AALBORG
UNIVERSITY

The Impacts of Climate Change on Youth's Place Attachment

A case study of Tasiilaq, East Greenland

Maria Risager Nielsen
Marie-Louise Leppert

2023

Photo credit: Student 10B class, Tasiilaq School

AALBORG UNIVERSITET

Department of Planning
Cities and Sustainability
Rendsburggade 14
DK-9000 Aalborg
https://www.en.plan.aau.dk

Title:
The Impacts of Climate Change on Youth's Place Attachment
A Case Study of Tasiilaq, East Greenland

Semester Framework:
Master Thesis

Project period:
1st February 2023 - 2nd June 2023

List of group members:
Maria Risager Nielsen
Marie-Louise Leppert

Supervisor:
Rikke Becker Jacobsen

Co-supervisor:
Caroline Bouchard

Number of pages incl. appendices: 112

Date of completion:
2nd June 2023

Acknowledgement

We express our sincere gratitude for the immense support and assistance we received during the course of this research from a variety of people.

First and foremost, we extend our heartfelt gratitude to the curious and insightful youth from Tasiilaq who generously participated in this research. It was an honor to engage with you and gain a deeper understanding of your perspectives. Your invaluable knowledge and willingness to share your experiences have been the foundation of this study. We sincerely appreciate the time and connections we established with you. A special thanks goes out to the 8th, 9th, and 10th grades of Tasiilami Alivarpi, the class of the vocational school Majoriaq, the youth from the youth house Igdlo, as well as the travel youth group connected to the local museum, for taking the time to speak with us and sharing your knowledge.

In this regard, we would like to express our gratitude to the local facilitators of the youth interviews, Aviaja, Casper, Gerda, Jacob, Jonna, Sune, Trine, and Volker. Thank you for providing us with the opportunity to engage with the youth and for your invaluable support in the interview process, including translations and cultural guidance.

We also want to extend a great thank you to the locals of Tasiilaq for making our stay unforgettable and unique. We sincerely appreciate your warm welcome and engaging attitude, which deepened our understanding of the city. Tasiilaq holds a special place in our hearts.

In addition, we extend our acknowledgment to the institutional key informant interviewees: Justus Hansen, Hjørdis Viberg, Ole Jens Lundblad, Anna Burdenski, Arkalo Skifte, Nivikka Langstrup Witjes and Mati Larsen. We were fortunate to have the opportunity to collaborate with you during our research. Your expertise and insights were invaluable in deepening our understanding of Tasiilaq. We sincerely appreciate the time you dedicated, the information you shared, and your interest in our research.

Furthermore, we would like to express our gratitude to Justus Hansen, Hjørdis Viberg, and Anna Burdenski from Sermersooq Municipality and Jonna Jensen Klemensen from the local museum for their warm welcome and inestimable contributions. Their support in the design, production, and distribution of an accessible visual representation of our research findings played a crucial role in the process of decolonising science.

Moreover, we would like to extend our acknowledgement to Joan Melgaard Rasmussen from Sermersooq Municipality for the time invested in the initial phase of narrowing down our research focus and the insight shared. We appreciate your collaboration and support in the project.

Additionally, we would like to express our gratitude to Jorrit van der Schot for his invaluable insights and support in navigating the climate change data for Tasiilaq. We sincerely appreciate the time and effort he dedicated to assisting us in our research.

We would also like to express our gratitude to the ArcticHub for providing us with confidence and helping us contextualise conducting research in Greenland during the initial phase of the research.

We would also like to extend our gratitude to Søren Skov and Pernille Thorup from SustainableNow for their collaboration and interest in our research. Without their partnership, this research would not have been possible. We are truly grateful for their constant and insightful support, which has been essential throughout our research. Their guidance and ideas have been a source of encouragement during challenging times, and we are deeply thankful for their endorsement and generosity.

Likewise, we would like to extend our appreciation to our supervisor, Rikke Becker Jacobsen from Aalborg University, for her invaluable guidance, critical insights, and constructive advice. We are truly grateful for her unwavering support and belief in our research, which served as a constant source of motivation throughout our journey. We always felt welcomed and supported, and we are thankful for the time she dedicated to us, especially during moments of uncertainty.

Moreover, we would like to express our gratitude for the co-supervision of Caroline Bouchard from the Greenlandic Institute for Natural Resources. Her expertise and guidance have been instrumental in shaping our research approach and navigating the unique challenges of conducting research in Greenland.

We would furthermore like to acknowledge the valuable contributions of Janni Sørensen, Lars Bodum and Kîsta Bianco Kjærfrom from Aalborg University in providing knowledge and guidance for the methodology and data collection. We are thankful for the time they invested in consulting with us, which helped shape a solid foundation for our research.

Finally we express our gratitude to North2North for the financial support that facilitated the field trip essential for this research. This support has been instrumental in fostering a decolonised approach to science.

Qujanaq!

Maria Risager Nielsen
mrni18@student.aau.dk

Marie-Louise Leppert
mleppe21@student.aau.dk

Abstract

This research examines the impact of climate change on youth's place attachment, highlighting the pressing need to understand its implications for urban space utilisation in the rapidly changing Arctic. To achieve this, it is crucial to gain a comprehensive understanding of the youth's frame of reference. Acquiring this knowledge is essential for effectively safeguarding the well-being of the youth and enhancing adaptive measures. Furthermore, this understanding, in combination with addressing historical colonial practices in Greenland's urban planning, play a pivotal role in fostering community engagement and ultimately promoting more sustainable urban development.

Therefore, the case study conducted in Tasiilaq investigates the youth's perspectives on their attachment to public spaces and examines the implications of climate change on place attachment through interviews and participatory observation. This study employs an expanded place attachment theory, considering the influence of climate change, and adopts a decolonisation of science as well as a community based participatory research approach.

The findings highlight that place attachment for the youth is shaped by the fulfillment of functional and emotional needs, encompassing social interaction, physical activity, and reflective purposes. The study concludes that climate change impacts the place attachment of the youth, albeit in a multifaceted manner, influenced by a complex interplay of factors. The findings reveal both positive and negative effects of climate change on place attachment, which are mediated by the youth's functional and emotional needs and the availability of alternative options.

Table of Contents

List of Figures

List of Tables

Climate Change & Urban Planning in Greenland 1

Arctic regions are under threat from climate change, which is accounted as the most pervasive driver for change (Lee et al., 2021; Rysgaard et al., 2003; Stephen, 2018), which affects the environment, technology, culture and politics (Latola & Savela, nodate; Timlin et al., 2021). Since 1979, the Arctic has experienced a temperature rise four times as rapid as the global average (Rantanen et al., 2022; Williams & Campbell, 2022). Specifically, indications show an increase of humidity, air temperature, precipitation, rainfall, permafrost thaw, and decrease in snow cover (AMAP, 2018; Box et al., 2019; IPCC, 2014a; Rysgaard et al., 2003).

Relative to other regions in the Arctic, Greenland experiences some of the most drastic and rapid climate changes (DMI, 2016b; Krupnik et al., 2010). Currently, the surface temperature of Greenland is increasing (DMI, 2018; Krupnik et al., 2010; Rysgaard et al., 2003), and wind patterns have become unpredictable while winters are becoming warmer, as observed by locals (Krupnik et al., 2010).

Climate change in Greenland is estimated to continue in the future, resulting in rising temperatures, increased in precipitation, declining sea ice, fewer extreme cool days, and more frequent and extreme weather events (DMI, 2016a, 2016b, 2018). The melting of glaciers and permafrost thaw are also expected to continue (Masson-Delmotte et al., 2012). If the current emission rate remain the same, the average temperature for Greenland is estimated to increase by 4 °C by the end of 2100 (DMI, 2016b). Additionally, the increase of temperature will result in warmer summers which can result in more frequent and longer heat waves (DMI, 2016b; IPCC, 2014a). Wind patterns are estimated to undergo significant changes as a result of sea ice reduction, although gale force and storm frequency most likely will remain the same, but this is based on sparse knowledge. Overall, climate projections indicate minimal changes in Greenland until the mid-century, with limited certainty regarding specific regional changes (DMI, 2016b).

1.1 Climate Change Adaptation in the Arctic

Arctic communities are predicted to be the most impacted by climate change regarding temperature differences (Ford et al., 2015; Hemmersam, 2021) as climate indicators such as land surface warming, ocean surface warming, atmospheric warming, and change in wind and ocean circulation affect their livelihood (IPCC, 2014a, 2014b; Lund, 2022). The livelihood is and will be further impacted as change in ecosystems alter the biodiversity (IPCC, 2014a).

Given the impacts of climate change on Arctic communities and their livelihood, urgent action is needed to adapt and accentuate these threats (Birchall et al., 2023). For future change, adaptation action and increase of resilience are crucial for humans' well-being[1] (AMAP, 2018; Timlin et al., 2021). Therefore, it is crucial to understand the context in which people are perceiving climate change, as well as how Arctic communities are adapting to these changes and maintaining their well-being in the face of these challenges (Timlin et al., 2021).

Adaptation is defined as *"The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities."* (IPCC, 2014a). Climate adaptation therefore encompasses actions, strategies and behaviors aimed at improving the resilience[2] of communities to climate change (AMAP, 2018).

Sejersen (2015) articulates the environmental changes affecting the indigenous communities in the Arctic and argues that a conceptual approach aimed at understanding their daily lives is lacking. Despite numerous studies, COP meetings, conventions, policies, and strategies addressing Arctic climate change, insufficient attention has been given to the impacts on Arctic citizens, leaving their needs unmet (Ford et al., 2015; Huntington et al., 2019; Latola & Savela, nodate). Sejersen (2015) therefore proposes a new approach to adaptation strategies, one that focuses on addressing the everyday needs of people living in the Arctic rather than designing adaptation strategies solely based on climatic indicators.

To achieve sustainable adaptation, it is crucial to combine climate change with well-being, however at the present moment, there is a lack of understanding about how climate change impacts well-being through changes in *place*[3] (Hess et al., 2008). If development of urban place appears, climate adaption would advantage a more sustainable development and likewise improve local well-being (Graybill, 2015; Hess et al., 2008; Orsetti et al., 2022; Vukmirovic et al., 2019). By adapting to the interconnected challenges of climate change, urban planning, and sustainability[4] in an integrated way, cities can become more resilient, sustainable, and equipped, creating healthier, safer, and more livable communities (Hess et al., 2008).

[1] Well-being refers to the overall state of an individual's physical, mental, and emotional health and happiness. It encompasses various aspects of a person's life, including their social relationships, and life satisfaction. Well-being is often associated with positive feelings, a sense of fulfillment, and a high quality of life. It is influenced by various factors, such as personal circumstances, social support, access to resources, and the ability to cope with stress and adversity (Stammler & Toivanen, 2022; Steenholdt, 2019).

[2] Resilience is defined as *"The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganising in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation."* (IPCC, 2014a)

[3] Places are nested assemblies of human's affective relationships to a location. The place connects people to feel an adherence, which can complicate adaptation for environmental change (Hess et al., 2008).

[4] Sustainability is defined as the principle of *"meeting the needs of the present without compromising the ability of future generations to meet their own needs"* (UN, nodate-c). Sustainability involves ensuring environmental, social, and economic well-being for both present and future populations through responsible practices (Purvis et al., 2019). This research primarily emphasises the aspect of social sustainability.

1.2 Urban Planning & Colonialism in the Arctic

Urbanisation has become a prominent reality in the Arctic, transforming the geography of human settlement in recent history (Dybbroe et al., 2010; Fondahl & Wilson, 2017). Despite variations in urban planning approaches across the Arctic, functionalism and centralised planning paradigm prevails, with little attention paid to the everyday experiences of urbanisation and its historical connections to culture, politics, and the economy (Rygaard, 2008; Sheppard, 2021; Soikkeli, 2021).

Historically, urban planning has been used as a tool for cultural colonisation that erodes local traditions and ignores the unique geographic characteristics of the Arctic (Sheppard, 2021). As a result, current urban designs in the Arctic reflect dominant international design cultures, rather than local traditions and cultural forms (Hemmersam, 2021; Körber et al., 2017). Indeed, the process of urbanisation in the Arctic has been contrary to the traditional ways of life of the indigenous population, resulting in cultural challenges (Laruelle et al., 2019).

Despite the long history of research on Arctic indigenous communities and their traditional ways of life, our understanding of Arctic urban life remains limited (Laruelle et al., 2019). It is crucial to acknowledge that the incredible diversity of indigenous communities, encompassing their unique histories, languages, cultures, and ways of life, further compounds the challenge of generalising their experiences within the context of Arctic urban environments. Therefore, it is essential to approach indigenous communities with cultural sensitivity and respect, recognising the complexity and diversity of their cultures in urban planning (Sejersen, 2015).

For example, the Inuit, indigenous peoples of Alaska, Canada and Greenland, strongly connect their identity with the land and maintain harmony with the seasonal changes. This aligns with the notion of *network of spaces*[5], in which Inuit geosophy[6] emphasises the significance of context and interrelationships, valuing the interconnectedness of spaces rather than individual places in isolation. The importance lies in the variety and different qualities of available places, their connection to each other, and the shared experience of the community. However, the networks of spaces experienced by the Inuit mainly represent spaces out in the land. The question therefore remains whether Arctic urbanism can acknowledge, adapt and integrate the Inuit identity with diverse, networked spaces that offer a variety of experiences adapted to seasonal changes (Sheppard, 2021).

Moreover, the closeness to nature is an integral part of traditional life for Arctic indigenous peoples and essential to their livelihood and well-being (Hemmersam, 2021; Körber et al.,

[5]The urban network has two dimensions, namely physical-formal and formal-functional. Physical-formal refers to urban elements and their links and relationships, while formal-functional represents the population as users of urban functions and their interactions. These two dimensions are interdependent and complement each other, while also having important relations with the social-cultural network of the city (Pinto et al., 2010).

[6]Inuit geosophy is the comprehension of the land and environment, expressed through the use of place names as narratives. These place names are like witnesses, revealing the intricate relationship between the Inuit people and their surroundings. Inuit geosophy involves not only practical and efficient geographical knowledge but also encompasses a range of emotions, dreams, hopes, values, and beliefs. It represents an understanding of the landscape and the Inuit's unique perspective on their land (Collignon & Müller-Wille, 2006).

2017; Stammler & Toivanen, 2022; Steenholdt, 2019; Timlin et al., 2021). Inuit elders, for example, describe feeling imprisoned in the city and feeling free and at home once outside on the land (Sheppard, 2021). Understanding the connections between human sense of place and how it can inform urban development is essential for the livability of cities, but it has been undervalued in practice (Petersen, 2017). Therefore, Inuit identity calls for spaces that nourish their identity (Sheppard, 2021).

1.2.1 Colonialism in Greenland

The traditional way of life in Greenland was semi-nomadic and communal, and was shaped by seasonality and hunting practices, resulting in temporary settlements (Elixhauser, 2018; Grydehøj, 2014; Jonghe & Germain, 2021). The concept of kinship was central and had an impact on the built environment, with communal houses being used to reinforce social bonds during the winter months. This way of life is still perceived positively in the collective imagination of the Greenlandic people (Elixhauser, 2018; Jonghe & Germain, 2021). However, with the Danish colonisation, starting from 1721, Inuit culture in Greenland was drastically repressed and reshaped through urban planning (Grydehøj, 2014; Jonghe & Germain, 2021; Sejersen, 2010). The traditional settlement patterns were exchanged for trading posts, in order to make the Arctic productive and lucrative for the coloniser (Nuttall, 2011). After World War II, Denmark's objective shifted to the modernisation of Greenland and the cultural assimilation of Greenlandic people to Danish values (Grydehøj, 2014; Hemmersam, 2021; Jonghe & Germain, 2021; Sejersen, 2010). Policies such as 'Danification' actively subverted Greenlandic languages, traditions, and cultures (J. Christensen & Arnfjord, 2022). Cities became manipulated structures that represented what Denmark wanted for Greenland, rather than what the Greenlandic people wanted (Hemmersam, 2021).

With the introduction of Danish-designed, color-coded prefabricated houses, Denmark aimed to urbanise Inuit society and improve their living conditions through the codification of Greenland's urban space (Hemmersam, 2021; Jonghe & Germain, 2021). However, these modernisation efforts aggravated the colonial process of obliterating Greenlandic culture by forcing people to abandon their traditional way of living and move into Western-style houses (Jonghe & Germain, 2021). Cities and settlements were constructed from scratch, following rational modernist urban design schemes (Hemmersam, 2021; Rosendahl, 1981). Consequently, hostile urban spaces were built, which were inappropriate for the special conditions of Greenland (Hemmersam, 2021).

Meanwhile, the Greenlandic people felt like bystanders in the transformation of their homeland (Sejersen, 2010). The voices of the Greenlandic people were disregarded as their culture was compromised by urbanisation and modernisation, resulting in a sense of alienation among urban inhabitants and in various social issues (J. Christensen & Arnfjord, 2022; Hemmersam, 2021; Jonghe & Germain, 2021). Colonial practices disrupted and dislocated traditional Greenlandic lifestyle, leading to a decline in fishing and hunting opportunities, a rise in unemployment rates, and psychological stress (Jonghe & Germain, 2021). Consequently, this has resulted in long-term impacts, such as increased rates of alcoholism, domestic abuse, and poor mental and physical health (Hemmersam, 2021; Jonghe & Germain, 2021). In addition, negative inter-generational effects of colonialism in

Greenland include adverse impacts on family and community relations, sense of place, and cultural identity (J. Christensen & Arnfjord, 2022; Hemmersam, 2021).

Despite the implementation of Self Rule in 2009, which marked Greenland's transition into a post-colonial territory and its ongoing decolonisation process as a self-governing nation within the Kingdom of Denmark (Hemmersam, 2021; Sejersen, 2010), Denmark's influence still persists in certain aspects of daily urban life (Guldager, 2022). This is particularly evident as Danish materials, engineers, and architects continue to play a role in shaping and designing Greenland's infrastructure, including buildings, streets, and neighborhoods (Grydehøj, 2014). As a result, the Greenlandic people have come to view urbanisation as a form of colonialism, and the city as a symbol of Danish cultural and political dominance (Hemmersam, 2021; Sejersen, 2010). Nonetheless, Greenlanders' perception of urban life has gradually changed, as the city is no longer seen as quite so hostile to their culture. Instead, a combination of Greenlandic and Danish urban lifestyles has emerged. This acknowledgment does not downplay the negative effects of Danish colonialism or disregard the social consequences of change. However, it emphasises the importance of understanding the causes and effects of change, as well as recognising the new opportunities for urban development that arise (Grydehøj, 2014).

As history, modernisation, and cultural traditions have proved challenging to balance in the past, there is a need to empower local cultural identity and emphasise the sense of community, particularly in urban spaces, to foster a feeling of belonging (Hemmersam, 2021; Jonghe & Germain, 2021; Leonard, 2014). This is crucial, as the Greenlandic government is currently perceived as having a deficient democratic form of governance and being physically, culturally, economically, and practically distant and alienated from its own population (Hemmersam, 2021; Sejersen, 2022). To rectify this situation and align modernisation with the expectations and desires of the local population, their frame of reference, traditions, community life, and habits must be understood. Therefore, future urban development should be based on the Greenlandic people's way of life (Hemmersam, 2021).

1.3 Community Based Planning in the Arctic

Community engagement has gained significant attention in urban planning as a relevant approach to bridge the gap between functional, centralised urban planning and the local identity, priorities, needs, knowledge, and capacities in the Arctic (Hemmersam, 2021; Huntington et al., 2019; Lindberg et al., 2020; Sheppard, 2021). This approach involves professionals in urban planning and local actors who jointly explore and discuss the needs in a city. This shift from the traditional way of urban planning, which mainly focused on physical infrastructure, to a people-centric approach that emphasises the experiences and societal needs in the Arctic (Lindberg et al., 2020), is expected to change how, what, and for whom the city is planned. The way knowledge is produced, interpreted, and linked to action is explored differently as well (Lindberg et al., 2020; Sejersen, 2022). Community engagement not only increases the city's attractiveness but also enhances people's well-being and *sense of place*[7] (Lindberg et al., 2020; Loewen, 2016; Meenar & Mandarano,

[7]'Sense of place' refers to the character of a place and the meaning people associate with it, and can be a combination of both. This concept encompasses attachment to place, national identity, and

2021; Sejersen, 2022). This is crucial for the creation of spatial belonging as it underlines, expresses, and legitimises specific worldviews, cultures, and frame of references that are associated with particular communities and the uniqueness of its people (Loewen, 2016; Petersen, 2017; Sejersen, 2022).

However, planning process often neglect youth participation, leading to a lack of understanding of their needs and interests (Frank, 2006; Head, 2011). Despite being affected by development, youth are frequently marginalised in public participation processes (Skjervedal, 2018). Nonetheless, the field of planning recognises the significance of youth participation in meeting their needs which can improve urban livability for an enlarged segment of residents (Frank, 2006). Community based planning emphasises the importance of youth participating in shaping their urban future (Argo et al., 2016; Skjervedal, 2018). Participating youth in planning processes can enhance their civic capacity and their impact on social value (Checkoway & Gutierrez, 2006; Frank, 2006). By actively involving youth, they are acknowledged as a valuable resource in planning process (Checkoway & Gutierrez, 2006).

Community based planning is furthermore increasingly being recognised as a necessary approach for effective climate change adaptation (Ford et al., 2016; UNFCCC, 2022) as adaptation strategies in the past solely focused on climate change and left people's needs unresolved (Huntington et al., 2019). The paradigm shift from traditional to community based urban planning prioritises the communities' traditional local knowledge, and empowers them to plan and cope with climate change impacts based on valuable insights regarding adaptation capacities developed over generations (Ford et al., 2016; Nuttall, 2011; UNFCCC, 2022). Sejersen (2015) argues that to effectively address climate change in the Arctic, it is crucial to recognise the competence of indigenous communities as future-makers who are engaged in collective political, economic, and intellectual systems. By combining the knowledge of various stakeholders, community based planning can result in more effective and sustainable climate change adaptation strategies that are sensitive to local needs and context (Ford et al., 2016; UNFCCC, 2022).

1.4 Interdisciplinary Urban Planning in Greenland

The importance of embracing an interdisciplinary and reformed approach to urban planning, which incorporates diverse perspectives rather than solely relying on a single field of expertise, is particularly evident in the context of Greenland (Hemmersam, 2021; Jonghe & Germain, 2021). This approach is essential for achieving successful climate adaptation and resilience, while also fostering the creation of sustainable, diverse, and culturally valuable cities that prioritise Greenlandic values. By adopting such an approach, Greenlandic cities can possess not only adequate infrastructure but also become attractive, livable, and meaningful to the daily lives of the Greenlandic people who are affected by climate change (Hemmersam, 2021; Jonghe & Germain, 2021; Sejersen, 2010).

regional awareness. The perception of a place is subjective, and the messages conveyed are not neutral. The intangible qualities of a place play a significant role in our perception of 'sense of place' (Mayhew, 2009).

In order to embrace the distinctive context of Greenland and enable future urbanisation processes to unfold in unique ways, it is essential to comprehend the everyday lived experiences of urban places. Understanding the social, cultural, and economic factors that influence the sense of place and contribute to the livability of cities is predominant (Hemmersam, 2021; Sejersen, 2010). Moreover, considering the limited progress and ongoing shortcomings in youth participation within public processes in Greenland, it becomes imperative to address the absence of youth voices in urban planning (Skjervedal, 2018). Therefore, this research endeavors to examine the functional use and emotional connection of the youth to public spaces, with the objective of analysing the potential implications of climate change on these places. By centering the perspectives of youth, this study aims to contribute to the advancement of community based planning, as well as an understanding supporting adaptation and resilience in urban life within Greenland.

Research Question 2

The objective of this research is to analyse the place attachment of the youth in Tasiilaq, East Greenland, and contribute knowledge regarding how climate change affects their attachment to public spaces in the city. The research question for this investigation is, therefore:

How is the youth's attachment to public urban places impacted by climate change in Tasiilaq, East Greenland?

The research question is further divided into three sub-questions, which contribute to the overall investigation. The three sub-questions are as follows:

1. What public spaces are identified by the youth?
2. How are the youth attached to these public spaces?
3. How does climate change impact the function of these public spaces?

2.1 Delimitation

The scope of this research includes delimitations. The investigation specifically focuses on the case of Tasiilaq, located on the southeast coast of Greenland. Consequently, the research does not encompass the perspective of entire Greenland. However, it incorporates relevant climatological natural science knowledge about East and Southeast Greenland to illustrate climatic changes in Tasiilaq when data for climate parameters specific to Tasiilaq are not available. Furthermore, the research narrows down its scope to examine a particular focus group and their place attachment. The chosen focus groups consists of youth aged between 14 and 30 years. The delimitation to the focus group is inspired by the United Nations' definition of youth, which encompasses individuals aged 15 to 24 years (UN, nodate-b). However, this research also takes into account the specific context of Tasiilaq, where the research identifies individuals up to the age of 30 being considered as youth participants. Additionally, the research delimits itself to the investigation of public spaces, including indoor and outdoor places, thereby excluding an investigation of place attachment to non-public spaces and surrounding rural areas. Notably, the research employs the term *significance*, which encompasses two distinct definitions depending on the context. Firstly, it refers to the crucial role a place holds or the constructed meaning attributed to it, thereby contributing to its uniqueness for the users (Ujang & Zakariya, 2015). Secondly, it pertains to a critical value that determines a significant change in the context of climate change, using a statistical significance level of 0.05 (van der Schot et al., 2023).

Methodology 3

This chapter introduces the research design, the epistemology, the conceptual framework, and the methods utilised for data collection and analysis in this research. It encompasses the epistemology of abductive reasoning, decolonisation of science, and community based participatory research. The methodology incorporates a conceptual framework and various methods, including case study, qualitative interview, participatory observation, and literature review. Lastly, the chapter reflects on the limitations of the methodology and identifies areas for improvement.

3.1 Research Design

The research design provides an overview of the entire research process and helps to ensure that a conclusion is reached for the research question. Figure 3.1 presents the visual representation of the research design, which outlines the methodology, data collection, and analytical vocal points developed through the sub-questions. The research methodology employs an abductive reasoning approach, enabling new aspects to be continuously integrated into the research. Additionally, the research's epistemology is grounded in a decolonising approach, aligning with community engagement in research to promote research that is ethical, sustainable, and responsive to the needs and concerns of the indigenous community.

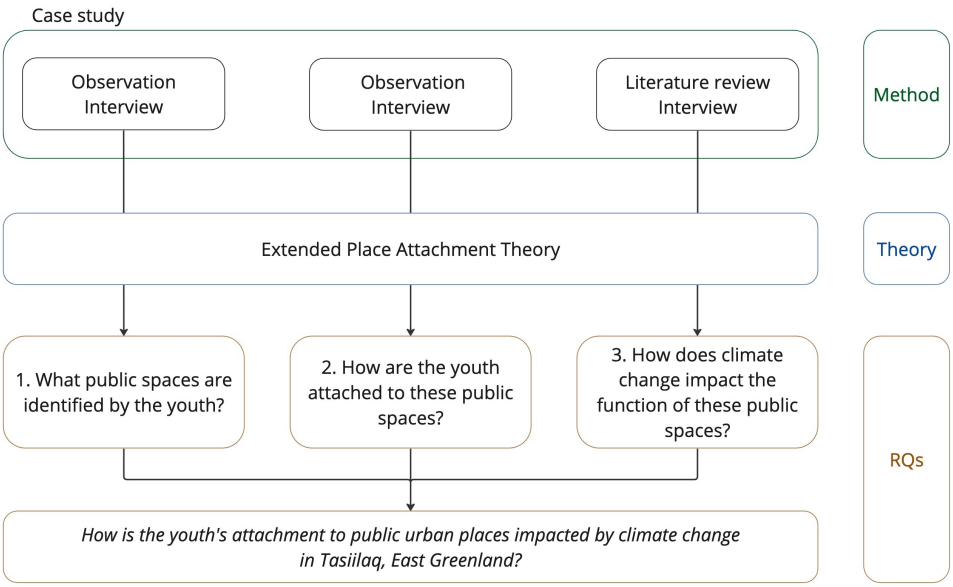

Figure 3.1. Research Design

The conceptual framework is built on the theory of place attachment, which is expanded to include climate change and its effects on place attachment. The data collected for this research is guided by the method of case study, and gathered through qualitative interviews, participatory observation, and literature review. The case study enables the research to focus on a specific case and extrapolate the findings or methodology to new contexts.

Triangulation involves a collective and generalised analysis based on consistency, thereby ensuring a high degree of validity (Robson & McCartan, 2016). The triangulation approach in this research involves the use of qualitative interviews, participatory observation, and literature review to triangulate the data, to minimise potential threats to validity. However, the use of data conducted from diverse methods may lead to disagreements and discrepancies (Robson & McCartan, 2016), which highlights the complexity of users' needs in public spaces. Therefore, these diverse insights are included in the analysis and discussion.

To ensure that the research adheres to local ethical standards during fieldwork, it relies on the local ethics and morality that shape daily life (Tjørnhøj-Thomsen & Hansen, 2009). This research accounts for ethics and morality by consulting with local knowledge holders[1] who provide guidance on how to conduct research in the selected case. Additionally, community engagement is prioritised in this research, and expert knowledge is sought to ensure high validity and ethical considerations hereto.

An *open coding* approach (Robson & McCartan, 2016) is used to classify and structure the data based on initial *categories* derived from information gathered during the field work's preliminary data collection. The categories consist of public spaces identified from early interviews and observations. For each category, *subcategories* are selected that align with the conceptual framework and cover function, emotion, and climate change.

The research question was formulated based on a knowledge gap identified during the problem analysis and preliminary meetings with locally involved stakeholders. To provide a comprehensive answer to the research question, three sub-questions have been formulated. These sub-questions serve the purpose of incorporating relevant methods and theories into the research.

Sub-question 1, *What public spaces are identified by the youth?* is addressed through the data collected using the methods of participatory observation and qualitative interview. These methods contribute to an understanding of the public spaces that the youth identify as places where they spend their time. The qualitative interviews provide detailed knowledge about the specific public spaces that the youth utilise, while the participatory observation offers insights into the public spaces that the youth use. The conceptual framework serves as the initial foundation for understanding the availability of public spaces for the youth in Tasiilaq. Consequently, the results obtained from this sub-question inform the subsequent sub-question, which delves deeper into the youth's place attachment to the identified public spaces.

[1] A knowledge holder is defined as either an indigenous knowledge holder or an individual researcher (Chapman & Schott, 2020; Aaltio, 2009). The knowledge holders possess expertise that is constructed through complex processes influenced by the environment and personal relationships (Aaltio, 2009).

Sub-question 2, *How are the youth attached to these public spaces?* focuses on investigating both the functional and emotional attachment of the youth to identified public spaces. The data utilised to answer this sub-question is gathered through the methods of qualitative interviews and participatory observation. The qualitative interviews provide a comprehensive understanding of both the functional and emotional aspects of attachment, while the participatory observation captures insights into activities, users, and social situations, primarily contributing to the understanding of functional attachment. The conceptual framework plays a crucial role in establishing an understanding of the youth's attachment to different public spaces and the underlying reasons for their varying levels of attachment. By exploring this sub-question, valuable knowledge is generated regarding the current state of the youth's attachment to public spaces, thereby paving the way for the subsequent analysis of how climate change impacts these spaces.

