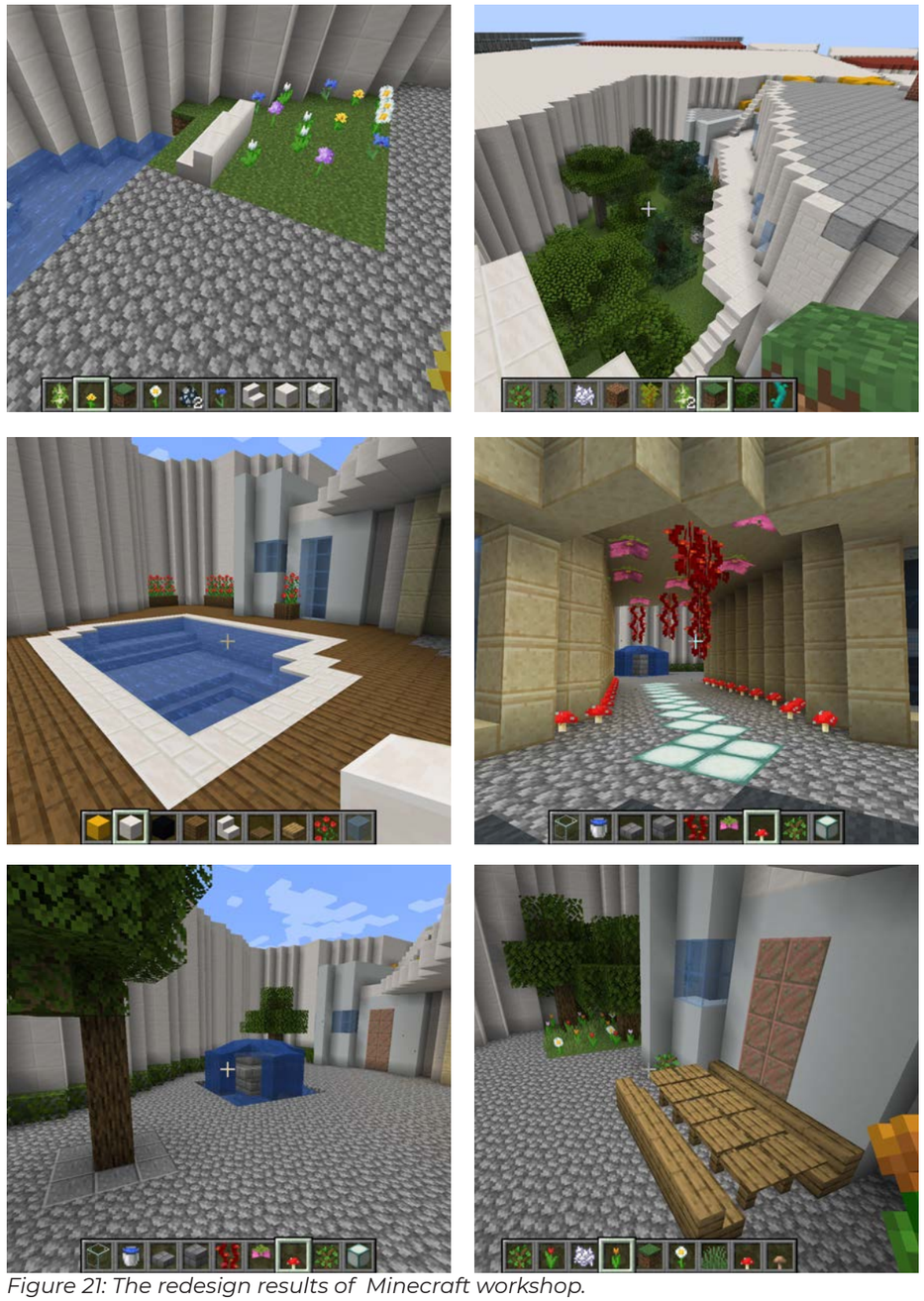


Figure 21: The redesign results of Minecraft workshop.

4

Chapter 4

Conclusion

The last chapter aims to formulate a conclusion for the research and give answers to all four sub-questions. Finally, the main question will be answered, and further developments for the redesign will be discussed.

