

Shayesteh Shahand

# **How to promote students' social interactions**

## **case study of Gløshaugen Campus, Trondheim, Norway**

Master's thesis in Urban Ecological Planning  
January 2022



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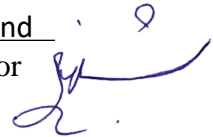


## Statement of Originality

I certify and that this is my own work and that the materials have not been published before, or presented at any other module, or program. The materials contained in this thesis are my own work, not a “duplicate” from others. Where the knowledge, ideas and words of others have been drawn upon, whether published or unpublished, due acknowledgements have been given. I understand that the normal consequence of cheating in any element of an examination or assessment, if proven, is that the thesis may be assessed as failed.

28.02.2022 Trondheim  
Date and Place

Shayesteh Shahand  
Signature of Author



## Preface

The idea of this research stemmed from the researcher's experience at the Gløshaugen campus. During my study as an international student, having difficulty socializing with other students, especially Norwegian students and students from other faculties, triggered me to talk about this subject with other students. I realized that this was not only my problem but the concern of many students. With the advent of Corona and limitations of communications with others, the need for and importance of interacting with others to have a positive mood and mental health became more apparent to me than before. Since I was away from my family, my communication was mostly limited to my friends on the campus, and I experienced difficult conditions while attendance at the campus was limited, and all classes were online. As a result, I became more determined to study how it can be possible to enhance students' social interaction on the campus during normal and pandemic conditions.

The question that occupied my mind at the first stage of the study was whether open spaces on university campuses are the same as public spaces in the city or they vary because of the purpose and differences in the age ranges of most of the users at campuses.

One of the important lessons I learned in the Urban Ecological Planning program is focusing on the people and users of spaces, identifying their needs, and considering challenges from their perspectives. Therefore, students and their opinions were the main points in this study.

I would like to express my special thanks of gratitude to my supervisors Peter Andreas Gotsch and Savis Gohari Krangsås for all the valuable guidance and feedback throughout the research process.

I would like to thank Berit Therese Nilsen for connecting me to other projects related to campus development and inviting me to different meetings on the subject of campus, and I also thank Hanna Maria Jones for providing me with useable information about the Future campus project.

I am really grateful to my husband and my family for their support; I could never have completed this task without them!

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## Abstract

Campuses provide a supportive environment for learning of students. This learning is not limited to academic learning. Previous studies have shown that active students' learning mostly happens outside the classrooms and during their interactions with others (McLaughlin & Faulkner, 2012; Ibrahim & Fadzil, 2013). Students not only attend universities to study and go to different lectures and classes but also spend time and socialize at the campus to learn how to communicate with others and prepare for further challenges in their lives. Furthermore, social interaction is an effective way to reduce students' tiredness and anxiety (Hajrasouliha, 2017) and help them enhance their mental health. Therefore, outside the classrooms, where students can interact, is as important as inside the classrooms. The importance of study and research about students' social interactions became even more critical for the researcher with two events; The approval of unifying NTNU's campuses around the Gløshaugen campus and the outbreak of Covid-19 all around the world and the impacts it had on students' lives.

The literature review revealed that although many studies have discussed the importance of campus and social life of students and reported statistics about their mental health and wellbeing, there has been less research on ways to promote social interactions of students. Consequently, the main aim of this research is to investigate the underlying features of campuses that can facilitate and limit the social interactions of students through the case study of the Gløshaugen campus in Trondheim.

The researcher used several complementary methods to investigate experiences and expectations of students from the social interaction on the Gløshaugen campus, the impact of Corona on their interactions, and attributes of campus spaces that improve the students' social interactions. The methods were desk-based research of documentation on the topic, an online survey with 100 participants, in-person interviews with six participants, and three focused group interviews. During this study, the researcher tried to determine students' perspectives on the topic and analyze the results and findings based on a combined theoretical framework of campus and public space.

Based on the results and findings, the researcher discussed the positive and negative aspects of the Gløshaugen campus that can facilitate or limit students' social interactions. According to the theoretical framework, these features were described and included six categories; accessibility, facility and comfort, image, use and activities, sociality, and participation. Additionally, the researcher provided some recommendations for physical and



spatial interventions to improve students' social interactions by analyzing the conditions and places that students tend to interact and communicate. These features and suggestions can be considered and applied during the space development of NTNU's unified campus project.

# 1 Introduction

The initial idea for this research stems from the researcher's experience during her study in different universities. Lack of proper places to get together with other students and have social interactions on campuses led students to go outside to have fun or even do their group work. After talking with her friends, the researcher realized that this issue is the same concern as other students. They were eager to spend more time on the campus if there were more suitable places or feasibility of hanging out and doing various activities. In other words, a campus is a place where students expect to enjoy academic life and study is only part of their goals. They need to contact other students and people to develop their interpersonal skills alongside their intellectual capabilities.

University campuses are constantly evolving, and many developments are summarized in the facilities of buildings hidden behind rigid walls. Students' experience can significantly change for the better if these investments bring to the outside, become visible and provide a platform for their multidimensional growth. Attractive and pleasant places for interactions, study, physical activities and entertainment result in the personal development and satisfaction of students during their academic life.

Describing and analyzing university campuses as a land where university and other related institutional buildings are located are different from a city, a neighborhood, or a block because universities' mission, objective, and governance are not equivalent to the goals of cities or neighborhoods. Instead, a campus provides a supportive environment for learning (Hajrasouliha, 2017). Additionally, campus life is different from urban life. In the urban context, people present in public space; they perform various activities but do not necessarily interact with each other (Yaylali-Yildiz, et al., 2014). However, on the campus, the existence of shared space for spending time, such as dining and studying, increases the probability of meeting people with common goals and interests. (Halsband, 2005).

In the early 1990s, the learning concept was considered in opposition to teaching. In the learning paradigm, the purpose of a university is not limited to transferring knowledge, but it is expanded to provide environments and experiences that make students more active and part of the learner communities to discover and create knowledge (Barr & Tagg, 1995). Therefore, spaces outside the classroom, where interactions occur among students, are as important as classrooms and lectures. These interactions can happen in any part of the university, indoor or

outdoor, wherever students feel comfortable and safe from the environmental inconvenience (Ibrahim et al., 2013).

Even when campus provides a supportive environment for learning, the influence of the campus on students is not limited to academic learning. It has significant power in preparing them for further challenges in their lives (Ibrahim & Fadzil, 2013). This learning does not just happen in the classroom, but previous studies have indicated that active student learning mostly happens outside the classroom, in informal spaces, where students are eager to communicate and exchange their knowledge and ideas (McLaughlin & Faulkner, 2012; Ibrahim & Fadzil, 2013).

Furthermore, various studies suggest that campuses should be designed in a way that mitigates the mental exhaustion of students and enhances their quality of life and educational outcomes. Social connection is known as one of the effective factors that make the campus a delightful experience and encourages students to spend time there, reduce their tiredness and help them to cope with the challenges of academic life (Hajrasouliha, 2017). Additionally, students enter a university not only to obtain knowledge and skills but also to make friends and join social organizations (Arum & Roska, 2011). Consequently, if the interaction is removed from campuses, academic life will be meaningless and boring because it just sums up going from one class to another. Thus, campuses gain much if they have public spaces and encourage students and staff to have informal gatherings (Yanni, 2006).

After the outbreak of coronavirus pandemic all over the world, many aspects of students' life and university campuses have been influenced significantly. Many lectures and classes have been switched to online and the presence of students on campus has been restricted in order to control the infection. Based on the responses of students in Norway to the Studiebarometeret survey conducted in October 2020, although students were happy with the study program as in previous years, they were less satisfied with the social environment and function of the university's pandemic response regarding creating a sense of belonging to a community in 2020 compared to before. Many students have suffered from mental health problems such as stress, anxiety, and depression. This applies both at NTNU and nationally. This survey was conducted in October 2020 and around 30,000 students responded. 5528 of the NTNU students responded to the survey, corresponding to 46% of the total student body. They replied to questions about different aspects of their studies and everyday study. This survey also contained students' experience during Covid-19. Specifically, it examined the effect of digital teaching during this pandemic. Many students stated that they think digital teaching is less

motivating and learning outcomes would have been better if they could have been physically present on campus. Few people believe that digital education can replace physical education. All of these results express the importance of the physical presence of students and their interactions on campus (Nokut, 2020).

Around 20 percent of Trondheim's population are students and this town is well-known as the best student town in Norway (Life and housing student in Trondheim, no date). Therefore, students and NTNU have a crucial role in shaping the identity of this town, and they have had a mutual influence on each other. Students usually spend most of their time on campus for study, research, participating in group work or other associations, etc. They need support for their activities such as learning, research and exchanging knowledge during their study and university campuses usually provide infrastructure to make it feasible. In the past few years, it was agreed to collect all the NTNU campuses around Gløshaugen to provide synergy and an interdisciplinary environment. This decision indicates the importance of studying and creating effective spaces tailored to the needs of students more than before. Furthermore, the highlight of user involvement in the unified campus project has led this study to find out the desired and pleasant campus from students' points of view.

Considering all these issues, university campuses play a significant role in student life, and there is always the possibility to improve the quality of that to receive more benefits. University campuses can play a more prominent role in the social life of students by offering a space where students and staff can meet not only academically but also socially and culturally. Campuses usually have a high potential to be more active and livelier during the day and be still in use after the formal working hours of the university to serve people. In Trondheim, due to the Nordic climate condition, public and outdoor open spaces are more complicated and need special considerations. Often, wind, rain, cold temperature, or other unpleasant environmental conditions negatively influence the use of these spaces. Despite the extensive studies around the quality of campus spaces and the importance of social interactions of students on their learning, mental and physical health and personal development, the literature review demonstrated that there is a need to study more about the context that can support social interactions of students on campuses.

## **1.1 The project aim**

This report aims to investigate the underlying features of campuses that can facilitate and support the social interactions of students through the case of the Gløshaugen campus in

Trondheim. This study identifies these features from students' perspectives and these features are further divided into possible activities and spatial qualities.

## **1.2 The project questions**

This research aims to answer the following questions:

1. What are the experiences and expectations of students from the social interaction on the Gløshaugen campus?
2. How did Covid-19 change /has Covid-19 changed students' social interactions on the Gløshaugen campus?
3. What are the main elements and attributes of spaces of university campuses that improve the students' social interactions?

## **1.3 Research paper organization**

In the following chapters, the first chapter presents general information about NTNU, Gløshaugen campus, and ongoing campus development project to provide an overview regarding the current situation of Gløshaugen campus and the future plan for unifying campuses around Gløshaugen. It continues with some successful experiences of placemaking and attempts to create pleasant places for students' engagement. They include Coffee House in law faculty of McGill University in Canada, a plaza at Harvard University in the USA and two placemaking projects on the KTH campus in Sweden.

The theory chapter presents the state of research on the topic and theoretical framework. It makes the outline of foremost concepts and relevant previous studies that the research is founded on. In the further progress of the research, these theories and concepts offer a framework for questions development of survey and interviews and ultimately discussing the research findings.

The method section will discuss the data collection and data analysis procedure. The selection and implementation of different methods used in the data collection process, including desk-based research, survey, interviews and focus group interviews, will be described in detail. Challenges and limitations that affect the result of the research and ethical consideration during the research will be mentioned at the end of this section.

In the last two chapters, the results and findings from the survey and interviews will be discussed and lately, the research questions are answered and linked to the theoretical framework.

## 2 Context

This chapter will present background information about the Gløshaugen campus and the in-progress campus development project around Gløshaugen. In addition, three examples of making attractive and social places on different campuses will be explained. These cases illustrate some attempts to create quality places where people desire to spend time and do activities. Identifying and evaluating relevant experiences and solutions developed by others helped the researcher understand the characteristics that led to successful placemaking. Analyzing similar cases was a good investment of time and energy to find solutions for similar problems.

### 2.1 NTNU campuses and Gløshaugen

Located in Trondheim, NTNU is the largest technological university in Norway. The high number of students interwoven NTNU to the identity of the city. Today, although NTNU's campuses and other buildings of specific disciplines are distributed among several locations in the town, most of the students are collected in two major campuses, Gløshaugen and Dragvoll. In recent years, it was decided to gather all the campuses around Gløshaugen to create better opportunities to use resources and to create an innovation district with an international reputation. In January 2018, the government decided on this project. The aim of this program is to develop NTNU's campus coherently and facilitate education, research, and dissemination in the multidisciplinary environment (Unified campus, no date).

Unified Campus project is based on the fact that a well-designed and integrated campus facilitates a combination and collaboration of knowledge and different subjects. The campus development project includes conservation and redevelopment of 45,000 square meters of existing buildings and construction of up to 92,000 square meters of new buildings. The state is responsible for financing the project. Figure 2.1 illustrates the overall view of this program in the area.



**Figure 2.1. Overview showing buildings in NTNU's unified campus in white and areas for NTNU's campus development in grey (NTNU, no date)**

According to the planners of the Unified Campus project, developing a robust and adaptable physical infrastructure that facilitates collaboration and synergy in an interdisciplinary environment and improving the quality of education, research, innovation, art, and dissemination is this project's main goal. Consequently, this project enhances the communication between students, researchers, and academia, business and the local community. In addition, the unified campus will be more appealing for students through an interdisciplinary and new form of learning and study combinations (Unified campus, no date). In order to achieve these goals, new development, as well as a transformation of existing spaces, are needed. Hence, to take full advantage of this evolution, it is vital to take into account not only the physical aspect of campus but also virtual aspects, space quality and social life of students.

Another important point in the unified project is user involvement which is highly emphasized in the project agenda. There is a separate descriptive document for users' participation to make sure that appropriate points of view and knowledge are included in the



development of the campus. This document explains the guidelines, structures, goals and process of involvement. In fact, it has two main parts; one part is about the general basis and framework for involvement and the second part concerns updating user participation based on project progress. As the project progress, project plans, priorities and needs will change. Thus, participation processes need to be updated as well.

## **2.2 Successful place making experiences**

The following section explains three successful examples of creating pleasant meeting places on different campuses, including Coffee House in law faculty of McGill University in Canada, Science Center Plaza at Harvard, and placemaking projects on the KTH campus. In each case, studying the problem, solutions, effects, and lessons provides an in-depth analysis of other experiences to learn how to use the lesson learned in the case of Gløshaugen.

### **2.2.1 Coffee House in law faculty of McGill University in Canada**

#### **- The problem**

The law faculty of McGill University needed a place for gathering and enhancing the connection among the law students and between the law students and law firms. They also wanted to improve the informal intellectual development of students.

#### **- The solution**

Initially, the idea of Coffee House was proposed by a group of students as a gathering place and getting financial support for activities in the mid-1980s. Every Thursday evening during the academic year, more than one hundred students from law faculty get together in Caffe House, which is called “Atrium” at McGill University. A group plays jazz music, hot and cold food, beer and wine are served. Sometimes law student organizations organize the gathering and sometimes, law firms sponsor the event and send their attractive lawyers to the event as well. Contrary to its name, there is not any house or coffee. Although the Coffee House is specifically for law students, even if students from other faculties show up, they were expelled by formal and informal measures. Like security guards ask students looking confused about the reason for their presence (Turner and Manderson, 2007).



**Figure 2.2 The empty Atrium (Turner and Manderson, 2007)**

**- The effect**

Some researchers studied the Coffee House in depth by conducting qualitative research in the socialization process of students. The result of their study reveals that in the classroom, students are taught how to think like a lawyer and in the Coffee House, they learn how to act and live like a lawyer. They believed that students learn a lot by being in this place, yet not everything they receive is conscious (Turner and Manderson, 2007).

While the Coffee House is a good place to drink, it is not perfect for socializing, talking and finding new friends. It is usually too crowded and noisy and there is even no place to sit. Due to the noise, students need to talk to others very close and ignore the personal space. Students also have the feeling that they are watched constantly by the lawyers. By deeper examination of the Coffee House, it turns out that students do not attend for the alcohol, yet they practice to act, socialize or dress up like lawyers, make small talk even among their friends and enhance their social skills. All of these characteristics are crucial for them to be a lawyer. (Turner and Manderson, 2007).



**Figure 2.3 Appearance of Coffee House during one of the sponsored events (Turner and Manderson, 2007)**

All of the details and the quality of the place instill in the law students that they deserve to drink wine and eat nice food as professional and powerful lawyers. It also affects the way law students look up to other students, from top to bottom. This fact is also obvious in law students' phrases to describe other students, such as students from downhill or lower campuses. The law students believe that they never get very drunk and always "hold they drink," unlike the non-law students if they can attend (Turner and Manderson, 2007).

Although many students think their interactions with the lawyers sent by the law firms are very superficial, students can still benefit from these connections and enhance their chance of recruitment.

#### **- The lessons**

Based on Turner and Manderson "Coffee House is a site of repetition, operates to create a recognizable identity, a powerful corporate lawyer..."(Turner and Manderson, 2007, p776). The Coffee House is a place where students confirm their identity as "McGill law students". In other words, it induces a sense of belonging to the community of law students and transfers student identities gradually in an unconscious way. Coffee House is full of tension, paradox and diversity of identities which have the ability to gradually converge. The Coffee House is one type of experience, and it is not the only way for law students to socialize (Turner and

Manderson, 2007). Because of the conditions of the place, students usually communicate with their friends and people whom they know instead of making new friends. Power and control dominate the space, students are watched all the time and cannot feel comfortable being themselves.

The important point regarding the Coffee House is that there is a sense of exclusiveness. All the space details have this message for them that you have apriority to other students. The Coffee House illustrates the power of space to instill a special identity to users and its impacts on the way users think and behave.

### **2.2.2 The Plaza at Harvard**

#### **- The problem**

Located between Harvard's historic yard and its North Campus, Science Center Plaza was only asphalt paths and muddy lawns. Some measures were needed to transfer this place from a busy place to cross to a meeting place and social activity center for students, university staff and the local community (Holmes, 2013; Reuell, 2012). According to Harvard president Drew Faust, the main purpose of the Harvard Plaza project was to provide a flexible, functional and welcoming space (Reuell, 2012). He attempted to convert the public space of campus to a gathering place and make it more vibrant to connect students and the university to the neighborhood (PPS, 2015).



**Figure 2.4 The conditions of the Harvard Plaza before the reparation (Holmes, 2013)**

### - The solution

The project of Science Center Plaza included visible and invisible improvement. Since it is atop the Cambridge Street underpass, some infrastructure and water drainage considerations were done (Reuell, 2012). The surface of the underpass tunnel below this plaza was repaired and a set of Harvard's projects was identified to bring opportunity in university spaces for interaction and a sense of community. (Holmes, 2013; Reuell, 2012). These projects included a plaza, light-color pavers, installing fixed benches and embedded foundations for tent and power and water.



**Figure 2.5 Flexible space of the Plaza hosts various performances and events (Harvard University, no date)**

### - The effects

A wide variety of activities from relaxing to socializing is possible for individuals, students and the community. They can study, hang out, eat, and hold various organized and unorganized events and celebrations all year round (Reuell, 2012). Different groups with various ages, backgrounds and programs of study get together in this plaza. (PPS, 2015). The combination of simple designs from fixed benches to removable tables and chairs to food trucks create an exciting place for students and the community and help them to arrange their desirable



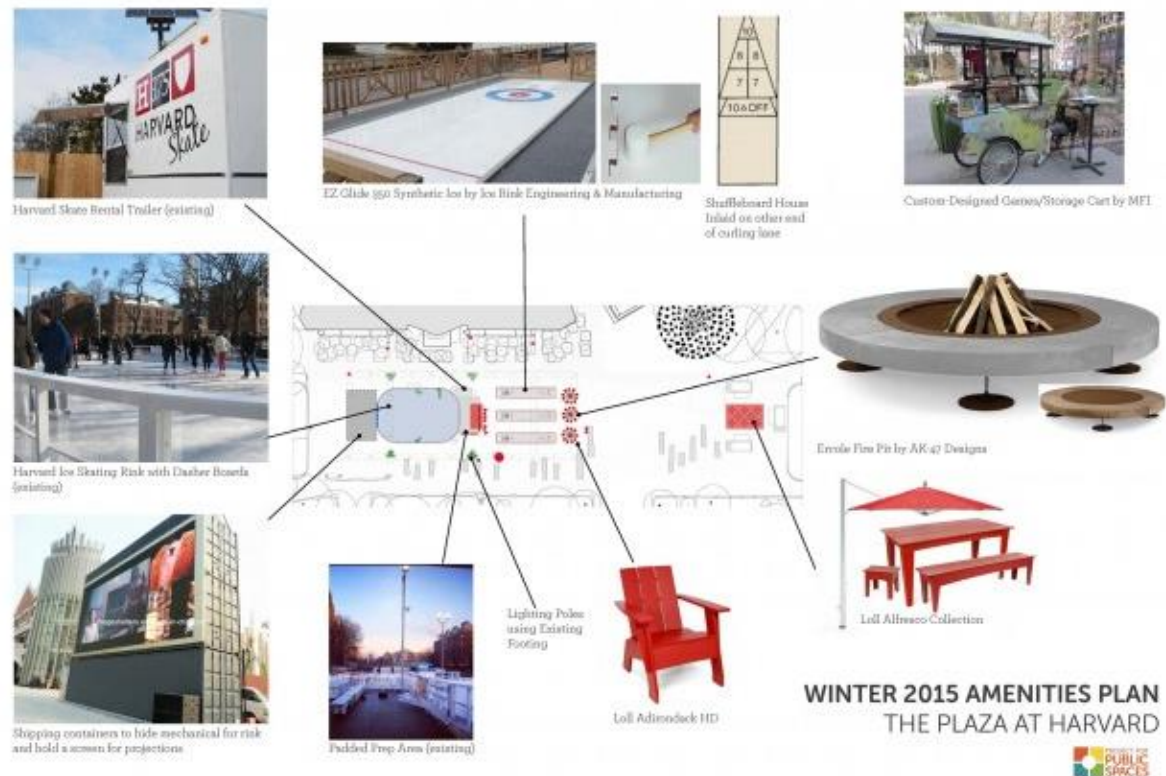
place (Reuell, 2012). All the amenities and activities like food trucks, markets, ice skating and musical performance not only bring people together but also highlight the importance of engagement, sharing ideas and experiences (Reuell, 2012).