Sub-question 3, *How does climate change impact the function of these public spaces?* is addressed through knowledge obtained from the methods of literature review and qualitative interview. The literature review offers a climatological natural science perspective on the occurrence of climate change and how it manifests in Tasiilaq. The qualitative interviews provide firsthand knowledge of how climate change locally impacts the public spaces. The findings derived from this analysis in conjunction with the understanding of functional and emotional attachment from sub-question 2, serve as the foundation for the subsequent discussion on how climate change affects the place attachment of the youth.

The results of the analysis and discussion provide insights into how climate change affects the youth's attachment to public spaces in Tasiilaq. This sheds light on the potential challenges and necessary adaptations needed to maintain the relevance and usability of these spaces amid changing climatic conditions.

3.2 Abduction

This research employs an abductive approach, which involves a cyclical process depicted in the Figure 3.2. Initially, a hypothesis is formulated. Subsequently, new data and knowledge are incorporated to refine the hypothesis before conducting an analysis and discussion (Conaty, 2021; Kennedy & Thornberg, 2018; Robson & McCartan, 2016). The abductive approach is employed in this research to enhance flexibility and adaptability throughout the research process. It achieves this by actively integrating new knowledge, thereby facilitating a dynamic and evolving research process.

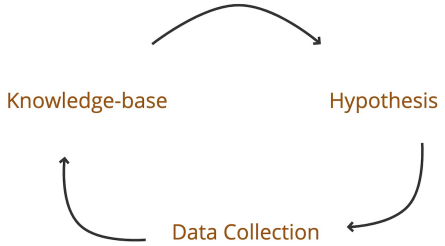

Figure 3.2. Abductive Approach

The abductive reasoning approach enables the research process to progress from data to an argument based on the logic of discovery, rather than justification (Conaty, 2021). This approach integrates ongoing reflections on data against theory, facilitating continuous reshaping of the research, thus acknowledging and describing scientific adaptability (Conaty, 2021; Kennedy & Thornberg, 2018).

The abductive approach recognises the researcher's frame of reference and pre-existing knowledge, shaped by their cultural and educational background, as an inevitable dynamic in the research process (Conaty, 2021). This acknowledgement also highlights the potential for the analysis in this research to be biased by the researcher's frame of reference. However, the abductive approach allows for reflexivity regarding cognitive bias by providing the researcher with an opportunity to reflect on new perspectives gained during research and apply them to further analyses of the data (Kennedy & Thornberg, 2018).

The iterative process of the abductive approach for this research entails the following steps:

1. Pre-existing knowledge, influenced by cultural and educational backgrounds, shapes the research focus on Greenland, climate change and community based planning. The initial hypothesis suggests that urban planning in Greenland may not consistently incorporate and address the needs of the local community and the challenges posed by climate change. Consequently, the primary research question seeks to explore the interplay between climate change adaptation, the community's needs, and the formation of urban planning in Tasiilaq.
2. The initial stages of defining the research focus involves meetings with locally involved key stakeholders and a preliminary literature review. Additionally, decolonisation of science principles shape the research process.
3. This leads to a renewed knowledge base and thereby frame of reference represented by the problem analysis. The newly acquired knowledge has led to the formulation of an updated hypothesis, specifically highlighting the under-representation of youth in urban planning. In alignment with this, a renewed research question is formulated, asking how urban planning can increasingly be shaped by the youth's perspective while accounting for climate change in Greenland.
4. Various methodological approaches are explored, involving research about place-making theories and interactive community based research methods and their possible applicability to the research question. The conceptual framework of an extended place-attachment theory is then finalised.
5. The new methodological knowledge leads to an updated hypothesis and a targeted data collection within the case study of Tasiilaq. The hypothesis asserts that the youth in Tasiilaq possess some kind of attachment to public spaces. To comprehensively understand the impact of climate change to public spaces, it is crucial to gain a deep understanding of this attachment. Hence, the revised and final research question seeks to examine both the nature of place attachment among the youth in Tasiilaq and the influence of climate change on this attachment.
6. Through the application of the conceptual framework and the methods of participatory observation and qualitative interviews, new and deeper insight into the place attachment and its interpretation is evoked. In addition, conducting a comprehensive literature review and gathering insights through qualitative interviews

provide a foundation for understanding the implications of climate change on Tasiilaq. This understanding contributes to knowledge about the impact of climate change on youth's place attachment.

7. The acquired knowledge thus leads to the development of a new and final knowledge base, along with a revised hypothesis indicating that climate change has multifaceted implications on the place attachment of youth towards public spaces.
8. Based on this final knowledge, the applicability of the results to a wider context is discussed, and recommendations are made for further research.

3.3 Decolonisation of Science

Decolonisation of science seeks to address the legacy of colonialism in scientific research and practice, and to promote the inclusion of diverse perspectives and knowledge systems in scientific inquiry (de Leeuw & Hunt, 2018; Eberle et al., 2019; Liboiron, 2021). It recognises that colonialism has had and still has a profound impact on the way that scientific knowledge is produced, disseminated, and valued, and that results in the marginalisation and erasure of indigenous and other non-Western ways of knowing (Eberle et al., 2019; Liboiron, 2021; Smith, 1999). Thus, the integration of a decolonising science approach is crucial to confront and rectify colonial practices within this research. Embracing this approach allows for a more just research while respecting and valuing diverse knowledge.

Although it is argued that complete decolonisation is unattainable because of the inherent and continuing imbalanced power dynamics (de Leeuw & Hunt, 2018), it is possible to steer research towards a decolonised direction (Eberle et al., 2019; Liboiron, 2021; Smith, 1999). Furthermore, the decolonisation of science is a complex and ongoing process that involves continuous dialogue, reflection, and action. It requires scientists to engage in self-reflection and critical analysis of their own biases and assumptions, and to work collaboratively with indigenous communities and other stakeholders to build more fair and inclusive research partnerships (Liboiron, 2021). Ultimately, the goal of decolonisation of science is to create a more equitable scientific practice that can better serve the needs of diverse communities and promote more sustainable and ethical forms of knowledge production (Mignolo, 2009; Smith, 1999).

Community Based Participatory Research (CBPR) is an integral part of decolonising science, as it provides a way for the community to take an active role in shaping research questions, methodologies, and outcomes (Brunet et al., 2014; Huntington et al., 2019). This approach prioritises the participation of community members and stakeholders in all aspects of the research process, acknowledging their expertise and knowledge, and seeking to address issues that are relevant to the community's needs and priorities (Huntington et al., 2019; Rink & Reimer, 2019).

By involving community members in research processes, research can become more culturally sensitive and responsive to the needs and concerns of the community, promoting even-handed distribution of benefits and reducing the risk of research exploitation (Huntington et al., 2019; Rink & Reimer, 2019). Therefore, CBPR is an important step towards decolonising science and promoting more inclusive and equitable research practices (Huntington et al., 2019).

In consequence, this research approach emphasises collaborative methods and Inuit voices in research and urban planning, moving away from top-down measures designed outside of affected communities. We recognise that contextualising human-place experiences is crucial to fully understand the impact on place attachment and to develop adequate responses to the effects of climate change (Ariccio et al., 2021; Vukmirovic et al., 2019)

3.3.1 Decolonising this Research

Greenland has a history of colonisation dating back to the 10th century (Grydehøj, 2014; Hemmersam, 2021; Jonghe & Germain, 2021; Sejersen, 2010). As researchers from Denmark and Germany, we also inherit a colonial history that is reflected in our education, culture and other aspects. Given this context, it is essential to incorporate decolonising principles into the project to avoid potential post-colonial dynamics. The realisation of decolonisation practices within the research is visualised in Figure 3.3.

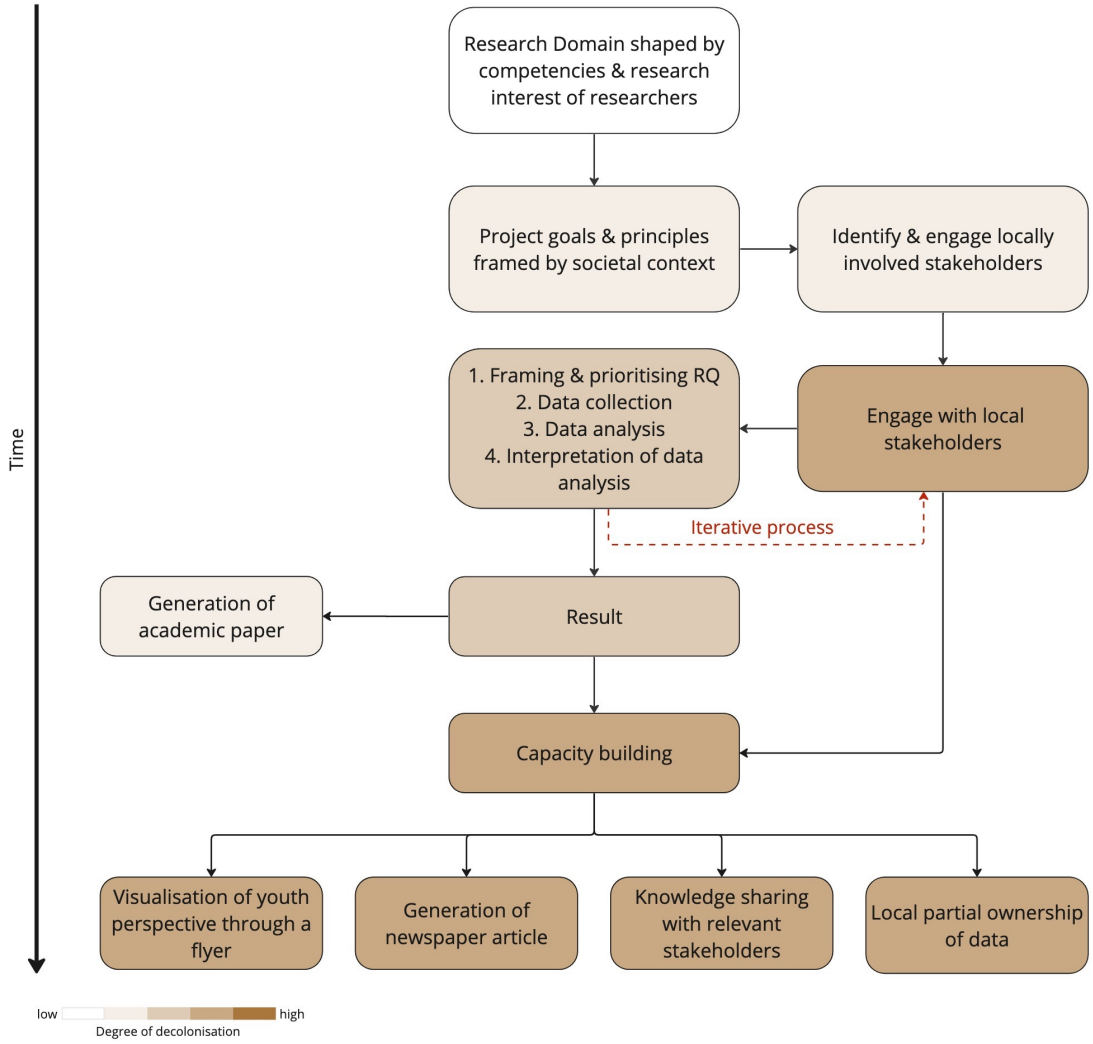

Figure 3.3. Decolonisation approach in this research

To achieve decolonisation of science, we utilised a set of guiding protocols during the research planning, problem formulation and methodology stages inspired by the 'Circumpolar Inuit Protocols for Equitable and Ethical Engagement', published by the Inuit Circumpolar Council (ICC, 2022).

The 'Circumpolar Inuit Protocols for Equitable and Ethical Engagement' (ICC Protocols) lists the following eight protocols to support decolonisation and cultural revitalisation in research:

1. "Nothing About Us Without Us'- Always Engage with Inuit
2. Recognise Indigenous Knowledge in its Own Right
3. Practice Good Governance
4. Communication with Intent
5. Exercising Accountability – Building Trust
6. Building Meaningful Partnerships
7. Information, Data Sharing, Ownership and Permissions
8. Equitably Fund Inuit Representation and Knowledge"
   (ICC, 2022)

Furthermore, the 'Community Based Participatory Research (CBPR) in Greenland' toolkit by Rink & Reimer (2019) serves as an inspiring guide for this research. It offers valuable insights and recommendations for conducting research in Greenland through a collaborative and equitable partnership between communities and researchers. The key principles of CBPR are as follows:

- "Developing partnerships, team building, defining community
- Building trust and developing decision making structures
- Research priorities, study design and data collection in partnership with community
- Interpreting findings within community context
- Disseminating results
- Maintaining relationships and sustainability of partnerships"
  (Rink & Reimer, 2019)

The CBPR toolkit serves as a valuable resource, providing not only a definition of community based participatory research in Greenland but also offering inspiration for its application in research processes for this research. While we acknowledge the existence of overlaps and synergies between the CBPR toolkit and the ICC protocols, we will refrain from further exploring these connections within the scope of this research. Due to our Western background, we have chosen to adopt the ICC protocols as a structured framework to guide our research process.

1. 'Nothing About Us Without Us'- Always Engage with Inuit

In order to promote Inuit self-determination and self-governance, it is crucial to involve Inuits from the beginning of the research process through continuous communication (ICC, 2022). We attempted to engage with local Inuit stakeholders from Tasiilaq to incorporate their frame of reference in our initial research. However, we were unable to contact any local Inuit stakeholders and only managed to connect with non-Inuit individuals prior to fieldwork. As we did not have sufficient knowledge of the relevant Inuit stakeholders in

Tasiilaq, we were unable to achieve this objective. Additionally, expanding our knowledge by delving into Inuit-driven publications within our research field would have greatly enhance our understanding of their perspectives. Unfortunately, we encountered challenges when attempting to find and access Inuit-specific publications pertaining to our area of research.

Despite our inability to directly engage with the local community in Tasiilaq prior to our fieldwork, we took several steps to tailor our research as closely as possible to the local circumstances, gain a better cultural understanding, and access locally involved contacts from the beginning of the research process:

1. We communicated and collaborated with Sermersooq Municipality to become familiar with their institution and planning approach.
2. We communicated and collaborated with the NGO Sustainable Now[2], who has been working with Sermersooq Municipality on social sustainability issues in Tasiilaq for the past three years.
3. We exchanged ideas and sought guidance on ethical research approaches with ArcticHub[3].

To prioritise the recognition and establishment of relationships built on trust, as well as to ensure our research methodology resonating with local stakeholders, we made efforts to extend our fieldwork period as much as possible within the constraints of a master's thesis timeline and available funding. Consequently, the fieldwork phase spanned a duration of seven weeks. By being physically present in Tasiilaq, we were able to actively engage with local stakeholders, incorporating their input and feedback into various stages of the research process, including the research design, data collection, and parts of the data analysis. This proximity facilitated a close and collaborative relationship with the local stakeholders, enabling verification and feedback sessions.

To prioritise Inuit voices, our research focuses on local Inuit youth, with their insights and observations forming the basis for our analysis. Their engagement is based on free, prior and informed consent. By seeking their permission in a situation where they have control over the engagement and knowledge sharing, the research acknowledges their autonomy and adheres to the principles of ethical engagement.

2. Recognise Indigenous Knowledge in its Own Right & 7. Information, Data Sharing, Ownership and Permissions

We acknowledge Inuit knowledge as a *systematic way of knowing*[4]. However, our understanding of their perspectives and values tied to their culture is limited. Nonetheless,

[2]Sustainable Now is a non-profit organisation that promotes the UN Sustainable Development Goals in municipalities to increase public awareness and commitment to the sustainable transition towards 2030. They also implement local development programs for sustainable conditions for children and young people. In Greenland, Sustainable Now leads the 'We Cooperate in Tasiilaq' project to support sustainable development at all levels of the local community (Sustainable Now, nodate).

[3]ArcticHub is an institution that strives to make Greenlandic research more accessible. It serves as a platform to connect people, institutions, and countries with a shared interest in Greenlandic research. It aims to facilitate collaboration, knowledge sharing, and innovation within the field, with the goal of advancing understanding and addressing challenges facing the Arctic region (ArcticHub, nodate).

[4]The Inuit systematic way of knowing refers to the traditional knowledge and belief systems of Inuit communities, which are deeply rooted in their culture and history. This knowledge holds multiple

we ensured that the youth's knowledge used in our research was peer-reviewed by following up with them in later stages to guarantee that we understood, interpreted and analysed their knowledge correctly to avoid any misinterpretation. In spite of that, not all youth participants had the opportunity to verify the data and results, due to the limitations imposed by the fieldwork period. Verification was primarily limited to youth interviews conducted in formal settings, such as schools. Unfortunately, arranging verification for interviews conducted in informal settings was challenging due to their spontaneous nature and the restricted time frame.

All participants were given credit for their work in the report's acknowledgment section. The utilisation of local knowledge was carried out in full agreement with the stakeholders, recognising their invaluable contributions. Furthermore, the municipality possess partial ownership of the collected data and findings. To ensure compliance with confidentiality and ethical standards, the data is shared with them in a raw but anonymised format, adhering to the General Data Protection Regulation (GDPR). Furthermore, the research findings are effectively disseminated through a visual and oral presentation conducted during a dedicated meeting at the conclusion of our field trip. This presentation serves as a means to transfer knowledge and insights to the municipality, fostering a mutual exchange of information and understanding.

In addition, a visual product in the form of a flyer is produced to represent the voices of the youth involved in the research (see Appendix 7.10). This tangible output enables the youth to have a sense of ownership. The flyer is designed in an accessible and non-scientific language and format, ensuring that it can be easily understood by a wide audience. It is available in East and West Greenlandic as well as Danish and English. The design process of the flyer involved a collaborative effort with various stakeholders, including selected youth from Igdlo, the local tourism office, the local museum, and the Vice Mayor. Their input and feedback were instrumental in ensuring the relevance and engagement of the content and layout.

The target audience of the flyer serves a fourfold purpose. Firstly, it primarily caters to the youth themselves, acting as a platform to showcase their contributions and providing an accessible and concise overview of their perspective to the municipality. Secondly, it targets policy makers who can utilise the flyer as a communication tool to gain insights into the youth's perspective. Additionally, it provides a platform to showcase the state of urban life from the youth perspective on the east coast to West Greenlandic politicians, fostering a deeper understanding of the unique experiences of the youth in this region. Lastly, the flyer extends its reach beyond Greenland and serves as an artifact for the tourism office, bridging the gap between the youth's perspective on the city and outsiders. Its purpose is to bring the unique youth perspective closer to a broader audience, allowing them to gain a deeper understanding of the city and its cultural richness.

To capture an authentic perspective, all the pictures featured on the flyer were taken by the youth from the school. With their consent, these pictures were incorporated into

methodologies, evaluation and validation processes, ways of storing and sharing, and passed down through generations. It encompasses a holistic view and understanding of Inuit land and the Arctic as a whole. Inuit systematic way of knowing is often contrasted with Western scientific approaches, as it emphasises the importance of personal experience and cultural context in understanding the world (ICC, 2022).

the layout, adding a personal connection and a sense of ownership to the final product. Additionally, some of these pictures, with the consent of the youth, were also used for an Instagram page called 'tasiilaqteens', providing a platform to continue showcasing the city through the lens of its youth. This initiative aimed to highlight their unique perspective and share their experiences with a wider audience.

This final academic paper will be transformed into a newspaper article to enhance its accessibility to a broader audience, including policy makers, and most importantly, the local community. To ensure widespread understanding among the audience, the article will be translated from English to Danish, as well as West and East Greenlandic. The article is intended to be distributed through various channels, including the municipality's website. Additionally, there is a possibility of publication in local newspapers, further extending its reach and impact within the community.

3. Practice Good Governance & 6. Building Meaningful Partnerships

In order to acknowledge and address potential biases, respect governance structures and cultural differences, and recognise power dynamics, we consulted with Sustainable Now, as well as researchers with prior experience in conducting research in Greenland. Furthermore, we consulted with an Inuit researcher from Greenland, who provided valuable insights and guidance on the relevant matters. Their expertise and perspectives enriched our understanding and potentially enhanced the cultural relevance and sensitivity of the research to the local context. Despite not having an established relationship with a local in Tasiilaq, we made an effort to establish a safe and comfortable research environment for participation. To operationalise the concept of critical consciousness, we engaged in a discussion on our frame of reference through a reflexive autoethnographic narrative exercise before our fieldwork. Autoethnography aims to understand cultural experiences by analysing personal experiences in a descriptive and analytical manner (McIlveen, 2008). In addition, we actively maintained reflexivity throughout our fieldwork in Tasiilaq by engaging in regular discussions among ourselves, as well as with our supervisors and Sustainable Now. These discussions allowed us to critically reflect on our research process, methodology, and findings, ensuring a thoughtful and self-aware approach to our research.

To support a wide range of participation and accommodate different communication styles during data collection, we utilised varied engagement activities. Initially, we introduced our research and encouraged participation through the local Facebook group and information sheets on local info-boards. For data collection, we conducted interviews during school visits in five classes and also engaged in interviews and participatory observation in other settings such as the local youth culture house.

The process and approach of these engagement activities were continuously reflected upon to ensure the most suitable, equitable, ethical and interesting way of engagements. Furthermore, we adequately planned to allow enough time for meaningful engagement. This approach enabled us to adapt to the needs and schedules of the individuals involved. We maintained a free and flexible calendar, making ourselves available for interactions at convenient times. Additionally, we regularly visited public spaces and attended local events, proactively seeking opportunities to engage with the community and foster valuable interactions.

Our main objective with this research is to prioritise community benefit and establish reciprocal relationships. To achieve this, we leveraged the existing network established by Sustainable Now and developed it further. We shared information about our research with the youth in accessible formats by giving presentations in the school visits. We also shared the results of the research with policymakers to ensure a mutually beneficial relationship and the relevance of the research findings. Through the design of a visual representation of our findings and dissemination in the school, tourist office, and museums, we aim to create value and empowerment for the community.

4. Communication with Intent

We made a deliberate effort to listen and learn from the Inuit youth to share their perspectives. As a result, we allowed for discussions to flow naturally in unstructured spaces such as kitchens or hallways and adapted our engagement activities based on the youth's preferences. These activities included informal gatherings, passing conversations, group discussions, or interviews, alongside supporting materials such as maps, pictures or drawings.

We approached each conversation with humility and respect for Inuit knowledge. While some engagement activities were facilitated by Inuits, others were facilitated by non-Inuits. However, due to budget constraints, we were unable to invest in linguistic and cultural translation throughout the research. Translation was provided only when a Greenlandic person facilitated the interviews or when an interpreter was freely available and present during the school visits. As none of us spoke East Greenlandic, a language barrier existed that may have hindered mutual understanding and impeded equitable and ethical engagement when no interpreter was available.

5. Exercising Accountability – Building Trust

Before beginning engagement activities in Tasiilaq, we familiarised ourselves with the cultural and historical context by reading literature. We also had conversations on that matter with Sustainable Now, former researchers who worked in (East) Greenland, as well as a Greenlandic researcher. In addition, we attempted to contact the Greenlandic house to establish a connection with locals from Tasiilaq for cultural insights. Unfortunately, our efforts were unsuccessful. We also read previous research conducted in the area to prevent duplicate research efforts and research fatigue within the community as well as to gain a better contextual understanding. We made sure to communicate the research objectives, timeline, scope, and potential local benefits and uses to all engaged parties to ensure transparency, accountability, and consent.

8. Equitably Fund Inuit Representation and Knowledge

Due to limited funding we were unable to allocate sufficient funds for equitable Inuit representation and knowledge.

3.3.2 Limitations

While aiming to align with the 'Circumpolar Inuit Protocols for Equitable and Ethical Engagement' (ICC, 2022), it is crucial that we collectively apply these protocols. Selective

use of the protocols should be avoided, as they are interconnected and essential for a holistic and ethical approach to research (ICC, 2022). In hindsight, we acknowledge that we have not fully adhered to all the protocols, and our failure to include Inuit-driven publications and Inuit guidance from the outset as well as our lack of understanding of their language, culture, and values were issues that may have limited the relevance of our research for the Inuit. Additionally, the lack of funding for Inuit representation pose further obstacles to achieving complete decolonisation of research.

Despite encountering various challenges, we maintained our commitment to adhering to the majority of protocols to ensure the generation of relevant knowledge, particularly for the local community. Our research exhibits notable strengths, primarily evident in our data verification process and the partial ownership the municipality has over the collected data. Additionally, our contributions to the community through the creation and dissemination of informative flyers have provided valuable insights to the youth perspective on the city. These efforts have contributed significantly to the decolonisation of our research, although there remain areas that require improvement.

3.4 Conceptual Framework

The project is based on a conceptual framework which builds upon the theory of *place attachment* and focuses solely on public spaces. It incorporates the impact of *climate change* as an influencing factor, making the extended conceptual framework relevant to climate change.

3.4.1 Public Space & Place

Space refers to the *physical form* that define a geographical or spherical dimension detached from material form and cultural interpretation (Cresswell, 2014; Ujang & Zakariya, 2015). *Place*, on the other hand, is distinguished from space by the *meaning* that individuals, groups, or societies ascribe to the function of a place through their lived experiences (Cresswell, 2014; Hess et al., 2008; Ujang & Zakariya, 2015). This meaning can include opinions, emotions, specific uses, and activities associated with the place (Cresswell, 2014; Meenar & Mandarano, 2021; Ujang & Zakariya, 2015).

Public space can be defined as any area, building, or conveyance that is accessible to the public (Lab, 2022; Worpole & Knox, 2007). These spaces include a variety of forms, such as parks, streets, footpaths, squares, and marketplaces (UN-Habitat, 2018; Worpole & Knox, 2007), or public buildings such as libraries or community centers (Lab, 2022; Worpole & Knox, 2007). Public space plays a crucial role in defining the character of a city and provides a setting for a range of activities, including festivities, trade, movement of goods and people, provision of infrastructure, and community life (UN-Habitat, 2018). This is also evident in the context of the Sustainable Development Goals, specifically in Indicator 11.7 [5], which highlights the importance of open and accessible public spaces for promoting

[5]Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Target 11.7: Providing universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities. Indicator 11.7.1: Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities (UN, nodate-d)

efficient and equitable urban environments (UN-Habitat, 2018; Vukmirovic et al., 2019).

Public spaces are *places* that provide a shared resource that fosters experiences and value creation, serving as sites of connection and fulfilling an important role in the community (Vukmirovic et al., 2019; Worpole & Knox, 2007). Understanding the importance of public spaces in fostering mental, emotional, and spiritual well-being is critical for urban planners. This requires listening to community voices and considering the needs of less able and less empowered residents as a central concern. However, few planning projects have engaged in a *high-touch*[6] approach of community engagement, which is demanded in order to engage people who do not usually participate in planning processes. Urban planners must prioritise community engagement to create and maintain public spaces that promote well-being and meet the needs of all residents to enable sustainable city planning (Meenar & Mandarano, 2021).

3.4.2 Place Attachment Theory

The physical form and the function of a place influence the attachment and meaning that people associate with it (Ariccio et al., 2021; Brown & Raymond, 2007; Junot et al., 2018; Maricchiolo et al., 2021; Scannell & Gifford, 2014; Ujang & Zakariya, 2015). *Place attachment* refers to the functional and emotional connection that people develop with a particular place, as seen in Figure 3.4 (Ariccio et al., 2021; Clark et al., 2017; Friedmann, 2010; Junot et al., 2018; Maricchiolo et al., 2021; Scannell & Gifford, 2014; Ujang & Zakariya, 2015).

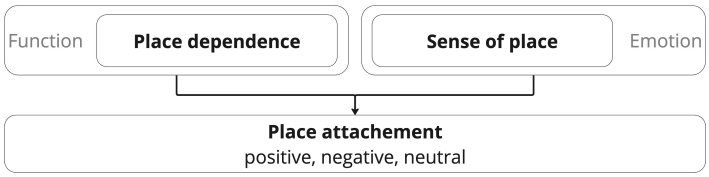

Figure 3.4. Place Attachment Theory

Place attachment is characterised by a relationship between individuals or groups and places, expressed through their feelings, emotions, knowledge, beliefs, behaviors, and actions (Friedmann, 2010; Junot et al., 2018; Maricchiolo et al., 2021; Scannell & Gifford, 2014; Ujang & Zakariya, 2015). This attachment develops when a place is well-identified, significant to the person, and can fulfill functional needs and support behavioral goals better than known alternatives (Junot et al., 2018; Scannell & Gifford, 2014; Ujang & Zakariya, 2015). Overall, place attachment is a complex interplay of various factors, such as the physical environment, social interactions, and cultural values, that shape people's

[6]High touch community engagement refers to an urban planning approach that emphasises close and direct interaction with community members and personal connection. It involves a range of activities such as face-to-face meetings, workshops, focus groups, and community events that provide opportunities for community members to voice their opinions, ideas, and concerns about urban planning projects. This approach aims to build strong and meaningful relationships between planners and the community, and to ensure that the planning process is transparent, inclusive, and responsive to the needs and aspirations of the community (Meenar & Mandarano, 2021).

responses towards the place (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). These emotional and functional dimensions of place attachment are described by the *place dependence* and *sense of place* (Brown & Raymond, 2007; Scannell & Gifford, 2014; Ujang & Zakariya, 2015).

Place Dependence

Place dependence, also called *functional attachment*, refers to the significance of a place in providing features and conditions that facilitate specific objectives or desired activities (Brown & Raymond, 2007; Junot et al., 2018; Maricchiolo et al., 2021; Scannell & Gifford, 2014; Ujang & Zakariya, 2015). The extent to which an individual is attached to or dependent on a place is influenced by how well their needs, goals, or motivations are met. Place dependence therefore results from considering two factors: 1. the *functional quality* of the place, and 2. the quality of other *substitute* places that are similar to the place (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). This concept pertains to the functional and utilitarian aspects of place attachment, which link to the functional quality of the physical elements and activities that differentiate it from other places (Junot et al., 2018; Maricchiolo et al., 2021; Scannell & Gifford, 2014; Ujang & Zakariya, 2015)

Sense of Place

Sense of place, also described as *emotional attachment* and used interchangeably with the term *sense of belonging*, refers to the subjective emotional and psychological attachment that individuals have towards a particular place (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). The significance and relevance of a place in people's lives compared to a known alternative can be attributed to the conscious awareness of the emotional attachment and the sense of care individuals feel towards that particular place (Ujang & Zakariya, 2015).

The emotional attachment is often shaped by the individual's past experiences, memories, cultural identity, and perceptions of the physical environment (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). Within this research, the focus lies on people who have been living in a place for a longer period of time thereby tend to establish a stronger and more enduring connection known as a *personal sense of place*. They usually have a higher degree of familiarity of the local area, larger social connections, and a higher level of participation in community activities (Scannell & Gifford, 2014).

The sense of place can involve positive emotions such as love, happiness, joy, pride, and contentment when thinking or visiting that place (Scannell & Gifford, 2014). However, negative or ambivalent feelings can also arise towards places, particularly when they represent painful memories or have undergone changes or disappearance. The combination of the experiences of the functional and emotional attachment to a place, described by place dependence and sense of place, results in a *positive*, *negative* or *neutral place attachment* (Scannell & Gifford, 2014; Ujang & Zakariya, 2015).