The conclusion focuses only on the four highest-rated values: ecological, social, economic, and aesthetical. We can conclude that natural elements promote people's emotional attachment to Estação mainly through two approaches:

1. Based on the ecological values of natural assets, people feel attached to the green areas as a part of Estação.
2. Based on the social and economic values of natural assets, natural elements are well connected with other attributes, mainly (I) relation-relation, (I) social-use, and (I) social-community attributes. In this way, people's emotional attachment to their social network is also translated into natural assets.

An essential aspect of the research is that four different methods were used to research four different stakeholders. Differences in the design of methods could influence the outcomes. For example, the questionnaire used with children and the walking tour format were oriented towards natural elements. On the other hand, if nature would not considered significant by children and young people, it would be visible in the results. Furthermore, the results of the older generations show similarities in both values and attributes, which can be linked to the adaptation of the method from the card game and street interviews. Due to changing dynamics of the fieldwork, not all methods can be used in the most optimal setting.

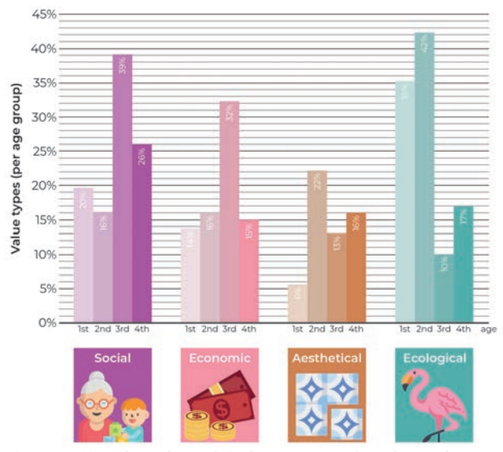


Figure 22: The four highest rated values from research. Made by authors.

Results from this research allow us to answer all the questions stated at the beginning of this paper.

Sub-questions:

1. How can an intergenerational relation be created by using the values on nature of the local community of Estação?

The most important values for all generations are social, economic, and ecological. The highest overlaps are (social) emotional, collective, and (ecological) spiritual. These are linked to proposals connected to social gatherings and the relation between nature and the built environment.

2. How could the tangible and intangible attributes affect different generations' place attachment to Estação?

Intangible social and related attributes are more relevant to place attachment than tangible attributes. There is a focus shift from social attributes to relation attributes between adults and the elderly. It is visible that residents feel more attached to the edge areas of the neighborhood.

3. How does the younger generation feel emotionally attached to nature in Estação?

The most important values on nature for the younger generation are ecological, aesthetical, economic, and social. By comparing the positive and negative attachment to nature with each other, this generation is aware of the potential that nature can have in their neighborhood and that they are not satisfied with the current state. Besides that, areas with a high concentration of natural attributes are considered places where people feel an emotional attachment.

4. How can children's values on nature be applied to redesigning vacant buildings?

The most essential for children are ecological and social values on nature. Those values indicate that for the redesign of the vacant building, an integrated approach to architecture is fundamental. Considering the results, the redesign of the vacant building should include the following attributes: water, trees, plants, and sitting areas. Creating green public spaces that offer opportunities for interaction with other people and increasing biodiversity around the buildings is how architects can implement children's values on nature in redesigning vacant buildings.

Research main question:

How can the values on nature of different generations influence the emotional attachment to Estação, and support the redesign of a vacant building?

Nature values are much more comprehensive than it was expected. A deeper analysis indicated that values considering nature could be associated with social interaction, memories, and environmental awareness. Different generations consider significant other values that can be seen as an obstacle or as an opportunity to create a more complex and meaningful urban landscape. Values of different generations influence their emotional attachment to Estação through associations people have. Elderly and adults feel more attached to their neighborhood because of memories and emotions triggered by social interaction. Younger generations feel attached to their place of living because of the importance of nature in their life.

Redesign- further development

The location of natural elements in vacant buildings of Estação provides an opportunity to improve people's emotional attachment to this area. Therefore, the social, economic values, and intangible attributes are relevant to natural assets. In addition, the value overlapping and differences between intergenerational should be considered. Therefore, the second part of the main question, considering the redesign of the vacant building, will be described in the following chapters focused on the redesign of various vacant buildings in the Estação neighborhood.

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