Twisting wood benches are formed in a way to make it possible for people to sit, lie down lonely or in small and large groups. These benches are illuminated in such a way that they seem to be suspended in the space and invite people to sit at night. In contrary to active plaza, the edges of that offer shaded, quiet and relaxed area to rest and watch other people (Holmes, 2013).



**Figure 2.6 Twisting wood benches accommodate different bodies and people can sit and relax in different ways (Holmes, 2013)**

There are also seasonal amenity and design plans available on the site to provide a comfortable environment for users. Even during the winter and unpleasant weather, this plaza is active. Ice skating rink, fire pits, food trucks and serving hot cocoa and s'mores offer the possibility of gathering (PPS, 2015).



**Figure 2.7 Details of winter amenities (PPS, 2015)**

### - The lessons

Open space of the plaza does not disturb the movement of people between the Yard and North campus but rather invites them to stop, sit and observe the happenings for a few minutes or even hours. It provides a multifunctional environment for relaxing, studying, eating, socializing and organizing different events. This plaza testifies to the effect of rethinking of public space on its activation and social interactions of individuals. Flexibility is one of the distinctive features of this project. The new light-color pavers and embedded foundations for tent and power and water utilities provide a flexible surface for hosting different performances and events (Holmes, 2013).





**Figure 2.8 Plaza during the winter (PPS, 2015)**



**Figure 2.9 View of winter activities during the Plaza winter fest (Winn, 2015)**



### **2.2.3 Placemaking projects on the KTH campus**

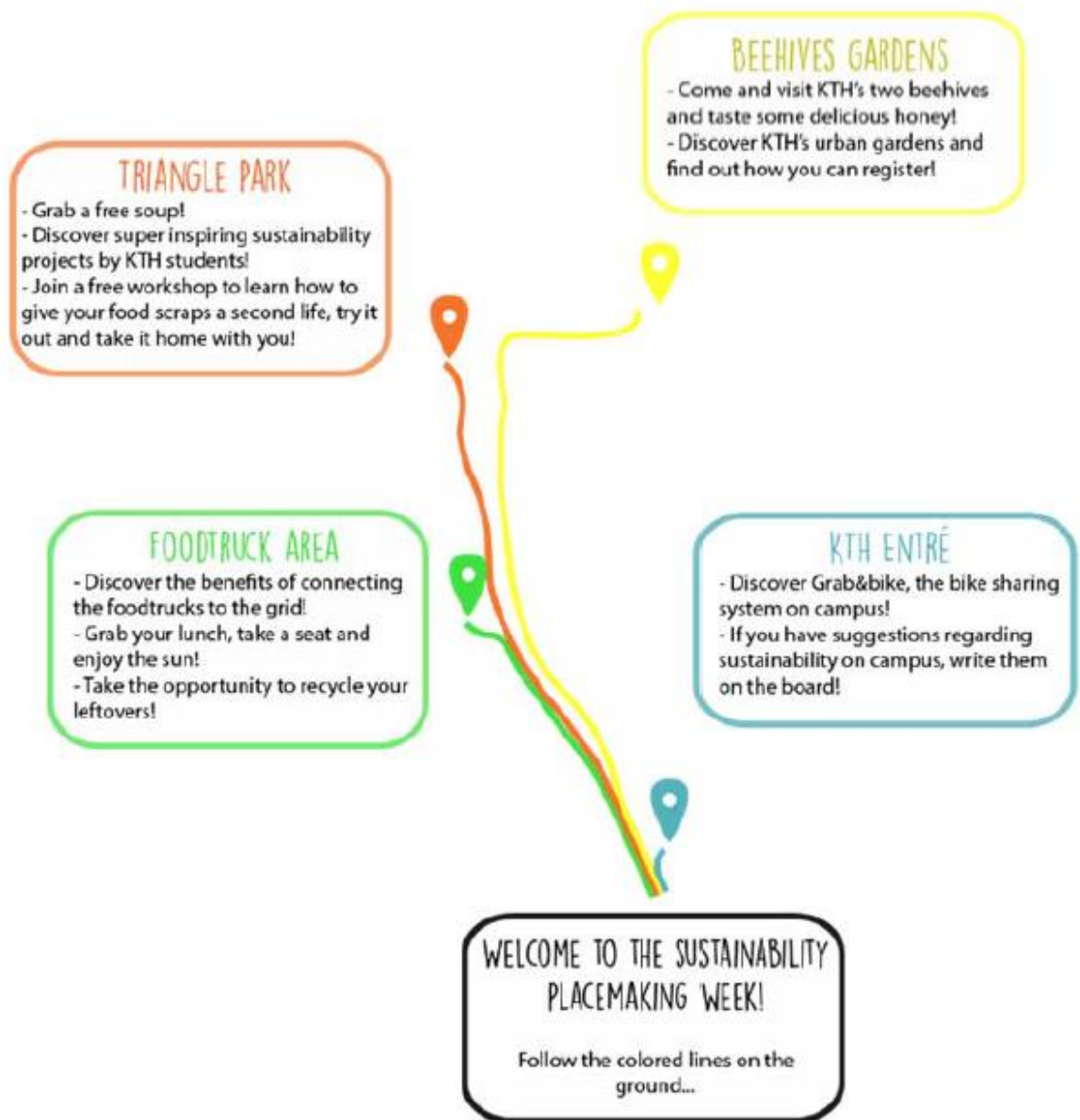
#### **- The problem**

Like other famous international universities, many changes and constructions of new buildings are continuously running on the KTH campus. But often, public spaces are not given much attention. Although KTH is leading academically, students have found it challenging to have a livelier campus and more vibrant public spaces on the campus.

#### **- The solutions**

Students from the master of Urbanism Studies Program at the Royal Institute of Technology (KTH) in Sweden applied placemaking as a tool to make public spaces livelier and create a sense of community under the program called Placemaking Week. This program allowed students to employ their academic knowledge in a real project at the scale of their campus. It took four months for students to propose and accomplish a project and experience the challenges and rewards of carrying out a placemaking project (Pannone et al., 2019).

Two Placemaking Week projects that differed in their form and intervention are explained in the following. In the first project, students set up an event and tried to promote pro-environment behavior and make open spaces of campus more attractive and pleasant at the same time. Creating colored lines on the ground led people to different spaces with different sustainable activities. Figure 2.10 illustrates the plan, all the spots with their colors and activities that took place there. Activities included “a bike repair station, a workshop to learn how to reuse food scraps, an outdoor exhibition of student projects addressing environmental needs, and gazpacho was cooked from left-over food and was served directly on the street” (Pannone et al., 2019, pp,217).



**Figure 2.10 Map of routs and activities during the first place making week project (Pannone et al., 2019)**

In addition, through simple interventions, they made the public spaces more pleasant. For instance, they eliminated food truck generators that were noisy and polluted the air and connected them to the gride in association with local stakeholders. They also added some informal seating like pallets. Consequently, students became more interested in getting together around the food trucks and eating their lunch there. In general, the result of this project was very satisfying and showed the possibility of the transformation of public spaces on the campus (Pannone et al., 2019).

Students who organized the second project were focused on the unused public space on the campus. This space had a special position because it would become the main square of the campus in the future. They called their theme of Placemaking Week “Creating place through mixed media.” Students’ main goal was to create a place where people are eager to meet and talk about the future of public space on campus. During their project, they practice how to use tools and techniques for implementing the participatory planning process (Pannone et al., 2019).

Their procedures are organized into four main phases: immersing, planning, designing, and executing. First, they identified and communicated with stakeholders. Then they planned an event and performed all the preparation tasks like managing the budget, providing materials, designing posters and a Facebook event to let people know about the event. To create a welcoming environment and give them opportunity to stay in that space, it was decided to use round buckets as light-weight equipment. These buckets could be used in different and flexible ways. Additionally, they were strong enough to use as seating. People were led to the site through red-painted circles with the same size as the buckets on the sidewalks (Pannone et al., 2019).



**Figure 2.11 Designed poster for the event (Pannone et al., 2019)**

### - The effects

The large crowd that participated in this event and engaged with the space indicated people's enthusiasm for involving in the future public spaces on the campus and the possibility of using the participatory process to create future spaces (Pannone et al., 2019).



**Figure 2.12 Arrangement of buckets on the day of the event (Pannone et al., 2019)**

### - The lessons

These two projects demonstrated that even with limited time and resources, better space for interactions of people can be created. The arrangement and movement of buckets conveyed many messages. They signified desirable places to stay and sit individually or in groups (Pannone et al., 2019). The movable buckets gave people opportunities to organize the space in their desired way.

Both experiences illustrated how small changes within limited resources could influence people's feelings in public spaces. Furthermore, to have a more "human-centered" public space, bottom-up procedure, engaging community and people as well as stakeholders from the beginning are necessary to find out their real needs.

#### **2.2.4 Summary of the lesson learned from the three cases**

The above section explains three different attempts to create vibrant open spaces on campuses. The first one, the Coffee House in law faculty of McGill University, showed how the organization of space could influence the way people think and behave. It also illustrated the direct and indirect impact of the Coffee House on the law students; the Sense of belonging to the law community, the feeling of being under supervision, dictating the way they should behave as a lawyer. The second example demonstrated how a place to cross could convert to a vibrant and flexible place for various purposes like relaxing, socializing, studying, eating and organizing different events all year round. The third case explained how small changes by limited resources could transfer deserted open spaces to active and pleasant ones. In addition, giving people opportunities to organize the space in their desired way can encourage them to feel comfortable and stay longer in the space.

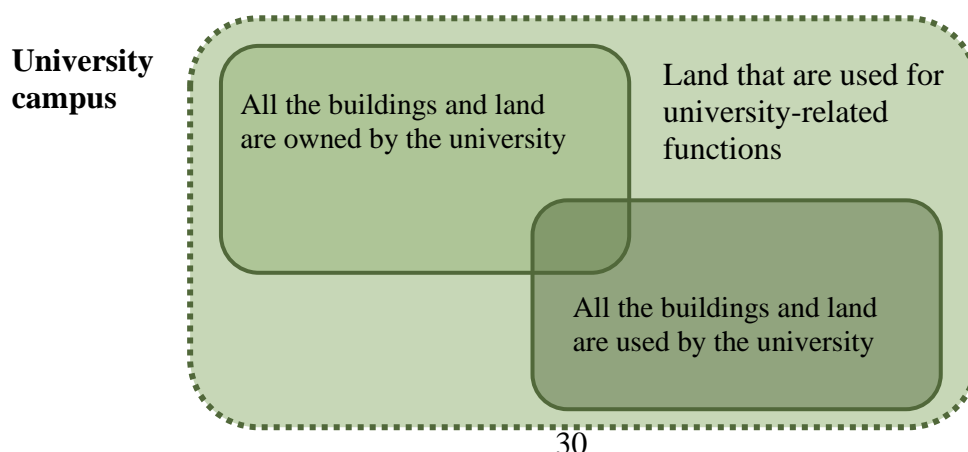
### 3 Theory

In this section, the relevant theoretical background is explained. These theories are derived from the research questions and include campus, the role of a campus on the social life of students, public spaces, and pandemic and campus. These theories provide a proper basis for the research by expressing the studies and research in the field of presented topics.

#### 3.1 Campus

Superior university campuses have changed during the time and have been formed and designed carefully. One of the clearest changes of many campuses during recent years is that they have grown in size. This physical development could be due to the increase in the number of students, faculty, and staff (Halsband, 2005). As the size of universities grows, the need for more diverse and flexible spaces is felt more than before. Furthermore, outside and inside the buildings are required to be equipped. The campus landscape is furnished with different facilities such as benches, night lights and bicycle racks to make a pleasant and safe environment and invite people to stay there for a while and watch in-progress events (Halsband, 2005).

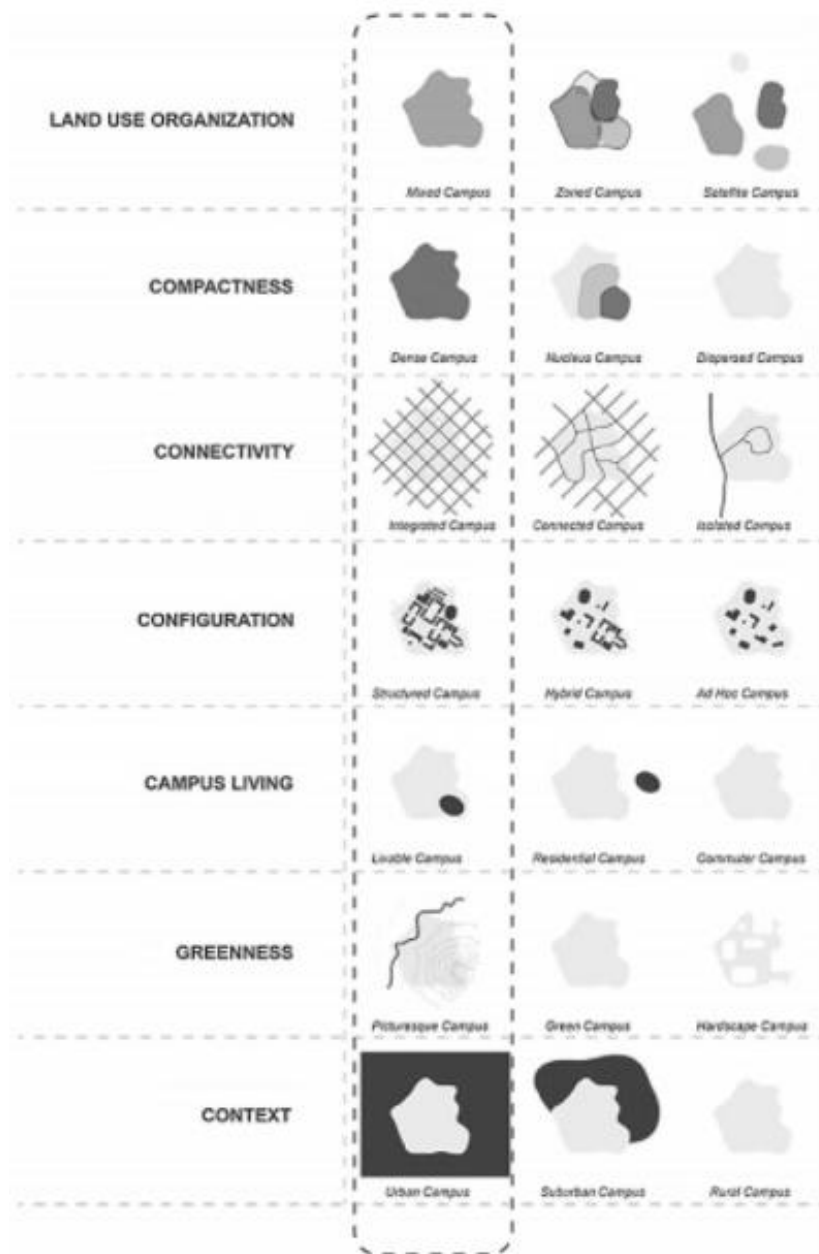
University campuses can be defined from different perspectives, such as functional, spatial, or managerial perspectives (Heijer et al., 2011). Richard Brodhead defined the university as home and a “world of belongingness against the larger world of strangeness” (Brodhead, 2004). This definition demonstrates the importance of the university very well. It can refer to the land and all buildings owned or used by the university. If space and buildings used for university-related functions are added to this definition, the reality of the campus of the future is collected better. These functions like leisure facilities, related businesses and student housing are crucial for universities to meet their goals (Heijer et al., 2011). Figure 3.1 shows the concept of campus spatially.



30  
Figure 3.1 University campus (Heijer et al., 2011)

Describing and analyzing campus as land that university and other related institutional buildings are located is different from a city, a neighborhood, or a block. Because the mission, objective and governance of universities are not equivalent to the goals of cities or neighborhoods. Instead, a campus provides a supportive environment for learning (Hajrasouliha, 2017). In this research, the campus considers all the spaces related to a university and it can be outdoor or indoor spaces that create a context for learning and support students' lives.

Successful and desirable university campus which leads to students' satisfaction and meeting institutional goals are defined differently. Hajrasouliha (2015), by analyzing 50 randomly selected university campuses in the United States, defined "the well-designed campus" in terms of some dimensions including land-use organization, compactness, connectivity, configuration, campus living, greenness, and context. These dimensions are illustrated in figure 3.2 In other words, he determined "the well-designed campus" as "a mixed, compact, well-connected, well-structured, inhabited and green campus in an urbanized context." He considered these dimensions as quantitative factors that campuses can be quantified based on and compared to the desired outcome.

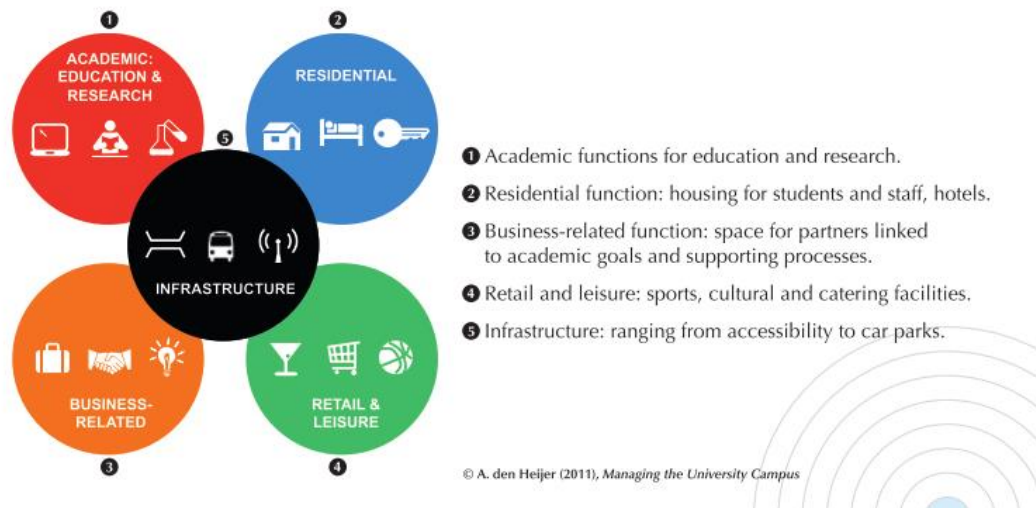


**Figure 3.2 Well-designed campus (Hajrasouliha, 2017)**

Although the main purpose of a university and academic environment is learning and education, other spaces and functions on the campus influence this main purpose and are essential for the success and satisfaction of students. Heijer et al. (2011) classify campus space

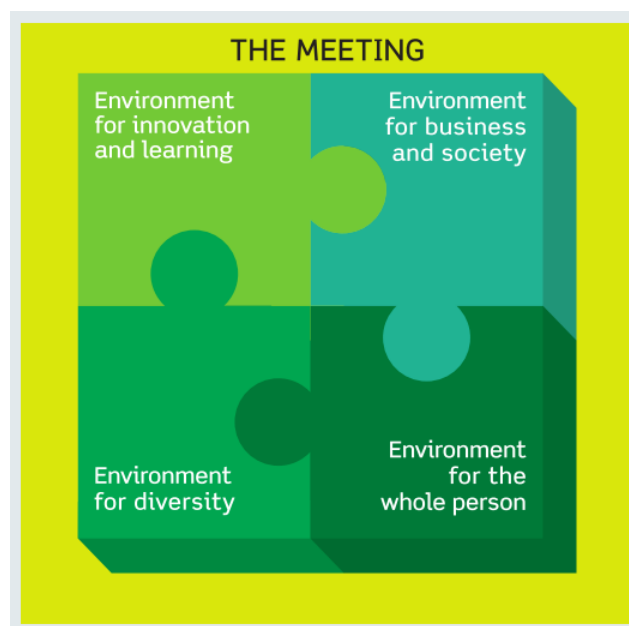


into five categories. This model demonstrates that academics and education are just one of the functions of a campus (figure 3.3).