The Inuit way of knowing plays a vital role in understanding place attachment, as the Inuit people establish a strong emotional and functional connection between their identity and the land. Thereby, the significance of places stems from their diverse qualities,

characteristics, and interconnectivity, fostering shared experiences within the community (Sheppard, 2021). The theory of place attachment therefore aligns with the existing Inuit geosophy, offering insights into practical and functional knowledge while encompassing a wide range of emotions, dreams, hopes, values, and beliefs (Collignon & Müller-Wille, 2006). This complementary relationship between the Inuit's perspective and the place attachment theory employed in this research enhances our understanding of the complex dynamics of place attachment within the Inuit community. However, it is important to recognise that the places experienced by the Inuit primarily revolve around the natural environment, with a strong focus on the land. Consequently, the critical question arises regarding the ability of Arctic urbanism to acknowledge the Inuit identity within a diverse array of spaces (Sheppard, 2021).

3.4.3 Influencing Factor: Climate Change

Place attachment is influenced by various factors, including socio-demographic characteristics, patterns of use, socially and culturally shared activities, geography, architecture, and personal experiences (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). However, contemporary factors such as climate change can also have a significant impact on the attributes and characteristics of a place, and consequently influence place attachment (Ariccio et al., 2021; Hess et al., 2008; Vukmirovic et al., 2019).

As climate parameters such as temperature, precipitation, and wind are part of the physical environment, their changes can impact the functional and emotional attachment to public spaces (Hess et al., 2008; Vukmirovic et al., 2019). Maintaining a positive and intact attachment to places is essential for overall well-being. Consequently, the identification of vulnerable places can enhance local preparedness, playing a crucial role in climate change adaptation (Ariccio et al., 2021; Hess et al., 2008). Consequently, this research assesses the impact of climate change on the place attachment of public spaces.

3.4.4 Operationalisation

To facilitate this research, an *extended place attachment theory* is proposed as a conceptual framework, with place dependence and sense of place as its core characteristics (see Figure 3.5). These components can be influenced by climate change and potentially impact place attachment. Therefore, climate change is added to this framework to bridge the gap in understanding the connection between climate change implications and place attachment for public spaces. The research is structured around exploring these components and their interconnectedness with climate change that can influence place attachment.

Overall, the conceptual framework guides the research process, encompassing the identification of relevant places, examination of place attachment, and exploration of climate change implications.

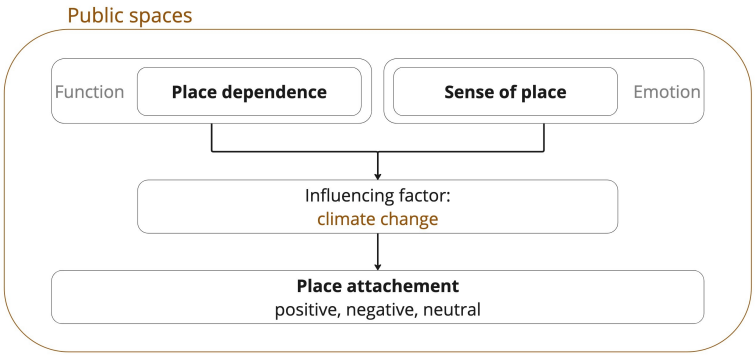

Figure 3.5. The Extended Place Attachment Theory forming the conceptual framework of this research

The initial research question centers around identifying public spaces that hold significance for youth. This inquiry is inspired by the conceptual framework of place attachment, which provides a foundation for understanding the attachment youth have to specific places. To ensure a comprehensive approach and identify the key places, youth and institutional interviews as well as participatory observation are integrated into the identification process.

The second research question aligns with the identification of places and delves into exploring the attachment of youth to these identified places. Guided by the conceptual framework, the data collection is structured to gather information on both the functional needs and emotional connections associated with the places. We systematically examine each identified place and explore alternative options available to the youth, allowing for a comprehensive analysis. To complement the insights gained from youth interviews, we also consider input from institutional interviews and participatory observation. Both the identification of relevant places and the analysis of place attachment undergo a verification process through additional interviews with the youth to ensure the validity and reliability of the data. Through this thorough approach, we are able to classify the place attachment as positive, neutral, or negative, using the principles of the place attachment theory. It is important to acknowledge the nuanced nature of these classifications, and in cases where conflicting statements arise, we address them appropriately in the analysis. However, when the majority of youth classified a place with a particular attachment, it determined the overall classification for that place.

The third research question focuses on understanding the implications of climate change on the utilisation of public spaces. Drawing upon the extended place attachment theory in our conceptual framework, we gather information on the impacts of climate and weather on public spaces through interviews conducted with both youth and institutional stakeholders. Additionally, we utilise climatology data obtained from literature reviews to gain insights into the potential implications of climate change in Tasiilaq.

By combining the analysis of current place attachment with knowledge about the local implications of climate change, we aim to understand the impact of climate change on youth place attachment. By employing the extended place attachment theory and synthesising the knowledge acquired through addressing the three sub-questions, we can effectively

address the main research question. In doing so, we acknowledge the inherent uncertainty associated with climate change and its potential implications on place attachment.

3.5 Case Study

In accordance with Flyvbjerg's (2006) methodological approach of collecting data through case studies, this research focuses on a case study to establish a foundation of knowledge that can be extrapolated to broader contexts.

The research employs an *information-oriented selection* approach, aiming to maximise the utility of the collected data (Flyvbjerg, 2006). Taking into account the severe effects of climate change in the Arctic (DMI, 2016a, 2016b; IPCC, 2014b) and our personal interest in climate change-related research and Greenland, we purposefully select Greenland as a case area. Recognising the uncertainty surrounding the impacts of climate change on the livelihoods, well-being, and culture of communities (IPCC, 2014a; Masson-Delmotte et al., 2012; Sejersen, 2015), this research aims to examine how climate change affects a community in Greenland. As indigenous communities possess distinct cultures, lifeworlds, conditions, and histories (Sejersen, 2015), it is crucial to investigate a specific local case to capture their unique perspectives and experiences.

The research therefore centers on the city of Tasiilaq, located on the east coast of Greenland on Ammassalik Island (see Figure 3.6). Specifically, the study examines what the youth identify as public spaces and how they utilise and perceive them. By delving into their functional and emotional attachment to these places, the research aims to analyse the potential impact of climate change on public spaces and, consequently, on place attachment.

Tasiilaq was selected as a case to study based on the informative contextual knowledge of its urban dynamics and the potential to yield significant insights for the research. This decision of the specific case was influenced by the collaboration with Sustainable Now, that leads the 'We Cooperate in Tasiilaq' project in partnership with the Sermersooq Municipality to enhance sustainable development within the local community (Sustainable Now, nodate). Their project aims to strengthen communication between the municipality and locals, and to facilitate the realisation of local initiatives to empower the community in local development. Through consultations with Sustainable Now and access to their materials, we established a foundational understanding of Tasiilaq, which informed our decision to choose it as a case study. The alignment of our research with the ongoing project efforts of Sustainable Now in the community presents an opportunity to contribute to their work and to generate valuable insights for our research. Therefore, Tasiilaq was a suitable choice as a case study.

Figure 3.6. Geographical location of Tasiilaq. Map adapted from (Hemmersam, 2021)

In addition, this research is conducted in collaboration with Sermersooq Municipality with the aim of providing them a deeper understanding of the youth's place attachment in Tasiilaq. By identifying the impacts of climate change on place attachment, the municipality can enhance its ability to support and strengthen the sense of attachment within the community. Furthermore, as the policymaker responsible for the development of appropriate strategies, the municipality can utilise the findings of this research to derived appropriate adaptation strategies and improve public spaces accordingly. The collaboration with the municipality ensures that the study's outcomes can directly contribute to informed decision-making and the promotion of sustainable urban development in Tasiilaq.

Tasiilaq is considered an *extreme/deviant case*, characterised by being exceptional or deviating from the norm and presenting particular challenges in a specific context (Flyvbjerg, 2006). The deviance of Tasiilaq, the biggest city in the east coast of Greenland (VisitGreenland, nodate), is evident in the cultural and physical divide between the west and east coasts and the derived negative impact on the political priorities regarding

the east coast (Højsgaard, 2023). The west coast of Greenland is home to 92% of the country's population, while the remaining population is mainly located on the east coast (Bjerregaard, 2010). Sermersooq Municipality spans from the east to the west, with the central seat of power situated in Nuuk on the west coast. The imbalance of west to east coast has led to reduced political representation, lower political emphasis, and limited consideration of the the local culture on the east coast. Consequently, development on the east coast faces structural and democratic challenges that hinder local progress (Højsgaard, 2023). Additionally, the east coast's remote geography and diverse cultural and linguistic background further segregate it from the west coast (Højsgaard, 2023; Rygaard, 2008).

As the east coast is marginalised by the west coast, this research aims to understand the locals' place attachment to raise the voice of the east. Moreover, the study specifically includes the perspective of the youth, who are a minority group in urban planning. In order to counteract this trend and promote a more engaging approach, it is crucial to amplify the voice of the youth in Tasiilaq. This can be achieved by developing a deeper understanding of their frame of reference, their experiences, and their needs. By doing so, their perspectives can be integrated into urban planning processes, ultimately fostering a more inclusive and representative approach to community development. Moreover, by incorporating the perspectives of the youth, we foster the development of a comprehensive knowledge base rooted in local expertise rather than relying solely on external viewpoints.

3.6 Qualitative Interview

Qualitative interviews are utilised for data collection in this research with the purpose of gathering detailed knowledge about the case. The interviews include *institutional key informant interviews* covering the institutions' perspectives on public spaces, such as the municipality and other locally involved stakeholders. The institutional key informant interviews serve as a source of information regarding the roles and responsibilities of decision-makers involved in urban planning in Tasiilaq. These interviews shed light on their perspectives and actions in shaping the city's development. Additionally, the interviews comprise *youth key informant interviews*, which aim to have young people identify public spaces and their attachment to these places. Both institutional and youth key informant interviews serve the purpose of comprehending the local perspective on how weather and climate change affect the utilisation of public spaces. These interviews provide valuable insights into the experiences and viewpoints of both the institutions and the younger generation.

By conducting interviews with two distinct groups, the research seeks to establish a comprehensive knowledge base that visualises the diverse perspectives on place attachment, climate change, and the locals' impact on urban life. Qualitative interviewing is a suitable method for this research as it enables the collection of in-depth qualitative data that helps to concretise the understanding of public spaces used by the youth in the selected case of Tasiilaq. Through participants' elaborations, stories, and emotional experiences, the interviews serve as a valuable tool for triangulating the data collected from other methods, thus enriching the overall understanding of the case.

By using interviews as a method, an insight into the interviewee's frame of reference can be gained that cannot be obtained through literature (Olsen, 2012). All interviews used a semi-structured interview guide that targeted the research question while encouraging free dialogue (Robson & McCartan, 2016), which ensures a high degree of validity (Kvale, 2007). The interviews were conducted in either English or Danish, or with an interpreter to translate from East Greenlandic to Danish or English. Some interviews were conducted when unprofessional interpreters were available, while others had to be conducted without translation. Interviews conducted in English were only done if the interviewee felt comfortable with it. For particular situations, an unprofessional interpreter was available as when conducting interviews at the school, while other moments invited for the facilitator of the interviews to constitute as an unprofessional interpreter.

Therefore, the outcome of the interview data collection has limitations due to language barrier that prevented the interviewers from conducting interviews with the youth who did not speak English or Danish when no interpreter was available. Furthermore, the language barrier limited the informativeness of some of the group interviews as the communication was partially simplified language to understand the interviewees' level of place attachment. If more complex communication was not possible, drawings or polls were used as alternative methods to assess the level of place attachment. However, individual interviews with minimal language barriers allowed for more comprehensive answers and the opportunity for clarifying follow-up questions.

Before arriving in Tasiilaq, we undertook preliminary preparation for data collection. This included meetings with knowledge holders who had a connection to Tasiilaq through previous research, a cultural understanding of Greenland, or methodological knowledge about community engagement in research. The meetings provided an understanding of how to approach the research in a way that respects cultural sensitivity and engages with the locals in a respectful manner (see Section 3.3 for further details). During the interviews, no recording was done to create a more informal and comfortable atmosphere. Instead, we used jotting notation during the interviews, which we later elaborated on in detail to ensure that no crucial information was lost.

The institutional key informant notations were verified with the responding interviewees, and the preliminary findings from the youth key informant interviews were verified by some of youth interviewees. The verification process contributes to the decolonisation of the research (see Section 3.3) by testing the accuracy of the initial analysis and interpretation of the notes and identifying misunderstandings that may have occurred. As a result, verifying the notations and preliminary findings improved the validity of the research by reducing the potential for misinterpretation during data collection (Sanjek, 1990).

Verification with both youth and institutional interviewees has been practiced throughout the fieldwork, ensuring a minimum degree of misinterpretation to enhance validity. During this process, some of the youth were introduced to the preliminary findings depicted in a map showing identified places. The verification sessions involved follow-up questions to gain additional insights into their reasons for rating the places as positive, neutral, or negative. However, it should be noted that the verification process with the youth only included some of the group interviews, as it was challenging to accommodate the schedules of all interviewees. The institutional interviewees were provided the full notation

of their respective interview. They had the opportunity to review the notations, correct any inaccuracies, or provide additional information. This verification process aimed to enhance the reliability and accuracy of the collected data by involving the participants in validating the findings and ensuring that their perspectives were accurately represented.

3.6.1 Institutional Key Informant Interview

The data collected through the institutional key informant interviews is utilised to establish a foundational knowledge base of the case (see Table 3.1 and Table 3.2). Additionally, the institutional key informant interviews contribute to building a broader understanding of their responsibilities and communal involvement. The collected data yields valuable insights not only into the overall functionality of public spaces but also into the impacts experienced in everyday life due to climate change.

The institutional interviewees from the municipality include the municipal manager, the vice mayor, the community house coordinator, and the tourist coordinator. In addition, the Local Representative Committee, which acts as an intermediary between the municipality and the locals and often funds as well as participates in local initiatives, was also interviewed. Another institutional interviewee was Siu-Tsiu, a socioeconomic vocational school that serves as a pre-educational springboard for the youth before further education.

The citation of the institutional key informant interviews includes individual and group referencing. Individual interviews are cited in the text using the format (Surname, Interview). The citation style for group interviews follows the format (Surname, Group Interview). In the case of multiple interviews with one group, the first interview would be cited as (Surname, Group Interview1).

Interviewee(s)	**Purpose**	**Date**	**Length**	**Language**
Joan Melgaard Rasmussen *Urban Planner, Sermersooq Municipality*	Establish a collaborative relationship with the urban planning department and gain an understanding of their focus on community engagement and climate change. See interview guide in Appendix 7.1.	12.01 2023	1 hour	English
Hjørdis Viberg & Justus Hansen, Group Interview1 *Municipal Manager & Vice Mayor at Sermersooq Municipality*	Establish a collaborative relationship with the municipality department in Tasiilaq to gain a deeper understanding of their engagement with the community and their current plan for community development. See interview guide in Appendix 7.2.	16.03 2023	1,5 hours	Danish

Table 3.1. Institutional Key Informant Interviews

Interviewee(s)	Purpose	Date	Length	Language
Nivikka Langstrup Witjes & Mati Larsen, Group Interview *Introductory Vocational School Siu-Tsiu*	Gain knowledge about Siu-Tsiu and their engagement with the youth. The interview provided insights into their contribution to urban development. See interview guide in Appendix 7.3.	20.03 2023	1 hour	Danish
Ole Jens Lundblad *Chairman of the Local Representative Committee*	Understand the role of the Local Representative Committee and how they engage with the locals. The interview included a conversation about climate change impacts to the daily life in Tasiilaq. See interview guide in Appendix 7.4.	28.03 2023	2 hours	Danish
Arkalo Skifte *Coordinator of the Community House, Sermersooq Municipality*	Establish qualitative knowledge about the community house and communal events. See interview guide in Appendix 7.5.	28.03 2023	2 hours	Danish
Justus Hansen *Vice Mayor, Sermersooq Municipality*	Obtain knowledge about the places made for the youth in Tasiilaq, as well as to gain insight into his vision for the future of the youth in the community. The interview also covered how climate change impacts the daily life in Tasiilaq. See interview guide in Appendix 7.6.	03.04 2023	40 min	English
Anna Burdenski *Tourist Coordinator, Sermersooq Municipality and former Ph.D. candidate at the department of Social and Cultural Anthropology at the University of Vienna*	Get insights into the active and frequently visited places by the youth in Tasiilaq, as well as gain insights from her previous research on climate change impacts on the community. See interview guide in Appendix 7.7.	05.04 2023	1,5 hours	English
Hjørdis Viberg, Justus Hansen, Ole Jens Lundblad & Anna Burdenski, Group Interview2 *Sermersooq Municipality*	Share preliminary findings. The interview aimed to discuss the initial insights gained from the data collection and to gather feedback on the visual representation of the youth's perspectives. See interview guide in Appendix 7.8.	17.04 2023	1,5 hours	Danish

Table 3.2. Institutional Key Informant Interviews

3.6.2 Youth Key Informant Interview

The purpose of the youth key informant interviews is to provide data that depicts the identification of public spaces, as well as their personal functional and emotional attachment to these public spaces. This data generates a generalised picture of the youth's attachment to public spaces (see Table 3.3 and Table 3.4). Moreover, the interviews facilitate an understanding of how weather and climate change directly impact the utilisation of public spaces. The youth key informant interviews propound the perspective of the youth, which is the core of the analysis.

We adopted an approach of preparing for the interviews instead of planning for them, which enabled us to conduct some interviews spontaneously. We prepared by having an interview guide ready (see Appendix 7.9), and whenever the opportunity arose and it was appropriate, we used it to conduct interviews spontaneously. For some group interviews, consent was obtained through the facilitators, such as teachers, as some of the youth were under 18 years of age. Furthermore, the facilitators were present during the interview to ensure an appropriate setting for the youth. For the interviewees who were above 18 years of age, their consent was obtained by explicitly asking for it prior to conducting the interviews.

An affirmation about anonymity was emphasised both in the beginning and end of the interview. Each interview began by informing the youth about the purpose of the interview and emphasising the potential benefits they could gain from sharing their knowledge. We stressed that their participation could amplify the voice of the youth through our collaboration with the municipality.

The youth key informant interviews encompass both individual and group interviews. The individual interviews involve participants from different age groups within the youth population, including school students aged 16, as well as individuals affiliated with the youth culture house Igdlo, ranging from 19 to 30 years of age. Moreover, group interviews were carried out with entire classes at the school, comprising students aged between 14 and 16 years. Additionally, an interview took place with a youth group at the vocational school Majoriaq, which offers skills upgrading for the labor force, with an average age of 22. Furthermore, a group interview was conducted with a travel group associated with the local museum, consisting of individuals aged 19 to 24. This travel group provided us with another valuable opportunity to engage with the youth, offering unique access and a different format for interaction.

The purpose of the group interviews was to gain a broader perspective on how the youth of Tasiilaq perceive place attachment. On the other hand, the individual interviews aimed to gain a deeper insight into the reasoning behind both place dependence and sense of place. Overall, a combination of individual and group interviews was utilised in order to gather comprehensive data and to capture diverse perspectives on the topic of place attachment among the youth of Tasiilaq. Furthermore, the three group interviews conducted in school classes served as verification sessions for the previously collected data.

Individual interviews are cited in text using the format (Youth 1, Interview) for the interview with a youth participant number one, and (Youth 1,2,3, Interview) for individual interviews with the participant one, two and three in this example. The same citation style

applies to group interviews, using (Youth Group 1, Interview) for a single group interview, and (Youth Group 1,2,3, Interview) for multiple group interviews (see references in Table 3.3, Table 3.4 and Table 3.5).

Interviewee(s)	**Date**	**Length**	**Language**
10th Class B student *Youth 1, Interview*	30.03 2023	1 hour	English
10th Class B student *Youth 2, Interview*	30.03 2023	1 hour	East Greenlandic, unprofessional interpreter
10th Class B student *Youth 3, Interview*	30.03 2023	1 hour	Danish
10th Class B student *Youth 4, Interview*	30.03 2023	1 hour	Danish
Igdlo Youth *Youth 5, Interview*	03.04 2023	30 min	English
Igdlo Youth *Youth 6, Interview*	04.04 2023	35 min	Danish
Igdlo Youth *Youth 7, Interview*	10.04 2023	45 min	Danish
Igdlo Youth *Youth 8, Interview*	10.04 2023	45 min	Danish

Table 3.3. Youth Key Informant Interview

Interviewee(s)	**Date**	**Length**	**Participants**	**Language**
10th Class A *Youth Group 1, Interview*	13.03 2023	1,5 hour	12 students	East Greenlandic, unprofessional interpreter
8th Class A *Youth Group 2, Interview*	30.03 2023	40 min	15 students	Danish
Majoriaq Class *Youth Group 3, Interview*	30.03 2023	1 hour	16 students	East Greenlandic, unprofessional interpreter
Travel Group, *Youth Group 4, Interview*	13.04 2023	50 min	5 participants	East Greenlandic, unprofessional interpreter

Table 3.4. Youth Key Informant Group Interview

Interviewee(s)	**Date**	**Length**	**Participants**	**Language**
9th Class, Verification session *Youth Group 5, Interview*	13.04 2023	30 min	8 pupils	Danish
10th Class B, Verification session *Youth Group 6, Interview*	13.04 2023	2 hours	11 pupils	Danish
8th Class A, Verification session *Youth Group 7, Interview*	13.04 2023	1 hour	15 pupils	Danish

Table 3.5. Verification Session, Youth Key Informant Interviews

3.7 Participatory Observation

For the data collection of the research, the method observation is utilised to help understand public life and use of the public spaces (Gehl & Svarre, 2013). More specifically, this research utilises *participatory observation* to produce practical insights into human existence that are rooted in the everyday experiences of people (Jorgensen, 1989; Musante, 2011; Spradley, 1980). Participatory research has two purposes: 1. to engage in the activities within a particular social situation in a certain place and with certain actors and 2. to observe the activities, physical aspects, and actors within the situation (Spradley, 1980). Given that we are brought up in a Western culture, adopting a participatory approach is a crucial first step towards understanding non-Western communities (Emerson et al., 1995). This methodological approach therefore serves as a starting point for understanding the civic social life as well as the social and cultural meaning of social situations (Jorgensen, 1989; Spradley, 1980; Tjørnhøj-Thomsen & Hansen, 2009).

3.7.1 Participatory Observation in Practice

Initially, the observation encompassed all public spaces within Tasiilaq. However, through informal conversations and interviews with both youth and the general population, the focus gradually narrowed to the specific locations utilised by the youth. The observation of actors in this study includes their gender, age, and involvement in various activities, given that the focus group comprises of the youth. Activities are investigated through both observation and participation, enabling us to gain a deeper understanding of the context. We also ask actors for further details about events or activities to supplement our observations.

Spradley (1980) defines different types of participation depending on the degree of involvement (see Figure 3.7). In the course of our participatory observation, we have participated in social situations at different degrees of involvement, ranging from non-participation to active participation. However, we have not engaged in complete participation, given the extensive time required to become a complete insider of the community.

DEGREE OF INVOLVEMENT	TYPE OF PARTICIPATION
High	Complete
	Active
	Moderate
Low	Passive
(No involvement)	Nonparticipation

Figure 3.7. Types of Participation (Spradley, 1980)

Our participatory approach involved the use of social media platforms to connect with the youth. Through these channels, we were able to gain insights into their daily activities, such as events they were attending, places they frequented, and the times of day when they would visit public spaces. By engaging with the youth through social media, we were able to

complement our direct observations and gain a more comprehensive understanding of their social and cultural practices. By observing social media posts of events or people engaging in specific activities, we were able to adopt a *non-participatory observation* approach.

On the other hand, city walks at various times of the day or watching football matches for instance, entailed *passive participation*, wherein we were physically present in the location without actively engaging in social interactions.

Moderate participation, which involved alternating between insider and outsider roles, was initially adopted when we hung out at the youth culture house during the early stages of fieldwork. During this time, we were present in the youth's space but participated only minimally in their activities. However, as time passed, our participation became more active.

Active participation provided us with a deeper understanding of the youth's frame of reference. We achieved this by engaging in various activities such as playing games at the youth culture house, participating in volunteer activities with the youth, taking walks in the surrounding mountains, and going out with them to the local bar. Through these experiences, we were able to immerse ourselves in the youth's social and cultural practices, enabling us to gain a more comprehensive perspective of the context under study.

When conducting ethnographic research, it is crucial to take into consideration the *networks of social situations*. These networks refer to the connections between social situations that arise because the same people are actors in multiple situations (Spradley, 1980). In order to observe and understand the networks of social situations, we therefore engaged in both observation and participation in different social situations. By doing so, we were able to identify the individuals who were involved in different social situations, and explore the ways in which these situations were interconnected. Furthermore, by identifying *social situations involving similar activities* (Spradley, 1980), we expanded our perspective and gained an understanding of alternative locations where youth were present.

During our observations and engagement in social situations, we were mindful of our potential *obtrusiveness* (Jorgensen, 1989; Spradley, 1980). Nonetheless, being of a similar age to our focus group helped us to integrate more seamlessly into these social situations. Furthermore, we tried to minimise any direct attention or potential disruptions to the social situations while we were observing to ensure a successful data collection (Jorgensen, 1989; Spradley, 1980). While we were able to maintain a low profile in most cases, there were some social situations in which we felt our presence was more obtrusive or disrupting. In these instances, we chose to withdraw from the observation in order to ensure a safe and comfortable space for the youth. This delimits the comprehensiveness of the participatory observation in this research for some places.

During our fieldwork, we encountered a situation that highlighted the influence of age on participatory observation. We visited one youth house specifically catering to younger individuals, but it soon became apparent that the age difference between us and the youth created an uncomfortable atmosphere. As a result, we made the decision to leave the space. This particular incident exemplifies how age impacted the dynamics of participatory observation in this research, leading to a higher occurrence of participatory observations in places where older youth were present. Consequently, the data collected through

participatory observation tends to reflect the perspectives and experiences of the older youth more prominently, introducing a bias into the data collection process. However, respecting the age differences as an influencing factor ensured the non-intrusiveness of the participatory observation process in this research.

As we primarily dedicated our time to interacting with the older youth during our participatory observation, a high emphasis on building relationships and rapport was made (Tickle, 2017). This approach allowed us to establish trust and effectively integrate ourselves into their activities. By actively participating in the familiar activities they engaged in for seven weeks, we fostered a sense of rapport that ensured that our presence did not distort their behavior or interactions. This enhanced the reliability of the collected data and provided a more accurate representation of their experiences and perspectives as the youth felt comfortable and acted naturally in our presence.

A limitation of our observation is the potential for a lack of *explicit awareness* during social interactions. Explicit awareness refers to a conscious and deliberate awareness or understanding of a particular subject relevant to the research in study. Given the complexity of social situations, it is possible that relevant details may be excluded from conscious awareness as there is an *overload* of information, which could lead to the loss of valuable information (Spradley, 1980).

However, during our fieldwork, we were able to leverage a language barrier to our advantage. Specifically, one researcher was not able to verbally participate in social situations due to a language barrier, which led to an increased focus on other senses and potentially heightened explicit awareness of nonverbal cues. Non-verbal cues encompassed the body language and facial expressions of both the individuals we conversed with and those present in the surrounding space. These cues offered valuable insights into their level of comfort. Noteworthy examples include observing the raising of eyebrows, a cultural gesture indicating agreement in Greenland, and noting changes in body language as reactions to specific questions. These observations provided valuable information regarding people's understanding of various topics and their overall comfort within the given situation. By considering both verbal and non-verbal cues, we gained deeper insights into the nuances of their perspectives and the contextual dynamics, enhancing the overall quality of our data collection and subsequent analysis. Moreover, it contributed to an enhanced understanding of cultural sensitivity, which helped create a comfortable atmosphere during conversations.

Another limitation of the research is its physical observational perspective, which only encompasses a winter season setting as data collection was conducted from March to April in 2023. However, the data collection includes insights from qualitative interviews, literature, and informal conversations stemming from participatory observation that encompass perspectives from the summer season as well.

3.7.2 Jotting Notes

To ensure the collection of high-quality data through observation, we took detailed notes and reflected on our observations (Spradley, 1980). We divided our data into two main categories: descriptive and reflective data. *Descriptive data* included observations about

public spaces, how the youth used these spaces, and the emotions they attached to these spaces. If relevant and possible, we asked descriptive questions while observing to gather this data. *Reflective data* involved conducting personal thoughts, feelings, and reactions in response to an experience or event. This type of data is subjective and based on our individual perspectives and interpretations. It is used to explore the meaning and significance of our experience, to identify personal biases and assumptions, and to reflect on how our own experiences and perspectives may have influenced our understanding of the data.

During our participation, we took notes by jotting down key words or short sentences to aid our recollection of details for later elaboration. This approach minimised the time spent on note-taking during engagement, allowing us to better focus on the situation and reducing the risk of creating a distance between us and the actors (Emerson et al., 1995). After each observation situation, we relied on our memory of important details and recorded them shortly after to ensure accuracy and completeness. In addition to note-taking, the documentation of information was supported with various materials and technologies (Emerson et al., 1995; Gehl & Svarre, 2013; Jorgensen, 1989), such as online and offline mapping tools, or pictures and videos.

3.8 Literature Review

A literature review involves a systematic search for relevant literature, as well as a selection process to identify the most pertinent sources (Levy & Ellis, 2006; Okoli & Schabram, 2010; Robson & McCartan, 2016). In this research a systematic literature review is crucial in obtaining data regarding climate change and its impact on Tasiilaq. This section provides an explanation of the undertaken selection process and the scope of the included literature.

The primary search for literature is conducted using the search engine Primo, which provides access to a diverse range of literature platforms. Keywords are used to help delimit the search results and focus on the case area, thereby ensuring the relevance and applicability of the literature selected. An example of a search request would be: Tasiilaq OR "Ammassalik Island" AND "climate change". Throughout the literature search process, emphasis is placed on maintaining a high level of validity and precision by utilising these specific keywords to focus and refine the search.

The abstracts of the literature obtained in the search results are examined to determine their contribution to addressing sub-question 3 and shaping a knowledge base. To broaden the scope of the literature review, the snowball effect is employed, whereby additional sources are identified by reviewing the reference lists of the selected literature (Berrang-Ford et al., 2015).

Furthermore, data from the Danish Meteorological Institute (DMI) is accessed separately outside the Primo search engine by specifically searching for relevant climate and weather data for Greenland on their website. During our visit to the local museum in Tasiilaq, we had the opportunity to explore an exhibition by researcher Jorrit van der Schot, who specialises in studying climate change in Ammassalik Island. His research provided valuable insights, and we sought his guidance whenever we encountered conflicting data. This communication greatly contributed to the interpretation of the data in the analysis.

Due to the specific focus on Tasiilaq and the impacts of climate change on this particular area, the availability of literature addressing this topic is relatively limited. In instances where literature specifically targeting Tasiilaq was not available, the search was expanded to encompass the broader region of East and Southeast Greenland.

3.9 Limitations of Data Collection

The research encountered limitations during the data collection and analysis processes. These limitations may have impacted the findings and should be taken into consideration. It is important to acknowledge and address these limitations in order to provide a comprehensive and accurate understanding of the research outcomes.

Generally, the limited understanding of the local culture and potential variations in frames of reference can hinder our choice of methodology, impacting the validity of data collection and reliability of analysis. Insufficient cultural understanding may have led to misinterpretation, while different frames of reference may have influenced responses.

In addition to that, an observable language barrier hindered the respondents' ability to fully express themselves and be completely understood during the interviews. Since we were not proficient in East Greenlandic, the interviewees were compelled to communicate in either Danish or English, provided no interpreter was present. Consequently, the data collected through interviews or participatory observation may lack comprehensiveness, as there could be limitations in mutual understanding during conversations. Moreover, if we had shared a common language, there might have been additional elaborations, potentially impacting the data collected. Furthermore, due to the absence of a common language, certain youth were excluded from interviews and informal conversations, thereby limiting the diversity of available participants for data gathering. However, in certain instances during school interviews, an interpreter was provided, facilitating a more effective dialogue and enhancing mutual understanding.

Even though the methodology involves data triangulation, the period of fieldwork has a delimitation to understanding the comprehensiveness of Tasiilaq. The data collection did provide a broad understanding of how the youth are attached to different public spaces, but the deeper emotional and reasoning behind some of the places being neutrally and negatively attached remain unclear.

Several limitations were identified in the methods used. During the observation of public spaces, certain locations appeared less inviting due to our presence being perceived as intrusive. In order to respect the atmosphere, we decided to withdraw from those places, resulting in less comprehensive observation in those areas. Consequently, the observations conducted on various locations, such as the youth culture house Igdlo, the training center, and the bar & disco, provide more detailed and extensive insights compared to the observations made at the youth house known as the free time club.

The observation period was limited to March and April in 2023, which restricts our understanding of the case to this specific seasons. Therefore, the physical observation can only capture direct seasonal changes and their impact on the utilisation of public spaces towards the end of winter. Understanding the summer season relies on participation in

informal conversations, viewing videos and pictures shared by the youth, or information gathered from interviews. Consequently, the physical observations conducted on indoor places, such as the community house, and outdoor places actively utilised in the winter season, such as the fjord, have received more detailed and extensive attention compared to outdoor places that are used less in winter, such as the Flower Valley, the municipality square, and the multi-field. Due to the non-operation of the ski lift during the research period, only little observations were conducted in that specific place. Additionally, the fitness was given less prominence as the youth did not mention it frequently, leading to the prioritisation of other places for observation. Since the data collection was limited to the end of winter, there is a possibility that the findings may not accurately represent the perceptions and experiences of the participants during the summer months. Therefore, it is important to acknowledge that the validity of the data might be affected by the potential variation in perspectives arising from data collected during summer season.

Qualitative interviews, particularly those conducted with classes at the school, also present limitations. It was observed that when simple yes or no questions or polling questions were asked, the entire class would actively participate. However, when more complex and in-depth questions were posed, only a few students would respond on behalf of the entire class, limiting our understanding of the collective perception of places within the class. The process of generalising data involves drawing broader conclusions based on a subset of collected information, which necessitates interpretation. This interpretation introduces subjectivity and potential bias, which can negatively affect the reliability of the findings. The bias of generalisation is particularly relevant in this research due to the limitations of including all youth since language barriers posed challenges influencing their participation. Moreover, in group interviews, some youth exhibited shy behavior, potentially due to their discomfort with us, resulting in less engagement. Additionally, it is possible that some youth lacked interest in participating, limiting their perspectives included in the data collection. Consequently, the generalisation of data inevitably introduces a bias by including only those youth who actively participated in the research. This limitation is inherent in research, as achieving comprehensive participation poses significant challenges.

Moreover, the limitations of the data collection manifest in cultural sensitivity. Due to lack of understanding the cultural behavior, the comfortability of the interviewees might be impacted. During the fieldwork period, we encountered a cultural difference in dialogue situations where maintaining steady eye contact was perceived as intimidating by the locals. Likewise, the power relations impacted the interaction with the focus group. In certain situations, we acted more as friends, while in others, we took on an authoritative role similar to that of a teacher. As a result, the authoritative perception of us sometimes hindered informal conversations with younger youth during activities conducted outside of school. This inherent power dynamic may have limited the level of openness and spontaneity in those interactions.

To account for and ensure a high degree of validity and reliability through the data collection, a thorough research design was developed. To prepare for different outcome of data aligning to the local conditions, different methodological approaches were proposed before data collection begun. However, certain methods were selected based on local circumstances. After spending several weeks in Tasiilaq, a deeper understanding of the

local context was gained, which facilitated the selection of methods that would be most suitable for the research objectives and practical constraints in Tasiilaq. The utilisation of different methodological approaches aimed to ensure triangulation of data and enhance the validity of the data collection process. By aligning these various approaches with the conceptual theory, the overall validity of the collected data was increased.

The validity of the research was enhanced through the implementation of several key factors. One crucial factor was the utilisation of a standardised interview guide that was consistently employed across all youth interviews. This approach facilitated the triangulation of data by enabling comparisons of information gathered during interviews. Moreover, the research employed a combination of youth key informant interviews, observations, and institutional key informant interviews. The convergence of information from these different sources served to validate the data through the identification of consistent perceptions. This aligns with the principles of the *Saturation Theory* (Saunders et al., 2018), which underscores the importance of data saturation and the sufficiency of information obtained from various groups without the necessity of interviewing every individual.

Analysis 4

In the following analysis, the perception of various public spaces in Tasiilaq among the youth is explored. The investigation focuses on the identification of these spaces and the associated place attachment, characterised as positive, negative, or neutral. Through the application of the place attachment theory, as elucidated by Ujang & Zakariya (2015) and Scannell & Gifford (2014), this analysis aims to provide valuable insights into the youth's connection with public spaces in Tasiilaq. Additionally, the analysis investigates the impact of climate change in Tasiilaq and explores how the locals' perceive climate change and its potential implications on their daily lives.

4.1 Identification of Public Spaces used by the Youth

In order to identify the places frequented by the youth in Tasiilaq, a range of methods have been employed to ensure a comprehensive understanding of their patterns of usage. The identification process entails continuous participatory observation, combined with individual and group interviews conducted with a diverse set of young people ranging from 8th to 10th grade, as well as older youth who attend vocational school, namely Majoriaq, and those who frequent the local youth culture house, Igdlo. Additionally, the process involves interviewing members of a youth group that forms part of a cultural travel program, which is organised by the local museum.

The places marked on Figure 4.1 are the places that have been identified by the youth as public spaces to spend time in the city. These spaces encompass indoor facilities like the training center, fitness center, free time club, youth culture house Igdlo, community house, and the bar & disco. Additionally, outdoor spaces such as the municipality square, multi-field, benches, and the surrounding natural environment, including the fjord and the Flower Valley, have been identified by the youth.

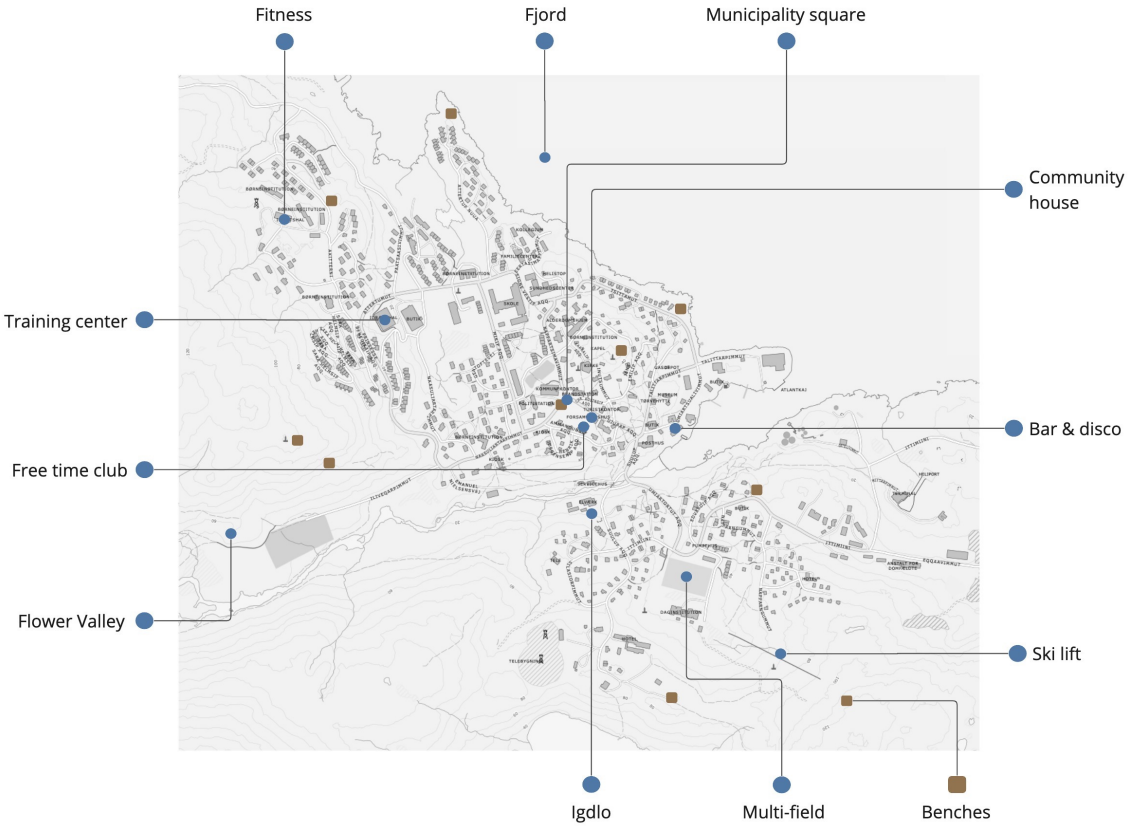

Figure 4.1. Public spaces identified by Tasiilaq's youth. Base-map adapted from Asiaq (nodate)

As the youth have unique preferences and interests when it comes to choosing places to spend their leisure time, they go to different places depending on the functional and emotional attachment to the place. As a result, the places identified on this map reflect the diverse and dynamic nature of the youth culture in Tasiilaq.

4.2 Youth's Place Attachment

In the following text, we analyse the place attachment of each location identified by the youth separately. Our analysis focuses on understanding how the youth utilise these places and form emotional connections to them. By examining both the functional and emotional aspects of place attachment, this analysis aims to deepen our understanding of the complex relationship between individuals and the spaces they connect with.

4.2.1 Flower Valley

The Flower Valley is an *"extension of the city"* in the summer (Burdenski, Interview) and represents the nature of the surrounding mountains of Tasiilaq, as seen in Figure 4.2 and Figure 4.3. It is a popular destination for the youth to be in nature, take a walk, go for a hike, or hunt, mostly in the summer (Youth 1,2,6,7, Interview; Youth Group 3,4, Interview).

Figure 4.2. The Flower Valley in the summer time (source: 10B student)

Figure 4.3. One of the lakes in the Flower Valley (source: 10B student)

An especially popular hiking route is going through the Flower Valley and the surrounding mountains back to the city (Youth 7, Interview; Youth Group 3,4, Interview; Observation) and the waterfall in the Flower Valley makes it particularly attractive (Youth 7, Interview; Observation). In the winter time, the polar bears are less visible due to the snow, making hiking a more dangerous activity if no rifle is carried along, and therefore less attractive to spend time there for some of the youth (Youth7, Interview; Observation). The Figure 4.4 and Figure 4.5 display the Flower Valley during the winter season.

In the summer, the valley is utilised for mountain biking (Youth 5, Interview; Youth Group 4, Interview) and fishing (Youth Group 4, Interview; Observation) or to drink with friends (Youth Group 4, Interview). The valley is also popular to pick berries, have a picnic, or swim in the lakes (Youth 1,2,5, Interview; Youth Group 3,4,7, Interview). To get out of the city and enjoy time in nature or barbecue with family, people hike or drive with the car to the mountains in the summer time (Youth 1, Interview; Youth Group 3, Interview). In winter time, snowmobiles are used for the same purpose (Youth Group 3, Interview).

The municipality organises hiking or running competitions to encourage the youth to spend more time in nature and be active too (Skifte, Interview), which is appreciated by the youth (Youth 4, Interview; Youth Group 3, Interview; Observation). To support the utilisation of the surrounding nature, the municipality plans to install a connecting staircase to the mountain to make it more easily accessible for everyone. Other initiatives to provide more activities in nature include the investment in the installation of binoculars on the top of one foothill (Lundblad, Interview), and the installation of citizens' huts, which can be used to stay overnight in nature (Lundblad, Interview; Hansen, Interview). Furthermore, canoes for the lakes in the mountains are to be provided (Hansen, Interview).

Figure 4.4. Hunting in the Flower Valley in winter

Figure 4.5. Pathway to the Flower Valley in winter (source: 10B student)

The provision of connecting stairs, binoculars, canoes, and citizens' huts fosters an environment that is enjoyable to spend time in. As Scannell & Gifford (2014) state, place dependence refers to a place's capacity to fulfill an individual's objectives and requirements, or to the degree to which the physical attributes of a location offer suitable resources for carrying out desired activities. With the access and *connection to nature* being key factors for place attachment (Scannell & Gifford, 2014), the functional upgrade of the Flower Valley may positively influence the place dependence. This increase in accessibility and possibilities, in turn, can promote an increase in the frequency of utilising this space (Scannell & Gifford, 2014; Ujang & Zakariya, 2015), which may reinforce the attachment of the youth to the Flower Valley. Additionally, an increased functional place attachment may benefit the youth psychologically by expanding the function through *activity support*, *entertainment* and a better *connection to nature* (Scannell & Gifford, 2014).

Currently, the youth's place attachment to the Flower Valley is built on several factors, such as its *natural beauty*, and the *activities* carried out in the area (Scannell & Gifford, 2014). The youth describes spending time in the Flower Valley, the mountains, and nature in general as making them feel *"happy"* (Youth 1,4,6, Interview) and *"refreshed"* (Youth 2, Interview). They enjoy going there (Youth 1,4,6, Interview; Youth Group 4, Interview) as it gives them a break (Youth 1,4, Interview) and a space to *"breathe and think"* (Youth 6, Interview).

In addition to happiness, the youth also associate other emotional attachment to the Flower Valley, such as calmness or relaxation (Youth 1,5, Interview), as well as *"excitement"* (Youth 1, Interview). A quote from one of the youth, *"What a nature!"* (Youth 4, Interview), highlights the strong sense of place that the natural environment holds for

the youth in Tasiilaq. This expression of *fascination* and *love* for the beauty of nature implicitly demonstrates their high level of place attachment (Scannell & Gifford, 2014). The youth find the Flower Valley to be a beautiful place, especially due to the variety of flowers found there (Youth Group 4, Interview). The nature is something they *"love"* (Youth 4, Interview), and for one young person, Tasiilaq has *"the best mountains in the world"* (Youth Group 7, Interview), highlighting the significance of this place and the role of beauty in shaping place preferences. This *appreciation of the qualities* of one's place is a sign of existing place attachment (Scannell & Gifford, 2014).

The youth's descriptions of their emotional states when they visit the Flower Valley demonstrate their positive place attachment, highlighting the role of the Flower Valley in enhancing individual *well-being* (Scannell & Gifford, 2014). Positive place attachment has *restorative properties* that offer relaxation, a space to cope with negative emotions, and an escape from the everyday routine (Scannell & Gifford, 2014). A similar sense of place and positive place attachment is evoked by alternative places such as the benches scattered around the city (Youth 1, Interview) and the fjord (Youth 6, Interview; Youth Group 3, Interview).

For some, nature triggers a sense of *"belonging"* (Youth 4, Interview) and a sense of being *"free"* (Youth 6, Interview). Consequently, the nature is a favorite destination for some of them (Youth 2,5,7, Interview). Belonging is a fundamental psychological need and a benefit of place attachment that includes the *"feelings of having roots in a place, fitting in, or connecting with others"* (Scannell & Gifford, 2014). As the youth express a *sense of belonging* (Scannell & Gifford, 2014; Ujang & Zakariya, 2015) towards the Flower Valley, their attachment to the place is highly positive. In speaking with the youth, a profound psychological connection to nature is apparent, indicating that it is an essential aspect of their lives with which they identify (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). One of the youth explains that this place is *"different from other places"* as it is *"special and unique"* (Youth 4, Interview). In the same vein, one of the youth expresses a lack of interest in leaving Tasiilaq, as it would result in feeling *"homesick"* and a sense of being *"lost"* (Youth 4, Interview). This highlights the significance of the Flower Valley and nature as a whole, as a place of deep meaning and importance to the youth, who view it as an *extension of themselves* and a source of *comfort* (Scannell & Gifford, 2014).

4.2.2 Fjord

The fjord is a multi-functional space that serves different purposes depending on the season. Both summer and winter offer opportunities for mobility and recreation (Lundblad, Interview; Burdenski, Interview; Observation).

During the summer, the fjord is utilised for sailing to settlements, hunting and fishing (Youth 3,4,7,8, Interview; Youth Group 3,4, Interview; Lundblad, Interview). During the non-frozen season, sailing on the fjord presents a unique opportunity for the youth to explore and discover areas that are further away (Youth Group 4,7, Interview). The youth likes to go somewhere to picnic with their family (Youth Group 3, Interview; Youth 4, Interview), go on camping trips or spend the night in nearby huts (Youth 4, Interview). While swimming in the colder fjord waters is not as common as in mountain lakes (Youth 1,4, Interview), the fjord is still an attractive recreational option in the summer.

In the winter, the fjord also becomes an *"extension of the city"* (Burdenski, Interview) and a means of connecting to the surrounding mountains (Youth 3, Interview; Burdenski, Interview). Young people visit the fjord regularly for walks (Youth Group 3, Interview; Youth 1,3,4,5, Interview) either alone (Youth 2,5, Interview; Observation) or with friends and family (Youth 4, Interview; Observation), with some potentially listening to music (Youth 5, Interview; Observation). Other activities on the frozen fjord include dog sledding, as seen in Figure 4.6 (Youth 3, Interview; Youth Group 4,6,7, Interview), or snowmobile tours (Youth 3, Interview; Youth Group 4, Interview; Observation). Furthermore, some like to drive with the car on the ice (Youth Group 7, Interview), play football (Youth 2, Interview), bicycle, go fishing (Youth 3, Interview; Youth Group 4, Interview) or climb icebergs for fun, as visible in Figure 4.8 and Figure 4.7 (Youth Group 6, Interview; Observation). The fjord is a recreational place in the winter, with events such as folk festivals and dog sledding competitions (Youth 1; Interview; Lundblad, Interview; Burdenski, Interview; Observation). It is also a connection to settlements that are mainly reached by snowmobile or dog sledge (Lundblad, Interview; Observation).

Figure 4.6. Dog sledding in winter (source: 10B student)

Figure 4.7. Youth playing on the iceberg (source: 10B student)

The fjord is a highly favored place among the youth, with all interviewed youth expressing positive associations (Youth 1,2,3,4,5,6,7,8, Interview; Youth Group 1,2,3,4,5,6,7, Interview). Beyond the practical act of food provision, hunting is also perceived as an activity that is enjoyable and *"fun"* for one of the youth (Youth 8, Interview). This is further evidenced by the youth sharing pictures and videos of their hunting experiences with pride. Their enthusiastic discussion and the inclusiveness they demonstrate by involving others, including us, in these hunting activities highlight the positive recreational aspect associated with it (Observation). For some, the fjord evokes childhood memories that create positive emotions (Youth 1,5, Interview). This illustrates the concept of *place-referent con-*

tinuity, which refers to the development of attachments to locations where associations with the past and memories have accumulated. Positive childhood memories can thereby trigger a *"sense of belonging, continuity and self-identify"* (Scannell & Gifford, 2014). This connection with nature is likely rooted in ancestral environments and can restore positive affect on well-being, leading to positive place attachment (Scannell & Gifford, 2014).

Figure 4.8. Locals ice fishing on the frozen fjord

As evidenced by the frequency of their visits, the youth have a strong place attachment to the fjord, and over time, this attachment can lead to the merging of the *"self and the physical environment"*, where the place becomes an integral part of who they are (Scannell & Gifford, 2014). Moreover, the fjord's mobility and connection to other places, such as hunting or fishing grounds, settlements, and surrounding mountains, creates *"multiple place bonds"*, further contributing to the youth's attachment to the overall area (Scannell & Gifford, 2014).

Additionally, the fjord serves a similar emotional purpose to the Flower Valley, providing a space for seclusion, reflection, and fresh air (Youth 2,4,6,8, Interview). It is a place to *"have fun and get cozy"* (Youth Group 3, Interview) with family (Youth Group 3, Interview; Youth 4, Interview) or an opportunity to escape the *"busy environment of the city"* (Youth 7, Interview). According to one of the youth, nature is *"the best therapy"* (Youth 7, Interview) and good for *"dealing with thoughts"* (Youth 6, Interview). The fjord is a happy place (Youth 2,3,8, Interview) that provides revitalisation (Youth 2, Interview) and calmness (Youth 7, Interview). In addition to providing a positive place attachment, spending time in nature has been shown to have a restorative effect on well-being (Scannell & Gifford, 2014) as also experienced by the youth. Moreover, the fjord and other natural settings can facilitate *self-growth processes* such as introspection, problem-solving, goal-setting, and personal growth (Scannell & Gifford, 2014). These aspects seem to be valued by the youth and may therefore further contribute to their positive attachment to the fjord.

Overall, nearly every youth expresses a strong positive attachment to the fjord, establishing it as one of the places with the most significant place attachment in Tasiilaq.

4.2.3 Benches

The benches scattered throughout Tasiilaq are an essential aspect of the cityscape (Hansen, Interview) and are popular gathering spots for young people (Youth Group 2,3, Interview; Witjes & Larsen, Group Interview; Observation). Individuals of all ages utilise and appreciate the benches (Witjes & Larsen, Group Interview; Lundblad, Interview; Burdenski, Interview; Observation) either alone (Youth 1, Interview), with family (Youth 4, Interview) or with friends, as seen in Figure 4.9 (Youth 5, Interview). The elderly and disabled use the benches as resting spots within the city, while more mobile individuals also use benches located further away from the city center (Lundblad, Interview; Observation). Overall, the benches in Tasiilaq serve as a communal space for locals to relax, socialise, and enjoy their surroundings, regardless of age or mobility (Witjes & Larsen, Group Interview; Lundblad, Interview; Burdenski, Interview; Observation).

Figure 4.9. Children sitting on one of the benches, enjoying the sunset

The benches are used less often in the winter due to difficulties in reaching them in snowy and icy conditions (Youth Group 3, Interview; Youth 1,4,7, Interview; Observation). As such, the summer is the preferred season for their use (Youth7, Interview).

While there are some of the youth who feel neutral about the benches as they do not have a functional need for them (Youth Group 5,6,7, Interview), most of them have a positive attachment to them (Youth Group 3,6,7, Interview; Youth 1,4,5,7 Interview; Witjes & Larsen, Group Interview). For those who use them, the benches bring forth positive feelings (Youth Group 3, Interview; Youth 7, Interview) indicating a positive place attachment as many definitions of place attachment include positive emotions as an inherent aspect of the phenomenon (Scannell & Gifford, 2014; Ujang & Zakariya, 2015).

The benches situated in the mountains surrounding the city are highly favored by the youth, as expressed by multiple interviewees (Youth Group 2,3,6 Interview; Youth 1, Interview). They are often used as a place to relax and to take in the breathtaking views (Youth Group 3, Interview; Youth 1,4,5,7 Interview; Observation). The youth emphasise the significance of having a good view of the surrounding area as a crucial factor in their preference for utilising the benches, as seen in Figure 4.10 (Youth 1,2,4, Interview; Youth Group 3, Interview).

Figure 4.10. A good view of the city and surrounding nature from one of the benches (source: 10B student)

The aesthetic and landscape characteristics of the area contribute to the development of a positive attachment to the benches, as it is known that attachments to places can arise from such features (Scannell & Gifford, 2014). The benches are a spot to unwind, have a cigarette, and *"chill"* (Youth Group 3, Interview). Similar to the Flower Valley and the fjord, the benches offer a connection to nature and provide a peaceful place to contemplate and reflect (Youth 1, Interview), as well as a spot to relax and potentially listen to music (Youth 4, Interview). One young person even considers it as a favorite spot to visit and regularly visits one specific bench to watch the stunning sunset over the fjord (Youth 1, Interview). Moreover, the benches serve as a destination for a leisurely stroll, where the bench itself becomes a reward to *"take a breath and enjoy"* the surroundings (Youth 7, Interview). As places of attachment often provide physical and psychological comfort (Scannell & Gifford, 2014), the benches seem to provide positive place attachment for some of the youth.

The placement and set-up of several benches in Tasiilaq was entrusted to young people, who were allowed to choose locations based on their preferences, (Lundblad, Interview; Viberg & Hansen, Group Interview2; Witjes & Larsen, Group Interview). Each bench is now named after the young person who selected its placement (Witjes & Larsen, Group Interview), strengthening a sense of emotional attachment to the benches by adding a *sense of ownership and pride* (Scannell & Gifford, 2014; Ujang & Zakariya, 2015), particularly among the youth who chose the location of the bench. This sense of ownership is a crucial aspect of place attachment, as individuals are more likely to develop positive emotions towards a place when they feel control over it (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). Although ownership can be empowering for place attachment, it is not a prerequisite for its existence. Nevertheless, ownership is a personal factor known to influence place attachment as it creates familiarity and connection (Scannell & Gifford, 2014). Furthermore, by allowing the youth to choose the placement of the benches, their functional quality is directly tailored to their needs ensuring high functional quality (Ujang & Zakariya, 2015).

Despite a few youth expressing a neutral attachment and variations in place attachment between different benches within the city, there appears to be an overarching positive place attachment to the benches.

4.2.4 Ski lift

The ski lift in Tasiilaq, as seen in Figure 4.11 and Figure 4.12, is utilised free of charge during the winter season (Youth Group 4,6, Interview; Lundblad, Interview; Burdenski, Interview), and it holds relevancy for the youth who explicitly mention skiing or snowboarding as their primary motivation for using the ski lift or being in that area (Youth 1,8, Interview; Youth Group 4, Interview). With the exception of cross-country skiing and Heli-skiing, with only one of the youth indicating prior experience in cross-country skiing (Youth 5, Interview), there appear to be no other skiing options utilised by the youth in the area. During the summer, the ski lift area may be used for walking or hiking to reach the benches on the hill (Youth 7, Interview; Youth Group 6, Interview; Observation). From the top of the hill there is a good view over the city, the fjord and the ocean (Observation)

Figure 4.11. The ski lift and the surrounding area in spring

Figure 4.12. The ski lift in winter (source: 10B student)

It seems that the ski lift in Tasiilaq holds varying degrees of place attachment for the youth. Some of them have positive experiences and emotions towards the ski lift (Youth 1,8, Interview; Youth Group 5,6,7, Interview) which may lead to a stronger sense of place attachment for those individuals. According to one youth, the ski lift is a *"cool"* place (Youth 8, Interview), while another describes the *"fresh air"* and *"excitement"* of skiing as a positive experience (Youth 1, Interview). In addition, one of the youth finds the winters *"boring"* without the ski lift (Youth 1, Interview). This underlines the importance of a place that caters to *"one's desired activities and goals"* (Scannell & Gifford, 2014) and emphasises why the distinct qualities of a place lead to place dependence (Ujang & Zakariya, 2015).

On the other hand, there are also some youth who exhibit a neutral place attachment to the ski lift (Youth Group 3,4,5,6,7, Interview), indicating that they neither hold strong positive nor negative feelings towards it. This indifference can be attributed to various reasons, such as a lack of interest in skiing or snowboarding (Youth 6, Interview; Youth Group 3,4, Interview), or potentially the infrequent use of the ski lift, which hinders the formation of a strong attachment (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). The youth explain the infrequent use of the ski lift area during the summer time by pointing out the soggy soil on the hill, which renders it impractical to go there for a walk (Youth Group 4, Interview).

While there are a few youth who appreciate the ski lift, it is worth noting that there are more who have a neutral attachment to it. Consequently, the overall attachment to the ski lift is classified as neutral.

4.2.5 Multi-field

The multi-field, situated near the mountains where the ski lift is located, stands out from its surroundings due to its artificial turf, as visible in Figure 4.13 (Observation). When snow is not covering it, this public space facilitates multiple purposes. During the summer, the multi-field is bustling with sports activities like rounders (Youth Group 4, Interview) and football, as seen in Figure 4.14 (Youth Group 3,4, Interview; Youth 1,2,5,7,8 Interview). It remains busy throughout the summer (Youth Group 4, Interview; Burdenski, Interview; Lundblad, Interview), as the sun never sets, allowing the youth to spend all day long here (Youth 8, Interview; Youth Group 4, Interview). Moreover, it is also a popular spot for social gatherings among friends and family (Youth 1,4,7,8, Interview; Youth Group 3, Interview), where some older youth sometimes drink alcohol with their friends (Youth Group 3, Interview).

Figure 4.13. The multi-field during summer (source: 10B student)

In addition to being a social spot, the multi-field offers an environment where the youth *"can be themselves"* and *"be loud"*, as there is ample space for them to utilise (Youth 1, Interview). It is also a venue for celebrating Greenland's National Day on June 21, where the youth and the rest of the city attend. The event includes food and activities for the community to take part in (Youth Group 3, Interview). League football teams also use the field for matches, and the youth occasionally come to watch (Youth 7, Interview; Youth Group 3, Interview). Additionally, the 10th graders hold an annual football match against their teachers before graduating (Youth 4, Interview). Due to the high level of activity, the Local Representative Committee[1] has ordered grandstands with 48 seats, which will be installed in the summer of 2023 when the shipment arrives (Lundblad, Interview). This investment showcases a strong commitment to enhancing the multi-field and highlights its significance for the entire community.

[1]The Local Representative Committee is an intermediary entity that serves as a bridge between the municipality and the local community. The committee often takes on the responsibility of funding and actively participating in local initiatives, acting as a supportive and empowering force for local projects and community-driven endeavors (Lundblad, Interview).

Figure 4.14. The busy multi-field (source: 10B student)

The multi-field is perceived as having important functional value for the youth, regardless of their age, based on the insights gathered. However, the one of the youth also has a substitute for the multi-field. The training center is mentioned as an alternative, providing indoor sports facilities like football or fitness. Nevertheless, the preference remains the multi-field, as it is larger and outdoor (Youth 2, Interview).

The emotional attachment to the multi-field is associated with feelings of happiness (Youth 7, Interview; Youth Group 3, Interview), *"healthiness"* (Youth 2, Interview), and *"excitement"* (Youth 1, Interview). For the youth, the multi-field holds great significance, as they spend most of their time there during the summer (Youth Group 4, Interview). Although there is also neutral attachment (Youth 4, Interview), the general sentiment is positive (Youth 8, Interview; Youth Group 2,5,6,7 Interview). One youth mentions that the multi-field feels like the center of the city during the summer, connecting both the locals and visitors from nearby settlements (Youth 7, Interview). The general positive emotional attachment to the multi-field makes it a *significant* and *relevant* place (Scannell & Gifford, 2014; Ujang & Zakariya, 2015) for the youth, regardless of their age. The multi-field is thus a place, where the youth feel familiar with the place, can participate in communal activities that foster community connection, which Ujang & Zakariya (2015) emphasise as essential factors for place attachment. Its role as a gathering place encourages a sense of belonging, ultimately reducing feelings of loneliness among its residents. In general, nearly all young individuals convey a strong positive attachment to the multi-field, establishing it as one of the places with the highest level of place attachment in Tasiilaq.