**Figure 3.3 Different space of a campus (Heijer et al., 2011)**

Another study specifies a combination of factors that develop a “successful knowledge environment.” It highlights the social aspect of the knowledge environment as consider it successful when people can freely get together, share their ideas and motivational discussions happen (Akademiska Hus, no date). That is knowledge environment is the combination of environment for innovation and learning, business and society, diversity and the whole person. These environments are indicated in figure 3.4 and the meaning of each as follows:



**Figure 3.4 Foundation of successful knowledge environment (Akademiska Hus, no date)**

- Environment for innovation and learning  
The first element is about the space where people can meet and share their knowledge and opinions and constructive discussions can take place, which inspires creative process.
- Environment for business and society  
The second factor emphasizes the space providing the opportunity for cooperation and interaction with business and private sector as well as non-academic people and society.
- Environment for diversity  
Creating a space where various people with different backgrounds, conditions and experiences can exchange their thoughts in the varied environment is the third indicator.
- Environment for the whole person  
The last factor underlines that human needs should be fulfilled at a campus. Thus, this factor is about the available services and facilities in the knowledge environment (Akademiska Hus, no date).

Campus environments have a significant influence on learning outcomes and the preparation of students for further study and challenges (Ibrahim & Fadzil, 2013). Research findings of McLaughlin and Faulkner (2012) indicated that active student learning mostly happens outside the classroom, in informal spaces. In fact, students showed a preference for collaborative, social spaces for learning and technology exchange (McLaughlin & Faulkner, 2012). In other words, the informal environment provides a comfortable atmosphere where students are eager to communicate and this leads to promoting a positive attitude (Ibrahim & Fadzil, 2013).

### **3.2 Role of a campus on the social life of students**

It is not just the level of educational content that makes the university different from high school, but also the whole environment is a living and learning space, students learn how to contact and interact with each other (Yaylali-Yildiz et al., 2014). There have been two different approaches to do research on and study campus. The first one is micro-scale research focusing on classrooms, teaching and learning environments. On the contrary, macro-scale

research studies the impact of campus quality on the quality of students' life (Hajrasouliha, 2017).

Recent studies have shown that it is not enough to realize only functional needs in the education environment; it still needs to take into account the emotional need for inspiration and a sense of identity (Ibrahim et al., 2013). On the one hand, education and campus life depend on the production and transmission of knowledge. On the other hand, social life is essential, which is achieved through interaction. (Yaylali-Yildiz et al., 2014). Another fact that stimulates informal interaction on the campus is the presence of young people and their passion and excitement, which makes it easier to develop these kinds of engagements (Halsband, 2005). Furthermore, learning community such as sport teams, social organization, and interest groups arises in the context of socialization (Yaylali-Yildiz et al., 2014). This kind of learning community and student organization provides an opportunity for students to learn more about themselves and others to develop their soft skills such as team working, problem-solving and decision-making.

By the beginning of the 1990s, the concept of “learning” in contrast with “teaching” formed (Barr & Tagg, 1995; O'Neill & McMahon, 2005). Based on the learning model, students are supposed to spend a considerable amount of their time outside the classrooms. The physical setting outside the classroom is as important as classrooms and lectures. Informal learning can accrue in any part of the university, indoor or outdoor, wherever students feel comfortable and safe from the environmental inconvenience (Ibrahim et al., 2013).

Furthermore, literature offers that campuses should be designed in a way that mitigates the mental exhaustion of students and enhances their quality of life and educational outcomes. Both greenness and social connection make a delightful campus experience and encourage students to spend time there, reduce their tiredness, and help them cope with academic life challenges (Hajrasouliha, 2017).

Obtaining knowledge and skills is not the only reason for students to enter a university. They want to make friends and join social organizations (Arum & Roska, 2011). In other words, academic education is not their sole purpose of attending a university but the sense of belonging alongside that is important for them and its absence sometimes has bad consequences such as leaving the institute or even giving up studies (Brazzell, 2001). According to a study in the United States, over the past half-century, students allocated less time to studying and attending classes. Hence, revising the campus culture in such a way that gives more emphasize on social life and leisure activities were offered (Babcock & Marks, 2011). Literature shows that there is

a positive relationship between students' development and their active engagement of them on campus (Pascarella & Terenzini, 2005). Students who often socialize with fellow students, participate in programs outside class and extracurricular activities, and involve in campus life are more content with the academic and social experience (Martin, 2012; Astin, 1999; Charles et al., 2009; Espenshade & Radford, 2009). David X.Cheng (2004) demonstrated in his research that the quality of social life on campus the feeling of being cared and accepted as a part of the community are closely related to the students' sense of community.

### **3.3 Public space**

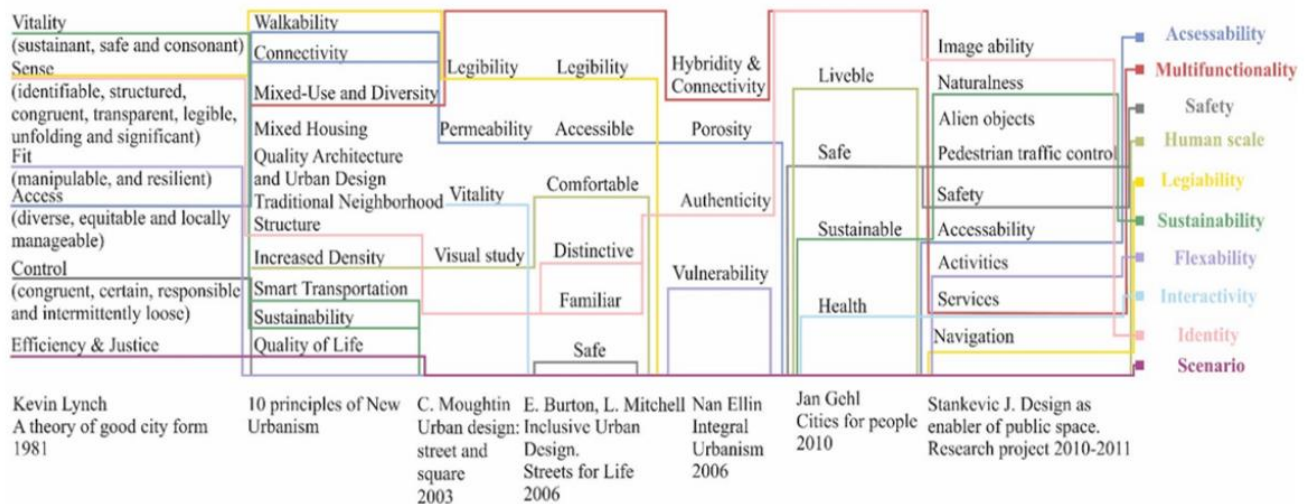
Public spaces have historically a social active role in the city and the quality of them is evaluated by the scale of pedestrians. "Spaces that are easily accessible, easy to cross and/or inviting to sit, rest, wander are bursting with visitors, shoppers, traders and local residents. Spaces not providing those characteristics do not burst" (Viljoen et al., 2005, p116). During the planning of public space, not only should planners think about the experience and emotions of pedestrians but also they should not consider public space as a residual space (Karrsenberg et al., 2016). Public space has its own identity and needs to be designed along with other spaces instead of taking up the remaining spaces after other spaces have been developed.

Kozlova and Kozlov (2017) defined ten quality indicators for improvement and assessing public spaces include accessibility, multifunctionality, safety, legibility, sustainability, human scale, identity, interactivity, flexibility and scenario. These features are the result of comparison of studies in the literature that explained the spatial quality of public space directly and indirectly. Figure 3.5 illustrates these qualities and the collection of them describe the value of the public space in the city. These qualities are briefly defined below to specify their meaning.

1. Accessibility interprets the state of free access, penetration, and usability of public space for all regardless of their physical and mental disability. It is about the connectivity of the city's districts and pedestrian networks on the city scale.
2. Multifunctionality interprets the state of functional variety and degree of mixture of places with different functions and the opportunity to choose them in the public space.
3. Safety interprets the state of security of people, including protection from crime, unpleasant environment conditions, collision with vehicles, etc. (Kozlova & Kozlov,2017).

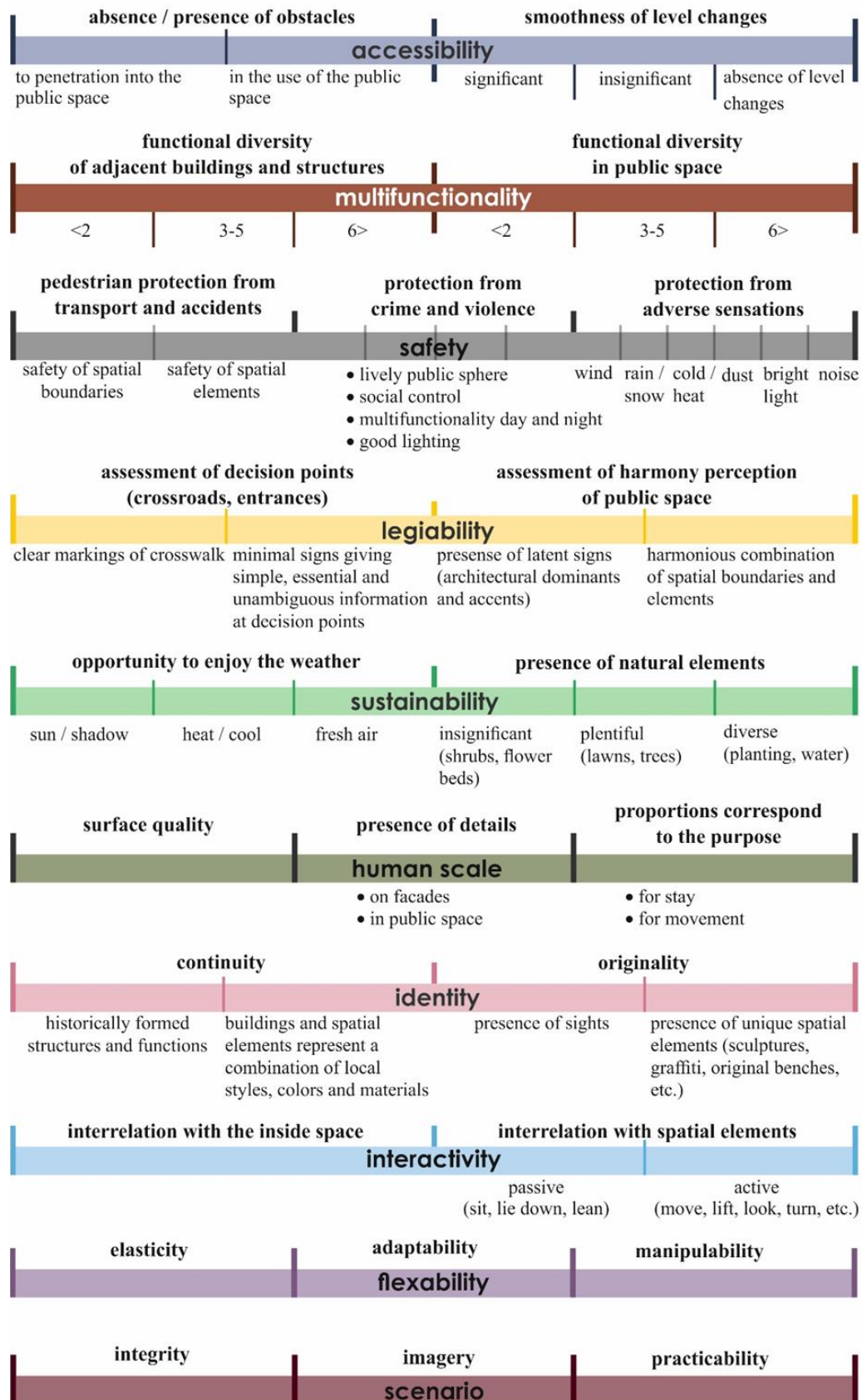
4. Legibility interprets the state of the simplicity of the network of routes and intersections, convenience in orientation and clarity of signs and features. legibility is considered as a fundamental value for creating an integral picture of the city, district or individual space in an easily identifiable way (Lynch ,1960).
5. Sustainability interprets the state of fulfilling needs and conserving the environment at the same time and creating an environmentally friendly space.
6. Human scale interprets the state of creating a comfortable environment for humans regarding the proportional scales of the space. These proportional scales are based on the dimensions and purpose of the space and the nature of the social interactions that influence the dimensions.
7. Identity interprets the state of expression of local character and the range that space with the aggregation of functions, forms of development, characteristics, colors and materials creates a distinct identity.
8. Interactivity interprets the people's engagement in the "active life of the city and the processes occurring in public space." There needs to be a balance in the definition of space in order to make a context for various activities (Kozlova & Kozlov,2017).
9. Flexibility interprets the range of variability in the urban spaces. According to Lynch's research, flexibility can be measured through three factors, including adaptability, elasticity and manipulability. Adaptability refers to the degree of stability and openness to change of the space. Elasticity is the capability to go back to the original status and it is related to temporary inclusion in the space. Manipulability concerns changes in form and use of the special environment (Lynch, 1981).
10. Scenario interprets the degree of "special unity" and the existence of the development idea of public spaces and their progressive implementation (Kozlova & Kozlov,2017).

Figure 3.6 demonstrates these qualities of public spaces and their effective indicators and components.



**Figure 3.5 Qualities of public spaces (Kozlova and Kozlov, 2017)**

Social connections make a difference between a “space” and “place.” Place is beyond an empty space that is tied to people’s experience and meanings (Tuan, 1997). Successful public spaces provide a place where people prefer to stay, return and connect to others. According to the Project for Public Spaces (PPS) team that examined thousands of public space projects, successful public spaces are defined as accessible, comfortable, sociable places where people are engaged in activities (PPS, no date). Figure 3.7 illustrates the tool that PPS developed for evaluating any public spaces known as the place diagram. This diagram consists of three rings, the inner circle is the key attributes of a place, the middle ring is intuitive or qualitative features and the outer ring explain the quantitative and measurable aspects.



**Figure 3.6 Effective indicators and components in the quality of public spaces (Kozlova and Kozlov, 2017)**



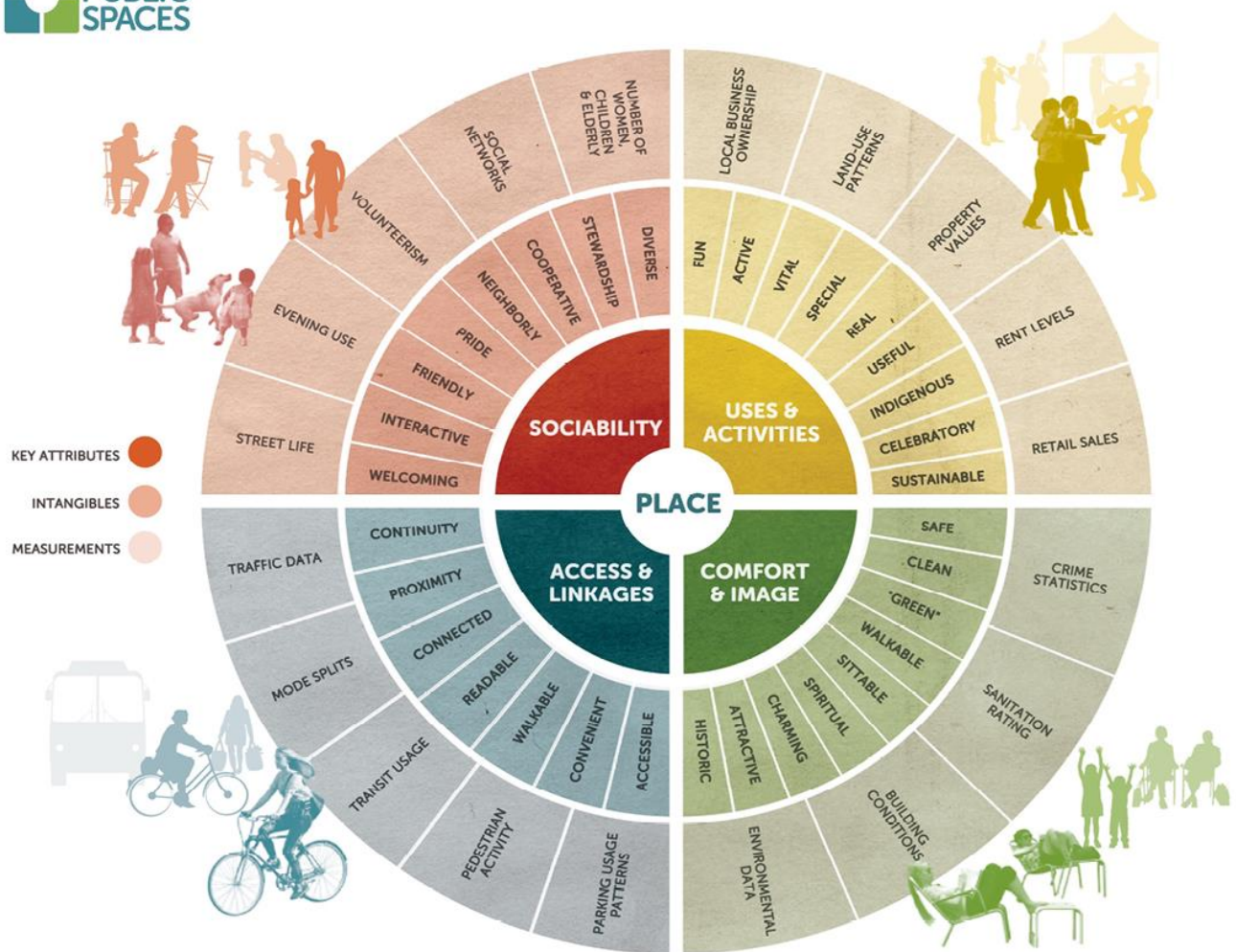


Figure 3.7 Four qualities of public space (PPS, no date)

### 3.4 Pandemic and campus

Over the years, different pandemics such as SARS, MERS and COVID-19 have influenced the education sector. Many universities change their teaching methods to remote and online study approaches during these kinds of pandemics. The pandemic has a great impact on the academic life and mental health of students like stress, anxiety, and panic (Izumi et al., 2020). Based on a survey conducted in China, some students found it difficult to focus on their study in this situation or others had some difficulties communicating and collaborating with their classmates and fellow students (Peters et al., 2020).



COVID-19 has been spread all over the world and influenced life of many people. Trondheim and NTNU were not exceptions. NTNU has an “emergency response plan” for an emergency incident such as fire, deaths and accidents, but since the Corona pandemic is enduring, widespread, and influence the daily activities of the university, both the emergency response management and day-to-day management have been tackling this problem (NTNU, Emergency Planning during the Corona Pandemic).

Covid-19 has altered many aspects of people’s life. Many people have experienced the contradictory feeling. On the one hand, they realized that they could perform a lot more remotely and, on the other hand, perceive the importance of socializing and meeting each other face-to-face (Diep,2020).