4.2.6 Training Center

Another place that the youth are attached to, is the training center, which is located near the school. This place hosts both sports activities and community events (Lundblad, Interview; Observation). The training center provides a court for playing sports like football, volleyball, badminton, and handball as well as a fitness area and sauna (Burdenski, Interview; Lundblad, Interview; Observation). The youth visit the training center to play football (see Figure 4.16) or work out at the fitness area (Youth 6,8, Interview; Youth

Group 2,3,6,7, Interview). For some of them, the activities involve watching other people play sports (Youth Group 3,4, Interview; Observation). During the winter, the place is very popular throughout the day (Burdenski, Interview; Observation). Overall, the training center emerges as an *activity support* (Scannell & Gifford, 2014) for team sports, workouts, or watching sports for the youth.

Figure 4.15. The training center being used to show films

Figure 4.16. One of the local teams practicing football

Over the year, the training center orchestrates a variety of events, including communal dinners for the entire community (Lundblad, Interview), weekly family activities (Burdenski, Interview), music contests (Youth 1, Interview), Christmas markets (Youth 1,4, Interview; Lundblad, Interview), climbing sessions, conferences, and cinematic events, as seen on Figure 4.15 (Observation). The youth mention that they participate in activities such as the Christmas markets, cinema, and the music contests (Youth Group 3,6, Interview; Youth 1,4, Interview; Observation).

Another significant factor of this place is the free access for everyone (Burdenski, Interview; Lundblad, Interivew; Observation), as the municipality has a vision to make all public spaces and events free of charge to ensure accessibility for all citizens (Lundblad, Interview). The Vice Mayor also comments on the role of the training center in the community, stating that it brings people together and provides a place for gatherings free for everyone (Hansen, Interview). The youth express positive sentiments towards the free access, as they believe it is important to have the place open to everyone (Youth Group 4, Interview).

The youth's regular workout routines and involvement in various activities within the training center highlight the lack of viable alternative places to fulfill their diverse needs. This limitation can be attributed to the training center's multi-functionality.

Some of the youth have a neutral place attachment (Youth 1, Interview; Youth Group 4,5,7, Interview), although the general place attachment to the training center is positive (Youth 6,8, Interview; Youth Group 1,2,5,6,7, Interview). The youth express feeling *"happy"* there (Youth 8, Interview) and *"happy about the place"* (Youth 6, Interview). Simultaneously,

one young person perceives the feeling of *"excitement"* for the multiple activities to do with friends (Youth 1, Interview). On that note, the Chairman of the Local Representative Committee explains the importance of togetherness in the community, which the locals value while participating in communal events or visiting the training center (Lundblad, Interview). One of the youth further describes the Christmas market as *"tiptop"* (Youth 4, Interview). The expression *"tiptop"* aligns with the concept of *social value* emphasised by Ujang & Zakariya (2015). Social value is fostered when a place meets *functional needs* and facilitates *behavioral goals*. This resonates with the notion put forth by Scannell & Gifford (2014) that satisfaction arises from engaging in preferred activities within these places. Furthermore, the training center can increase the social value by providing a place of connection to other individuals, which *"builds social capital in the community"* (Scannell & Gifford, 2014).

However, there is a division among the training center's users. A group of Danes is present at the training center but tends to exclude themselves from the activities in which the locals participate (Observation). As noted by Ujang & Zakariya (2015), *"a strong sense of attachment to a particular place is influenced by racial, ethnic or class identity"*. Based on this quotation, the place dependence on the training center may be affected by limitations of inclusion in certain activities due to perhaps racial, ethnic or class identity, as the groups lack cohesion when they are present there. This, in turn, can impact the availability for the youth to participate in all the functions that take place.

Both the Municipal Manager and the Vice Mayor stress the issue of not having people in charge of all the different activities the training center provides, which is why the full potential for multi-functionality is not fulfilled. Meanwhile, the municipality sees a lack of youth taking part in volunteering tasks (Viberg & Hansen, Group Interview2). Based on this, the training center may serve as a place of further engagement and activity for the youth if the training center can find volunteers to help awaken these activities. This can ensure that the place maintains and continues its social factor (Scannell & Gifford, 2014).

4.2.7 Fitness

The fitness center is another place, where some of the youth have an attachment towards. The place facilitates machines for workouts, as seen in Figure 4.17, which is why one of the youth comes here to train (Youth 8, Interview). The place also has other activities like table tennis for the younger youth, as well as cross-fit (Youth 8, Interview; Burdenski, Interview; Observation). Arctic Sports are practiced there, and the place is also used to host the championship of the Arctic Sports. This place is also without charges for the locals to utilise. Furthermore, it is possible for the locals to rent the building for different purposes, as seen in Figure 4.18(Observation).

Figure 4.17. Training equipment in the fitness

The attachment of the youth for this place is assorted. The attachment is for some of them positive (Youth Group 1,7, Interview; Youth 8, Interview), where others feel a negative (Youth Group 5,7, Interview) or neutral attachment (Youth Group 6,7, Interview; Youth 5, Interview). The negative and neutral attachment of the youth to the fitness, is not understood from the available data, but could potentially stem from a lack of fulfillment of functional needs. If public spaces fail to adequately meet the practical requirements and expectations of individuals, it can result in negative or indifferent feelings of attachment towards those places (Scannell & Gifford, 2014). However, it is important to note that this is an assumption as the data did not explicitly indicate this relationship. Therefore, further exploration is necessary to gain a deeper understanding of the factors contributing to negative and neutral attachment. Nonetheless, for one of the youth, this place is important to do cross-fit with friends *"as a team"* which makes a *"very happy"* mood (Youth 8, Interview), while others express they simply like the place (Youth Group 1,5,7, Interview). The general attachment is therefore neutral based on the mixed responses.

Figure 4.18. A music contest at the fitness (source: 10B student)

The fitness center exhibits a comparatively weaker attachment among the youth, as opposed to the training center. This can be attributed to the ownership of the fitness by the nearby orphanage, which limits public availability to specific times. As Ujang & Zakariya (2015) describes: *"Identity in an urban environment is to a greater or lesser degree defined by the environment's elements and activities or events taking place within that environment"*. Due to a lesser degree of events and activities and little mention of the place, a weak attachment seems apparent. While the fitness center may hold value for the youth who actively participate in the provided activities, it is important to acknowledge that this positive attachment is only true for some of the youth. There are others who exhibit neutral or even negative place attachment towards the fitness center, indicating that it may be more of a niche place rather than universally appealing. This diversity in attachment highlights the varying perceptions and experiences individuals have with regards to the fitness center as a important place. In general, the place attachment to the fitness is perceived as neutral, as only a few youth mention a positive attachment to it.

4.2.8 Igdlo

The indoor public space, Igdlo, is a youth house also called the culture house. It is a distinct architectural building, with an excellent view of the fjord due to its location on a hill and a big window section, which invites sunshine into the building, as seen in Figure 4.19 and Figure 4.20 (Youth 1, Interview; Observation). The building differs from the surrounding buildings as it is not painted in a color. The interior reflects a local Greenlandic connection by having dog sledges made into benches, a polar bear skin on the wall, their own pictures and paintings hanging on the walls, and a work of art illustrating a polar bear on a sliding door (Observation).

Figure 4.19. Igdlo's distinct architecture

Based on interviews with the youth one of them mentions, that the building misses colors (Youth 2, Interview), while another interviewee expresses appreciation for the architecture and interior, which is culturally rooted (Youth 1, Interview). When the design of a place effectively caters to the needs of the youth, it has the potential to intensify positive place attachment. By creating a comfortable atmosphere that aligns with their preferences and requirements, the likelihood of increased patronage and positive experiences is heightened (Scannell & Gifford, 2014).

The youth come to Igdlo to socialise and engage in the various activities that the place offers (Youth 1,5,6,7,8, Interview; Observation). The place is multi-functional as it facilitates activities including table football, playing FIFA and various board games, as shown in Figure 4.22 (Youth 1,5,6,7,8, Interview; Youth Group 4, Interview; Observation). Some of the youth also come to do their make-up, as Igdlo has a make-up table with proper lighting for that purpose (Youth 1, Interview; Observation). Igdlo furthermore provides free WiFi connection to all visitors, which the youth use to stay connected on social media and listen to music (Youth 6,8, Interview; Observation). The background music is a defining feature of Igdlo, as they have speakers for everybody to use, and the atmosphere is often filled with either Greenlandic music or pop music. In addition, there is a television located in the center of the room where the youth sometimes watch sports, including local teams playing. In a separate room, there are big cushions arranged to shape a couch in front of a large screen where the FIFA game is available (Observation).

Figure 4.20. The view to the fjord from inside Igdlo (source: 10B student)

The older youth spend most of their time at Igdlo, as it provides a place for them to spend time with friends or *"hang out"* and *"chill"* alone, as Figure 4.21 illustrates (Youth 1,2,5, Interview). This creates an inviting atmosphere where doing nothing is accepted, allowing the youth to be themselves (Youth 5, Interview; Burdenski, Interview; Observation). Some youth spend multiple hours daily at Igdlo, keeping the place busy during the day until it closes late in the evening (Observation).

As the youth spend several hours at this place, it invites for eating and snacking. Some days, the building is packed with different smells from the youth cooking, for example, pizza, buns, or cake. Moreover, some of the youth are baking in the kitchen primarily to share with the entire group gathered at Igdlo at the moment. The kitchen is also used for individual cooking, and always provides coffee, which the youth also enjoy (Observation).

Figure 4.21. A typical day at Igdlo with the youth hanging out

Figure 4.22. One of the activities available is the table football game

For special occasions, Igdlo organises events for the youth such as a girls' night or tournaments for different board games where there is a prize to win (Observation). The youth enjoy participating in these events (Youth 7, Interview; Observation). Igdlo facilitates outdoor activities for the youth, such as utilising sledge dogs, which requires them to feed the dogs. However, observation reveals that only a few of them use the dogs for dog sledding. Additionally, Igdlo provides equipment for cross-country skiing (Observation), and through an interview, the Coordinator of the community house explains that he helps the youth master this activity. The youth were likewise given the opportunity to assist tourists from cruise ships in cross-country skiing and earn a minor salary from it (Skifte, Interview). According to Scannell & Gifford (2014), place attachment can involve self-growth by introducing *new people, activities, or environments* that serve as resources for *self-change*. Igdlo provides new activities and environments and engages some of the youth in local initiatives that enable the youth to become more self-aware and foster their self-growth. The interaction with new people and involvement in various activities and environments can help shape or transform the identity of the youth.

Igdlo also serves as a significant place for the municipality and the Local Representative Committee to create a safe place where the youth can feel comfortable (Hansen, Interview; Lundblad, Interview; Observation). The Chairman of the Local Representative Committee explains how they aim to create safe spaces for children and youth to seek out when adults drink alcohol, especially at the beginning of the month or on weekends. The safe spaces can provide a spot, where the youth can get a break from the troublesome environment that

may evolve at home. For Igdlo's case, creating a safe space entails longer opening hours during certain weekends to allow and encourage youth to stay there longer than usual (Lundblad, Interview). Moreover, events can be organised on these weekends, aiming to attract more youth to spend time there (Lundblad, Interview; Observation). By creating a comfortable space in Igdlo for the youth, it supports their well-being and provides practical benefits, which can shape place attachment according to Scannell & Gifford (2014). Additionally, when *"a place provides a sense of safety and security"* (Scannell & Gifford, 2014) it can provide psychological benefits and reinforce place attachment. This may explain why the youth develop a stronger attachment to Igdlo, especially when they feel the need to escape from a troublesome environment.

One of the youth identifies an alternative to Igdlo being the community house (Youth 1, Interview). However, generally, the youth feel that there is no alternative to substitute for Igdlo and the activities occurring there (Youth 5,7,8, Interview; Youth Group 4, Interview). Through observation, it is noted that the free time club and Igdlo serve a similar purpose, but the main difference is the age division represented at the places. The free time club is for youth up to 22 years old, whereas Igdlo is for everyone between 14 to 30 years (Youth 5, Interview; Observation). As Igdlo is mostly for the older youth, the younger ones spend time at the free time club, which also makes Igdlo more busy when the free time club is closed. It seems, therefore, that Igdlo is an alternative for the younger youth to spend time when the free time club is closed. Furthermore, there is a gender representation divide as there are more males presented at Igdlo overall, which according to the youth may be due to females taking care of the home and potentially children, walking around the city with friends or a boyfriend. It is mentioned that the males are over-represented as they often come as a larger group of friends which spends time being together at Igdlo (Observation).

While some of the younger youth have a neutral place attachment to Igdlo (Youth Group 2,5,6,7, Interview), older youth have a positive place attachment to it (Youth 1,2,6,7,8, Interview; Youth Group 4,5 Interview). The neutral place attachment observed among the younger youth can be attributed to their infrequent visits (Observation). Due to that, their attachment to the place may not be as strong as those who visit more regularly. The level of attachment to a place is often influenced by the frequency of visits and the degree of familiarity with the surroundings (Scannell & Gifford, 2014; Ujang & Zakariya, 2015).

The emotions associated with Igdlo are happiness and laughter (Youth 1,6,8, Interview; Youth Group 4, Interview). One interviewee explains how Igdlo is a place to go on *"more challenging days"* (Youth 8, Interview), while another expresses it as a place where you can *"find peace with yourself"* (Youth 2, Interview). For others, Igdlo is highly valued since they *"care for it"* (Youth 1,6,7, Interview). The youth mention Igdlo as either their favorite place or a place of importance to them (Youth 1,6, Interview), whereas one interviewee expresses a sense of *"belonging"* to both the people and the place (Youth 7, Interview). As described by Ujang & Zakariya (2015), a place holds significance as it serves as *"a repository for emotions and relationships that give meaning and purpose to life, reflects a sense of belonging and important to a person's well-being"*. With both importance and sense of belonging associated with Igdlo, it becomes evident that the place provides meaning. Additionally, the *sense of belonging* contributes to increased *self-esteem*, formed through *positive qualities* associated with the place, thereby fulfilling *fundamental psychological*

needs (Scannell & Gifford, 2014). Therefore, Igdlo becomes a place of strong attachment, creating personal well-being and giving meaning to the youth.

The absence of participation requirements at Igdlo (Burdenski, Interview; Observation) may result in less social interaction among the youth. This can lead to feelings of boredom, particularly when their friends are not present (Youth 5, Interview; Youth Group 4, Interview). Interestingly, there is a contrast in experiences, with another youth expressing never feeling bored at Igdlo (Youth 1, Interview). As Ujang & Zakariya (2015) explain, *"places of different socio-cultural characteristics differed in the degree of attachment and how meanings are layered in similarities and differences"*. Thus, the two young people may differ in their degree of attachment to this place, depending on the activities they participate in. Therefore, the meaning of the function varies, which impacts their perception of being bored or not. Furthermore, one interviewee expresses that Igdlo can be too loud from time to time, with activities such as music, people, and table football creating a noisy environment (Youth 7, Interview). This highlights the diverse nature of individual experiences and attachments, as no other interviewees mention being disturbed at Igdlo. It suggests that perceptions of meaning and attachment can vary among individuals, emphasising the multifaceted nature of the place.

Despite the complexity of individual experiences, Igdlo is predominantly perceived as a highly positive and meaningful place for the youth. Their strong attachment and positive descriptions of the space affirm its significance in fostering functional and emotional needs. According to Scannell & Gifford (2014), *"places often include people, who influence the meaning, experiences, and activities inherent in a place"*. In the case of Igdlo, its inviting and inclusive atmosphere, free from regulations or requirements to participate in activities, fosters a welcoming environment for the youth. This allows the users to contribute to the meaning, experiences, and activities at Igdlo collectively shaping the place and deepening their attachment. Consequently, Igdlo holds a positive place attachment and stands as a source of positivity for the youth, where they feel accepted.

4.2.9 Free Time Club

The free time club (see Figure 4.23) is a popular spot among the youth (Observation). The youth enjoy spending time with their friends, playing table tennis, pool (see Figure 4.24), watching movies, and playing board games there (Youth 2,3, Interview; Youth Group 3,4,5 Interview). Some of the youth visit the club weekly (Youth 2, Interview), while others find the loudness distracting (Youth Group 4, Interview). As aforementioned, this place is targeted for the younger youth aged between 14 to 22 years and serves a similar purpose as Igdlo (Youth 2,5, Interview; Youth Group 4, Interview; Burdenski, Interview; Observation). Thus, some of the interviewed youth above the age limit do not express attachment to this place.

Figure 4.23. The free time club from the outside

Figure 4.24. One of the activities available is the pool table game

The free time club opens for the youth early in the evening and during the day the building is also used for pre-schooling children below the age of 14 years (Youth 2,3, Interview; Burdenski, Interview). Due to the multiple purposes of the building, the interior is characterised by childlike posters and furniture related to the pre-schooling purpose (Observation). The free time club and the activities available here are the only option for the younger youth to spend time, as they mention no alternatives connected to other public spaces (Youth 2,3, Interview). However, it is observed that Igdlo serves as an alternative for some of the younger youth who have reached the age requirement, particularly when the free time club is closed (Observation).

The youth have assorted attachments to the free time club. For those with positive emotional attachments, their feelings are linked to happiness and liking the place (Youth 3, Interview; Youth Group 2,3,4,5,7, Interview). Some of them explain that the positive attachment stems from feeling the coziness of being with friends (Youth 3, Interview) or feeling *"excited and energetic"* (Youth 2, Interview). Conversely, some negative emotional attachment is associated with the place (Youth Group 2,6, Interview), as it has too few activities to offer, becoming boring for the youth (Youth Group 6, Interview). Furthermore, the youth feel that the place is too small, and they lack space (Youth Group 6, Interview), which can be why some mention that they would like a second free time club (Youth Group 1, Interview). Scannell & Gifford (2014) explain how discordant meanings can impact the well-being of users, leading to negative attachment when a place fails to meet other needs.

The perceptions of the youth towards the free time club demonstrate complexity and variation, with both positive and negative attachments being present. The positive attachment can be attributed to the free time club's ability to facilitate social gatherings among friends and provide leisure activities during spare time. However, the negative attachment arises from the issue of limited space, which creates challenges in accommodating all the youth who wish to utilise the free time club. Despite the existence of negative attachment, the overall place attachment to the free time club remains positive. This is evident from the positive feelings expressed by multiple groups and interviewees towards the place.

4.2.10 Community House

The community house is located in the city center, where various events are organised for the community. The events cater to different groups or associations of the community, while some are open to everyone (Lundblad, Interview; Burdenski, Interview; Skifte, Interview; Observation). Communal dinners for elderly people, tournaments in different games, contests, flea markets, cinemas for children and youth, bingo, and seminars are some of the events that take place there (Youth 1,3, Interview; Lundblad, Interview; Skifte, Interview; Observation). In addition to organising events, the community house is also available for rent to anyone who needs a space for gatherings. This flexibility allows the community house to become an extension of people's homes, especially when their houses are not big enough to host a large crowd (Burdenski, Interview; Skifte, Interview). Furthermore, the community house is free of charge to rent for public purposes (Hansen, Interview; Burdenski, Interview; Skifte, Interview).

The community house is one of the public spaces where the Local Representative Committee and the municipality try to create a safe environment for children and youth to get away from issues at home (Lundblad, Interview). The place has a non-alcohol policy to create a safe and comfortable space. This also provides an ability to exclude drunk people attending events there, ensuring the space to remain safe for the users (Lundblad, Interview; Burdenski, Interview). The main activity for youth at the community house is the disco ('dansemik'), as seen in Figure 4.25, which takes place every weekend on Fridays and Saturdays (Youth 1,2,8, Interview; Youth Group 2,3,4,7 Interview; Observation). Children can participate from 19:00 to 21:00, after which the disco continues for the youth until midnight (Skifte, Interview). The youth enjoy dancing, listening to loud music, and watching others dance at the disco, as seen in Figure 4.26 (Youth 1,2,8, Interview; Observation). The weekend disco not only offers an enjoyable activity for young people but also prioritises their comfort.

Figure 4.25. The weekend youth disco

As the community house mostly is the disco place for the youth, the older youth mention the bar & disco as the only alternative for the community house (Youth Group 4, Interview), whereas the younger youth below 18 years did not mention alternatives.

The emotional attachment to the community house is mainly positive, as multiple mention it as a place they like or are happy about (Youth 2, Interview; Youth Group 2,3,4,5,6,7, Interview). Only a few youth from a 9th grade mention having a neutral emotional attachment to the community house (Youth Group 5, Interview), but this neutral attachment does not seem prominent. Some of the youth elaborate on their feelings when participating in the discos, describing them as *"nice"* and enjoyable (Youth 8, Interview), while another describes feelings like *"love the vibe around people"*, *"having fun"*, and *"caring for the place"* (Youth 1, Interview). When conversing with the youth about the community house, their enthusiasm and overwhelmingly positive responses vividly demonstrate a strong sense of attachment to the place.

Figure 4.26. Young people dancing at the disco (source: 10B student)

The general positive attachment of the youth to the community house, particularly through their attendance at the weekend discos, can be linked to what Scannell & Gifford (2014) defines as *entertainment* in the context of place attachment. The presence of entertainment in these places contributes to a level of stimulation that is perceived as interesting, novel, exciting, fun, or exhilarating. This suggests that entertainment serves as a significant benefit of place attachment, enhancing the overall positive experience and strengthening the attachment of the youth to the community house. For the youth, the social value of the community house is of great importance as it fulfills their need for *social interaction* (Ujang & Zakariya, 2015). The public space provides a platform for them to engage with their friends, build relationships, and participate in social activities. Additionally, the community house serves as a source of *physical and physiological comfort* for the youth. It offers a sense of safety and security (Scannell & Gifford, 2014), allowing them to escape from any issues they may be facing at home. This aspect of comfort contributes to their overall positive experience within the community house, further strengthening their attachment to the space. Overall, almost every young person exhibits a strong positive bond with the community house, making it one of the locations in Tasiilaq with the highest level of positive place attachment.

4.2.11 Bar & Disco

The bar & disco are located in the same building, but they serve slightly different functions. The primary function of both places, is to socialise with friends and have a drink (Youth 7,8, Interview; Youth Group 3, Interview; Burdenski, Interview; Observation). People of all ages above 18 years can be found here (see Figure 4.28), with some also choosing to drink non-alcoholic beverages and simply hang out (Observation). On Saturdays, the disco hosts live music performances (see Figure 4.27) that draw in young people who come to dance and enjoy the music (Youth Group 3, Interview; Observation). In contrast, the bar primarily serves as a space for socialising and having conversations with friends (Observation). Some of the youth visit the bar & disco just to *"see what is happening"* (Youth 8, Interview; Observation), while others work there (Youth 7, Interview; Youth Group 4, Interview; Observation). Moreover, due to its extended opening hours, the bar & disco is the sole gathering place available for young people to socialise after the community house, the free time club, and Igdlo close at night (Observation). Since alcohol consumption is not allowed in the community house, the bar & disco is the only place open for youth to hang out and have a drink at the same time (Youth Group 3, Interview; Observation). However, for some of the youth, the community house is an alternative to go dancing (Youth Group 4, Interview).

Figure 4.27. Live music at the disco

Figure 4.28. People hanging out at the bar

Emotional attachments to the bar & disco are varied, ranging from positive to negative. Some of the youth have a positive attachment to the place (Youth 8, Interview; Youth Group 3,4,5,6, Interview), associating it with happiness and laughter (Youth 8, Interview; Youth Group 3,4, Interview). Others have a neutral attachment to the place (Youth Group 4,6,7, Interview). However, some of the youth do not like the bar (Youth 1,2,4,5,7, Interview; Youth Group 5,6,7, Interview). They feel uncomfortable around drunk people, and the proximity of the bar to the community house makes them feel unsafe when at the community house, especially at night (Youth 1,2,4, Interview). Past violent incidents have also contributed to this negative perception (Youth 1,2, Interview). Personal negative experiences, such as parents getting drunk there, have likewise affected some youth's perception of the place (Youth 2, Interview). The question *"Why do they make [drink]*

alcohol?" (Youth 5, Interview) when speaking about the bar suggests a rejection of associating socialising and fun with drinking, and may be indicative of a desire for alternative social spaces that do not revolve around alcohol consumption.

The degree of place attachment to the bar & disco in Tasiilaq is highly contingent on individual experiences and social interactions that take place within or around it (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). For some, the bar & disco serves a unique functional purpose that cannot be replaced by any other establishment in the area, leading to a sense of place dependence (Ujang & Zakariya, 2015). Certain places become places of attachment due to their ability to provide *entertainment* and *fun* for those who visit them. This stimulation experience can contribute to the development of a positive place attachment (Scannell & Gifford, 2014).

Conversely, negative emotional associations with the bar & disco can trigger a negative place attachment, which may be influenced by external factors, such as *negative personal experiences* (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). The concept of the *shadow side* of place attachment recognises the coexistence of negative or challenging aspects of attachment alongside the positive ones, which can impact an individual's well-being (Scannell & Gifford, 2014). This is exemplified by the experiences of some youth who do not feel comfortable and safe around the bar & disco.

Furthermore, some of the younger youth express neutral place attachment to the bar & disco (Youth Group 4,5,7, Interview). This may be due to the fact that the bar is only accessible to individuals above the age of 18 years, which limits its accessibility and functional use for this age group.

It is important to note that place attachment is not a fixed concept and can evolve over time (Scannell & Gifford, 2014). The fact that some youth still drop by the bar & disco to hang out with friends, despite expressing negative feelings towards it, highlights the complexity of place attachment and the potential overlap or contradictions between functional and emotional needs (Scannell & Gifford, 2014). Particularly as there are no other places open during those hours, the bar & disco may be the only viable option for socialising, underscoring the interdependence between place attachment and practical considerations.

4.2.12 Municipality Square

The municipality square, as shown in Figure 4.29, is adjacent to the municipality administration and the community house and is considered *"the heart of the city"* (Hansen, Interview). The outdoor place is characterised by a unique feature, a Christmas tree that doubles as a bench due to its stand, which can be seen in Figure 4.30. The adjacent playground is a popular spot for children to play, while people of all ages can be seen sitting on the Christmas tree stand or the multiple benches surrounding the square (Observation). The Christmas tree is a landmark and is even present in April as it represents the only tree in the city (Viberg, Group Interview2; Observation). During summer, the square is a popular place for youth to hang out, play football, and rounders (Youth 6,7,8, Interview; Youth Group 3,4,6, Interview; Observation). During the summer months, the sun barely sets in the region, making the municipality square a popular destination for youth in the evenings and nights when Igdlo or the free time club are closed as a place where you can

"play all night" (Youth 7, Interview). The square is frequented by many young people during this season (Youth 7, Interview). Although the square is utilised less during winter due to the snow and ice, youth can still be found playing there (Youth Group 4, Interview; Observation).

Figure 4.29. The municipality square when no activities or events are happening

Figure 4.30. A communal event at the municipality square (Youtube Video, 2019)

The square is also the heart of many activities and events during May's "Make Me Healthy" month (Youth 1,8, Interview; Youth Group 3,4, Interview). Other events and activities in which the youth actively participate include the Greenlandic National Day on June 21st, as well as flea markets, music events, and the lighting of the Christmas tree, as seen in Figure 4.31 (Youth 1,4, Interview; Lundblad, Interview; Hansen, Interview; Burdenski, Interview). During Children's Day on May 1, the municipality square turns into a fair with a bouncing castle, sausages, candyfloss, and live music (Youth 1, Interview; Observation). These events are for the whole community (Youth 7, Interview; Youth Group 4, Interview) and for some of the youth it feels like there is *"space for the entire city"* to participate (Youth 7, Interview). According to the Chairman of the Local Representative Committee, people like to join these types of events on the square as they care about the traditions and *"togetherness"* of the community (Lundblad, Interview).

Figure 4.31. The Christmas tree on the municipality square (source: 10B student)

The municipality square plays an important role in the social and cultural life of the community, bringing people together through various events and activities. Most of the youth thereby have a positive attachment to the municipality square (Youth 4,6, Interview; Youth Group 3,6,7, Interview), with some stating they would not want to change anything (Youth 7, Interview; Youth Group 3, Interview) which underlines an appreciation of the *quality of the place* and thereby a positive place dependence (Scannell & Gifford, 2014; Ujang & Zakariya, 2015). One youth even mentions that the square and its communal activities, such as the flea market, are *"cozy"* and enjoyable to participate in (Youth 4, Interview) which indicates a positive emotional attachment to the square.

According to Scannell & Gifford (2014), social gatherings contribute to a feeling of attachment to a place because they provide a sense of social comfort, which translates into feeling connected to the broader community. Moreover, the *activity support* and *entertainment* happening on the square enable the youth to participate in *preferred or novel activities*, which contributes to positive place attachment.

Nonetheless, the square may not have strong emotional or functional attachment for all the youth. Some youth express a neutral attachment to the square (Youth 2,8, Interview; Youth Group 5, Interview), suggesting a lack of strong emotional or functional attachment. For instance, one youth mentions that they only go to the square to bring their sibling to the playground (Youth 2, Interview), signaling a purely functional use of the place. This lack of place dependence may be attributed to various factors, such as personal preferences or lack of opportunities to engage with the place.

The square may not have strong emotional or functional attachment for all the youth, as evident by the neutral attachment observed among some of them. However, the municipality square is an important and valued place for some of the youth, activating a *sense of community* (Scannell & Gifford, 2014). Therefore, it serves as an overall place of positive attachment for the youth.

4.2.13 Overview of Youth Place Attachment

The analysis of the youth's place attachment shows that the youth in Tasiilaq utilise both indoor and outdoor public spaces, and their attachment to these places can be influenced by functional and emotional experiences.

Figure 4.32 provides a visual representation of the level of attachment of the youth to the various identified public spaces. It illustrates the diversity of places that the youth frequently visit, emphasising the significance of community spaces, outdoor activities, and sports in their lives. Positive place attachment is observed in places such as the Flower Valley, fjord, municipality square, multi-field, benches, community house, Igdlo, free time club, and the training center due to the significant functional and emotional purpose that they serve for the youth. On the other hand, neutral place attachment is noted for the fitness center, and the ski lift as not all youth have strong functional or emotional needs to frequently visit these places. Furthermore, the bar & disco is found to have both positive and negative place attachment among the youth, which can be attributed to their varied experiences and perception of its function and the emotional experiences connected to it.