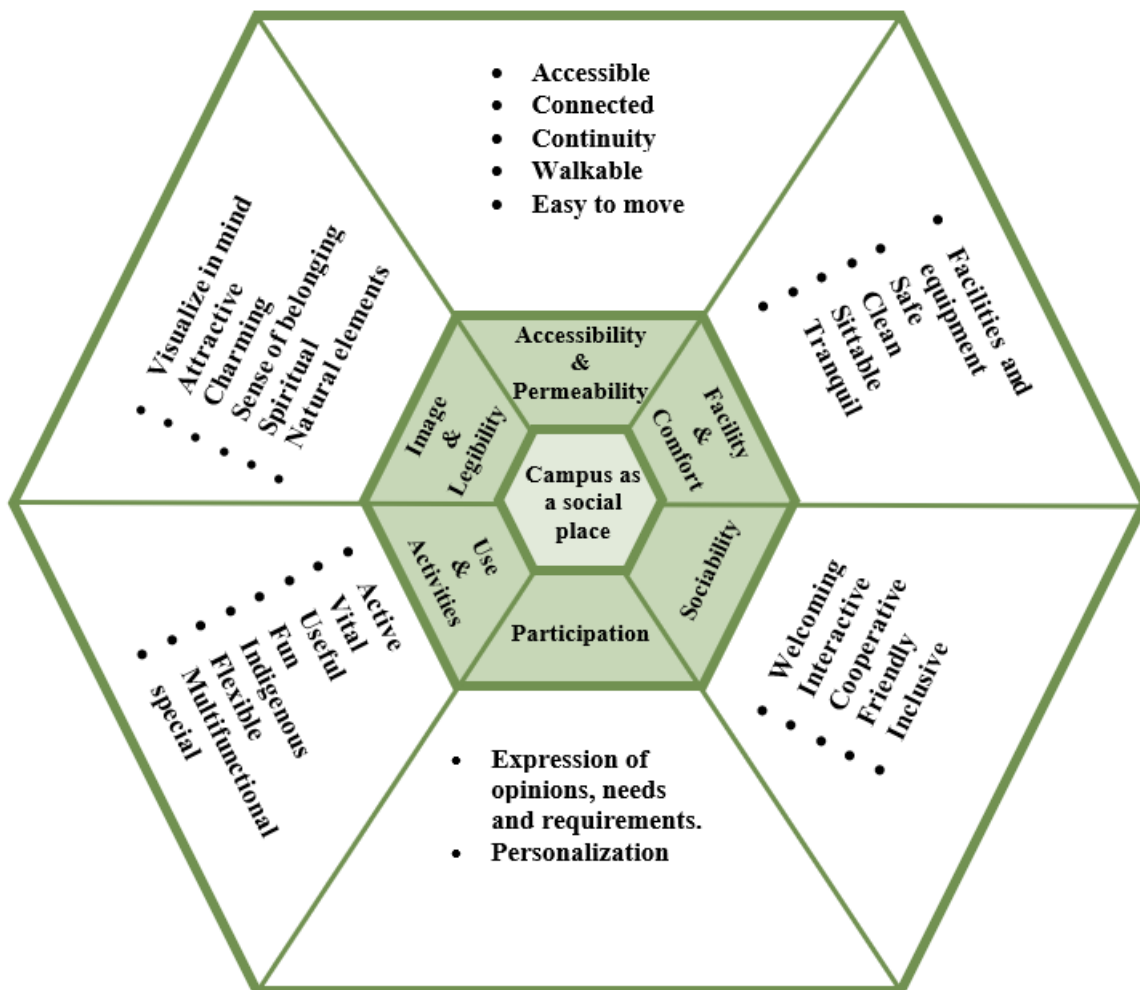
During Covid-19, people have experienced considerable changes in their every day of life. Accordingly, spaces and buildings will inevitably change. Before the Corona, there were some thoughts and opinions about modification in campus spaces which Covid-19 sped up these changes. For instance, Covid-19 accelerates the tendency of “Flexibility and collaboration” in spaces among universities. In universities, campus leaders prefer “flat floor” which gives them more flexibility and adaptability to arrange the furniture and hold different forms of lectures and group activities compared to multilevel lecture halls. Because they know the teaching and learning approaches are usually changing faster than the shape of campuses. Although flexibility was one of the effective factors in the university developments before, the pandemic highlights the importance of that (Diep,2020).

Based on a survey carried out by the Brightspot Strategy consultancy in April 2020 among 502 undergraduates in the United States, the most desirable experience of students from the campus was the “community and connection with their friends” and students stated that they were not satisfied with the function of the university’s pandemic response regarding creating a sense of belonging to a community. Students also selected “community” as the second most significant aspect of their on-campus experience after education issues. Therefore, this survey indicates that the community, interaction and social life of students is one of the drivers of the post-pandemic campus spaces (Diep,2020).

### **3.5 Summary**

The concepts and theories presented in this section allowed the researcher to identify the focus of the study and provide a background to answer the research questions. In the following chapters, findings will be discussed in connection with these theories.

On the one hand, the campus theory emphasizes the importance of social interactions and spaces outside the classrooms without describing details and qualities that need to be met to enhance interactions. On the other hand, public space theory elaborates very well in the context and scale of cities. In addition, required qualities and places are affected by the context, culture and climate conditions of every campus. Therefore, by combining the campus and public space theories alongside a focus group interview with students from different universities, the researcher developed a basic framework for further study. This framework can be seen in figure 3.8 and forms the foundation of the discussion and questions of interviewees.



**Figure 3.8** The model developed by the researcher as basis for the research

## 4 Methodology

This chapter explains methods applied for collecting and analyzing data. By using mixed-method in a complementary way, the researcher tried to obtain comprehensive answers. In this mixed-method approach, one method helped the researcher fill the gaps from another. As an illustration, the survey allowed the researcher to collect data from a group of students who were not easily accessible for interview. Furthermore, the survey as a quantitative method gave the researcher a chance to gather a vast amount of data in an online and remote way. The qualitative study and interviews provide a context to understand the broad information collected from the quantitative method and survey. Mixed-method also helped the researcher achieve information from students' viewpoint by the qualitative method and issues that the researcher herself is interested in through the quantitative approach. Thus, diverse views were gained throughout this procedure.

Furthermore, selecting a case gave an opportunity to investigate the study subject in depth. That is, "Case study is an empirical method to examine a contemporary phenomenon in depth in its real-world context especially when the boundaries between phenomenon and context may not be clearly evident" (Yin, 2018). Gløshaugen campus was chosen as the case study in this research because not only the researcher studied at this university and was familiar with different spaces and events on the campus, but also the ongoing Future Campus project requires research to strengthen positive aspects of the campus and modify the negative aspects, and eventually create a vibrant and active academic place. In other words, public spaces on the campus become more integral when all the programs gather around Gløshaugen.

Following section explains the methods used for data collection including desked-based research, survey, interview and focus group interview in details. Then the methods used in analyzing the collected data are described. The final part addresses the challenges and limitations and ethical considerations of the research.

### 4.1 Data collection

Data was collected through an online survey, semi-structured interviews, and focus group interviews. The online survey opened from November 3 until the end of November 2021 and in total, 100 students participated. Six students were interviewed in November and December 2021 for the semi-structured interviews. Three focus group interviews were carried out during two different stages of the research. The first one included 10 participants and was conducted in August, while two other focus group interviews included 5 and 12 participants in

November 2021. All the details of the implementation of each method are explained in the following sections.

#### **4.1.1 Desk-based research**

To review previous research related to university campuses and the social interactions of students and to gain a broader understanding of this field, desk-based research was conducted. Literature, including published and online articles, books and theses, were searched via an academic database such as google scholar and Oria. Different terms used in the search process included the term “campus” and “university campus” in a combination of “social interactions”, “students’ social life”, “public space”, “outside classrooms”, “learning”, “mental health”, “campus community”, “pandemic” and “Covid-19”. Twenty articles related to the research topic were selected and formed the basis of the research. At that stage, it was revealed that despite the great emphasis of many studies on the importance of spaces outside the classroom and the impact of these spaces on the mental health, learning and social life of students, the characteristics of these spaces were less discussed. After the selection of more relevant articles and books, practical and useful parts were coded and categorized by using Nvivo software.

#### **4.1.2 Survey**

The online survey was carried out by Nettskjema<sup>1</sup> questionnaire tool as one of the most secure and widely used solutions for collecting data. First, the survey was reported to and approved by the Norwegian Centre for Research Data (NSD) due to asking participants for their personal data. Personal data in this survey is considered as a combination of information that could indirectly identify a person. The survey began with an introduction about the research, the purpose of the survey and details about the data storage, characteristics of participants and their rights based on the NSD information letter. In the beginning, the survey was sent to five students with different backgrounds and study programs. According to their opinions and feedback, some changes were made in the survey and it was distributed widely. The survey was shared through social media such as Facebook and WhatsApp. It was also shared on an open channel on Innsida which is specifically for students from different programs who are eager to participate in research. Additionally, a printed QR code with a brief description was distributed

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<sup>1</sup> <https://nettskjema.no/user>

among the students studying and using the Gløshaugen campus. The survey was open to everyone for one month and 100 students responded to that.

The aim of the survey was to figure out how students use the Gløshaugen campus from the perspective of the shared spaces. The survey gave a proper overview to the researcher on how often students use it, what activities they often do on the campus, their favorite group and the spot to socialize. The survey consisted of several sections. The first part was about students' background, like their age, gender, nationality, level of study, faculty, duration of their stay in Trondheim and duration of their study at NTNU. These background questions allowed the researcher to make sure that an acceptable number from all groups participated in the survey. The survey followed by different types of questions from multiple choice to rating questions or pinned on a map. Moreover, students had the opportunity to write their opinions in the other parts of the questions when they could not find their answers in the options. The survey questionnaire is available in Appendix A.

The participants of the survey were students studying at the Gløshaugen campus. There were also a few students from programs with different main campuses other than Gløshaugen who participated in the survey, but they were using Gløshaugen frequently. The focus was on bachelor's and master's students since they are the majority users of public spaces on the campus. Although a number of Ph.D. students who spent their master's degree at Gløshaugen also participated.

#### **4.1.3 Interview**

The semi-structured interviews were conducted in person and provided an in-depth understanding of the meaning of social interaction for students. Affecting factors on their interactions, spaces or activities that they miss on the campus, their power of change, desired changes and their experience and expectation during a pandemic were also examined.

The participants included six students, three of them were Norwegian and the other three were international from different countries. Five of them were students who had been studying for more than four years at NTNU and had a chance to use the campus both before and during the corona pandemic. Only one of them started her study during the corona situation. These students were selected from different programs. All of these parameters were considered to explore various points of view and sample students from different groups to be interviewed. These participants were either people I already knew or were recommended to me by my friends based on the features they should have. Before the interview, the information letter, which was

about the purpose and participation details, was sent to interviewees to get an overview and their minds get more prepared for the day of the interview. The interviews took about 45 minutes each, and they were recorded and transcribed later. According to the participant responses and reactions, the order of the questions was different and questions were adjusted slightly for each participant.

The interviews usually started with participants' background information followed by their definitions of social interactions in general and specifically on campus and the possibility of having social interactions on the Gløshaugen campus. That helped participants to state positive and negative aspects of Gløshaugen that facilitate or limit their interactions. There were many questions in the interview guide which can be found in the Appendix B but the most important ones were highlighted and had priority for being asked. According to the participants' replies, proper questions were asked afterward. Participants were asked about their ideal campus and their expectations regarding social interactions and campus community. That gave them an opportunity to make recommendations to improve the campus and compare the present situation and perfect model of campus from their perspectives. Another type of question that interviewees were asked was the impact of Covid-19 on their interactions, mental health and feelings. Furthermore, their opinion about how the campus can support students during a pandemic to remedy mental suffering.

#### **4.1.4 Focus group interview**

Focus groups make it possible that a group of people discuss their feelings, thoughts and experiences about specific issues on the basis of interaction with others. Focus group interviews were used in two different stages in this research. The first one was during the primary stage and that was online through the Clubhouse application. The Clubhouse is an audio-based social media app that people from all over the world can talk in virtual rooms. Some Iranian students were invited to share their experiences about public places of universities that they had been studying at. Ten students from different parts of the world discussed their experiences and explained places and remarkable situations that they interacted well with other students. Since they were educated both inside and outside Iran, interesting comparisons were made between various spaces in different universities. The second focus group interviews were after the survey and in-person. The first year and second year of students at the Urban Ecological Planning program were chosen for focus group interviews. They were two available student groups with various backgrounds and nationalities. Since they had been studying in different universities all around the world, they could have a dynamic discussion. One of the groups had 5 participants

and another included 12 students. The discussion was recorded and transcribed afterward. Their writing on sticky notes was also photographed and documented for further reviews.



**Figure 4.1- One of the focus group interviews**

Every interview took about one hour and 45 minutes and started with eating free food and informal talking to create a comfortable atmosphere. At the beginning of each interview, the researcher briefly explained the research goals and emphasized that there is not any true or false answer and encouraged them to express their ideas even though it was in contrast with others. The researcher provided a large map of the Gløshaugen campus and its surroundings and also sticky notes to make the discussion easier and more interesting. The researcher tried to facilitate the discussion and keep it on track during the interview. At some point, students did not have anything more to add or their conversations deviated from the research goals, so by coming up with a new aspect or changing the direction of the discussion researcher helped the discussion to progress.





**Figure 4.2- Students' opinions on the map of the Gløshaugen campus during the focus group interview**

Questions were generally divided into three categories. The first part was about social interaction, motives for socializing and factors affecting that. The second part was related to social spaces and activities of students on the Gløshaugen campus and their expectations regarding campus support of social interactions. The last part Each of the questions presented to the groups and gave them a couple of minutes to think about that and took notes if they wanted. To allow each group members to share their ideas equally, the round-robin reporting technique was applied. That is, students were given time to think about a question, they wrote down their ideas and then took a turn to share their ideas.

## **4.2 Data analysis**

Although the survey and interviews were carried out and analyzed separately, the researcher found it useful to combine the results to answer the research questions.

### **4.2.1 Survey**

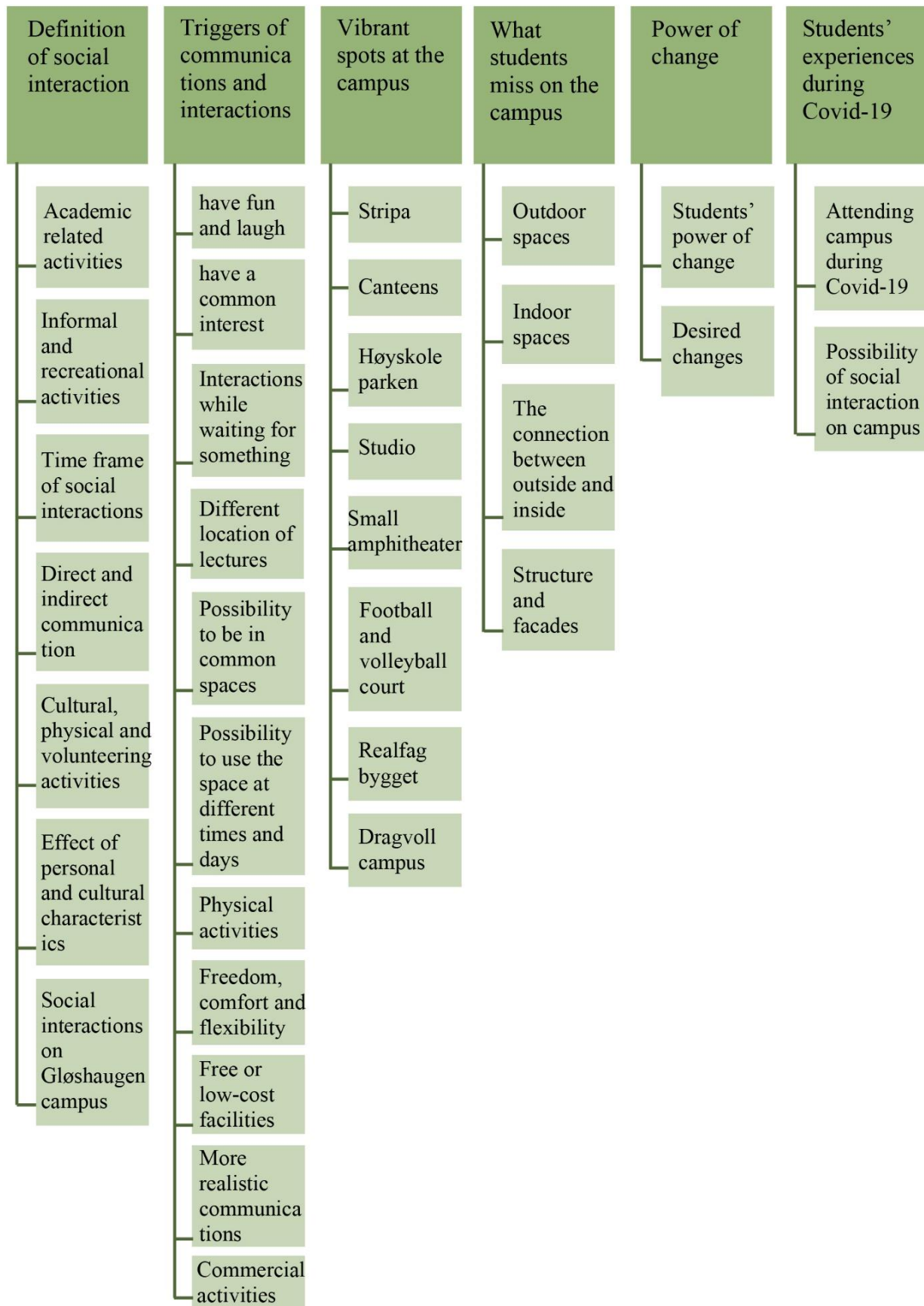
All the data from the survey was available digitally and could be downloaded as an excel sheet easily. Therefore, that was simpler to illustrate them graphically. The survey consisted of two types of questions which required different presentations and analyses. Presenting background and closed questions in the form of charts made it possible to examine and compared answers. Frequency, rate of selections, and highest and lowest choice percentages were descriptive forms of this question. Coding was applied for another type of question,



including questions with a free text field. Due to the different spelling and various phrases for the same answers, the coding process was done manually. Categorizing responses based on defined coding gave the researcher a better view of similar responses.

#### **4.2.2 Individual and Focus group interview**

Recorded and transcribed interviews allowed the researcher to review all the interviews several times and ensure that the meaning and implication of participants' discourses were understood correctly. First, because of the extensive and long conversations, the researcher categorized all the transcribed interviews based on their theme into six groups containing the definition of social interactions, triggers of communications and interactions, vibrant spots at the campus, what students miss on the campus, power of change and students' experiences during Covid-19. Then each of those categories is divided into sub-categories. This division helped the researcher to organize the obtained data and result in answering the research questions. Figure 4.1 illustrates these categories and sub-categories.



**Figure 4.3 Categories and sub-categories of the results**

### 4.3 Challenges and limitations

During this research, some circumstances led to challenges and limitations. Due to the Covid-19 situation, organizations and institutions adopted partial lockdown or people were quarantined when there was a possibility of infection. This situation influenced the research, especially when it required direct interaction and keeping the social distance at the same time. Thus, working with students and interviewing them needed consideration or sometimes it was not feasible. Furthermore, another effect of the Covid-19 situation was that students did not use the campus as before due to the national and local regulations. They would prefer not to stay on the campus and increase the risk of infection. Consequently, many methods such as observations, photography, recording videos and time laps were not useful to study students' behavior in different places and times. Consequently, research methods are limited inevitably to the survey and interviews.

Interviewing is always challenging since it needs practice and proper techniques. The selection of participants presenting the target population and motivating students to participate in the interview made some challenges. The researcher used snowballing to select the interviewees and choose them from different backgrounds. However, in order to understand the needs and expectations of all students, more interviews were needed, which was not possible because of the time limitation. Another challenge regarding the covid situation was that interviewees had to recall their experiences and the way of using spaces before the Corona situation, which sometimes reduced the accuracy of their responses. Additionally, ensuring that the explanation of interviewees was understood correctly or making a balance between creating a relaxed atmosphere in the interview and at the same time addressing research concerns were among the challenges of the interview.

Like other methods, the focus group interview also had some challenges. Due to Corona restrictions, inviting different groups was hard, so it was decided to use the existing groups from Urban Ecological Planning program. Since they already knew each other, there were some hidden personal dynamics that affected who said what and influenced the discussion. For instance, some members were more eager to speak, or others did not oppose the expressed viewpoints. By creating a balance in participants' speaking time and allocating individual tasks, the researcher was able to remedy that effect.

## 4.4 Ethical considerations

Ethical considerations are crucial in every aspect of social research, from how data is collected to how they are managed, utilized and published. The following are some of the principles that are considered during the research:

- Before the data collection, the project was submitted in the Norwegian Centre for Research Data (NSD), and when it was approved successfully, the researcher began to collect data according to the approved procedures.
- Participants were informed properly about the purpose of the research and their involvement rights and voluntary participation.
- Participants were provided written consent letters and had the opportunity to withdraw their consent at any time without giving any reason and negative consequences.
- The voices of the participants were recorded with their consent and stored in the researcher's computer with consideration of security measures.
- The researcher made sure to maintain the privacy of participants and their personal data and did not let to be divulged to others.
- All the responses were quoted anonymously.

The information and consent letters distributed to students are attached in Appendix C.

## 4.5 Summary

This chapter outlined the specific research design choices the researcher made during this study. Table 4.1 summarizes the relation of goals, methods and questions to provide an overview of consistency throughout the research.

**Table 4.1 Relation of goals, questions and methods**

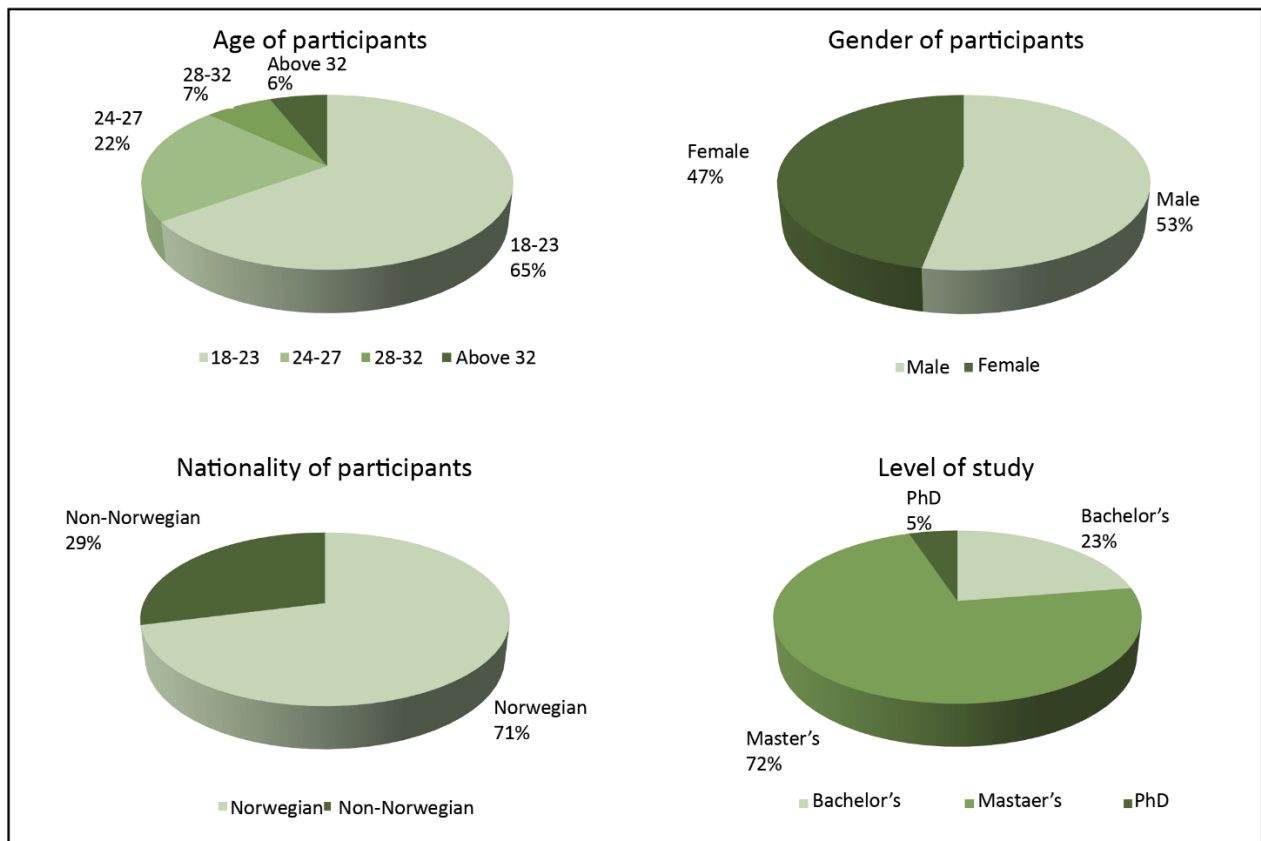
AIM	GOALS/ OBJECTIVES	QUESTIONS	METHODS	EXPECTED FINDINGS
To find out underlying features of campuses that can facilitate and support the social interactions of students during normal situations and pandemics	1. To understand and document the spatial features of campuses and other spaces which create a proper context for social interactions	<p>Q.1.1 Which spaces exist that are successful in creating a context for social interactions on campuses or outside campuses?</p> <p>Q.1.2 Why these spaces work well regarding the social interactions?</p> <p>What are the features of these spaces and what can we learn from these spaces?</p> <p>Q.1.3 What characteristics and features of spaces have been defined and detected by researchers as prerequisites of socialization?</p>	<p><b>Secondary data</b></p> <p>Literature review- Published Papers, Books, Articles</p> <p>Websites and internet sources</p> <p><b>Primary sources</b></p> <p>Focus group interviews</p>	Features and characteristics of the spaces which facilitate the social interactions and communications.
	2. To explore the experiences and expectations of students from the social interaction on the university campus through the case study of the Gløshaugen campus in Trondheim	<p>Q.2.1 What is the current situation of the Gløshaugen campus regarding the social interactions of students from the students' points of view?</p> <p><b>Q.2.2 What are the experiences and expectations of students from the social interaction on Gløshaugen campus?</b></p> <p>Q.2.3 Which type of spaces does the Gløshaugen campus need to improve the social interactions of students and encourage them to</p>	<p><b>Secondary data</b></p> <p>previous surveys -Study Trondheim</p> <p><b>Primary sources</b></p> <p>Observation</p> <p>Survey</p> <p>Semi-structured</p> <p>Interview</p> <p>Focus group interview</p>	<p>Desired spaces and their features for students to have social interactions.</p> <p>Students' behavior in different spaces on the campus</p> <p>Positive and negative aspects of the Gløshaugen campus which limit or facilitate social interactions among students.</p>

		communicate and spend time outside the classrooms?		
	3. To find out the influence of the Covid-19 situation on the interactions of students on the campus	<b>Q.3.1 How did Covid-19 change /has Covid-19 changed the social interactions of students on the campus?</b>  Q.3.2 How can campus spaces help students to have a sense of community during a pandemic?	<b>Secondary data</b> previous surveys  <b>Primary sources</b> Survey Semi-structured Interview Focus group interview	Impact of Covid-19 on the interaction of students
	4. To propose some recommendations for spaces in campuses that allow university administration to promote the students' social interaction in Normal and pandemic situations	<b>Q.4.1 What are the main elements and attributes of spaces of university campuses that improve the students' social interactions?</b>  Q.4.2 How can university campuses support the social interactions of students during a pandemic?	Synthesis of results	Set of recommendations for university campuses to support the social interaction of students with detailed elements and features

## 5 Results and findings

### 5.1 Survey

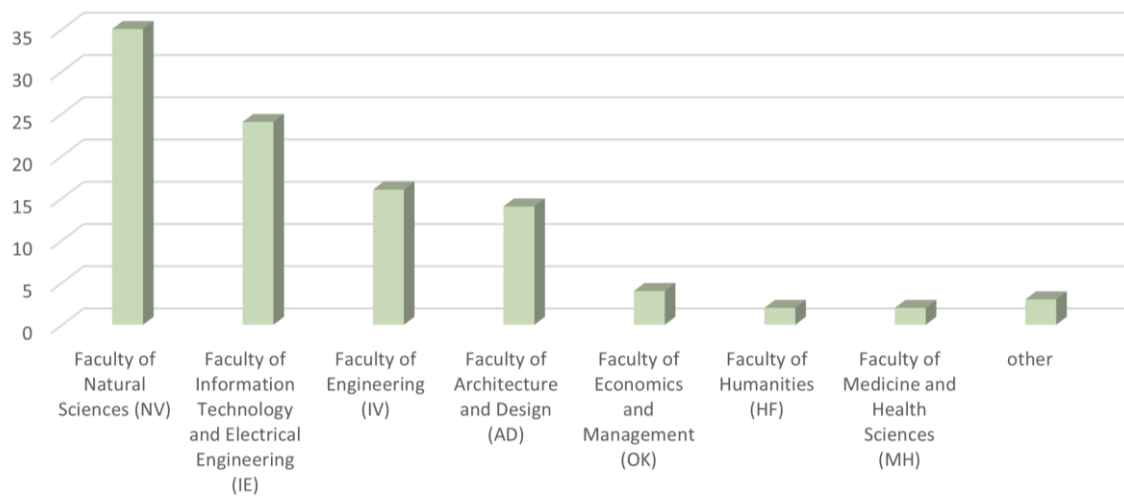
In total, 100 students responded to the survey. Most of them were under 23 years old and almost equal numbers of responses from both sexes participated. About two-thirds of the participants were Norwegian and the rest were from different countries, including Nepal, India, Iran, Portuguese, Pakistan, France, Lebanon, and USA. Almost 70 percent of participants were studying at master's level, 22 percent at bachelor's and the rest were Ph.D. students. Background information about their age, gender, nationality, and level of study can be seen in the following charts in figure 5.1.



**Figure 5.1 Background information about participants' age, gender, nationality, and their level of study**

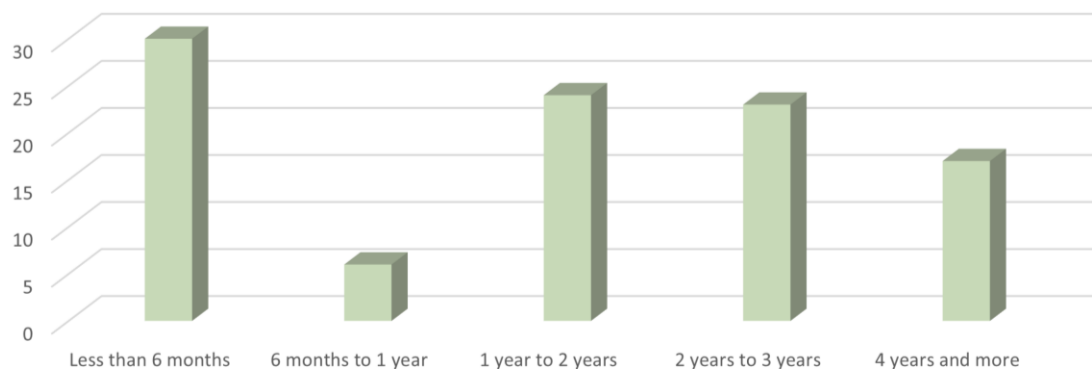
NTNU has nine faculties in different campuses all around Trondheim. There are four main faculties located in Gløshaugen campus, including faculty of natural science, faculty of information technology and electrical engineering, faculty of engineering, and faculty of architecture and design. All the participants in the survey were users of the Gløshaugen campus; however, they maybe from the faculties that belong to other campuses. In total, around 90

percent of participants were from four faculties located in the Gløshaugen campus. Figure 5.2 illustrates the number of participants from different faculties.



**Figure 5.2 Participants' faculty of study**

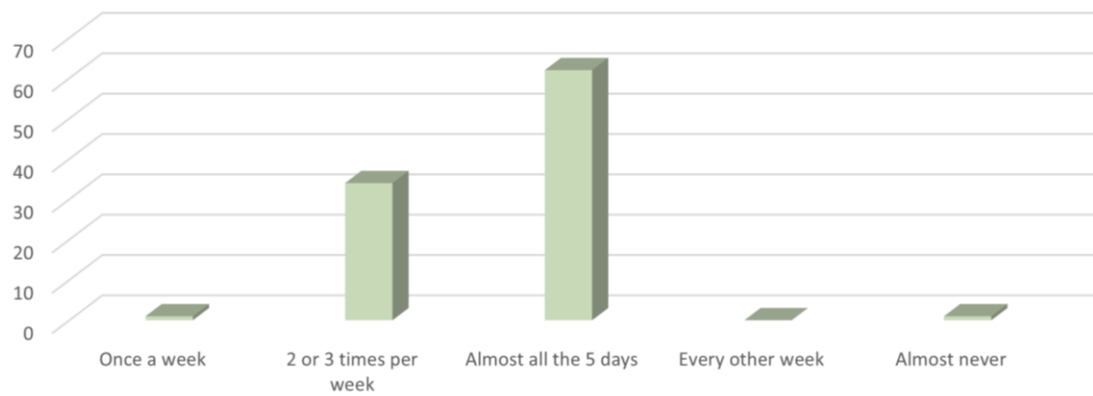
In the survey, students were asked about the length of their stay in Trondheim and their study at NTNU. As the following charts demonstrate the percentage of students having spent one year or more is around 65. Therefore, most survey respondents had adequate opportunity to understand and experience the spaces on the campus.



**Figure 5.3 Duration of participants' stay at Trondheim**

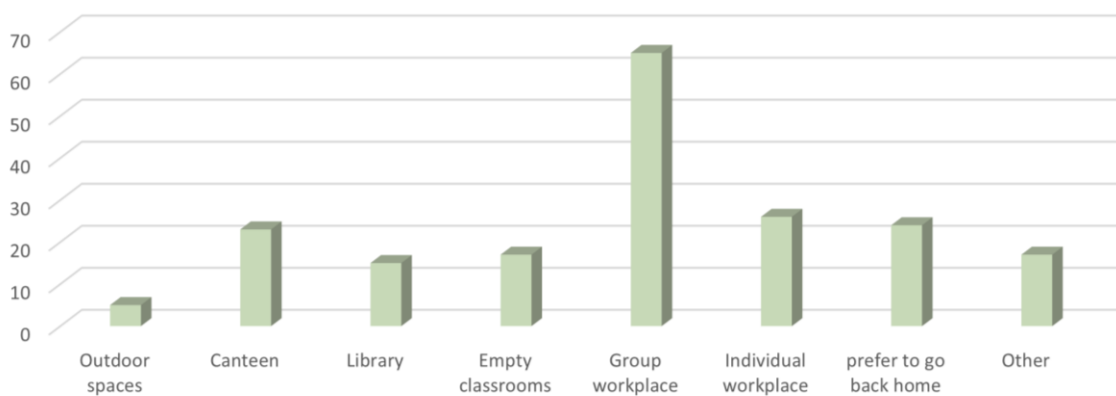






**Figure 5.6 Times of physical presence of students on the campus**

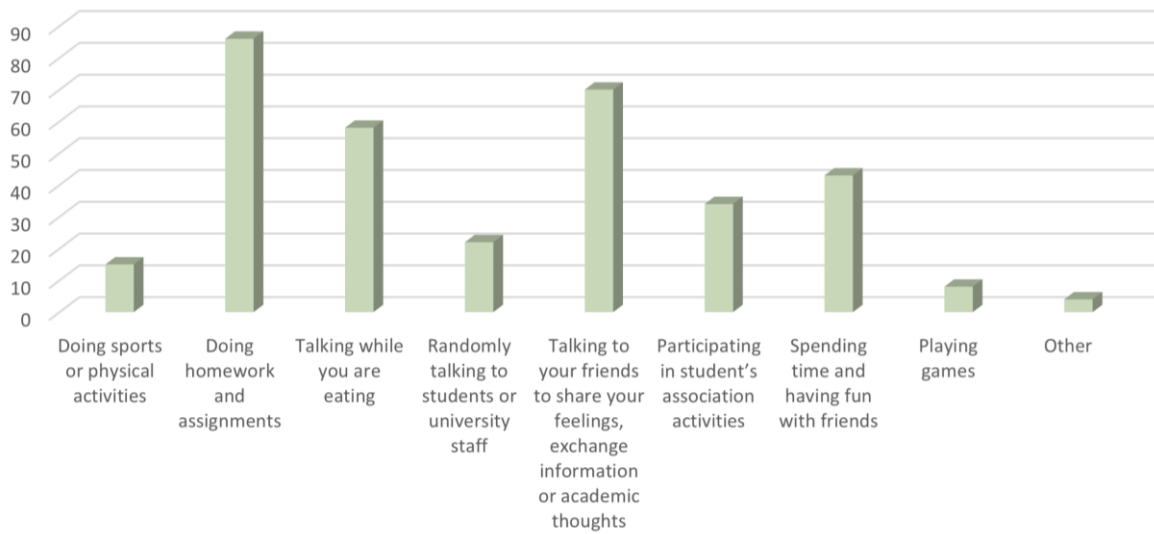
According to the survey, students spend their time in different places when they do not have any classes or lectures. Figure 5.7 indicates that a significant number of students spend their time in group workplace to do group projects. Other favorite places are individual workplaces and study rooms as well as canteen and classes without preset schedules. They also mentioned other places such as student organization offices, study program lunchroom, sitting area in hallways, laboratory, studio and Sit Student Center. The usage ratios of these spaces can be noticed in figure 5.7 Obviously, this figure shows that they don't use outdoor spaces very much and even a noticeable percentage of them prefer to go back home and study there.



**Figure 5.7 Places that students spend most of their time when they do not have any classes**

Another aspect that the survey showed is that one of the main purposes of students to interact is to do their homework and assignments at the campus. They also desire to share their feelings and knowledge and it is widespread to interact and talk to each other when they are eating. While many students selected having fun, participating in association activities, and randomly talking to others, few chose to connect with others to do physical activities and play games on campus. Based on participants' views, other activities that connect them to other

students were smoking, having a party, singing and dancing. Figure 5.8 expresses all of these purposes and response rates to them.

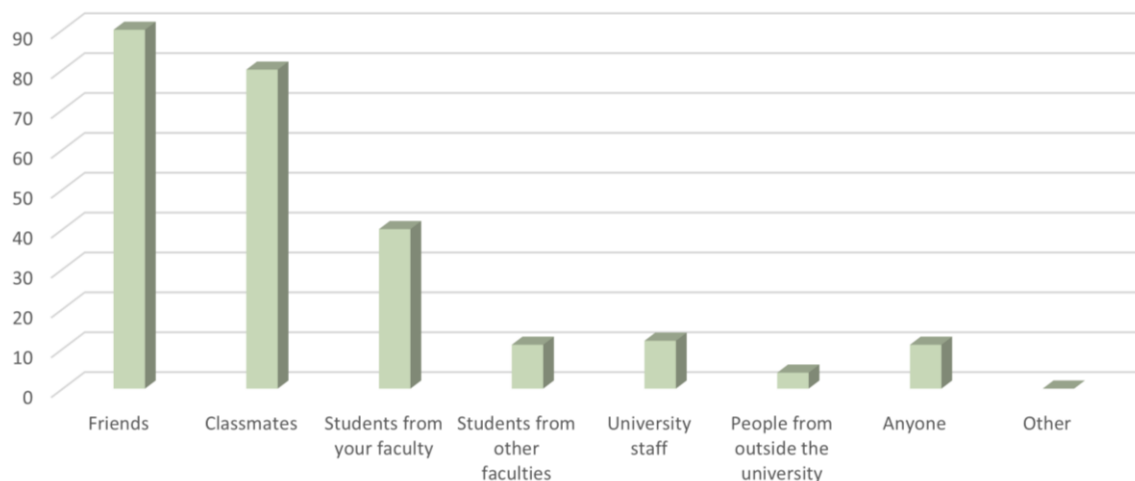


**Figure 5.8 Purposes of students to connect with others at campus**

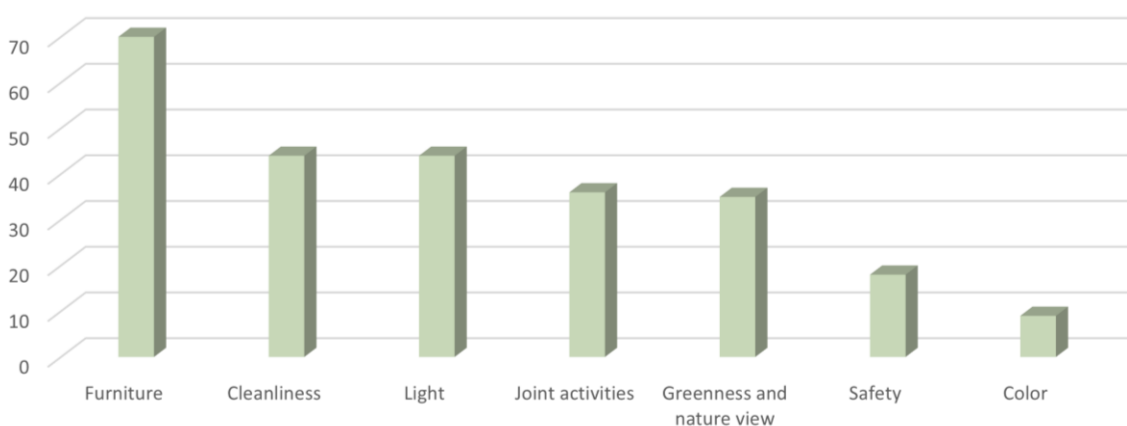
Students also asked about the groups that they like to socialize with on the campus and results can be considered in figure 5.9. The most desirable groups were their friends and their classmates. They showed a moderate desire for students from their faculty and low willingness to university staff, people from outside the university or students from other faculties.