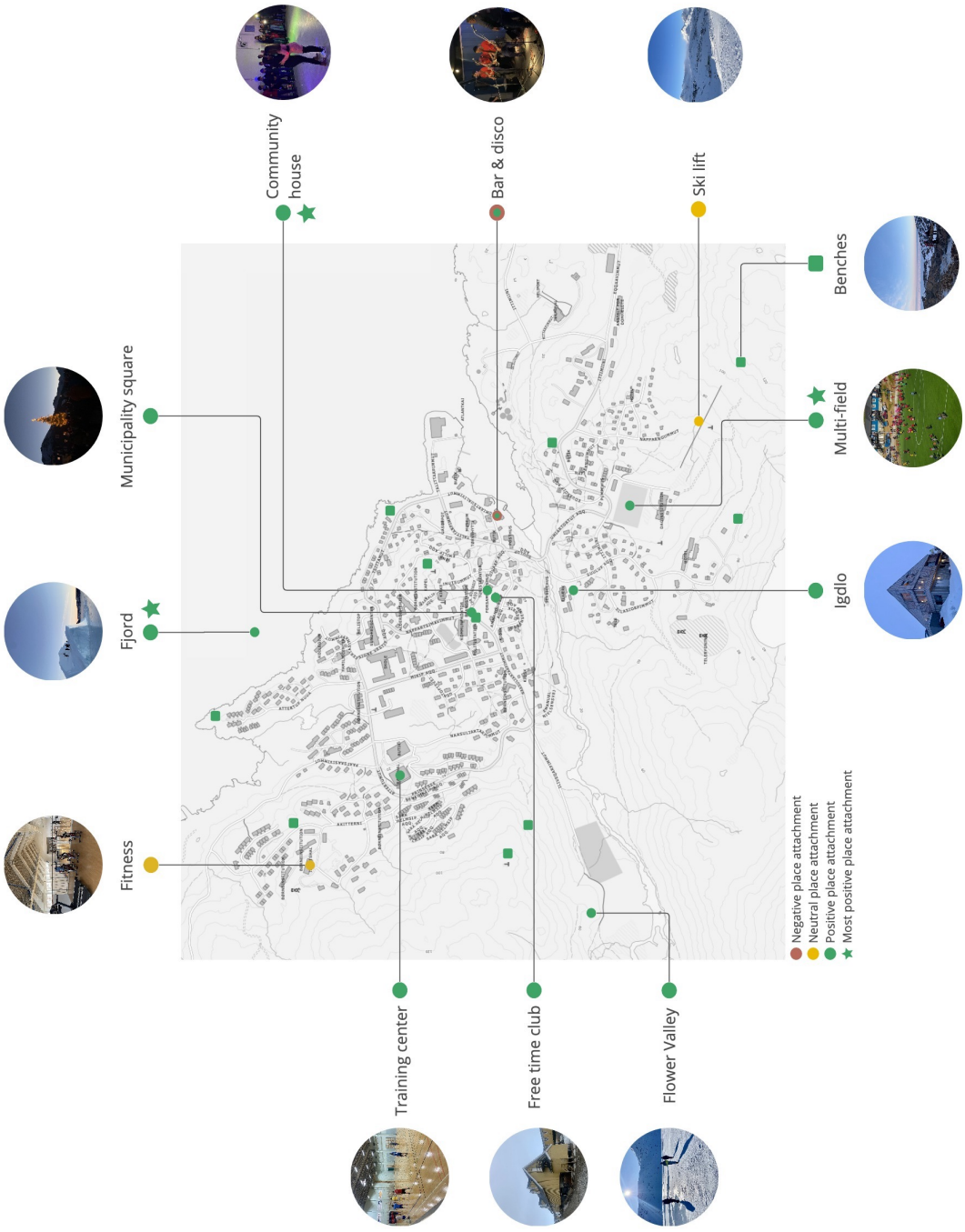

Figure 4.32. The youth's place attachment in Tasiilaq. Base-map adapted from Asiaq (nodate)

In the examination of place attachment among the youth in Tasiilaq, it is discovered that various places meet a variety of positive functional and emotional requirements. Notably, certain places exhibit multi-functionality, enabling the simultaneous fulfillment of multiple needs of the youth. In particular, it is observed that *social interaction and a sense of togetherness*, engaging in *physical activities*, and having access to *reflective spaces* are the most prevalent needs of the youth, which constitute components of the *functions of place attachment* (Scannell & Gifford, 2014).

It is important to recognise that specific places possess distinct physical and social characteristics that increase the likelihood of fostering attachment. Once such attachment is established, it often leads to enhanced well-being (Scannell & Gifford, 2014). In the case of Tasiilaq, the promotion of social interaction and a sense of togetherness, facilitating physical activities, and providing reflective spaces emerge as integral components that shape place attachment and consequently impact the well-being of the youth positively. However, it is important to acknowledge that place attachments can also have negative implications (Scannell & Gifford, 2014). While the examination of place attachment among the youth in Tasiilaq mostly reveals positive aspects, it is crucial to recognise that negative experiences or challenges can arise within these attachments. These negative implications may impact the well-being of the youth and warrant attention.

One of the key needs that is identified is the desire for *social interaction and a sense of togetherness*, as well as a need for a comfortable and secure place to spend time with friends. The community house, Igdlo, the free time club, municipality square, and multi-field are the places that best meet these needs of the youth. While the bar & disco may also serve as a meeting place for friends, the perception of comfort and security differs significantly among the youth. Among the public spaces frequented by the youth in Tasiilaq, the community house stands out as having one of the highest degrees of place attachment.

In addition to social needs, the youth in Tasiilaq also express a desire for places where they can engage in *physical activities*, such as the multi-field, training center, fitness center, and ski lift. While all of these places serve this function to some extent, the multi-field is identified as the place with the highest degree of place attachment among the youth.

Finally, a need among the youth for private and *reflective spaces* is also observed, which places such as the Flower Valley, fjord, and benches scattered throughout the city and beyond provide. These places provide opportunities for solitude and contemplation, as well as a connection to nature. Therein, the fjord emerges as the place with the highest degree of place attachment among youth of all ages in Tasiilaq.

Overall, the analysis highlights the multifaceted nature of place attachment and the importance of understanding the different functional and emotional needs of the youth that different places can meet. Therefore, recognising the distinct qualities that make certain places more meaningful and significant to the youth in Tasiilaq, beyond what is visible from the outside, is crucial. Additionally, considering the impact of factors like climate change on their place attachment is essential.

4.3 Climate Change in Tasiilaq

The climate serves as one influencing factor that can have profound implications for the actualisation and transformation of place attachment. Consequently, understanding the effects of climate change on public spaces and their utilisation becomes imperative. The following analysis therefore examines climatological data and local knowledge concerning climate change in Tasiilaq.

4.3.1 Climatological Data

The following section presents climate parameters for southeast Greenland, with a focus on Tasiilaq situated on Ammassalik Island. In the case of Tasiilaq, available and accessible data is limited, which is why knowledge is supplemented with data for Ammassalik Island, Southeast or East Greenland as an indication of how climate change may evolve in Tasiilaq. Literature for this area depicts patterns of climate in terms of temperature, precipitation, sea ice, and wind.

Temperature

Even though the Arctic experiences four times more rapid temperature changes compared to the global average (Rantanen et al., 2022), the average temperature changes in Southeast Greenland align with the annual average changes observed globally (Cappelen, 2021b; J. H. Christensen et al., 2016). According to J. H. Christensen et al. (2016) the temperature in Southeast Greenland has increased by approximately 2.0 °C since 1895, with occasional fluctuations.

Both Mernild et al. (2008) and Cappelen (2021b) confirm an overall increase in air temperature for all seasons. However, the highest temperature increase for Southeast Greenland has been observed during the winter season, which can be attributed to the reduction of snow and ice in the region (J. H. Christensen et al., 2016). In contrast, data for Ammassalik Island indicates that the most significant temperature change occurs during the summer (van der Schot et al., 2023). These observed temperature changes vary depending on seasons in Southeast Greenland and Ammassalik Island, as complex topographical differences impact the local weather patterns (J. H. Christensen et al., 2016; Mernild & Liston, 2010; van der Schot et al., 2023).

The projections for temperature in Southeast Greenland aligns with global projections. The RCP4.5 and RCP8.5 scenarios project a temperature increase of 2.7 °C and 5.4 °C, respectively, for winter, and 2.1 °C and 4.2 °C, respectively, for summer by the end of this century (2081-2100) compared to the reference period of 1986-2005. The projections are more certain about an increase in temperature after 2050, with little evidence for significant cooling periods to happen (J. H. Christensen et al., 2016).

Precipitation

Since temperature is rising in Greenland, the precipitation is impacted and changes (Cappelen & Jensen, 2021; Cappelen, 2021b; IPCC, 2014a; Rysgaard et al., 2003). Coastal locations experience a higher amount of precipitation compared to inland locations, and for Greenland, the southeast area witnesses the highest amounts of precipitation (Cappelen

& Jensen, 2021; Cappelen, 2021b). This is also evident for Tasiilaq (van der Schot et al., 2023).

The annual average precipitation for Tasiilaq has become more pronounced in the 30-year period from 1990 to 2019 compared to the period of 1960 to 1989 (van der Schot et al., 2023) and is projected to increase further at the end of this century (2081-2100) (J. H. Christensen et al., 2016). This implies more liquid precipitation in correlation with the increase in temperature, which most likely persists in the future (J. H. Christensen et al., 2016; van der Schot et al., 2023). This increase in precipitation can cause an increase in pluvial surface runoff (van der Schot et al., 2023). Moreover, the observations for precipitation do not indicate a significant change (J. H. Christensen et al., 2016; van der Schot et al., 2023). However, precipitation during summer has been observed to be decreasing for Tasiilaq, although this is based on lack of high-quality measurements (van der Schot et al., 2023). As for temperature, the data for precipitation varies due to the complex topography, which impacts the local weather patterns and introduces uncertainties (J. H. Christensen et al., 2016; Mernild & Liston, 2010; van der Schot et al., 2023).

At the end of the century (2081-2100), projections estimate an increase in precipitation for Southeast Greenland. For the area of Tasiilaq, this indicates a 15% increase in precipitation. Seasonal increases, according to RCP4.5 and RCP8.5, are projected to be 11% and 20% for winter and 13% and 27% for summer, respectively (J. H. Christensen et al., 2016).

Extreme precipitation is also expected to become more frequent in the southeast of Greenland at the end of the century (2081-2100). It is expected to occur particularly in areas with fjords and mountains close to the ocean, where extreme precipitation events already happen more frequently (J. H. Christensen et al., 2016).

Sea Ice

East Greenland also faces a reduction in sea ice. Along the east coast, there is a band of several hundred kilometers of ice that provides drift ice. In the southern part of the east coast, where Tasiilaq is situated, the sea ice undergoes seasonal variations. During the summer, the sea ice spreads and melts, while in the winter, it remains fully frozen until temperatures and winds cause it to crack and disperse again (Cappelen, 2021a). The ice cover of the sea in Southeast Greenland is reducing, and this trend is expected to continue with global warming. Spreading of sea ice annually will therefore be less, but projections suggest a significant reduction in sea ice dissemination by around 2050 (J. H. Christensen et al., 2016).

Wind

Wind patterns in Tasiilaq are predominantly calm, with 45% of the time being almost still conditions and 98% of the time being nearly calm (Cappelen & Jensen, 2021; Cappelen, 2021a). However, Tasiilaq experiences the highest recorded values of high wind speeds (10-minute averages) in all of Greenland, with the highest recorded speed being 51.0 m/s (Cappelen & Jensen, 2021). According to Moore et al. (2015), the southeast coast of Greenland experiences high wind speeds more frequently due to topographical barrier flow.

Characteristically, Ammassalik Island is known for its north-westerly strong wind events, called *piteraqs*[2], which can reach hurricane intensity and cause severe damage to urban environments (Cappelen & Jensen, 2021; Cappelen, 2021a; Oltmanns et al., 2014). The wind originates from the ice sheet (Oltmanns et al., 2014) and through the topography, creates a local cold outflow that canalises to the coastal area, with Tasiilaq being the most exposed location (Cappelen & Jensen, 2021; Cappelen, 2021a). According to J. H. Christensen et al. (2016), the frequency of extreme weather events, such as strong storms, is expected to intensify in the future. This intensification of extreme weather events may result in more frequent strong storms in Tasiilaq and the surrounding areas.

4.3.2 Local Knowledge

The locals, including the youth, in Tasiilaq have experienced climate changes that align with scientific findings. Observations by local hunters along the east coast, including Tasiilaq, indicate climate change in the form of warmer weather, disappearing glaciers, and reduced sea ice, as documented by Writers (2018). These changes are further supported by reports from local hunters in Tasiilaq, who have witnessed warmer temperatures, deteriorating weather conditions, more frequent storms, glacial retreat, and increased wind intensity. While climate change has significant implications for their livelihoods, the Arctic indigenous peoples do not consider it the most pressing issue (Sejersen, 2015). However, the Arctic indigenous peoples do express concerns, albeit to a lesser extent, about climate change, particularly in relation to its impact on extreme weather events and seasonal variations (Huntington et al., 2019; Laruelle et al., 2019). In the following section, we will analyse how the locals describe the impacts of climate change on Tasiilaq and examine how these changes potentially affect the public space.

Temperature

Based on interviews with the locals, it becomes evident that changes in climate have been observed in Tasiilaq. According to one interviewed youth, climate fluctuations were already noticeable 50 years ago based on discussions within their family. They hold the belief that these changes are natural and anticipate a return to a colder period in the future (Youth 7, Interview). Conversely, another interviewee attributes the observed temperature changes to climate change (Youth 1, Interview). Furthermore, an interviewee points out the increase in temperature, explaining that summers start earlier and winters arrive later than before (Youth 8, Interview). These fluctuations in temperature have also been acknowledged by the Vice Mayor, who mentions the extremely cold winter experienced during 2022/2023 in comparison to other winters (Hansen, Interview).

The cold winter weather had a positive effect on visiting the settlements using snowmobiles or dog sledges, as the surrounding fjords were completely frozen. This made the fjords viable transportation routes (Hansen, Interview). However, despite the rising temperatures, one of the youth mentions that temperatures have not yet affected the frozen fjord and its functions during winter (Youth 2, Interview).

[2]The East Greenlandic word for *"sudden strong and cold wind, directed out of the fjord"* (Oltmanns et al., 2014)

Precipitation

According to local knowledge, the winter of 2022/2023 lacked snow in general (Youth 1,3, Interview; Youth Group 3, Interview; Lundblad, Interview; Burdenski, Interview; Observation). Moreover, one interviewee explains that there was more snow in the past (Youth 1, Interview). The Chairman of the Local Representative Committee explains how the conditions for precipitation fluctuated in recent years. For example, Tasiilaq received a lot of snow, *"more than usual"*, during the winter of 2021/2022, but in the winter of 2022/2023, Tasiilaq received liquid precipitation that caused most of the snow to thaw (Lundblad, Interview).

The different precipitation conditions impact the mobility in the city and pose a challenge for managing large amounts of snow when the city receives more than usual. Moreover, snow serves as better mobility conditions for snowmobiles, and less snow can make snowmobiling dangerous (Burdenski, Interview). The Vice Mayor adds that snow conditions also affect the ability to visit the settlements during winter (Hansen, Interview).

The increase in liquid precipitation necessitates the implementation of robust water infrastructure to effectively manage pluvial runoff, as emphasised by the Chairman of the Local Representative Committee. Tasiilaq already possesses adequate infrastructure for handling meltwater from snow and ice (Lundblad, Interview). However, during extreme precipitation events in Tasiilaq, which further intensify thawing, the existing water infrastructure proves insufficient, leading to uncontrolled pluvial runoff (Lundblad, Interview; Observation).

The lack of snow also affects the utilisation of the ski lift, as experienced in the winter 2022/2023 when it was unable to operate due to insufficient snow (Youth 1, Interview; Lundblad, Interview; Observation). Consequently, the function of the ski lift undergoes changes when there is insufficient solid precipitation in winter. Furthermore, the impact of climate change becomes evident during the summer thawing period. Currently, the ski lift area experience increased sogginess and wetness for this period (Youth Group 4, Interview). Therefore, the increase in precipitation for the winter season compounded by the existing thawing process might increase this sogginess and wetness of the area.

The combination of insufficient solid precipitation during winter and excessive liquid precipitation during summer, along with the ongoing thawing, directly affects the functionality of the ski lift. These environmental changes can disrupt normal operations, making the ski lift area unsuitable or challenging for its intended purpose.

When using other outdoor public places, the youth prefer *"good"* weather conditions, without precipitation (Youth 2, Interview). For instance, they prefer going to the Flower Valley when it is sunny (Youth 1,2, Interview; Youth Group 3,4, Interview), while others like to enjoy nature regardless of the weather (Youth 4,6, Interview). Similarly, the weather conditions impact the recreational activities on the fjord, where young people tend to go when there are good weather conditions (Youth 2,7, Interview), while fishermen and hunters use the fjord in almost any weather condition (Lundblad, Interview; Observation). However, during bad weather conditions such as rain or storms, the benches (Youth Group 3, Interview; Youth 1,4,7, Interview; Observation) and the municipality square (Youth 1, Interview; Youth Group 4, Interview; Observation) are not utilised by the youth. One

interviewee mentions the difficulty in accessing some benches during icy conditions (Youth Group 3, Interview; Youth 1,4,7, Interview; Observation), which limits the usage of them (Youth 7, Interview). One of the youth even says that when there it bad weather *"you stay home"* and would not go to the community house or multi-field (Youth 1, Interview). Nonetheless, for some of the youth, the multi-field is used in any weather condition, even when it is raining or windy (Youth 2,8, Interview; Youth Group 4, Interview). However, severe rain can flood the multi-field, rendering it unusable (Youth 1, Interview). Furthermore, extreme rain events in the past have caused flooding that closed a road hindering the accessibility to Igdlo (Lundblad, Interview), which prevented the youth from accessing it (Youth 1, Interview).

Some also describe that rain is something they enjoy in the summer time (Youth 6,8, Interview). In the winter time when there is snow, the rain is negatively perceived by some as it gets slippery when moving outside (Youth 7,8, Interview).

Sea Ice

The locals in Tasiilaq have observed a shift in drift ice covering the ocean, as pointed out by the Chairman of the Local Representative Committee (Lundblad, Interview), which is consistent with the findings of Cappelen (2021a). The amount of ice melting varies each year (Youth Group 3, Interview), and there has been a trend of sea ice melting occurring earlier in the summer over the past three to four years (Lundblad, Interview). The melting of sea ice affects the ability to navigate boats, making it possible to sail from the fjord to the ocean through the drift ice. This creates uncertainty for the locals to know when it is safe to start sailing, making them more dependent on understanding how the drift ice spreads where the fjord meets the ocean. The Chairman of the Local Representative Committee further thinks that the potentially earlier sailing season could be for the better for them, as cargo ships may arrive earlier some years (Lundblad, Interview). Moreover, if there is not too much sea ice, the hunting season by sail starts earlier (Youth 3, Interview). This observation aligns with the Vice Mayor's statement, highlighting that climate change affects the locals' way of life in various ways (Hansen, Interview).

Local hunters from Tasiilaq have noted that the changes in less sea ice make it difficult for them to use dog sledges, forcing them to use boats instead. Local hunters also emphasise that they used dog sledding more frequently 10 to 15 years ago, which is no longer feasible (Writers, 2018). The fjord and the activities taking place there are impacted by fluctuations in sea ice, and the impacts are perceived differently. Some locals perceive the impacts directly in relation to sailing on the fjord, which affects their transportation to other places for hunting. Others perceive it as a change on their modes of transportation for winter in general.

Wind

The wind, especially during storms, emerges as a notable concern for the locals (Observation). This sentiment is echoed by one of the interviewed youth who identifies wind as a climate parameter negatively affecting the usability of open public spaces (Youth 6, Interview). Furthermore, both the Vice Mayor and the Chairman of the Local Representative Committee highlight the challenges they face in constructing citizen's huts

near the city due to the destructive impact of piteraqs (Lundblad, Interview; Hansen, Interview).

The Chairman of the Local Representative Committee acknowledges that people tend to stay indoors during extreme weather events such as piteraqs (Lundblad, Interview). One of the youth interviewed goes as far as expressing a strong dislike for piteraqs, stating that they *"hate"* these events because they hinder the interviewee's ability to go out into nature (Youth 6, Interview). However, some of the youth mention the windy weather as a fun factor, when they play football at the multi-field, as the wind makes the ball turn unpredictably. The same group of young people mention the Flower Valley as a place, where they can go to hide from the wind due to the topography, which they appreciate (Youth Group 4, Interview). Wind can have a positive impact on activities in open public spaces, but storms like piteraqs are not perceived as positive weather conditions as it keeps the youth indoors.

Climate Change Impact on Public Spaces

Climate change is having significant effects on public spaces in Tasiilaq. Local expertise reveals that open public spaces are particularly vulnerable to these impacts, while indoor public spaces are relatively less affected. The changing climate parameters, including temperature, precipitation, sea ice, and wind, directly influence the activities within public spaces, potentially affecting the youth's place attachment. However, the specific impact of future climate changes on place attachment remains uncertain.

Discussion 5

In this section, the impact of climate change on the youth's place attachment is discussed. Furthermore, the applicability of the research to other cases and the decolonisation of science approach applied to the case are reflected upon.

5.1 Impacts of Climate Change on the Youth's Place Attachment

The observations made by the locals, especially the youth, along with the climatological data, indicate that climate change is having an impact on Tasiilaq and the public spaces that have been identified by the youth. The question is how these changes will impact the utilisation of these public spaces and the place attachment of the youth. As noted earlier, place attachment is a psychological bond that people develop with places based on their experiences and emotional connections and the function of the place. If these public spaces are no longer accessible or have changed in ways that are no longer appealing, the youth may begin to feel either less or a changed attachment to them. This change in attachment can affect their sense of belonging and connection to the community as a whole. Therefore, the aim of the following discussion is to explore how climate change potentially affect the youth's attachment to the public spaces that have been identified.

5.1.1 Indoor Public Spaces

The analysis indicates that indoor public spaces are less affected by the impacts of climate change compared to outdoor public spaces, since the latter are more exposed to the elements, represented by climate parameters. This finding is positive for the place attachment of the youth, considering that six out of the twelve public spaces identified by the youth are indoor.

Although indoor public spaces may not be directly affected by the elements, climate change can still impact their accessibility, which could have effects on how the youth utilise and attach to these places. This, in turn, may result in the most significant impact on their place attachment to indoor public spaces due to climate change. For instance, Igdlo has experienced extreme rain events in the past, causing flooding and rendering the place inaccessible. Some of the youth have also mentioned refraining from leaving their houses during bad weather, such as rain or storms. With extreme precipitation and storms becoming more frequent due to climate change, accessibility to public spaces like the free time club, community house, training center, fitness, and the bar & disco could be hindered in the future. This decrease in the frequency of visits to these places can have negative

implications for place attachment, as frequent habitual interactions are integral. In turn, this could have an adverse effect on social interactions and entertainment, which are also crucial factors for place attachment. Considering the youth's need for social interaction, comfortable and secure spaces to spend time with friends, the negative implications of hindered accessibility to public spaces could have a negative impact on their well-being. Moreover, the potential limitations in accessing the training center and fitness facilities can adversely affect the attachment to these places and the youth's need for physical activities. Consequently, this can have a negative influence on their overall physical and mental well-being.

Nevertheless, considering that accessibility is likely to remain largely unaffected except during extreme events, the impact on place attachment is expected to be minimal. Similarly, any negative effects on well-being are anticipated to be temporary. This is evidenced by the experiences of today's youth when they encounter difficulties in accessing places during extreme events.

5.1.2 Outdoor Public Spaces

The impact of climate change on outdoor public spaces, and consequently the place attachment of youth to these areas, presents a more complex scenario compared to its implications for indoor public spaces. In the following discussion, the potential impacts of climate change on place attachment are explored, with a particular emphasis on the three main functions of the youth's attachment: reflection, social interactions and togetherness as well as physical activity.

Reflective Spaces

The places that youth seek out for the need of reflective spaces are mostly the Flower Valley, fjord, and benches.

Fjord
With increasing temperatures and liquid precipitation, the functionality of the fjord for mobility and as a connection place might decrease as the solidity of the frozen fjord reduces in the winter. This is due to the winter starting later and ending earlier, affecting the safety of the ice for transportation. This can have an impact on the cultural ties of youth and decrease attachment as the traditional means of transportation, such as dog sledges, might continue to decrease, as already observed by locals today. In contrast, the rising temperatures in summer may lead to an increase in boat transportation, which can positively impact the practical utilisation of the fjord. Considering these evolving patterns of increasing temperature, the traditional hunting and fishing activities in the fjord may also gradually transition towards warmer periods. As a result, hunting and fishing practices persist during winter and summer, albeit with potential variations in their seasonal duration due to the shortening of winters caused by climate change. Given the cultural significance of these practices, the potential decline of winter-related functions can negatively impact place attachment.

The long-term impact of reduced solidity of the frozen fjord, which leads to a shorter duration for winter activities on the fjord, may also affect the recreational and solitude

aspects of the fjord. Due to the strong sense of place attachment that youth have towards the fjord, the diminishing solidity of the frozen fjord can potentially disrupt their attachment, as the functional opportunities for winter activities decrease.

An example of a negative impact on the recreational function of the fjord is the anticipated reduction in the frequency of colder periods. This change may result in the icebergs being carried away by the current towards the ocean before the fjord has a chance to freeze. Consequently, engaging in activities such as playing on the icebergs might no longer be feasible. Nonetheless, the functional role of the fjord remains consistent during summer and gradually extends into the winter season. Furthermore, as summer extends, there is a possibility that the focus might shift towards the alternative attraction of the Flower Valley, which becomes more accessible during this season. Therefore, positive place attachment might continue by transferring it to places that serve the same needs of the youth. However, since there is no direct substitute for the frozen fjord during winter, the decline of solidity of the frozen fjord may lead to a decrease in place attachment, affecting the sense of belonging, continuity, and self-identity. Furthermore, the loss of connection to childhood memories and cultural identity, as well as the loss of a place for privacy and reflection, may negatively impact the well-being of youth.

Flower Valley

The Flower Valley and the fjord serve similar emotional purposes, such as providing a connection to nature and a refuge for relaxation and comfort, but they have slightly different functions. In addition to being a place for hunting, fishing, and leisurely walks, the Flower Valley is also used for activities such as hiking, swimming in the lakes, and picnicking. Furthermore, the Flower Valley offers a place for dealing with thoughts and provides a sense of belonging. In light of climate change, the youth's positive place attachment, may potentially be strengthened due to higher temperatures and a longer summer season. This can potentially be attributed to increased visits to the natural environment, particularly during the preferred time to explore the Flower Valley, which is the summer.

The impact of increased precipitation on the utilisation of the surrounding nature also needs to be taken into account. However, it is important to note that precipitation in the summer is not necessarily perceived as negative by the youth. Therefore, increased precipitation may not have a significant negative impact on place attachment. However, with more extreme weather events, such as piteraqs, the accessibility might be hindered, potentially impeding the frequency of visits. Consequently, the sense of belonging of the youth may remain the same or even increase with the Flower Valley becoming a more accessible location for the youth in warmer periods of the year even though more rain and extreme events occasionally hinder its accessibility.

In summary, extreme weather events may disrupt the place attachment of the youth to the Flower Valley. It is assumed that such events will not impair the place attachment of the youth significantly. Therefore, the positive place attachment and well-being fostered by the sense of belonging and restorative properties of the Flower Valley are likely to continue.

Benches

The benches provide a valuable connection to nature, as they offer good views of the surrounding landscapes and a comfortable place to sit and relax. However, the exposure to the elements can negatively impact their usage with the increase in extreme weather events, as they are often left unoccupied by the youth during bad weather conditions. Additionally, accessing some of the benches in icy conditions can be challenging, further limiting their use as noted by some of the youth.

Despite these challenges, warmer weather can increase the overall frequency of utilisation. It is possible that extended periods of good weather might enhance the positive emotions that individuals associate with the benches, strengthening their sense of place attachment. However, it is important to note that while frequency of use may change, the type of place attachment individuals' feel towards the benches is unlikely to change significantly. Place attachment is an intricated and multi-dimensional phenomenon that encompasses various emotional, social, and cognitive factors. Therefore, simply altering the frequency of visits may not necessarily change the overall functional or emotional attachment to these places.

Places for Social Interaction & Physical Activity

The outdoor places that the youth seek out for the need of social interactions and togetherness as well as physical activity are mostly the ski lift, multi-field, and the municipality square.

Ski lift

The long-term impact of climate change on the ski lift, which is a key location for physical activity in the winter time, has become increasingly apparent in recent years. The poor snow conditions in the winter 2022/2023 for example, have made it impossible for the lift to operate. The non-functioning of the ski lift may lead to an expansion of the number of youth who develop a more neutral place attachment, as they are unable to utilise the ski lift during the winter season.

For those of the youth who do enjoy the ski lift, the current degree of place dependence is high as there are no alternatives for those who rely on it for their winter recreation. This can lead to a negative impact on well-being in the future, as youth who are unable to access the ski lift may feel frustrated or bored. This possibility is supported by the fact that, even now, some youth describe the winter season without the ski lift as boring, indicating that the absence of this activity can have a negative impact on their enjoyment of the environment and their place attachment. This sentiment may also hold true during the summer, as the soil already tends to become soggy during the thawing season, discouraging youth from utilising the area. In the future, this situation can be exacerbated by additional precipitation, further intensifying this phenomenon.

Multi-field

The multi-field serves two key purposes for the community: physical activity and social interaction. It is a place where people come together to play sports, hang out, and foster a sense of togetherness. As with other outdoor places, the utilisation of the multi-field can be positively impacted by an extension of the warmer period. However, the increase in extreme weather events such as extreme rain events or storms can have a negative impact

on the use of the multi-field. As the multi-field is a popular summer location, extreme precipitation events in this period could lead to flooding, which can hinder accessibility and function, as already experienced by the youth.

Despite these challenges, the overall positive place attachment to the multi-field is expected to remain strong. The multi-field offers opportunities for physical activity but also serves as a communal place, fostering social interactions and cultivating community connections not only among the youth but also among the entire community. This multifaceted role enhances place attachment, making it even more robust and enduring. These factors collectively contribute to a profound sense of place attachment that surpasses the mere functional aspects of the place. Consequently, it is unlikely to be significantly affected by occasional inaccessibility or diminished functionality resulting from the increase in extreme events.

Additionally, the indoor training center can serve as a substitute for the functional quality of the multi-field. This is advantageous for the well-being of the youth, as their needs can still be met in a different location when the multi-field is inaccessible during extreme rain events. Therefore, the impact of climate change on the multi-field may not significantly disrupt the well-being of the youth. However, it is important to note that the training center may not be able to fully replicate the experience of the multi-field, particularly when it comes to social interaction and community building. Despite this, the existence of an alternative location does provide some level of resiliency to the community in the face of climate-related challenges.

Municipality Square

The municipality square is an important place in the heart of the city, serving a variety of functions and providing a focal point for community life. Its ability to shift from a sports field to an event venue to a simple concrete slab makes it a versatile and valuable place for the community. However, the increased frequency of extreme weather events due to climate change makes the square a less attractive place for the youth to spend their time. Consequently, this can affect the frequency of their visits and potentially impact their place attachment. Nevertheless, the attachment of the youth to the square is not solely dependent on the frequency of visits. The unique and multi-functional qualities of the square play a crucial role in fostering attachment among the youth.

It is probable that this positive attachment will persist despite the disruptions caused by climate change. The square's significance as the heart of the city contributes to a continuous place attachment. Additionally, the square's topography does not make it prone to flooding, potentially shielding it from the impacts experienced by other areas. Moreover, it is possible that the youth's attachment to the square could experience a slight shift towards other indoor spaces that can fulfill similar needs, such as the community house or the training center. However, while these alternative places may serve similar purposes, they may not entirely replicate the diverse range of functions provided by the square.

5.1.3 Overview and Future Directions

This discussion brings attention to the potential influence of climate change on the place attachment of youth. In summary, the findings illustrated in Figure 5.1 indicate that climate change can have diverse impacts on the place attachment of young individuals. Given the complexity of these impacts, the figure specifically centers on the places where youth's attachment may encounter negative effects. This aspect warrants particular attention due to the potential negative influence on the well-being of young individuals. However, the potential positive implications are also discussed in the following text.