In order to understand the critical characteristics that are necessary from students' perspective for socializing, participants chose multiple options, and they had the opportunity to add items that were not among the options, but they thought were important. The outcome of their opinions illustrates in figure 5.10. Furniture was the essential factor for them, with a 70 percent rate. Cleanliness and light took second place and with a slight difference, joint activities and greenness were placed. However, safety and color are less important compared to other factors. They also added the following items:

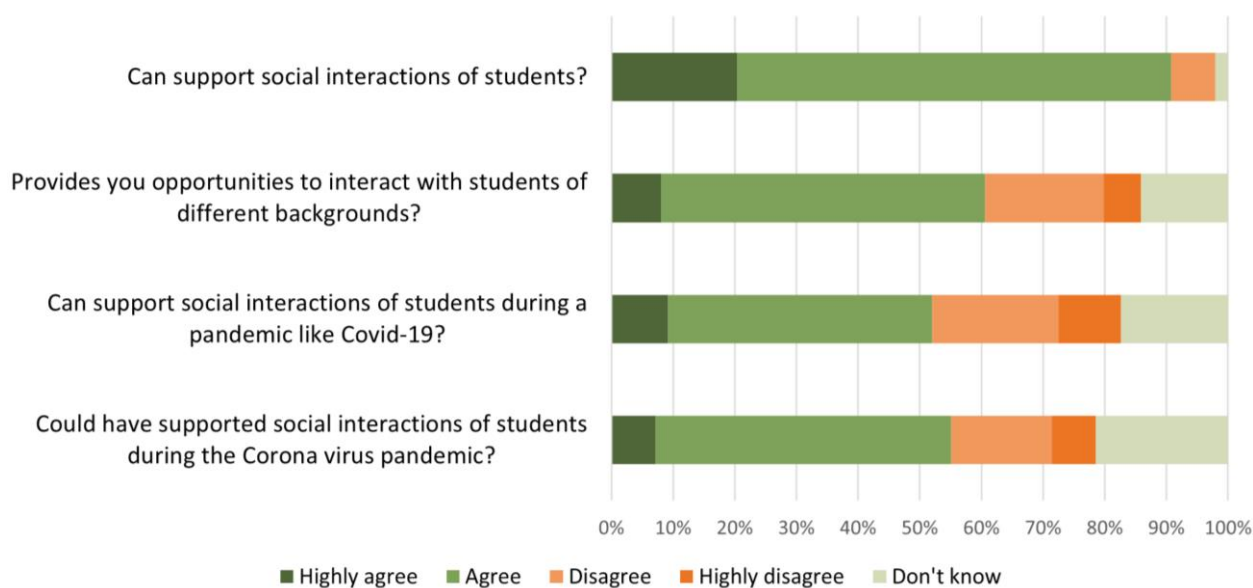
- Comfortable area in terms of temperature and climate consideration
- Easy access to coffee and food
- Free coffee
- Smoking spots
- High air quality
- Common area
- Identity areas used by students from the same study program.



**Figure 5.9 Favorable groups of people to socialize with**



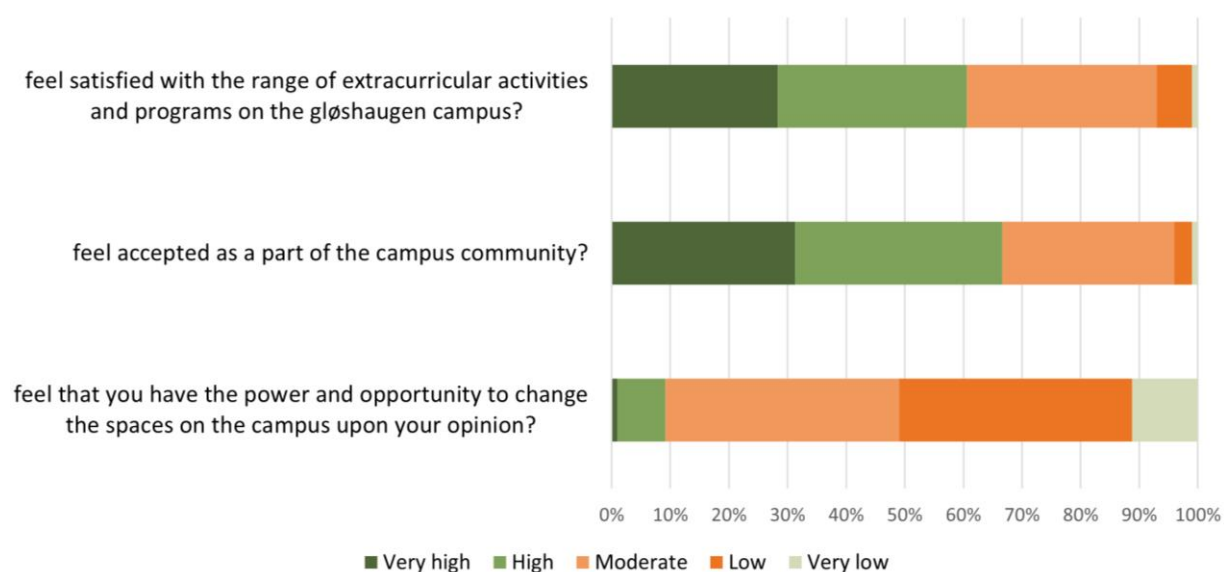
**Figure 5.10 Critical characteristics for interactions**



**Figure 5.11 The extent of the campus' supportive role in social interaction in normal situation and during a pandemic from students' point of view**

Figure 5.11 demonstrates how much students agree or disagree that the Gløshaugen campus can support their social interactions. They strongly agree, more than 90 percent, that the campus is able to support their interactions and almost 60 percent believe that it provides opportunities for this aim. In addition, more than 50 percent of them agree that campus can have a supportive role even in special conditions like during a pandemic. According to what happened at the campus during the corona situation, they mostly agree that the campus could have supported social interactions better despite the limitations.

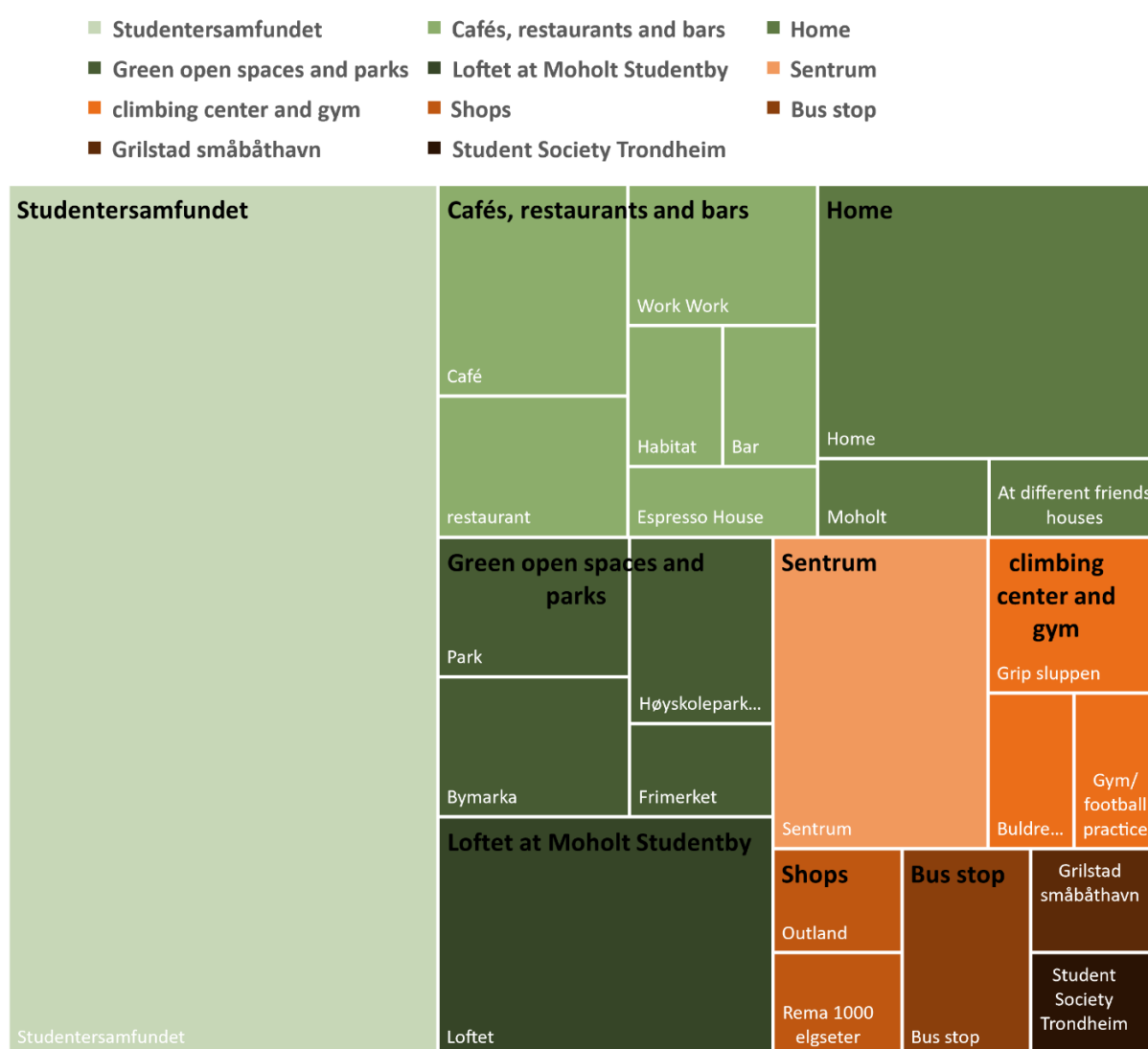
Another question asked of the participants was about the extracurricular activities, sense of belonging to the campus community and their power to make changes on the campus. Results demonstrated that they felt highly satisfied, up to 60 percent, about the extracurricular activities and programs. Furthermore, they felt accepted as part of the campus community and only 29 and 3 percent of them felt moderate or low about that, respectively. Students' responses revealed that only a few of them, around 4 percent, felt that they had the power to change the spaces on the campus, while more than 78 percent either did not feel much power or they did not even know how much power they had.



**Figure 5.12 The level of students' satisfaction with extracurricular activities, sense of belonging to the campus community and power of making changes on the campus**

Students were asked about their favorite place to socialize both inside and outside the Gløshaugen campus. According to their category and frequency, their favorite places outside the campus are sorted into different groups, shown in figure 5.13. Studentersamfundet was the most popular place for interactions for students and around 30 percent of students mentioned that as their favorite place. In second place in popularity, there were different cafés, restaurants

and bars around the city, such as Work Work, Habitat and Espresso house. Some also mentioned their home or their friends' house as the best place to get together and socialize. Others would prefer to interact at green open outdoor spaces, for instance, at Høyskoleringen or Bymarka. In addition, some wrote Loftet library at Moholt student village where they can study, play games, watch movies and meet other students. Sentrum and Torget were also choices of other students. Moreover, sports centers and gyms were preferable places for some of them where they can have physical activities and do exercise. There were other places that were not expressed as favorable places more than once or twice, such as Rema 1000, Outland shop, Grilstad Småbåthavn and Student society in Trondheim.



**Figure 5.13 Students' favorite places outside the campus**

Students stated many different places when it comes to students' favorite places to socialize at the Gløshaugen campus. The most popular places for students' interactions are

illustrated in figure 5.14. As evident, canteens, Electro building and student association offices were the most favorite places for students to have social interactions.

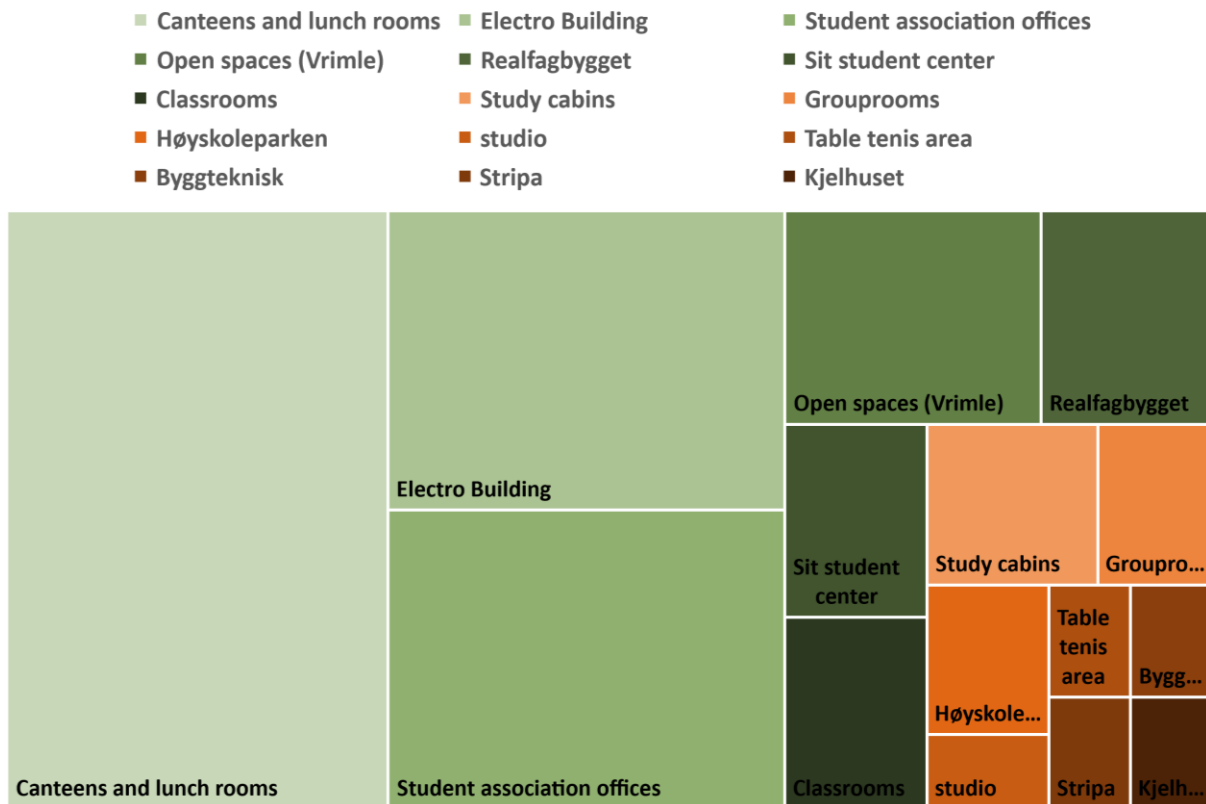


Figure 5.14 Students' favorite places at the campus

## 5.2 Interviews

### 5.2.1 Definition of social interactions

Students defined social interactions differently and from various points of view. They described the space and activities that they consider as social interactions and factors that affect socializing with others as follows:

- Academic related activities

Few students considered academic activities as social interactions. “It can be academic related activities like a group work or project work... it kind of brings people together.” Other students thought social activities can be related to teaching and academic activities but in informal settings: “When I think about social activities, I mainly end up thinking about more informal not planned out activities...it could be discussing with students or deciding to have a coffee to discuss something or have a break and do some activities or sit outside enjoying the

sun or a lunch break or writing or doing a project together, but you do not do it in the formal timetable.”

- Informal and recreational activities

Most of the students defined social interactions as more relaxed and recreational activities. They referred to activities in which people interact dynamically with each other in opposition to one-way behavior, such as when someone is giving a lecture. For example, someone said: “For me, I feel it is more social interaction if it is a two-way conversation. So, I would not consider it social interaction when someone is giving a lecture and we are listening or taking notes. Although it is technically social interaction because we are gathered and with the purpose and exchanging ideas, for me, it is a bit more dynamic when more people are participating with each other... So, social interaction is more relaxed like games and hanging out.”

Interviewees mentioned different activities such as informal conversations to talk or express themselves, eating, playing games and sports, co-working or watching movies, partying or engaging in an activity together as social interactions. They believe that people often socialize with each other while they are eating or doing activities together. One person said: “I think socializing means meeting with people, having casual talks, and discussing general ideas or common interests while you have food, drinks and even games.”

Another student explained social interaction in connection to the space and feeling that is taken from the space stating that: “Social interaction is probably trying to meet up new people or the people you know and then gather around and talk to them comfortably in a space we are not disturbed by someone else or where you have your own space and you are comfortable with it and activities as such, not just talking, but maybe doing something together. Let's say playing or some hobby or just reading or making art.”

- Time frame of social interactions

From students’ perspective, social interaction can happen for a short time or for a longer period of time so it can have a different time frame. “But it could also be like just passing by the lobby and saying hi and not engaging anymore. So just that opportunity that you are in a space and see each other and say good morning or just open the lift door.”

- Direct and indirect communication



In addition, socializing can involve indirect communication as one of the students emphasized eye contact and appreciation of the presence of other people in a space. As she said, “you have either conversation or could be eye contact, you feel that you are interacting with people and gives you something, more than just passing someone on the street. It could be being in the same environment, but without being in direct contact... But you kind of know that other people are there, and you appreciate it.” Another student stated, “if you are sitting and watching the sunset and maybe not saying a word, you are still in the way social interacting.”

- Cultural, physical and volunteering activities manifestations of interactions

Students mentioned cultural, sports and volunteering activities as manifestations of social interactions. For example, different festivals or any kind of sports can engage people within the campus's social boundaries and bring people together.

They also highlighted that in addition to space that should provide a suitable platform for interactions such as the possibility to sit or stay, feeling comfortable without disturbance, people's mood and culture influence interactions. “It also depends on my mood and other people's mood. Some people like to talk a lot and some people do not. So, it all depends on what kind of people you are meeting. And their cultural background and their family and friends and everything.” “If I am sober, I usually do not interact that much, but if I am drunk, I usually interact a lot in the public toilet as well.”

Another student shared his experience during his study in the USA and how people's behavior differs based on their culture and personality features. “I lived in the US for a while, and they were talking much more than that and then I could just stop at the sidewalk to check my phone and suddenly a person was talking to me for no reason. Just wanted to chat... if you are trying to generalize the Norwegian culture, it is like more introverted people.” Other students also discussed situations that they did not interact because of cultural background or personality trait “when you are passing people whom you know who they are, sometimes you say hello, sometimes you do not, so it is a kind of weird interaction. Because you always know that person, you maybe know their name, what grade they are or what kind of study program they have so I think it is a Norwegian cultural thing. Maybe someone just looks down or to the side to not meet your eyes.” “I think it also depends on you if you want to join or not. If you are an introvert, you do not want to go to that party or social gathering, so I think it also depends on you. For example, we did not go to UKA, although we wanted to go there and there was a chance to interact or socialize...It depends on you and your character as well.”

- Social interactions on Gløshaugen campus

In response to the possibility of social interactions on campus, they expressed different activities that they usually have, such as eating, talking, doing group work, playing games and interactions around different stands. Some of their expressions are as follows:

“I play dodgeball with a couple of friends at Idrettsbygg. That is not really at the campus, but the gym is sort of belonging to campus.”

“You know there is a lot of possibilities. For example, one that is fixed every day is having lunch together.”

“We use the cafeteria not just for eating but also for group work and talking.”

“These stands where people are giving away free coffee and chocolate and cookies. So, you are dropping by or saying a few words, you can know what is going on in college and get more information., then you are continuing your work... I think that is one of the social activities, although it is small.”

“Since I have classes in different campuses, sometimes in Dragvoll, sometimes, Kalvskinnet as well as Gløshaugen... there are people from other programs. So, you are just sitting on a couch, for example, there is a piano, so sometimes people are playing and these very nice, but other than that ... I still like the libraries... they all have both the place to work and this more common open place where you can talk. So, it used to be also like work and then just hang there.”

“I usually use Studentcenter between my classes, if you want to go somewhere and do something else for a change so it is really nice in that way. It is quite cozy and comfortable, and you have your space as well, and you are not always forced to talk to someone and there are games, there are books, you can paint or they knit sometimes, and so there are a lot of new things also that they do, and it is nice.”

## **5.2.2 Motivators of communications and interactions**

During the interviews, participants were asked about the situations that motivate them to communicate and socialize with other students. Their explanation gave interesting information about their reason, preference and desired situation to engage with someone.

- Interaction to have fun and laugh

Having fun and laughing was the reason that made one of them eager to communicate as she said:” If I see some people are discussing something if I know this sounds fun or will be fun, then I maybe join that conversation, or I take a lunch with that person I know it is fun to talk with.” “If you meet a couple of friends at home, it is very focused on having fun, and that is great of course but when you go to school, you will accidentally have fun. Because you are supposed to study and work, but if those kinds of interactions end up being the funniest.”

- Interaction with someone you know a little about or have a common interest

Based on some students’ experience, the conversation can be initiated if they are in a space with someone whom they have seen before or know a little about her or him or have a similar interest.” I do not normally go to the canteen or cafeteria to initiate a conversation, that is not really something I feel people do. We have our office for our program where people can come and have coffee and there is a sofa and a TV and that is sort of a social area. There I feel I can initiate a conversation with somebody because then I know all these people go the same study as me and I have seen their faces a lot before without really knowing them, and it is like a free space where people know that if you go to that office, then you are up for a talk.” “I do not know if it is good to say but people who smoke together bond really well so if we have some smoking zones outside, they can smoke, their hands will not freeze during the winter, and they interact with each other as well.”

- Interactions while waiting for something

In addition, many times, conversations start when you and other people are waiting for something. Thus, people usually fill the waiting phase with communicating and talking to others. “In the office, you have coffee machines, so there is always a normal place to wait for the coffee together and then it is easier to talk...Also, when I have group classes at the gym, for example, spinning or dodgeball when you are waiting for the instructor, or if you are waiting to start, you want to fill that gap a bit. Because you do not have anything else to do... then it is easier to talk to people.”

- Different location of lectures

Another point that one of the interviewees mentioned was that various locations of lectures helped her to meet different people and enhance the communication:” you are always changing location through the day that makes it maybe more like active communicative because you meet people when you are walking to different lectures.”

- Possibility to be in common space and participating in shared courses

Some of the students emphasized that the first step to interacting with others is the opportunity to be in a common space and see each other. They have a studio exactly next to students from another program but due to the solid walls between these two groups of students, they do not have the opportunity to interact with each other. “We have classes on either side, but because of the walls, you feel kind of separated and segregated. So, a nice idea would be to have one common studio for everybody with like walls which can be opened and closed, like sliding doors. So, you see each other all the time, but when we do need a private space, you can always slide the doors back and just get that kind of privacy.” Another student described her experience about the fact that shared space does not necessarily result in interactions. Besides a common space, we need to have a common activity as well.” I studied in a campus where we had architecture and design groups and even though we shared the space, we did not interact too much with each other, so something that can also help for implementation is to have some shared courses, we did one studio course ... it was like a great learning process and it also allowed us to get to know them more and I feel like those things also then contribute later to create a sense of community because just sharing spaces sometimes does not lead to relations... especially with academic things, you can make sure that people have to interact within the interest of the organization.”

- Possibility to use the space at different times of day and different days of week

Many students believed that expanding the time scope of using the campus results in more interactions.” After a certain hour, the campus is deserted, there is nobody here, everybody just went home.” “In the afternoon, the cafeteria is also closed so it is not very inviting. If I had the space just to sit and hang out, maybe I would be sitting, talking longer than I intended and then I am still here, so I might go back and do some more work and then go home.” They thought the campus could even be more active during the weekends since it is on the way to the city center and many people use campus open spaces for a walk.

“There are many people who come to campus on weekends, for walks, I have seen people walking with dogs or coming with kids and actually they have no idea what is happening in the university. So, I feel it is good to bring up the university outside.” “On Saturday or Sunday, if you take bus number 3 to the city center, you pass through campus and it is so weird because, in my home city, we never used to be like that. So, you could maybe pass by one day and see something, an art exhibition and then continue your journey to the city center.”

“Another important point that I see is the way campus works is like office buildings, on the weekend there is not much happening, so I feel like what this area needs more things not less and I feel bringing all the campus here will just like we will have a lot of very active spaces in the week, but nothing going on the weekend.”

- Physical activities

Based on students' point of view, designing space and equipment are not sufficient to have a vibrant and active space, rather it is the activity that enlivens space and encourages people to stay in spaces, especially in Norway where few people live, and they are not from a vibrant street culture. People should be free to choose to be part of performers or just watch.” I think you need activities, in general, to make people spend time in this space. In the beginning, you need something from the outside to push people maybe to feel like this is the space they want to stay.” “I do not want to sit in this space where there are no people, and it is deserted. But if there are some activities and you do not have to be part of it, I will use that space. You can also just enjoy being in space where other people are doing some activities.” I studied sports, we were a group of 30 people and then everyone interacted all the time ... Maybe people are interacting more when they are using their body more actively.”

Another student compared the climbing halls to the campus where people are eager to socialize after physical training. “The interesting thing about the climbing halls in the city is that the activity is very exhausting when you are doing it, and then you need a break, within the break, everyone is talking, so it is a very nice social atmosphere where you get a bit exhausted, then you are relaxed and talking. So, I think if we were able to have some similar activities at school where you have like some sort of activity, where it is normal to have a break in between or afterward, it could increase the level of interaction. Because you are in this arena, and you know that people that are there have similar interests.”

While another participant highlighted how physical activity helps him to talk to others: “In the running group I could just start to run beside another person and look at the other person and begin to speak even though I have not met this person before, but that is not something I usually do at school, because here it is a lot of people all the time that I have never seen before, so I usually do not start just walk beside the person and then start to talk that person. That feels kind of different. So, in the school situation, I think it is more like the people I know.”

- Freedom, comfort and flexibility

The ability to use a space without getting permission and flexibility is also another factor that students described as prerequisites for engaging. Flexibility appears to be the freedom to perform various activities in informal settings and flexible furniture to arrange in the desired way. As one of the students said: "The possibility to sit down ...and feeling that you are allowed to sit there. So, you can have a coffee or you can chat, you can also work or do different activities, so I think you need the flexibility to do different things and to have an informal setting, but you need to feel that it is public where you have the right to sit down you do not have to book it or to ask someone for permission." "It can also just be like the flexibility in furniture, for example in both outdoor indoor spaces that it is possible to sit in different positions and maybe have to sit together." "Somewhere calm and cozy and a little vibrant. Some good colors definitely, and a good environment in that way and so once I am comfortable in that space, then I would like to get to know other people. But when I am not, then I am just lost and nervous."

One of the students mentioned the possibility of creating flexibility in the form of changing the use of the cafeteria in the evening when it is closed:" There are movie screenings organized by the students here, but those are in the amphitheaters, but they can have it in the cafeteria for example to show some sports games or other things. There is a sitting space, there is an open space to put a screen, students will come and hang out there."

- More realistic communications instead of virtual communications

Although many students' organizations are active digitally and they post their activities and events on social media, they are not usually alluring for students unless they join that group, and it is limited to a specific group. Therefore, by organizing on-campus events where students can become familiar with other students' work, without the need for signing up or registration for those events, students can communicate and engage easier. "I feel interaction here is mostly through Facebook groups so they post different events and different groups for certain types of things...they do not like really engage you to participate unless you want to, unless you sign up on this, unless you join these groups, but back in Mexico, in my university, they used to have Architecture week or Industrial Design Week where students from those departments will showcase their work on different hallways and you could actually see what they were working on and maybe question them if you had any ideas or anything like that."

- Commercial activities

Some of the students considered commercial activities, markets and shops as places that can maintain campus active in the evening and change the atmosphere and appearance of the campus during a special period like Christmas time or Easter and make a platform of engagement. “Back in my bachelor's, we had like this underground alley with a lot of shops and commercial activities, and it was inside the campus and people would hang out there after classes. So maybe if we bring commercial into the institution can enhance students’ interaction.” “In Oslo, I saw in the school of architecture and design and also in Oslo University, design students and architects had Christmas market just products designed by them, and it was super cool. They were super unique. They have the chance to show it to people and make some profit out of it and many people were coming” “Maybe open market for one day that someone wants to sell brownie or something.”

- Free or low-cost facilities

Another consideration that can affect how students use space is the possibility of using space without spending a lot of money as one of the interviewees stated:” the spaces where you do not have to pay or spend money because students do not have much money, so we need to be spaces where you can spend time without spending a lot of money.”

- Different facilities

Students expressed some facilities which promote interactions such as games, food and magazine. They gave examples of cases where simple facilities helped them to socialize with others. “I feel a lot of people have become friends with each other through games like video games because when people want a break, you can play one or two and then somebody joins and says, can I take this one and all of a sudden, you are having lunch with them after it. So, I guess it gets started by games.” “Food helps a lot, just like we have the lunches. So having a place both that you can get something to eat, but also sit comfortably and see each other and stay some time.” “if you have some free stuff, free candy, free coffee people come and ask what is this? then suddenly, you are chatting” “we have monthly releases of magazines for the computer science group, and then we have cakes, people are getting the magazine and all of the students on that floor are gathering together over this magazine then also people are having a break and there is a natural thing to talk about. It has quizzes or recommendations; sort of a social magazine and we talk about many different things.” “I remember many interactions happened around Xerox machine.”



Another useful facility is furniture with suitable shape and organization that is set in a proper place. “I think having some furniture that hangs people out together instead of being individual benches or individual chairs is the first step to sitting together and then other activities.” “The zoning also important, behind the bus stop, there are some seats that I always see there are empty, nobody uses them even on sunny days because they are too close to the road, and everybody is just moving, and you are afraid bikes would crash into you. It is a terrible place to choose for space like that.”

### 5.2.3 Vibrant spot at the campus

During the interviews, participants were asked to describe the lively and vibrant spaces on the Gløshaugen campus. In the following, these spaces and their explanations about them are presented.

- Stripa in the central building

“Stripa where you have all these stands and free coffee and always people are talking about something there. I feel that sort of a center of all classes, everybody is meeting there between classes, and it is a bit chaotic, but that is where everybody goes if they want to do something like buying food, get free coffee, go to classes.”



Figure 5.15- Stripa in the central building

- Canteens

“I feel the Gløshaugen canteen is a very good space. Because you have those reading spaces near the café Sit, there are these cubicle spaces and eating areas. There is so much happening all the time.”

“The cafeteria in Central building is where I spend most of my time, but I know that both the cafeteria here and then the Science building or places where people eat, meet up with friends also work on their assignments and it is a social place, and you can also bring your food. You do not have to buy anything from the cafeteria. So, I think it is one of the important meeting or like social spaces at the campus.”

- Høyskoleparken and green square behind the main building

“In summer Høyskoleparken and also the green spot between the main building and central building where they have a lot of events especially volunteer groups and different student organizations have happenings there. So, in summer definitely more outdoor areas.”

“There is a slope in front of the main building, I see during summer there are lots of people hanging out there and drinking. But I think this is more vibrant during summer, but in winter, it is dead.”

- Studio

“In my classroom, there are a lot of interactions going on. But that depends on what you are studying as well because we have group work and then we are forced to interact. You have to collaborate, but if you are studying mathematics, for instance, you do not need to collaborate with someone. You can just do your equations and solve them. Just sitting quietly at your table. So, you have these reading halls where there is no interaction at all because everyone is just sitting reading, doing such things.”

- Small amphitheater near the central building

“The small amphitheater near the central building. I think this is one of the good spots. Sometimes they distribute waffles. I think the space is kind of inviting. There are the same circular sitting area and amphitheater where one can sit and even have discussions because it is a kind of stairs and people can see other faces.”

- Football and volleyball court at down hill

“I keep sports enthusiast and I normally like whenever the bus is kind of passing, I always look into this field and during summer it is always full of people.”

- Science building

“I think the whole study area of the Science building is the most active part that I have seen here where a lot of students are. They are always working, chirpy and doing something or other things keep happening in that building.”

- Dragvoll campus

Although my study area was Gløshaugen, almost all the interviewees mentioned Dragvoll as a pleasant campus in their speeches. They had a different interpretation of the spaces and sometimes compared that with Gløshaugen. Below are some of their explanations that worth to be considering.

“At Dragvoll, you see a lot of colors and people are very artsy and they are walking around in their socks. But at Gløshaugen, you have your rain jackets like normal sneakers and boots. I feel Dragvoll is cozier, you are more comfortable to be different, and of course, that is based on the courses as well. It is more about humanities, philosophy, language and culture. That kind of campus, of course, is more open, but also because it is the only campus that you do not go out that much... I think you feel more at home at Dragvoll.”

“I think the whole Dragvoll campus is vibrant.” “Gløshaugen has a very business type of building. It does not feel like a campus one... the floors in Central building are this big with corridors with the rooms on the sides. So, the space you have for interaction is in between these two walls...I guess you do not feel this freedom of walking. You do not have the vision of who is far away. And we also do not get that much natural light. I am calling it business. It is maybe related to people for whom these spaces are made because here is mostly the technical courses and Dragvoll has more this humanistic culture. I think it also influences indirectly or directly.

“In Gløshaugen, you do not see anything except the corridor, you do not see the rooms. You have no clue and that is why everything feels intimidating, or I always feel should I open this door?! Is it somebody's office or your class?! Everything looks the same. On the contrary, in Dragvoll, there is this one building and there is so much light and then there are two or three floors that you can see, even if you do not want to go to that floor, you can see the window of that floor. You can see people sitting inside and you know what is happening. So at any point, you are standing in one corner of the Dragvoll, like the lobby, you see a lot more. And not just

across the floor, but also like heights. So, it feels like a little ecosystem bubble, you just feel the glass is showing, you are inside. Like a glass ball.”

“I think the Gløshaugen and Dragvoll campuses are really different from each other, not only in the physical environment but also in terms of programs. The main campus at Dragvoll is one building and then inside you have these hallways or streets kind of, but they are closed. It feels like it is one place, and everything is together. So everyone has to go through this main street to get to the cafeteria or lectures, and then you meet people really often because you are all in the same building.”

““In Dragvoll, people spend time in this like social meeting places are more. You do not have so many options, but that makes it easier to meet up with people. Gløshaugen is such a big area and there are several buildings and you do not have one spot or place where you meet people.”

“The Dragvoll campus, in my honest opinion, is quite cool. I went inside the building for the first time; it looked very interactive. You have the skylights, and it is pretty cool. I feel they have even more spaces for interaction.”

“It is interesting what we call open spaces in India because it would be like green and park and stuff like that. But here I am going back to Dragvoll, the lobby feels like an open space to me because of the natural light, so maybe if it says open space specifically designed for the winters here, then the definition of open spaces could change. Because I do not think it is actually possible to use the traditional open space here all year round. That is the challenge that most landscape architects are facing right now. Like how do you help people use open spaces in winter? Unless they have like alternative uses in the open spaces, like some places, turn it into skating rings.”

#### **5.2.4 What students miss on the campus?**

Although the Gløshaugen campus provides opportunities for students to socialize, there are some shortcomings that students stated. These issues are divided into categories, including outdoor spaces, indoor spaces, the connection between outside and inside, structures and façades, and belongingness to the campus to outline their opinion better.

- Outdoor spaces

“I would really like to have somewhere comfortable outdoor space to get some fresh air and not always stay inside. That is like a really good break from the work and studies that we do. So that is one thing that I would like to have.”

Based on the statements of many participants, open spaces have a high potential to become meeting places, but they are not useable during the winter or inclement weather conditions such as rainy, windy and snowy days. Lack of winter urban furniture, unprotected seats, or insufficient lighting and warm food leads to fewer social interactions during winters. They missed a sheltered area where various activities and unexpected events could be held. “For outdoor spaces, it depends on the provided furniture and also activities happening there. There is no activity, food, warm places, so nobody uses outdoor spaces.... food is really important like warm winter foods.” Even though there are some benches outside the buildings, there is not any table, outdoor grill or fireplace to sit around and enjoy themselves. The benches are organized in a way that only two or three people can sit together. Additionally, some of them mentioned that it is possible to sit outside and work on their assignments when the weather is nice, but it is very limited compared to how big the campus is.

Darkness and poor lighting are other issues for some of the students. One of the participants stated that: “lighting is really important because when it is just dark and there is no color, I feel that I am living in a Scandinavian crime series!” They also miss some cozy places with the dim light that draws their attention but does not light up the entire area.

The impossibility of staying on campus in the evening was another shortcoming of students. They missed more integrated activities into the area, such as some groceries shops, more cafés, gyms, or some outdoor meeting places for students. Students expressed that they need to have a more vibrant campus at night and feel safer to be there when it gets dark.

Participants believed that open spaces could be exploited better because now they are more designed as a pathway instead of a hangout area. For example, creating an outdoor sports area, basketball court or benches with a heating lamp. “I just want to shoot some hoops sometimes or if there is a little football field or just small sports courts because that is also like a natural hangout.” “The area between the main and central buildings has no function in the winter. The only thing is that people walk over the field, but it could be like ice skating and maybe you could also borrow free skates or other equipment as well.”

Some students felt that some outdoor spaces are too open or too empty to invite them and support their interactions. As one of the participants said: “The rectangular open space

behind the main building is too open. I feel it is like a very open place that has nothing. When you want to sit somewhere, you need support, as you sit somewhere close to a wall or under a tree or a bench when there is nothing, then you feel too exposed. There is nothing around you, you are the only one there inside and people just pass by, and you do not feel comfortable.”

- Indoor spaces

When it comes to indoor spaces, many students complained about the insufficient spaces for their study during the exam period of finding proper places for their group works. During the exam period, if students do not come to campus very early in the morning, they cannot find a space to study and have to go back home. Group work which is known as an opportunity to meet different people and work together, needs a proper space. One of the students said: “For big groups working with eight people it would be such a headache to look where do they stay today... it would affect the work and results of the group work... and also the amount of time they are able to meet because if we had to find a spot, we might spend a significant amount of time looking for a place to sit where it can accommodate the group.” Another student expressed: “Many times I have been trying to look for a group room or a group table, but there is no place, so we just need to sit in a very inconvenient place and then we do not stay long at all everybody goes home.” One of the students stated a sign of the lack of space for group work. Canteens put the note on the table that “you should leave the tables for people to eat in between 10:30 to 1:30.” This indicates that Canteen is the only place many students have for doing group works and there is not enough place for them to get together.

Some students believed that spaces outside classes in Central building are just connecting spaces. Except for cafeterias and small study areas, they do not really use many other spaces. Moreover, because of the linear organization of the buildings, it is difficult to understand what is happening in other places unless students push themselves and explore every corner. So, they missed an open space that is always something is happening and is not hidden behind the walls.

The closing time of the campus’ cafeteria is another problem for students. They get hungry and they do not have food so they cannot stay on campus for a long time. It is one of the main reasons they have to go back home in the evening.

Some students explained how difficult it is for them to find a pleasant place to get a break from their study and work, somewhere that they can disappear into the crowd and at the

same time have their privacy: “If I need a break, I just need to get out for a minute then the only place I can go is the cafeteria. That is super crowded and mostly forbidden, or the rooms in Stripa are also occupied most of the time and then there is the Studentcenter that is also quite a lot of people. It is nothing where you can sit and be on your own amongst other people... there are benches by the staircase, but you feel kind of underplayed there because it is only you are sitting, there are not more people sitting around doing something, working on something, just kind of disappear into the crowd in the same way.”

One of the issues related to the indoor spaces concerned the students’ organization offices. They are usually located in the basements or the side of the hallways and are mostly very small and do not have much space for people from that organization to hang out. Since the inside of these rooms is not visible, students do not know if they are allowed to enter or what is happening inside. “I do not know if I should go in and see what is inside or just step back? Am I allowed to go in? Do I have to become a member?” Thus, students missed the space for students’ organization which is more open, inviting and makes them feel that this space belongs to them. Moreover, some of these organizations needed to rent spaces outside the campus for doing their activities and students preferred to use campus spaces instead of that if possible. “I am part of NTNUI dance, and we have been renting out spaces throughout the city for learning sessions... There is no suitable place or a studio for that at the campus.”

Participants mentioned that they lack a lounge area and more cozy cafés with different kinds of sofas, somewhere to play music or listen to that and somewhere where students can get together and do some craft stuff or arts. Additionally, students thought the small exhibitions of students’ projects had the opportunity to become a hangout place, but they needed some support facilities. For example, if it is possible to sit near them, students will look at them carefully and trigger a conversation with others. “In this hallway, sometimes you can see the small exhibition but there is nowhere to stop and to sit, and it is just passing through, if it were in the cafeteria you would sit there and then you would look at it, and maybe will go closer to it to have a look on your way out....and also it is not possible for people to meet the creators that would be a problem.”

- The connection between outside and inside

When students walk along the pedestrian routes outside the buildings on the campus, they do not have a vision to inside the buildings. As a result, there is not a visual connection

between the inside and outside the building and it sometimes leads to the feeling of insecurity during the evening. As a student described, “I think it could be done something more for the pedestrian routs here ... if I walk in the evening and I feel a bit unsafe, I will go to the main roads, and that is because there are not many things happening in these streets between the campus in the evening. At least you do not see it that well because there are definitely people meeting up at campus at night for meetings or like student activities, but you do not always see them from the outside.”

Gløshaugen campus consists of several buildings connected through outdoor open spaces and paths. So, students need to go outside and inside constantly to get to the lectures, laboratories, libraries and other places. During cold weather, it can cause trouble. One of the participants explained her feeling regarding the connection of the buildings. “In Gløshaugen, you have six different buildings, so you cannot take off your socks and feel at home easily because you need to walk away in one hour to reach a class in another building. I think you feel more at home at Dragvoll. The outer part of Gløshaugen is nice during summer, but I need to put on my jacket to go to different buildings. That is a mess.”

- Structure and facades

According to students’ point of view, there are some issues regarding the buildings’ structure, facades, and shape, which cause confusion and boredom. For example, some of the students expressed how they get confused about approaching different places. “One major problem I have with the campus is that there is no sign or guide, neither outside nor indoors. You do not know where you are going.” Or they thought the linear structure of the buildings on the campus makes it difficult to have enough spaces to be adopting different strategies in between and it reduces the sense of invitation. They also missed interesting and attractive facades on the site as they said:” From the outside, Central building is quite boring. It is just the repetition of the same thing.”