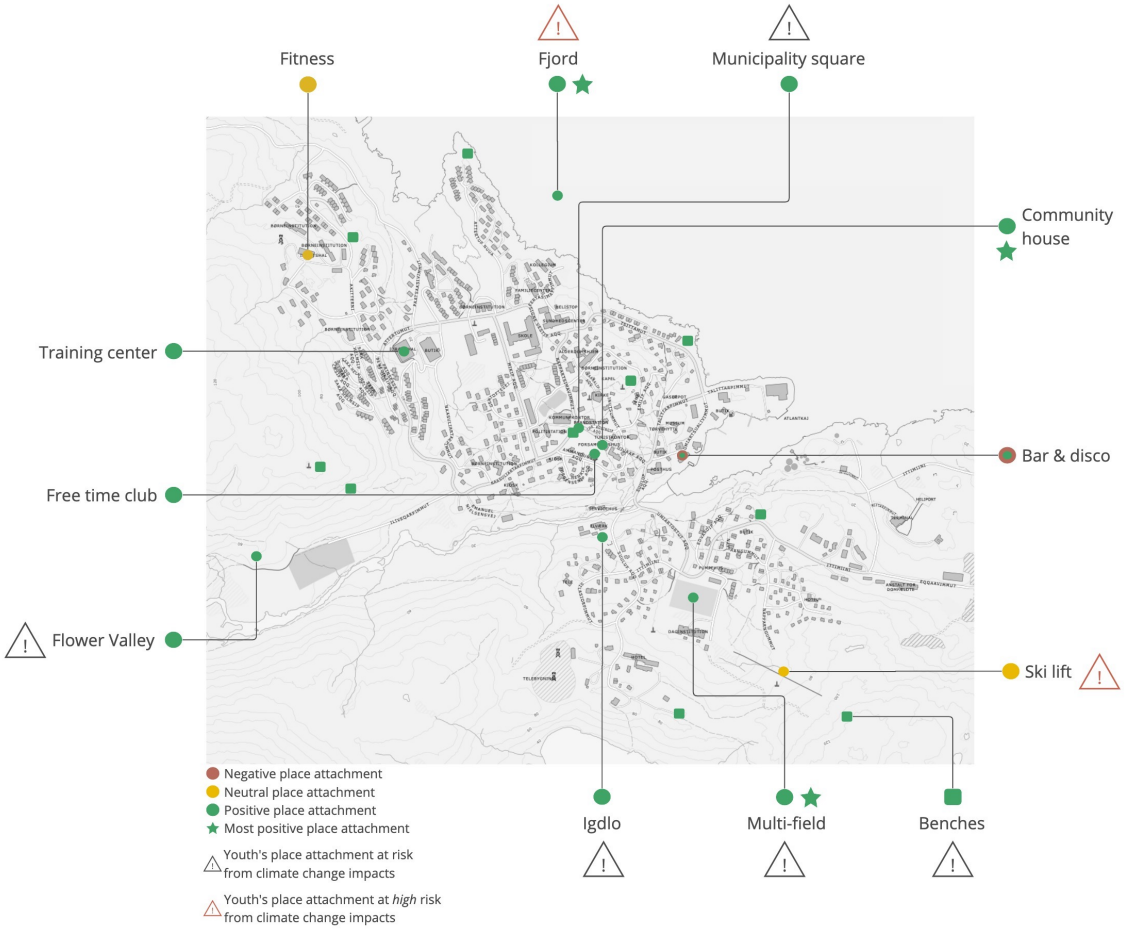

Figure 5.1. Youth's place attachment at risk due to the impacts of climate change. Base-map adapted from Asiaq (nodate)

All outdoor public spaces are undergoing disruptions in their functionality due to climate change. As a result, all of these places are classified as being at risk due to the potential impact on the youth's place attachment. The intensification of extreme weather events can negatively impact place attachment by causing disruptions to the use of outdoor places. However, as temperatures rise, there is a likelihood of increased utilisation of outdoor places by youth, which can have positive impacts on their attachment to these locations. Based on this analysis, it seems that the positive and negative impacts of climate change on outdoor places may offset each other, resulting in a potential net effect on place attachment that remains relatively stable. Nonetheless, it is important to note that this is just one potential scenario. Therefore, it is crucial to monitor all outdoor public spaces to assess

and understand any potential climate change impacts on the youth's place attachment in the future.

Both the fjord and the ski lift are highly reliant on cold temperatures and snow during the winter season, which contradicts the trends associated with climate change. As a result, the attachment of young individuals to these places can be negatively affected, potentially impacting their overall well-being. Therefore, both the fjord and the ski lift are categorised as being at higher risk of experiencing disruptions in the youth's place attachment due to the impacts of climate change.

In addition to these outdoor places, it is important to consider the impact of climate change on indoor public spaces. On the one hand, as the function of certain outdoor places may shift due to climate change, it is possible that indoor public spaces may experience an increase in place attachment. On the other hand, the youth cultural house Igdlo, is already encountering accessibility issues caused by flooding. Considering the possibility of amplified extreme rain events and therefore flooding in the future, the potential impact on the place attachment of youth becomes more significant. It is worth noting that, as of now, no other indoor public space has been identified to have similar challenges, making Igdlo the sole indoor public space classified as at risk of experiencing disruptions in the youth's attachment.

It is important to acknowledge that the exact extent to which climate change impacts the utilisation of places and the place attachment of youth remains uncertain. In order to gain a more comprehensive and accurate understanding of the specific implications of climate change on place attachment, it is essential to conduct further research focused on the local effects of climate change within urban spaces.

This discussion emphasises the complex and interconnected effects of climate change on the place attachment of youth. While some places may become more desirable due to changing weather patterns, others may be negatively impacted, requiring effective strategies for adjustment and alleviation. Policymakers must prioritise understanding the potential impacts of climate change on public spaces and place attachment in order to develop effective solutions that promote the well-being and positive place attachment.

A proactive approach that involves collaborative efforts with the community can help develop effective strategies for adjustment and alleviation, which can maintain the quality and accessibility of public spaces and preserve the positive place attachment. By implementing these strategies, negative impacts of climate change can be mitigated, ensuring continued positive place attachment for future generations.

5.2 Applicability to Other Contexts

The applicability of the case study of Tasiilaq can vary depending on the specific focus of investigation. It is important to distinguish between the applicability of the findings and the broader methodology employed in this research.

5.2.1 Applicability of Findings

Tasiilaq's distinct planning initiatives, traditions, culture, complexity, history, and challenges make the findings less applicable to other cases, necessitating caution when extrapolating them to predict outcomes elsewhere (Hemmersam, 2021; Ringgaard, 2016). When studying the connection between place attachment and the impact of climate change, it is crucial to thoroughly analyse the social context rather than relying solely on previous studies conducted in similar cases (Jacobsen, 2019; Ringgaard, 2016). The unique conditions specific to Tasiilaq therefore limit the generalisation of findings from this case to other contexts.

Climate change implications can vary between different locations. For instance, in another location than Tasiilaq, permafrost thawing could result in construction instability and various associated issues. This suggests that indoor public spaces in other cases might experience more severe impacts from climate change compared to the case of Tasiilaq. These varying impacts can also significantly influence the effects on place attachment. This example highlights the diverse range and impact of climate change on public spaces, emphasising the potential for significant variations in research findings. However, in cases with similar contexts, valuable conclusions can still be drawn regarding the implications of climate change and its effect on place attachment. While the specific manifestations of climate change may differ across locations, studying the climate change impacts on public spaces, can offer insights into the broader relationship between climate change and place attachment.

However, it is important to note that the youth's needs for a place for reflection, physical activity, and social interaction could align with the needs of young people in other Arctic communities and beyond. Understanding the youth's place attachment in Tasiilaq can therefore offer valuable insights into why young individuals may or may not utilise places in other parts of the world too. Specifically, the patterns of use of place observed in Tasiilaq, such as the importance of social interaction and connection to nature, and the positive impact on well-being, contribute to a growing body of literature confirming the similarity of these needs across Arctic communities (Hemmersam, 2021; Jacobsen, 2019; Körber et al., 2017; Stammler & Toivanen, 2022; Steenholdt, 2019; Timlin et al., 2021). Consequently, these findings shed light on the formation of place attachment among young people and help bridge the knowledge gap in understanding Arctic urban life.

Moreover, the findings of this case study have practical implications for planning processes that extend beyond its specific context and can be applied to other similar cases. The Sermersooq Municipality, where Tasiilaq is situated, serves as an example of how the insights gained from this research can complement their ongoing efforts to cater urban development to the needs of the youth. Initiatives such as the establishment of Igdlo and the provision of outdoor activities aligned with the changing seasons demonstrate the municipality's commitment to meeting the youth's needs. This exemplifies how an understanding of the place attachment can inform urban development and support the nourishment of the unique local identity. The analysis of this case therefore serve as a guide, illustrating the positive place attachment achievable when urban planning aligns with the social context of a community.

5.2.2 Applicability of Methodology

The extended place attachment theory, which incorporates the influence of climate change as a contemporary factor, offers a valuable framework for other cases in this field. By integrating climate change into the study of place attachment, researchers can obtain a more comprehensive understanding of how individuals and communities establish and sustain connections with public places. This approach recognises the dynamic interplay between environmental and social aspects, aligning with the broader agenda of the Sustainable Development Goals (SDGs) in urban planning.

The case study contributes to the incorporation of the SDGs into urban planning, particularly SDG 11 *Sustainable Cities and Communities* and SDG 13 *Climate Action* (UN, 2015). The case study specifically addresses target 11.7, which aims to provide access to safe and inclusive green and public spaces, and target 11.3, which focuses on inclusive and sustainable urbanisation. These targets intersect with SDG 13.3, which aims to build knowledge and capacity to address climate change, and SDG 13.2, which seeks to integrate climate change measures into national policies, strategies, and planning (UN, 2015). Therefore, the methodology of this case study provide a framework that facilitates participatory, integrated, and sustainable urban planning through valuable adaptation measures, applicable to other cases.

Furthermore, the applicability of the extended place attachment theory is not limited to specific demographic groups. While the youth in Tasiilaq serve as the focal point of the case study, the framework can be effectively adapted to examine place attachment among different focus groups beyond the youth, such as the elderly, mothers, children, and other relevant demographics. This expanded perspective recognises that the geographical location, cultural background, and historical context of each case may vary considerably from Tasiilaq, highlighting the importance of considering diverse contexts when investigating the dynamics of place attachment. This flexibility allows for a broader exploration of the experiences and perspectives of different groups, offering insights into how various demographics engage with and value places and how this might change in the face of climate change.

Furthermore, this research adopts a decolonisation approach that holds relevance beyond cases with a colonial background. While the decolonial perspective is particularly significant for locations with a history of colonisation, as it addresses the unique challenges and impacts of such historical processes, its principles can still be applied in various contexts. Even in areas without a colonial history, the inclusive and community-centered approach employed in this research can be beneficial. By adopting a high-touch approach to community engagement, individuals who may not typically participate in planning processes can be actively involved. This inclusive approach ensures the development and maintenance of public spaces that promote well-being and effectively cater to the diverse needs of all residents. By embracing community engagement and participation, cities can foster a sense belonging, leading to more sustainable and inclusive urban development.

This research's methodology can be utilised not only by researchers but also by public actors to empower local cultural identity and foster a stronger collaboration with the community, particularly in planning public spaces. By bridging the gap between functional,

centralised urban planning and local identity, it enables the development of more effective and sustainable climate change adaptation strategies that are sensitive to local needs and context.

In summary, the Tasiilaq case study highlights the limited generalisability of its findings in relation to the complexity of climate change effects. However, certain aspects, such as addressing the needs of youth in arctic communities, can be relevant and applied to similar cases. By leveraging the insights from Tasiilaq, communities can create urban environments that effectively meet the needs of their youth population, promote a sense of belonging, and safeguard their distinctive cultural heritage. Additionally, the Tasiilaq case study demonstrates the methodology's applicability to inspire other cases. It exemplifies how this methodology can inform urban development aligned with the SDGs, empower local identity, bridge the gap between centralised planning and local needs, contribute to decolonisation of planning processes, enhance community engagement, and address marginalised groups in current urban planning processes. The extended place attachment theory employed in this case study presents a promising avenue for future research, offering broad applicability and relevance to other cases and diverse focus groups.

5.3 Decolonisation of Science

The final part of the discussion involves reflecting upon the decolonisation approach applied in this research and considering potential areas for improvement. Overall, the research successfully adhered to many of the 'Circumpolar Inuit Protocols for Equitable and Ethical Engagement' (ICC Protocols) (ICC, 2022), which aim to achieve a high degree of decolonisation in scientific endeavors. However, we acknowledge the limitations of our research in relation to decolonisation of science, as we were unable to fully comply with all protocols outlined. Furthermore, we highlight the main takeaways derived from the application of decolonisation principles in this research, which aim to inform and guide future research. The limitations and takeaways are reflected in the following section.

5.3.1 Limitations

During the process of data collection, data management, and analysis, maintaining consistency with local expertise through verification processes was crucial to minimise the need for interpretation of information provided by the interviewees. This approach not only enhances the validity of the research but also aligns with the principles of decolonisation of science. By involving both the youth and institutional interviewees in the verification process, misunderstandings and misinterpretations were minimised in alignment with Protocol 2: *"Recognize Indigenous Knowledge in its Own Right"*. However, it would have been beneficial to revisit each youth interviewee or youth groups separately.

On one hand, employing a professional interpreter during data collection could have enhanced the interviews by ensuring clarity and depth, aligning with Protocol 4: *"Communication with Intent"*. As only unprofessional interpreters were employed for some interviews, limitations arose in terms of potential misunderstandings and the ability to ask follow-up questions for better comprehension. On the other hand, introducing an interpreter could have unintentionally created a disconnect, compromising the trust and

direct contact established with the youth interviewees, as we experienced during some interviews. This suggests that employing an interpreter might have introduced other unforeseen limitations that could have affected the relationship to the interviewees and thereby the data collection, although the specific nature of these limitations remains unclear.

To enhance decolonisation of science, the data was shared with the municipality, granting them partial ownership of the data and facilitating the dissemination of local knowledge. This action aligns with Protocol *7. Information, Data Sharing, Ownership and Permissions*. The partial sharing of data reflects a commitment to honouring the General Data Protection Regulation (GDPR) by removing identifiable statements and anonymising the data to respect the privacy of involved individuals (UN, nodate-a). While anonymising the data limits the municipality's full access to it, the value of the anonymous data was deemed higher than providing complete ownership to the municipality.

While still in Tasiilaq, the preliminary findings were presented to the Vice Mayor, Municipal Manager, Chairman of the Local Representative Committee, and Tourist Coordinator from the municipality. This allowed them to provide feedback on the research and be further involved in the analysis. The follow-up interview with the municipality adhered to Protocol *3. Practice Good Governance* and Protocol *6. Building Meaningful Partnerships*. However, to enhance the meaningful partnership and good governance, it would have been beneficial to have additional follow-up meetings with the municipality, empowering them to actively contribute to characterising the research. An improvement would thus be to empower and give agency to the municipality through multiple meetings with presentations of preliminary findings to include their feedback.

By ensuring the involvement of important local stakeholders and incorporating their expertise in evaluating the research and its value for the community, we furthermore align with Protocol *1. 'Nothing About Us Without Us' - Always Engage with Inuit*. However, the engagement could have been enhanced by involving a local contact from the beginning of the research. This individual could advocate for the community's interests throughout the research process and increased the decolonisation of the research question formulation. Nevertheless, including a local contact before defining the research presents difficulties. On one hand, it is challenging to motivate their participation without a complete understanding of the research's purpose. On the other hand, if the research focus is already defined, the local contact's influence may be limited, but a clearer understanding of the research's purpose could increase participation. Therefore, fully achieving the decolonisation of science by making the research relevant to local issues is challenging in the initial phase.

The knowledge obtained from the youth was utilised to create a flyer as a visual representation of partial research findings, incorporating their contributed pictures. The primary objective of the flyer was to amplify the voices of the youth by showcasing their perceptions of positive public spaces in Tasiilaq. By creating and sharing the flyer, we aimed to give something valuable back to the community while simultaneously respecting and acknowledging their ownership of knowledge. The process of developing the flyer aligned with Protocol *7. Information, Data Sharing, Ownership and Permissions*. Although the creation of the flyer generated a sense of ownership, full ownership by the youth was

not fully realised, indicating that we did not fully adhere to the protocol in this regard. Furthermore, to ensure active participation and a sense of ownership, some of the youth were involved in providing feedback and improving the flyer, thereby intensifying their connection and sense of ownership over the final product. Additionally, the local tourist information, the municipality, and the museum was involved in providing feedback and offering places where both locals and visitors can access the flyer.

The flyer aims to empower the youth by showcasing their perspective of Tasiilaq and making it available for others to be aware of. The final version of the flyer was distributed to the youth at the school, Igdlo, as well as to the municipality, the museums and all stakeholders, who contributed to the research. The distribution aims to show the youth the impact of their contributions and what their knowledge had helped create. Furthermore, providing copies to the involved stakeholders at Igdlo, the municipality, and the museums foster a sense of ownership and empowerment, encouraging them to share their knowledge with others.

Based on the lessons learned from the process of creating the flyer, it is recommended to prioritise such additional contributions alongside the research, as they can directly and uniquely bring value that is accessible for the locals. The decision to create a flyer as the end product is rooted in the principle of local anchoring, which focuses on tailoring the communication of the research findings to meet the specific needs and context of the local community. In this case, it recognises that not all locals, including the youth and visitors, have internet access. By designing a tangible artifact like a flyer, it ensures that information can be shared without relying on an internet connection. This approach also aligns with the local practice of using street info-boards for communication, thereby enhancing its relevance and familiarity within the community. Furthermore, accessibility is ensured by providing the flyer in multiple languages, including East Greenlandic, West Greenlandic, Danish, and English, accommodating the linguistic diversity of the community and promoting inclusivity.

The presence of a local contact is essential for accessing various community groups and gaining a deeper understanding of the different dynamics involved, which was not fully achieved during the initial research phase. Protocol *5. Exercising Accountability – Building Trust* emphasises the significance of trust to the engaged stakeholders, and this aspect could be improved for future research endeavors. However, the collaboration with Sustainable Now and their establishment of contacts with crucial stakeholders, such as the municipality and the Local Representative Committee, proved highly valuable for the fieldwork. This collaboration enabled the research to be conducted with a decolonising approach, as it ensured the inclusion of local decision-makers.

5.3.2 Main Takeaways

The process of decolonising science has resulted in an insightful research approach that involves learning from local communities. This approach has produced valuable insights and recommendations for improving future collaborations between academia and indigenous peoples. It includes strategies for effectively engaging these communities in the research process and ensuring that it brings meaningful value to their communities.

The main takeaways include recognising the time- and resource-intensive nature of this approach, which necessitates comprehensive planning to ensure that the decolonisation of science permeates the entire research process. Despite the demands on time and resources, we highly recommend following this approach. Therefore, we propose that this approach becomes the dominant theory for the methodology, when future research calls for a decolonising aspect. The positive reactions from the local community and the happiness generated by the inclusion of their perspectives validate the value of the research, making the investment worthwhile for the local community.

Another takeaway is the importance of consistently introducing the purpose of the research and how it can potentially benefit the local community to the interviewees. This learning is based on the understanding that it can be challenging to involve and generate motivation among the locals if they do not see the reason for participating. It is therefore crucial for researchers to reflect on what product or outcome can bring value to the community before the research begins.

Additionally, an important takeaway from the research process is the inclusion of local decision-makers, such as the municipality, and engaging them in the research to facilitate knowledge dissemination. Based on the feedback received from the municipality, they express how they can utilise the knowledge derived from this research in their future work. Through the sharing of data and findings with the municipality, the research contributes to a deeper understanding of the needs of the youth. Additionally, the municipality has already started efforts to improve some of the identified public spaces, and the knowledge derived from this research provides a broader understanding of what Tasiilaq offers to the youth and where more attention may be directed. The municipality also acknowledges the value of us conducting the research with a more objective perspective to analyse place attachment without preconceived positive or negative biases. As the research focuses on the place attachment of the youth, and many of the youth have a positive place attachment, the positive sides of Tasiilaq are in focus, which is appreciated by the municipality. This helps to counteract the negative perceptions of the east coast and potentially empowers the youth to take pride in their cultural and geographical heritage. The municipality emphasises that this knowledge will serve as a foundation for a communication tool that brings value to future urban planning on the east coast when collaborating with municipal departments from the west coast.

If local decision-makers are involved and a high quality of decolonising of science can be achieved, this approach has the potential to enhance the sustainability of future development in the city. The decolonisation of science can contribute to various SDG targets. For example, SDG Target 11.3: which aims to *"enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries"* (UN, 2015), emphasises the inclusion of all community groups. Decolonisation can help academia better understand local expertise, enabling research to be defined and characterised in a way that benefits the locals. This, in turn, can lead to the creation of more open and accessible public spaces for the community, affecting place attachment and well-being.

Protocol *3. Practice Good Governance* also aligns with the SDG Target *"17.7: Encourage and promote effective public, public-private and civil society partnerships, building on the*

experience and resourcing strategies of partnerships" (UN, 2015). This target underscores the importance of partnerships between the public, private, and civil sectors, leveraging their experiences and resources to evolve and enhance partnership strategies. Prioritising local expertise when forming partnerships allows local knowledge to play a significant role in the research process, promoting the empowerment of locals for the future.

Conclusion 6

Through an investigation of the youth's place attachment to designated public spaces in Tasiilaq, as well as analysing the local implications of climate change, this research has shown that the impact of climate change on the youth's place attachment is multifaceted and dependent upon a complex interplay of factors. The findings reveal that climate change can impact the youth's place attachment in positive and negative ways, which are influenced by the youth's functional and emotional needs as well as the availability of alternative options.

To understand the public spaces identified by the youth in Tasiilaq, a comprehensive methodology is employed, including qualitative interviews with individuals aged 14 to 30, participatory observation, and a decolonising approach to science. Through this approach, the research reveals that the youth identify a diverse array of public spaces, encompassing both indoor and outdoor environments. These spaces serve unique functional and emotional needs, highlighting the multifaceted nature of their utilisation by the youth population.

The identified needs play a crucial role in shaping the types of place attachment experienced by the youth. These needs include places for social interactions, reflective practices, and physical activities. Importantly, many places are found to fulfill multiple needs due to their multi-functionality.

In terms of social interaction, several places have been identified as significant for constructing collective lived experiences. These include the community house, the youth houses 'Igdlo' and free time club, the municipality square, as well as the multi-field. These locations foster a sense of togetherness and provide a comfortable and secure environment for spending time with friends and family. For the need of physical activity, places such as the multi-field, training center, fitness center, and ski lift are central. These places offer support for physical activities and effectively engage the youth. Furthermore, the need for private and reflective spaces is met by the Flower Valley, fjord, and benches scattered throughout the city and surrounding areas. These locations provide solitude and a connection to nature, fulfilling the youth's need for personal reflection.

The degree of attachment varies depending on the youth's individual needs, the perceived fulfillment of those needs, and the overall quality of the experience and functionality of the place. Generally, the majority of places are perceived positively, with nine out of twelve places evoking positive attachment for the youth. These nine places, fostering positive place attachment, include the fjord, Flower Valley, multi-field, municipality square, benches, community house, the youth houses 'Igdlo' and free time club, along with the training center. Therein, the fjord, the multi-field, and the community house stand out as the locations with strong positive place attachment among the youth population. This

can be attributed to the youth's highly positive experiences or their strong functional and emotional need to use these places. However, two places, the fitness and ski lift, are identified as neutral, indicating that not all youth have a strong need to frequent these specific locations. Notably, the bar & disco emerge as the most contested place, with a significant number of youth expressing negative attachment, while others reveal a positive attachment. This phenomenon can be attributed to the diverse range of both positive and negative functional and emotional experiences associated with this particular place.

As climate change continues to evolve in Tasiilaq, its impacts on the utilisation of public spaces become evident, supported by both local expertise and climatological research. Climate change affects both activities in open public spaces and the accessibility to indoor places both positively and negatively. These effects can be attributed to various climate parameters, including rising temperatures, a shift towards more liquid precipitation, reduced sea ice, as well as increased intensity and frequency of extreme high-speed wind events. Due to the uncertainty surrounding climate change projections, the impact of climate change on the youth's place attachment cannot be accurately predicted. As a result, the implications of climate change on the youth's place attachment are only indicative.

As noted earlier, the effects of climate change on the place attachment of youth are complex and interconnected. On one hand, outdoor places are more susceptible to the effects of climate change, potentially disrupting the youth's place attachment. On the other hand, rising temperatures also extend the summer season, which may positively influencing the utilisation of outdoor places and, consequently, the place attachment of the youth to these spaces. Based on this analysis, it seems that the positive and negative impacts of climate change on outdoor places may offset each other, resulting in a potential net effect on place attachment that remains relatively stable.

However, areas reliant on cold temperatures and solid precipitation, such as the fjord and the ski lift during winter, may face significant negative impacts on the youth's place attachment and overall well-being. This might primarily be due to decreased accessibility and consequently disrupted place dependence. Additionally, the escalation of extreme weather events has the potential to strengthen the attachment to indoor public spaces. As the sheltered nature of these places becomes more appealing, it is likely to result in an increased frequency of youth visits.

In summary, the anticipated impacts of climate change on the youth's place attachment are not expected to be severe for most indoor and outdoor places in the future, although there may be a slight disruption in the frequency of visit due to extreme events. However, given the strong and multifaceted attachment the youth have to these places, coupled with the presence of alternative options and the extended accessibility to outdoor places during warmer periods, their overall well-being is expected to remain stable. In spite of that, the fjord, being a place of strong attachment, is a cause for concern as the decrease in winter functionality could impact the physical and mental well-being of the youth, as recreational activities, a space for solitude, and cultural identity decrease, potentially leading to decrease in sense of belonging.

Understanding the attachment of youth to their environment and the potential implications thereof is crucial for effectively adapting to climate change and preserving their well-being.

This knowledge plays a pivotal role in enhancing resilience by fostering adaptive capacity to ensure the essential functions of places and the attachments to places are upheld. Given the limited understanding of the daily lives of Greenlandic youth and Arctic communities at large, this research serves as a valuable contribution toward addressing the practical needs of the youth living in the Arctic. Rather than relying solely on climatic indicators for designing adaptation strategies, this research sheds light on the interplay between climate change and well-being, with a specific focus on how changes in place influence the well-being of youth.

Moreover, the methodology employed in this research not only serves as a stepping stone towards a paradigmatic shift in urban planning practices but also enhances community engagement by bridging the gap between urban planning efforts and local identity. By exploring alternative ways of producing, interpreting, and applying knowledge within the local frame of reference, the methodology guides development and climate change adaptation towards enhancing their relevance and effectiveness while fostering a sense of belonging.

This methodological approach goes even further in facilitating the process of decolonisation within Greenlandic urban planning. It prioritises the voices of the local community, particularly the youth, thereby countering power imbalances and colonial legacies. By centering their understanding and experiences of Arctic urban life, this approach actively challenges historically dominant and often colonial urban planning practices. In doing so, it promotes a decolonising approach that recognises the unique contexts of Greenland and allows for more context-sensitive and sustainable urban development.

Further research

This research highlights several promising avenues for further research that can contribute to the development of comprehensive and effective strategies for addressing climate challenges and fostering sustainable communities.

Firstly, expanding the study of place attachment beyond the youth population is recommended. Examining the experiences of other focus groups, such as elders, women, or specific occupational groups, can provide a more nuanced understanding of attachment dynamics in Tasiilaq. This expanded knowledge of the communities place attachment has the potential to shape future urban planning practices.

Secondly, developing a deeper understanding of the local implications of climate change in Tasiilaq is crucial for better predictions and targeted interventions. This knowledge could enable the development of context-specific strategies that foster sustainable adaptation.

Thirdly, an important avenue for further research would involve conducting an additional case study within a different indigenous youth population. By employing the same research methodology utilised in this study and comparing the findings, a more comprehensive understanding of the youth's needs in relation to urban environments could be achieved. Comparing findings across different contexts could also help identify commonalities and differences in place attachment processes, offering valuable insights into the impacts of climate change on indigenous youth.

Finally, exploring how to operationalise the research methodology into the urban planning processes of municipalities holds great potential for further research. The methodology can serve as a valuable tool for fostering inclusive and participatory urban planning processes, where the voices and knowledge of the community members are actively engaged.

References

AMAP. (2018). *Adaptation Actions for a Changing Arctic: Perspectives from the Baffin Bay/Davis Strait Region. Arctic Monitoring and Assessment Programme*. Arctic Monitoring & Assessment Programme.

ArcticHub. (nodate). *Arctic Hub*. https://arctichub.gl

Argo, T. A., Prabonno, S., & Singgi, P. (2016). Youth Participation in Urban Environmental Planning through Augmented Reality Learning: The Case of Bandung City, Indonesia. *Procedia - Social and Behavioral Sciences*, *227*, 808–814. https://doi.org/10.1016/j.sbspro.2016.06.149

Ariccio, S., Lema-Blanco, I., & Bonaiuto, M. (2021). Place attachment satisfies psychological needs in the context of environmental risk coping: Experimental evidence of a link between self-determination theory and person-place relationship effects. *Journal of Environmental Psychology*, *78*. https://doi.org/10.1016/j.jenvp.2021.101716

Asiaq. (nodate). *Asiaq Map Supply*. https://kortforsyning.asiaq.gl/dk.html

Berrang-Ford, L., Pearce, T., & Ford, J. D. (2015). Systematic review approaches for climate change adaptation research. *Regional Environmental Change*, *15*, 755–769. https://doi.org/10.1007/s10113-014-0708-7

Birchall, S. J., Bonnett, N., & Kehler, S. (2023). The influence of governance structure on local resilience: Enabling and constraining factors for climate change adaptation in practice. *Urban Climate*, *47*, 101348. https://doi.org/10.1016/j.uclim.2022.101348

Bjerregaard, P. (2010). *Inuit Health in Transition – Greenland survey 2005-2009. Population sample and survey methods*. National Institute of Public Health.

Box, J. E., Colgan, W. T., Christensen, T. R., Schmidt, N. M., Lund, M., Parmentier, F.-J. W., Brown, R., Bhatt, U. S., Euskirchen, E. S., Romanovsky, V. E., Walsh, J. E., Overland, J. E., Wang, M., Corell, R. W., Meier, W. N., Wouters, B., Mernild, S., Mård, J., Pawlak, J., & Olsen, M. S. (2019). Key indicators of Arctic climate change: 1971–2017. *Environmental Research Letters*, *14*, 045010. https://doi.org/10.1088/1748-9326/aafc1b

Brown, G., & Raymond, C. (2007). The relationship between place attachment and landscape values: Toward mapping place attachment. *Applied Geography*, *27*, 89–111. https://doi.org/10.1016/j.apgeog.2006.11.002

Brunet, N. D., Hickey, G. M., & Humphries, M. M. (2014). The evolution of local participation and the mode of knowledge production in Arctic research. *Ecology and Society*, *19*, art69. https://doi.org/10.5751/ES-06641-190269

Cappelen, J., & Jensen, C. D. (2021). *Climatological Standard Normals 1991-2020 – Greenland The Climate of Greenland - with Climatological Standard Normals, 1991-2020*. DMI.

Cappelen, J. (2021a). *Greenland – DMI Historical Climate Data Collection 1784- 2020*. DMI.

Cappelen, J. (2021b). *Klimaet i Grønland*. https://www.dmi.dk/klima/temaforside-klimaet-frem-til-i-dag/klimaet-i-gronland/

Chapman, J. M., & Schott, S. (2020). Knowledge coevolution: generating new understanding through bridging and strengthening distinct knowledge systems and empowering local knowledge holders. *Sustainability Science*, *15*, 931–943. https://doi.org/10.1007/s11625-020-00781-2

Checkoway, B. N., & Gutierrez, L. M. (2006). Youth Participation and Community Change. *Journal of Community Practice*, *14*, 1–9. https://doi.org/10.1300/J125v14n01_01

Christensen, J. H., Olesen, M., Boberg, F., Stendel, M., & Koldtoft, I. (2016). *Fremtidige klimaforandringer i Grønland: Sermersooq Kommune (øst)*. Danmarks Meteorologiske Institut (DMI).

Christensen, J., & Arnfjord, S. (2022). *Building booms and shipping container housing: Geographies of urbanization and homelessness in Nuuk, Greenland*. https://doi.org/10.4324/9780429275470

Clark, W. A., Duque-Calvache, R., & Palomares-Linares, I. (2017). Place Attachment and the Decision to Stay in the Neighbourhood. *Population, Space and Place*, *23*. https://doi.org/10.1002/psp.2001

Collignon, B., & Müller-Wille, L. W. (2006). *Knowing places : the Inuinnait, landscapes, and the environment*. CCI Press.

Conaty, F. (2021). Abduction as a Methodological Approach to Case Study Research in Management Accounting — An Illustrative Case. *Accounting, Finance & Governance Review*, *27*. https://doi.org/10.52399/001c.22171

Cresswell, T. (2014). *1. Introduction: Defining Place*.

de Leeuw, S., & Hunt, S. (2018). Unsettling decolonizing geographies. *Geography Compass*, *12*. https://doi.org/10.1111/gec3.12376

DMI. (2016a). *Scientific Report 15-04 (Index catalogue): Climate indices for vulnerability assessments - Greenland*. Danish Metrological Institute.

DMI. (2016b). *Videnskabelig Rapport 15-04 (3/6) - Fremtidige klimaforandringer i Grønland: Sermersooq Kommune (øst)*. Danish Metrological Institute.

DMI. (2018). *Iskappen og klimaændringer i Grønland*. https://www.dmi.dk/hav-og-is/temaforside-klodens-store-iskapper/iskappen-og-klimaandringer-i-gronland/

Dybbroe, S., Dahl, J., & Müller-Wille, L. (2010). Dynamics of arctic urbanization. *Acta Borealia*, *27*, 120–124. https://doi.org/10.1080/08003831.2010.527526

Eberle, C., Münstermann, N., & Siebeneck, J. (2019). Carbon Colonialism - A Postcolonial Assessment of Carbon Offsetting. *Postcolonial Perspectives*. https://doi.org/10.13140/RG.2.2.36509.05602

Elixhauser, S. (2018). *Negotiating Personal Autonomy Communication and Personhood in East Greenland*. Routledge.

Emerson, R. M., Fretz, R. I., & Shaw, L. L. (1995). *In the Field: Participating, Observing, and Jotting Notes*.

Flyvbjerg, B. (2006). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry*, *12*, 219–245. https://doi.org/10.1177/1077800405284363

Fondahl, G., & Wilson, G. N. (2017). *Springer Polar Sciences Northern Sustainabilities: Understanding and Addressing Change in the Circumpolar World*. http://www.springer.com/series/15180

Ford, J. D., McDowell, G., & Pearce, T. (2015). The adaptation challenge in the Arctic. *Nature Climate Change*, *5*, 1046–1053. https://doi.org/10.1038/nclimate2723

Ford, J. D., Stephenson, E., Willox, A. C., Edge, V., Farahbakhsh, K., Furgal, C., Harper, S., Chatwood, S., Mauro, I., Pearce, T., Austin, S., Bunce, A., Bussalleu, A., Diaz, J., Finner, K., Gordon, A., Huet, C., Kitching, K., Lardeau, M. P., ... Sherman, M. (2016). Community-based adaptation research in the Canadian Arctic. *Wiley Interdisciplinary Reviews: Climate Change*, *7*, 175–191. https://doi.org/10.1002/wcc.376

Frank, K. I. (2006). The Potential of Youth Participation in Planning. *Journal of Planning Literature*, *20*, 351–371. https://doi.org/10.1177/0885412205286016

Friedmann, J. (2010). Place and Place-Making in Cities: A Global Perspective. *Planning Theory & Practice*, *11*, 149–165. https://doi.org/10.1080/14649351003759573

Gehl, J., & Svarre, B. (2013). *How to study public life*. Island Press.

Graybill, J. (2015). Urban climate vulnerability and governance in the Russian North. *Polar Geography*, *38*, 306–320. https://doi.org/10.1080/1088937X.2015.1117533

Grydehøj, A. (2014). Constructing a centre on the periphery: urbanization and urban design in the island city of Nuuk, Greenland. *Island Studies Journal*, *9*, 205–222. https://doi.org/10.24043/isj.302

Guldager, S. K. (2022). *I can feel that I understand the children more, and they trust me right away.*

Head, B. W. (2011). Why not ask them? Mapping and promoting youth participation. *Children and Youth Services Review*, *33*, 541–547. https://doi.org/10.1016/j.childyouth.2010.05.015

Hemmersam, P. (2021). *Making the Arctic City - The History and Future of Urbanism in the Circumpolar North* (1st). Bloomsbury Publishing.

Hess, J. J., Malilay, J. N., & Parkinson, A. J. (2008). Climate Change: The Importance of Place. *American Journal of Preventive Medicine*, *35*, 468–478. https://doi.org/10.1016/j.amepre.2008.08.024

Huntington, H. P., Carey, M., Apok, C., Forbes, B. C., Fox, S., Holm, L. K., Ivanova, A., Jaypoody, J., Noongwook, G., & Stammler, F. (2019). Climate change in context: putting people first in the Arctic. *Regional Environmental Change*, *19*, 1217–1223. https://doi.org/10.1007/s10113-019-01478-8

Højsgaard, L. (2023). *Grønlændere er selv blevet som de danske kolonialister*. https://www.forskerforum.dk/magasinet/2023/forskerforum-nr-1-2023/groenlaendere-er-selv-blevet-som-de-danske-kolonialister

ICC. (2022). *Circumpolar Inuit Protocols for Equitable and Ethical Engagement.*

IPCC. (2014a). *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* Intergovernmental Panel on Climate Change.

IPCC. (2014b). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* International Panel.

Jacobsen, M. (2019). *What works for well-being in Greenland? Nature!*

Jonghe, D., & Germain, B. (2021). *Inventing Greenland-Designing an Arctic Nation Citation Permanent link Terms of Use Share Your Story*. https://nrs.harvard.edu/URN-3:HUL.INSTREPOS:37367851

Jorgensen, D. (1989). *Participant Observation*. SAGE Publications, Inc. https://doi.org/10.4135/9781412985376

Junot, A., Paquet, Y., & Fenouillet, F. (2018). Place attachment influence on human well-being and general pro-environmental behaviors. *Journal of Theoretical Social Psychology*, *2*, 49–57. https://doi.org/10.1002/jts5.18

Kennedy, B. L., & Thornberg, R. (2018). *Deduction, Induction, and Abduction*. SAGE Publications Ltd. https://doi.org/10.4135/9781526416070.n4

Krupnik, I., Aporta, C., Gearheard, S., Laidler, G. J., & Holm, L. K. (2010). *SIKU: Knowing Our Ice* (I. Krupnik, C. Aporta, S. Gearheard, G. J. Laidler & L. K. Holm, Red.). Springer Netherlands. https://doi.org/10.1007/978-90-481-8587-0

Kvale, S. (2007). *Validation and Generalization of Interview Knowledge*. SAGE Publications, Ltd. https://doi.org/10.4135/9781849208963.n10

Körber, L.-A., Mackenzie, S., & Stenport, A. W. (2017). *Arctic Environmental Modernities From the Age of Polar Exploration to the Era of the Anthropocene*. http://www.springer.com/series/14570

Lab, U. D. (2022). *Urban Design Terminology*. https://urbandesignlab.in/urban-design-terminology/

Laruelle, M., Esau, I., Miles, M., Miles, V., Kurchatova, A. N., Petrov, S. A., Soromotin, A., Varentsov, M., & Konstantinov, P. (2019). Arctic cities as an anthropogenic object: a preliminary approach through urban heat islands. *Polar Journal*, *9*, 402–423. https://doi.org/10.1080/2154896X.2019.1685171

Latola, K., & Savela, H. (nodate). *The Inter-connected Arctic*. http://www.springer.com/series/15180

Lee, H., Calvin, K., Dasgupta, D., Krinner, G., Mukherji, A., Thorne, P., Trisos, C., Romero, J., Aldunce, P., Barrett, K., Blanco, G., Cheung, W. W. L., Connors, S. L., Denton, F., Diongue-Niang, A., Dodman, D., Garschagen, M., Geden, O., Hayward, B., ... Zommers, Z. (2021). *Synthesis Report of the IPCC Sixth Assessment Report (AR6) - Summary for Policymakers*. IPCC.

Leonard, S. P. (2014). The need to 'belong': Social connectedness and spatial attachment in Polar Eskimo settlements. *Polar Record*, *50*, 138–146. https://doi.org/10.1017/S003224741200085X

Levy, Y., & Ellis, T. J. (2006). A Systems Approach to Conduct an Effective Literature Review in Support of Information Systems Research. *Informing Science: The International Journal of an Emerging Transdiscipline*, *9*, 181–212. https://doi.org/10.28945/479

Liboiron, M. (2021). Decolonizing geoscience requires more than equity and inclusion. *Nature Geoscience*, *14*, 876–877. https://doi.org/10.1038/s41561-021-00861-7

Lindberg, M., Nilsson, Å. W., Segerstedt, E., Hidman, E., Nilsson, K. L., Karlberg, H., & Balogh, J. (2020). Co-creative place innovation in an arctic town. *Journal of Place Management and Development*, *13*, 447–463. https://doi.org/10.1108/JPMD-02-2019-0009

Loewen, N. (2016). *Enabling Indigenous Urban Design: An Examination of Theory and Precedents for Application in Winnipeg*.

Lund, N. H. (2022). *Changing times for people and polar bears*. https://doi.org/10.4324/9780429275470

Maricchiolo, F., Mosca, O., Paolini, D., & Fornara, F. (2021). The Mediating Role of Place Attachment Dimensions in the Relationship Between Local Social Identity and Well-Being. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.645648

Masson-Delmotte, V., Swingedouw, D., Landais, A., Seidenkrantz, M.-S., Gauthier, E., Bichet, V., Massa, C., Perren, B., Jomelli, V., Adalgeirsdottir, G., Christensen, J. H., Arneborg, J., Bhatt, U., Walker, D. A., Elberling, B., Gillet-Chaulet, F., Ritz, C., Gallée, H., van den Broeke, M., ... Vinther, B. (2012). Greenland climate change: from the past to the future. *Wiley Interdisciplinary Reviews: Climate Change*, *3*, 427–449. https://doi.org/10.1002/wcc.186

Mayhew, S. (2009). *A Dictionary of Geography*. Oxford University Press. https://doi.org/10.1093/acref/9780199231805.001.0001

McIlveen, P. (2008). Autoethnography as a Method for Reflexive Research and Practice in Vocational Psychology. *Australian Journal of Career Development*, *17*, 13–20. https://doi.org/10.1177/103841620801700204

Meenar, M. R., & Mandarano, L. A. (2021). Using photovoice and emotional maps to understand transitional urban neighborhoods. *Cities*, *118*, 103353. https://doi.org/10.1016/j.cities.2021.103353

Mernild, S. H., Kane, D. L., Hansen, B. U., Jakobsen, B. H., Hasholt, B., & Knudsen, N. T. (2008). Climate, glacier mass balance and runoff (1993–2005) for the Mittivakkat Glacier catchment, Ammassalik Island, SE Greenland, and in a long term perspective (1898–1993). *Hydrology Research*, *39*, 239–256. https://doi.org/10.2166/nh.2008.101

Mernild, S. H., & Liston, G. E. (2010). The Influence of Air Temperature Inversions on Snowmelt and Glacier Mass Balance Simulations, Ammassalik Island, Southeast Greenland. *Journal of Applied Meteorology and Climatology*, *49*.

Mignolo, W. D. (2009). Epistemic Disobedience, Independent Thought and Decolonial Freedom. *Theory, Culture & Society*, *26*, 159–181. https://doi.org/10.1177/0263276409349275

Moore, G. W. K., Renfrew, I. A., Harden, B. E., & Mernild, S. H. (2015). The impact of resolution on the representation of southeast Greenland barrier winds and katabatic flows. *Geophysical Research Letters*, *42*, 3011–3018. https://doi.org/10.1002/2015GL063550

Musante, K. (2011). *What Is Participant Observation?* https://www.ebsco.com/terms-of-use

Nuttall, M. (2011). Anticipation, climate change, and movement in Greenland. *Études/Inuit/Studies*, *34*, 21–37. https://doi.org/10.7202/045402ar

Okoli, C., & Schabram, K. (2010). A Guide to Conducting a Systematic Literature Review of Information Systems Research. *Sprouts: Working Papers on Information Systems*, *10*. http://sprouts.aisnet.org/10-26

Olsen, W. (2012). *Observer Bias*. SAGE Publications Ltd. https://doi.org/10.4135/9781473914230.n11

Oltmanns, M., Straneo, F., Moore, G. W. K., & Mernild, S. H. (2014). Strong Downslope Wind Events in Ammassalik, Southeast Greenland. *Journal of Climate*, *27*, 977–993.

Orsetti, E., Tollin, N., Lehmann, M., Valderrama, V. A., & Morató, J. (2022). Building Resilient Cities: Climate Change and Health Interlinkages in the Planning of Public Spaces. *International Journal of Environmental Research and Public Health*, *19*, 1355. https://doi.org/10.3390/ijerph19031355

Petersen, R. S. (2017). *Place based regeneration of the Colonial Harbor in Nuuk, Greenland.*

Pinto, A., Júlia, ; Remesar, A. ; Brandão, P. ; Silva, F. N. D., Ana, P., Remesar, J., Brandão, A., Nunes, P., & Fernando, S. (2010). *Planning public spaces networks towards urban cohesion.*

Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: in search of conceptual origins. *Sustainability Science*, *14*, 681–695. https://doi.org/10.1007/s11625-018-0627-5

Rantanen, M., Karpechko, A. Y., Lipponen, A., Nordling, K., Hyvärinen, O., Ruosteenoja, K., Vihma, T., & Laaksonen, A. (2022). The Arctic has warmed nearly four times faster than the globe since 1979. *Communications Earth & Environment*, *3*, 168. https://doi.org/10.1038/s43247-022-00498-3

Ringgaard, A. (2016). *Despite self-governing, Inuit still suffer social and health problems.*

Rink, E., & Reimer, G. A. (2019). *A toolkit for Community Based Participatory Research in Greenland.*

Robson, C., & McCartan, K. (2016). *Real World Research* (Fourth Edition). John Wiley & Sons Ltd.

Rosendahl, G. P. (1981). *Alternative Strategies Used In Greenland.*

Rygaard, J. (2008). *The city life of youths in Greenland* (1).

Rysgaard, S., Vang, T., Stjernholm, M., Rasmussen, B., Windelin, A., & Kiilsholm, S. (2003). Physical Conditions, Carbon Transport, and Climate Change Impacts in a Northeast Greenland Fjord. *Arctic, Antarctic, and Alpine Research*, *35*, 301–312. https://doi.org/10.1657/1523-0430(2003)035[0301:PCCTAC]2.0.CO;2

Sanjek, R. (1990). *On Ethnographic Validity.*

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & Quantity*, *52*, 1893–1907. https://doi.org/10.1007/s11135-017-0574-8

Scannell, L., & Gifford, R. (2014). *The psychology of place attachment Alberta Resilient Communities Project (ARC) View project.* https : / / www . researchgate . net / publication/279718543

Sejersen, F. (2010). Urbanization, Landscape Appropriation and Climate Change in Greenland. *Acta Borealia*, *27*, 167–188. https://doi.org/10.1080/08003831.2010.527533

Sejersen, F. (2015). *Introduction: Climate change and the emergence of a new Arctic region.*

Sejersen, F. (2022). *The predicament of sustainability: Solutions in Greenland.* https://doi.org/10.4324/9780429275470

Sheppard, L. (2021). Nunavut Urban Futures: Vernaculars, Informality and Tactics. *Études Inuit Studies*, *44*, 323–347. https://doi.org/10.7202/1081808ar

Skjervedal, A.-S. H. (2018). Towards meaningful youth engagement: Breaking the frame of the current public participation practices in Greenland. *Det Tekniske Fakultet for IT og Design*. https://doi.org/https://doi.org/10.5278/vbn.phd.tech.00044

Smith, L. T. (1999). *Decolonizing Methodologies: Research and Indigenous Peoples* (1. edition). Zed Books.

Soikkeli, A. (2021). Human-environmental Relationships in the Arctic: Mapping and Analyzing Shishmaref. *Rural and Community Development*. www.jrcd.ca

Spradley, J. (1980). *The Developmental Research Sequence*.

Stammler, F., & Toivanen, R. (2022). *Young People, Wellbeing and Placemaking in the Arctic*. www.routledge.com/

Steenholdt, N. C. (2019). What Works for Wellbeing in Greenland? | The Arctic Institute – Center for Circumpolar Security Studies. https://www.thearcticinstitute.org/what-works-wellbeing-greenland/

Stephen, K. (2018). Societal Impacts of a Rapidly Changing Arctic. *Current Climate Change Reports*, *4*, 223–237. https://doi.org/10.1007/s40641-018-0106-1

Sustainable Now. (nodate). *Vi samarbejder i Tasiilaq: Vores tilgang – samtaler og initiativer med udgangspunkt i lokalsamfundet*. http://susnow.gl/?page_id=12

Tickle, S. (2017). Ethnographic research with young people: methods and rapport. *Qualitative Research Journal*, *17*, 66–76. https://doi.org/10.1108/QRJ-10-2016-0059

Timlin, U., Ingimundarson, J. H., Jungsberg, L., Kauppila, S., Larsen, J. N., Nordström, T., Scheer, J., Schweitzer, P., & Rautio, A. (2021). Living conditions and mental wellness in a changing climate and environment: focus on community voices and perceived environmental and adaptation factors in Greenland. *Heliyon*, *7*. https://doi.org/10.1016/j.heliyon.2021.e06862

Tjørnhøj-Thomsen, T., & Hansen, H. P. (2009). *Overskridelsens etik. Erfaring, analyse og repræsentation* (K. Hastrup, Red.; 1. edition).

Ujang, N., & Zakariya, K. (2015). The Notion of Place, Place Meaning and Identity in Urban Regeneration. *Procedia - Social and Behavioral Sciences*, *170*, 709–717. https://doi.org/10.1016/j.sbspro.2015.01.073

UN. (nodate-a). *Data Privacy, Ethics and Protection - Guidance Note on Big Data for Achievement of the 2030 Agenda*. United Nations Development Group.

UN. (nodate-b). *Definition of Youth*. United Nations. https://www.un.org/esa/socdev/documents/youth/fact-sheets/youth-definition.pdf

UN. (nodate-c). *Sustainability*. https://www.un.org/en/academic-impact/sustainability

UN. (nodate-d). *Sustainable Development Goals*. https://sdgs.un.org/goals/goal11

UN. (2015). *The 17 Goals*. https://sdgs.un.org/goals

UNFCCC. (2022). *Synthesis report for the technical assessment component of the first global stocktake*. United Nations Framework Convention on Climate Change, Adaptation Committee.

UN-Habitat. (2018). *PUBLIC SPACE*.

van der Schot, J., Abermann, J., Silva, T., Jensen, C. D., Noël, B., & Schöner, W. (2023). Precipitation trends (1958–2021) on Ammassalik island, south-east Greenland. *Frontiers in Earth Science*, *10*. https://doi.org/10.3389/feart.2022.1085499

VisitGreenland. (nodate). *Tasiilaq*. https://visitgreenland.com/destinations/tasiilaq/

Vukmirovic, M., Gavrilovic, S., & Stojanovic, D. (2019). The Improvement of the Comfort of Public Spaces as a Local Initiative in Coping with Climate Change. *Sustainability*, *11*, 6546. https://doi.org/10.3390/su11236546

Williams, A., & Campbell, C. (2022). Climate graphic of the week: Arctic warming four times faster than rest of the planet, study says. *FT.Com*.

Worpole, K., & Knox, K. (2007). *The social value of public spaces*. Joseph Rowntree Foundation.

Writers, S. (2018). Traditional knowledge sheds light on changing East Greenland climate and polar bear hunt. *UPI Space Daily*.

Youtube Video. (2019). *Spring in Tasiilaq 2019 - Kulusuk Band*. https://www.youtube.com/watch?v=08hrL_xSNkc

Aaltio, I. (2009). How to become a Knowledge Holder: Creating a Piece of Scientific Knowledge with Originality. *Tamara Journal of Critical Organisation Inquiry*, *7*, 9–25.

Appendix 7

7.1 Interview Guide Joan Melgaard Rasmussen

Briefing

Questions

- Potential for collaboration between municipality planners and us through e.g. interviews?
  - Do they have information/knowledge/data about impacts of climate change?
  - How do you work with social issues in public urban spaces?
  - How do they aim to include people's perspectives in planning?
- Any best practice or area of big potential/issue?

Debriefing

7.2 Interview Guide Hjørdis Viberg & Justus Hansen

Briefing

Questions

- What is your responsibility working for the municipality?
- How much focus is there on Tasiilaq within the municipality?
- How do you engage the locals in the planning other than public meetings?
- Do you have any projects concerning Tasiilaq at the moment or anything planned?
- Do you have urban places in Tasiilaq that you would like to improve?
- Conflict: Language barrier between West and East Greenland. Does this impact the municipal connection and understanding of the locals in Tasiilaq?
- Possible to get contact information to the Local Representative Committee?
- Where can we find archive pictures or maps of Tasiilaq?

Debriefing

7.3 Interview Guide Nivikka Langstrup Witjes & Mati Larsen

Briefing

Questions

- What is your responsibility/role in the community?
- How do you work with the youth?
- How involved are the youth in your projects?
- Which stakeholders do you work/collaborate with?
- Regarding their projects:
  - Who paid/funded the projects?
  - Who was responsibility for what?
  - Why were you part of the bench project and who asked for the benches?
  - Where did the idea about the benches come from?
  - Have you gotten any feedback concerning the benches?
  - Why did you do the urban garden and who had the idea?
  - Who can use the urban garden?
- Are there others artefacts/projects you would like to implement in the city? (current/future projects?)
- How do you organise community engagement in your work?

Debriefing

7.4 Interview Guide Ole Jens Lundblad

Briefing

Questions

- **Community based planning**
  - When was the Local Representative Committee established?
  - Are there certain requirements from municipality you have to fulfill/align to?
  - Do the people come to you or the municipality when they have things they would like to change/improve?
  - Do you collaborate with the municipality, as they have the online platform, where people can do a request for a new project?
- **Urban spaces**
  - Where do the locals like to go in the city?
  - What activities do the locals do here?
  - What activities are happening here?
  - What function/quality does this place have for the locals?
  - Why do the locals come here?
  - Do the locals have an alternative?
  - Events during the year: what places are utilised for different events/purposes/happenings (Outside, inside, summer, winter)?
- **Climate Change and use of urban places**
  - Does change of weather impact the locals' everyday?
  - Have you experienced that the locals are more concerned regarding climate change and how it impacts their everyday?
  - Do you see a change of how people use urban places (e.g. more sun, more rain, more snow - less/more use of certain places)?
- **Citizens' huts**
  - Who was involved in making them?
  - What was the purpose of the huts?
  - Who used them?
  - Where were they localised?
  - Do you plan to make a third one that is more robust?
- **Hunters' Market - Brættet**
  - Who was involved in making it?
  - What was the purpose of the house?
  - Who uses it?
  - Is it mostly meant for certain groups of community e.g. fishermen, hunters?
- Are there other projects you think, we should know about that have the locals and their opinion very much integrated into the planning of it?
- What do you have as future plans where the Local Representative Committee is involved?

Debriefing

7.5 Interview Guide Arkalo Skifte

Briefing

Questions:

- What is the community house used for?
- What activities do the youth mostly attend?
- What other activities are you organising for the community?

Debriefing

7.6 Interview Guide Justus Hansen

Briefing

Questions:

- Are you involved in urban planning/development? How?

Urban spaces

- Where do the youth like to go in the city?
- What activities do the youth do here?
- What activities are happening here for the youth?
- What function/quality does this place have for the youth?
- What does the place mean to the youth?
  - Are there places that are emotionally / culturally important to them?
- Why do the youth come here?
- Do the youth have an alternative?
- Events during the year: what places are utilised for different events/purposes/happenings (Outside, inside, summer, winter)?

Climate Change and use of urban places

- Does change of weather impact the locals' everyday?
- Have you experienced that the locals are more concerned regarding climate change and how it impacts their everyday?
- Do you see a change of how the locals use urban places (ex. more sun, more rain, more snow - less/more use of certain places)

- What is the future plan for Tasiilaq? / Any certain projects that the municipality is planning for?

Debriefing

7.7 Interview Guide Anna Burdenski

Briefing

Questions:

- **Urban places and the use of them**
  - Where do the youth like to go in the city? (outside, inside, summer, winter)
  - What activities do the youth do here?
  - What activities are happening here?
  - What function/quality does this place have for the youth?
  - Why do the youth come here?
  - Do the youth have an alternative?
  - Events during the year: what places are utilised for different events/purposes/happenings? (Outside, inside, summer, winter)
- **Climate Change**
  - Do you know, whether the locals are aware of climate change?
  - How does climate change impact their life/livelihood?
  - How does the weather impact how the locals use the urban space?
  - Did the weather impacted/changed how the locals used the space in the past?

Debriefing

7.8 Interview Guide Hjørdis Viberg, Justus Hansen, Ole Jens Lundblad & Anna Burdenski

Briefing

Introduction of preliminary findings

- Fjord
- Community house
- Multi-field
- Bar & Disco
- Free time club
- Side result: Small field
- Municipality Square
- Flower valley /fjord /nature / mountains /benches
- Benches
- Training Center
- Fitness
- Ski lift
- Presentation of flyer and its purpose

Feedback round and discussion of findings

Debriefing

7.9 Interview Guide for the Youth

Briefing

Questions

- What urban spaces do people use/go to?
- What urban spaces do you like?
- What urban spaces do you less like?

Functional attachment: positive, neutral, negative? (Summer/winter changes)

- What activities do you do here?
- What activities are happening here?
- What function/quality does this place have for you?
- How often do you come here?
- Why do you come here?
- Do you have an alternative?
- Are you satisfied with this place?
  - What do you like about this place?
  - What do you dislike?
  - How do you (dis)like the placement/location/connection of this place?
  - How do you (dis)like the visual/architecture/physical/interior?

Emotional attachment: positive, neutral, negative?

- Are you familiar with this place?
- Why do you come here (emotionally)? Is there an emotional reason of why you come here?
- How do you feel when you come here?
  - Why?
  - Do you feel safe? uncomfortable?
- Do you care for this place?

Climate change impact:

- How does the weather impact how you use the space?
  - flood-events
  - protection from precipitation
  - protection from wind
  - sunlight during winter
  - shade during summer days
- Did the weather impact/change how you used the space in the past?
- Does this impact you emotionally / how does this change make you feel?

Debriefing

7.10 The Youth's Flyer

The outside of the English flyer is visualised on Figure 7.1 and the inside of the flyer is visualised on Figure 7.2.

Figure 7.1. Outside of the flyer

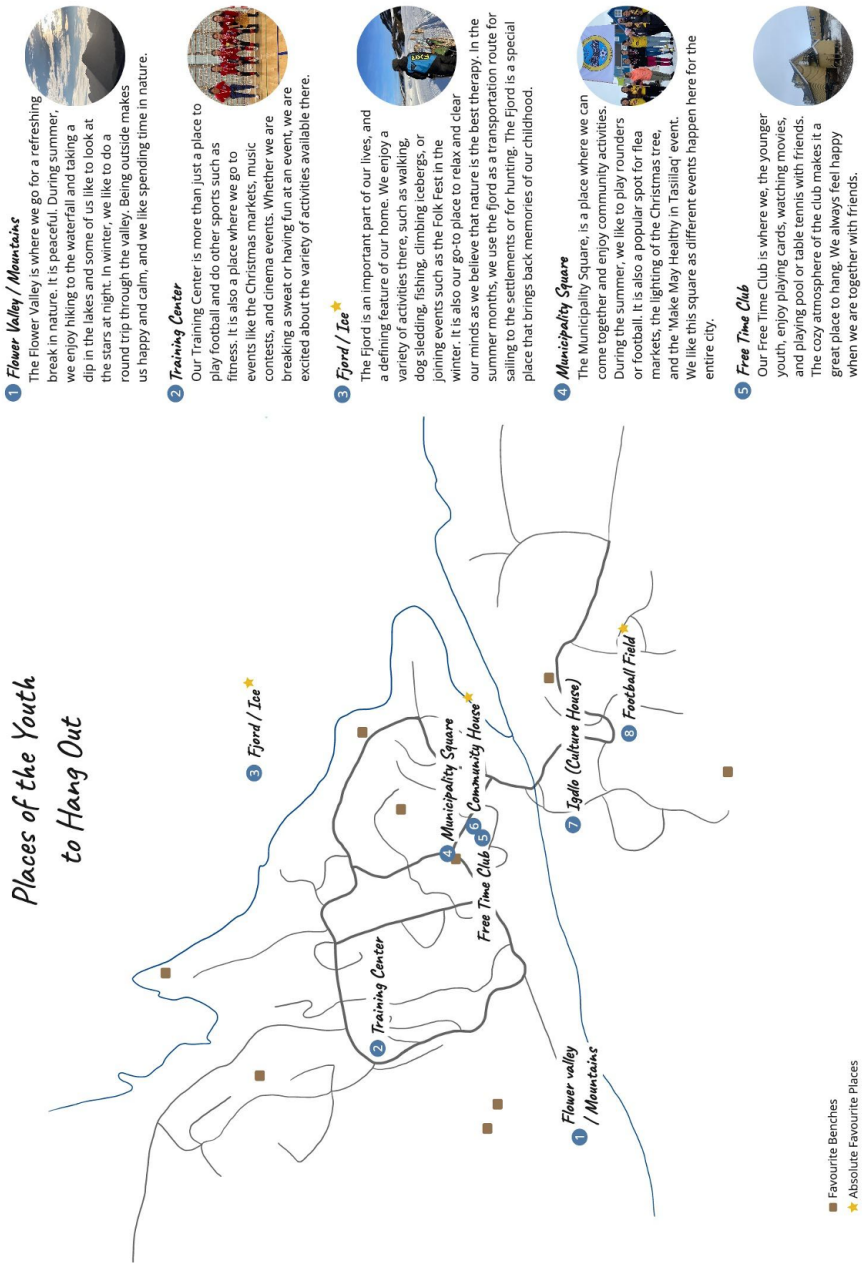

Figure 7.2. Inside of the flyer