- Belongingness to the campus

Students wanted to be part of the campus and have active roles instead of just using the campus. The words of one of the students indicated that as she said: “something that I really would like is to make stuff for the campus. Like you get together every semester or yearly and you paint a wall, or you do some art installation or something together and meet new people.”



### 5.2.5 Power of change and desired changes

Almost all the students I spoke to admitted that their power of change is limited to their studio or office space within a certain confine of limits. Students with dedicated spaces have the opportunity to personalize their space; however, they do not feel that they are able to make changes in other places on campus. Many other students even do not have a chance to make changes in their study places because they need to book a room or use the reading halls. “We are doing changes every year. Some classes are even painting the walls, but you are like putting up shelves, removing things and placing things in the system you want, and bringing plants. You have your stuff there, but we are really fortunate because we have our own spot every single day” “I have not felt that I have been part of any decision making or have or raised my voice to change something in the other spaces at the campus.”

Another problem that students had in connection with making changes on the campus was that the process of change was unclear. That is, they do not know whom they approach or whether they are allowed to make changes or not. “Some students were happy to be able to move and rearrange the different types of seating and create spaces according to the size of the group or what they wanted to do in the library or study rooms. This simple thing helps them to make the space more their own.

Participants were asked what changes they would like to make to the campus, and they gave different answers. Some of these desirable changes are as follows:

- Adding more cozy furniture to make a comfortable atmosphere, like comfortable chairs and nice lamps. “Nobody wants to sit at a place that looks like an institution until 10 in the evening. But if you have a good sofa and you have some books to just have time off or a good place to eat your food, then it would be easier to stay there longer.”
- Expanding the working time of canteen and add more restaurants with good chefs “The canteens close at normally four or five, it is so early, so it is very hard to socialize over dinner if you do not have food with you, if they were open till eight, I actually think in exams period people would be more willing to have dinner together at school. Everybody needs to eat and everybody wants to socialize when they eat.”
- Creating more flexible classes and not fixed seating arrangements. Making more natural designs like curves seating arrangements or something that makes it easier for students to see each other.

- Bringing plants inside the buildings.
- Remove these rigid walls between the studios and replace them with some partitions that can be mobile and make one open space.
- Making more spaces like the reading rooms in Central building and Student Center as they are very pleasant but not sufficient and are occupied most of the time.
- Adding more plantation, more color and interesting forms in the space between buildings.
- Adding more history. “There is a lot of history here, for example, in the hallway of Central building if something is printed, something that reflects the Sami history because it is in the north of Norway and then you have artists that have bigger pieces on the wall and the seating areas...It could also be on the lockers, there are lockers all the way down, but it is not very much other than lockers. Why not use those great spaces and not here as well?!”
- Adding more arts and graffiti on the walls. Dedicating space for street art around the campus and could be changed often. “I want something to look at and something to talk about. And also, to interact with it while sitting there.”
- Redoing, painting and decorating the studio. “In my bachelor’s, since we were doing architecture, we all had our own studios. So, every semester or every year, we had have like a class redoing competition which was like between different years and you get to redo your entire studio and paint it or decorate it the way you want, so that way you bring in the sense of identity to your space. Based on how your class would define the space, also you start interacting with each other more in the process and get to know each other better. I would like to have something like that here.”
- Using the open space of the old main building for social gatherings or exhibitions. For example, it can be used for art exhibitions or every week a theme can be defined, such as architecture week or chemistry week to show people’s work and models. “For being the front and translating the main façade, I think the place has fewer interactions and it is abandoned... it is not much going on in that area. It is such a nice view, it is such a great place... it is super underutilized, especially since it connects the campus in that direction as well.”

### 5.2.6 Students' experience during Covid-19

Participants shared their experiences during the Covid-19 situation and explained their feelings and the changes it has made in their lives and thoughts. One of them described since they were not allowed to get together at the university, they could not rely on the university for their social relations as before. Thus, they had to be more creative. "I actually think it influenced a lot my view on the social life at school. Just before Corona was very into being at school late for example and joining gym classes and being at the school events. When Corona came, we had to be more creative, and we were with my friends that I luckily had before Corona. We went out walking and on trips and sometimes when we could, we went home two or three people to watch a movie. It was more like we needed to distance ourselves from school because we were not really allowed to be many people there."

Some of the students tried to keep their distance from the university and be careful of what they touched, where they went, and whom they were with. "Luckily, I did not need the school as much as first or second-graders would, but it made me think that I did not depend on the campus life to give me my social activities. I needed to create them myself." Others used the campus spaces anyway because they did not have the conditions to stay and study at home. "I tried to come anyways to work at the university because I had bad Internet, but it was completely empty. And I used to sit there alone, and it was even depressing because you could see those folks' posters of before they were scheduled like workshops or something and there was this big canceled over that."

Participants explained their challenges when studying and working from their homes and how they influenced their private lives and feelings. "I joined thinking that this is normal, you just sit at home and work and work and there is no distinction between work and private life. And interestingly, at home I got a table...huge dining table that you could expand ...I was so excited to use it with friends ...it had been there for one and a half years, and I did not have any social activity on that except of my laptop and my screen. So, it was the workstation. And I did not come to campus because it was too depressing like no one was here and I was also anxious about using the common spaces ... for me that was my workstation, my dining table and I felt so bad working on a table at home now. The table that I have loved to have friends over. I got rid of it because I could not bear to look at it anymore, it was so stressful, I am sitting there to eat food just reminds me of that feeling that I was sitting here for 12 hours straight just in and out of digital meetings." "my roommate and I were sitting in the apartment on the one side each of the table working and then we had digital tutoring and stuff like that and it was

quite annoying when we both had a meeting, for instance, or one had a meeting because then you were like talking and you were sitting in the same room and it is so annoying to have this background noise of someone talking all the time so that was not nice... at some point is you are too much in the same room with the same person and I do not think for most people that is a good thing.”

Students were asked whether the university arranged events during Corona to gather students by observing health protocols. They responded that they did not see any event hosted by Gløshaugen. All of them thought Covid-19 had affected everyone’s mental health, it is very depressing for all if you do not really interact with people.

### **5.2.7 Attending campus during Covid-19**

Students were asked whether it was important and pleasant for them to have an opportunity to attend the campus during the Corona situation. They replied differently; some of them were dependent on meeting people at school because students usually live in a tiny room or cannot even meet the people they live with. In this situation, transferring all things to digital is not the solution. Students need to meet people physically as well. “I think a lot of people feel they need to go to school to get this social feeling because we go to school to socialize. We do go to school to study, but half of it is just seeing other people, so I am very dependent on that. So, when they opened the campus, my friends and I were at school all day long every day.” However, others feel safer staying at home and having online classes. “I felt much safer at home actually because at least during the initial part, I was not aware of what we could do, it was just everything that you hear from the news. So, it was honestly very dramatic and, in that way, I really liked the online classes. I feel much safer there than coming out. But this semester, when they actually made everything physical and I did not even have my vaccine yet, but I was still supposed to be here, it was terrifying to be here.”

It is worth noting that all of the students are not part of organizational or volunteering work or they move to Trondheim and do not know anyone or do not have a lot of friends from before. Hence, campus plays a crucial role for them to give them the possibility of socializing. In general, they believed that during this pandemic that you need to keep distance, social meeting places become even more important than before for mental health of students. “I think it is not the same being a student then doing it from home or keeping a distance at all times, I think it is even more important for loneliness among students to have these social meeting places at the campus.”

### **5.2.8 Possibility of social interaction on campus during the pandemic**

Students were asked about the university's performance regarding the social interaction of students during the pandemic. They thought that it could have been done more interventions and organizations to make it possible for students to meet physically on the campus. They mentioned some possibilities and measures that could have been done to reduce the stress of students and increase their mental health:

- More students could have used auditoriums and other spaces with distance on the campus, it would have required more planning and cleaning to ensure peace of mind in a stressful time.
- There could have been a platform for people from different study programs to communicate with each other and post their activities. Thus, students did not need to depend on their friends and could have found people with similar interests.
- It could have been planned and communicated better because the students did not know where they could go and what spaces they could use.
- Outside open spaces could be used, and students could have been reminded to keep their distance in a funny way to physically meet on the campus.
- There could have been a possibility to meet a few times physically or once a week without opening everything up.

## 6 Implications

The previous chapter explained the results and findings from the survey, interviews and focus group interviews. The researcher categorized them to make an appropriate outline of findings. This chapter describes the implications that led to answering the research questions.

In the beginning, the first question regarding the experiences and expectations of students from social interaction on the Gløshaugen campus is discussed. For many students, social interaction is about relaxing, informal, and recreational activities that can refresh and prepare them for studying and dealing with their life's challenges. This social interaction can be very fast, like greeting or be longer such as speaking and doing activities with others. Many factors can affect these interactions; personality and cultural backgrounds can considerably influence social interaction. For example, people usually need external stimuli to initiate an interaction in Norwegian culture. These external stimuli can be arts, exhibitions, something unusual, different events and games, etc.

Students discussed different favorable places to socialize. From the researcher's point of view, the common features of these desirable places are as follows:

- Have access to food and drinks.
- Feel free to have different activities such as talking, dancing, eating, playing games and doing physical activities.
- There are facilities to sit (in different organizations), lay down and make them feel comfortable
- Feel comfortable in terms of temperature and weather conditions.

One of the best examples of their favorite place is the canteen which is often lively and vibrant. It is possible for them to talk to others while eating and drinking, doing their group work, or doing their individual assignments. Another satisfying example is student association offices where there are usually comfortable couches and coffee machines and give students a chance to talk to students from their faculty, play games, or review the magazines and have fun.

One of the interesting points that the researcher realized while talking to students is that students do not always need open and broad spaces where a lot is happening to communicate and socialize with others. Although it is pleasant for them to sometimes disappear in the crowd and just watch others and their activities, they also require cozy and comfortable places with dim lighting to stay away from the crowds and socialize with their friends.

There was a paradox in the findings regarding the size of the spaces. On the one hand, the Gløshaugen is such a vast campus in students' minds as most of them mentioned big and huge as the first word comes to their minds when they think about the Gløshaugen campus. On the other hand, many students complained about the lack of proper spaces for their group work, study during the exam periods, or association activities. This fact can indicate that there is not enough flexibility in using spaces on the campus. For example, if there was a possibility for students to reorganize spaces and use them for different purposes based on their needs, they could deal with the lack of proper spaces in this vast campus.

According to the survey, a small percentage of students used outdoor spaces. Instead of social and meeting places, open spaces often acted as connection routes and passage spaces. Students could not use outdoor open spaces during wintertime and unfavorable weather conditions. They also preferred to go back home after their classes. Later interviews revealed that lack of sufficient facilities and spatial diversity led to this decision. If there were facilities such as restaurants, cafés, markets or social gatherings, students would stay on campus in the evening. Participants mentioned that they lack more cozy cafés with different kinds of sofas, somewhere to play music or listen to that and somewhere where students can get together and do some craft stuff or arts. These places can help them make the campus more comfortable, like home and students with the same interest can meet and do their hobbies. Especially during the exam period, when they sit in a place for a long period and have stress, friends gathering and physical activities become more important. In addition, in the winter, students become vulnerable and need to be outside to study due to the darkness and pressure of the exams.

Another issue about the time period of using the campus was students desired to use the campus during the evening and even during the weekends, but due to the insufficient facilities, they cannot expand the time of use of that. They need food or spaces with comfortable furniture and suitable spaces for different activities to be able to spend more time on the campus. One of the interesting points that students mentioned was the condition of the campus during the weekends. Many people go for a walk with their children or dogs on the campus and this gives a great chance to connect people to the university and make a meeting place by providing opportunities to use the campus on the weekends.

Another point that appeared in the survey and interviews was that the old main building has a special place in students' mental image of the campus. This building is the symbol of the NTNU, but it is underestimated and underused. It has the potential to become a central

interaction place. Many functions and events can be held there and because of its location, it can be considered the connection spot between the university and the city of Trondheim.

Findings showed that sharing shared places of various programs does not guarantee the interactions of students. It is not enough to gather students in an area without providing opportunities to meet and do activities together. Students explained how different leisure activities or common projects helped them socialize and interact with others or how solid walls make a barrier to seeing each other and communicating.

Many comments indicated that some spaces on the Gløshaugen campus are not inviting. One of the reasons is that there is not enough visual communication between different spaces, inside and outside the buildings and students are not able to see what is happening in various spaces. They remain unknown to many students because they are located in the corners, although many of these spaces are desirable and pleasant for students. In other words, students need to walk around to discover these places. Along with visual continuity, using digital capabilities can facilitate interactions. For instance, an application that shows open spaces, different events and activities on the campus can easily provide information to students.

Students required more visual signs on the campus to create more spirit and energy in the campus atmosphere. More arts, murals, and color in a way make the spaces more attractive and offer a more legible place to eliminate the feeling of being lost in space. According to participants' opinions, these interventions can develop in buildings interior, facades, or even on the floor. For instance, a creative design or specific color on the floor can lead students to a particular destination. According to students' points of view, the structure, facades, and shape of the buildings can be organized in a more attractive and legible way. They were not very satisfied with the current appearance of the buildings on the campus. They suggested that the use of the building can somehow appear in its external structure. For instance, if someone sees that particular building from a bit farther, they can recognize that this building is of architecture. It might be something related to architecture, structure, or something like a mural art on the outside that shows this building is associated with this department.

Students noted that they needed to see more greenery on the campus. Due to the cold Nordic climate, many plant species cannot survive outside the buildings. Thus, one solution might be bringing the greenery and plants inside the buildings in creative ways. There can be a green wall or table full of small plants by the entrance that students can take care of one of those plants and bring it back to the table or wall when they are done for the day. Therefore, students



can bring a small plant where they want to study. These plants create a beautiful view, benefit the indoor environment, or can even trigger a conversation with others.

Another intervention for the Gløshaugen campus is setting up appropriate lighting. Notably, on the long winter nights of Norway, lighting becomes even more critical. Creating patterns with lights on facades and walls can save the facades of buildings from monotony and make them attractive to the viewers. Additionally, a sense of security can instill in students if outdoor spaces illuminate during the nights. Moreover, the appearance of the campus can be changed during the year in accordance with different occasions, such as Christmas and Easter. All of these changes and decorations can be done with the help of students and it results in increasing their interactions.

The second research question was about the influence of Covid-19 on the social interactions of students. Many students believed that university has a significant role in supporting their social interactions and this role could have remained strong during the Corona situation. Several students depend on the university for their social communications. It is important to note that not all students are members of students' associations; they usually live in a tiny room or apartment with limited facilities and spaces for study or many of them move to the city of their university and do not know many people or do not have many friends. Thus, the university campus is the main source for the social interactions of students.

Although the Corona situation made students sensitive to how they use spaces, not touch surfaces, use disinfectants regularly and keep their distance from others, interviews have shown that these changes are temporary.

During the Corona situation, people and students felt contrary experiences. They realized that they could do a lot remotely and from their home; besides, they understood the importance of social and in-person communication as lack of this aspect in their lives resulted in many health and mental issues. Therefore, the Corona situation highlights the value and importance of social interactions. In other words, during a pandemic, students felt that they need more support from the university. Consequently, university campus requires more considerations to provide opportunities for students to attend the campus without endangering their health.

Findings demonstrated that in a pandemic situation like Covid-19, some creative and funny design could remind students to keep their distance and help them to use the space without increasing the risk of infection. But it must be noted that administrative collaboration

and cooperation and providing students correct and timely information are crucial in a pandemic.

The results and findings of this research led to answer the third question regarding finding out the principal elements and attributes of spaces of university campuses that can improve the students' social interactions. The researcher summarized these features as follows:

**Flexibility:** Flexibility in both furniture and activities motivates students to interact with each other. They need to reorganize the furniture based on their needs. For instance, if they want to do their group work assignments, they need to arrange the seats in circle form based on the size of their group or if they want to do their individual study, they require a tranquil place with a different arrangement. Regarding activities, interactions usually increase when students have different choices to do in that place. The best example is canteens, where students feel free to eat, talk, work on their assignments.

**Comfort:** Protection from adverse weather conditions such as rain, snow and wind and providing comfortable temperature, proper ventilation and air quality. Creating sheltered spaces and furnishing outdoors with fire pits and suitable and diverse furniture and seats help students use outdoor spaces despite the Nordic climate conditions. Students usually interact near the places where they easily have access to food and coffee. In addition, if students feel that they are observed all the time or controlled by cameras or regulations, they do not feel comfortable socializing.

**Attractiveness:** Attractive and pleasant spaces encourage students to stay more in space and a longer stay leads to more interactions. Based on findings, indoor spaces are attractive for students when their view extends into other spaces and other spaces not hidden behind the rigid walls. Furthermore, plants and greenery make spaces pleasant. Attractiveness can also appear in the buildings' facades by adding colors, arts and rhythmic elements instead of soulless and boring and gray facades.

**Multifunctionality:** Diverse functions such as students markets or other shops and restaurants as well as on-campus events make the campus more vibrant in more hours of the day and even during weekends.

**Visual orientation:** When students look around the campus, they want to figure out what is happening in the buildings. This fact can be addressed by connecting the outside and inside the buildings on the ground floor.

Furniture: Possibility to sit and choose between different kinds of seats, give students a chance to stay in space and communicate with others.

Lighting: Proper lighting both indoors and outdoors. Especially outdoor spaces during the winter when nights are long and dark.

Make changes: The ability to make changes and personalize the spaces allocated to students boosts their sense of belonging on the campus and increases social interactions. Students need to feel that the university administration hears their voices, they are part of the decision-makers of their campus and their opinions can influence the campus and improve it for the better.

## 7 Conclusion

This chapter discusses the research findings concerning the theoretical framework and every feature of open spaces of the Gløshaugen campus is described in detail. Furthermore, it explains some recommendations based on the findings to facilitate students' social interactions on university campuses. In the end, some suggestions for future research are delivered.

Based on the theoretical framework, features of social places on campuses classify into six categories. The findings of this study indicate aspects of the Gløshaugen campus that can facilitate or limit students' social interactions in each category.

- Accessibility (Accessible, walkable, easy to move, connected and continuity)

The definition of accessibility is different in the context of city and university campuses. All the open spaces of a campus cannot be accessible for everyone, but it is at least accessible for all the students and university staff. Findings support that accessibility is in satisfactory condition in the Gløshaugen campus. Since the campus is walkable and pedestrians can move easily, car and vehicle entry are restricted. However, findings indicated that the connection of the buildings could be reviewed as some students mentioned the difficulty of going to different buildings on the campus, especially because of the Nordic climate condition during the winter, which forces them to put on and take off warm clothes on the way from one building to another. This connection can be a sheltered path or bridge to make a movement more convenient. In addition, if the inside and outside the buildings are connected to create visual orientation, students can have a better understanding of what is happening in the spaces. This also enhances the safety issues when the campus becomes more secluded during the evenings. The connection of outside and inside the buildings is not limited to visual orientation, but they can serve each other. For example, the function of the old main building as the library can be integrated with the outdoor function in front of that as a café. That is, buildings in the vicinity of open space can support the open space somehow.

- Facility and comfort (Facilities and equipment, safety, cleanliness, comfort and sittability)

Although the Gløshaugen campus offers many facilities, students still need more furniture that is flexible and easy to move or comfortable couches to make the campus like their home and create the possibility to spend more time there. Outdoor open spaces need special consideration regarding sitting and protection against unfavorable and cold weather conditions. Due to the long night and darkness, lighting also plays a vital role in making students feel safe

and creating a pleasant place to stay and get together. Outdoors also require seasonal amenities like fire pits and available warm food and drinks in winters to provide a comfortable environment for users, like the Science Center Plaza at Harvard that offers different kinds of seats, twisting wood benches with night lights and the possibility to lay down, movable tables and chairs and winter amenities to create pleasant conditions.

- Image (Visualize in mind, attractive, sense of belonging, natural elements)

The findings showed that students had a sense of belonging to the campus and their explanations indicated that the campus was being visualized in their minds properly; the location of the campus on the hill and the old main building form the main elements of this image. However, there were some shortcomings in this case. The Gløshaugen campus needs to become more attractive by adding arts, historical elements, murals, and appealing facades from students' perspectives. More signs and colors are required to eliminate the feeling of loss. Students' contributions can be used to create these arts and make these elements or their opinion should influence the details of these elements such as the shape, location and color. The results also indicated that more plants and greenery, particularly inside the buildings, help to create a more pleasant environment.

- Use and activities (Active, fun, multifunctional, flexible)

The Gløshaugen campus is usually lively until the evenings and provides many opportunities for the enjoyment of students. However, the state of multifunctionality and flexibility need to be improved. The inactivity of the campus during the evening and weekends is proof of this. More flexible spaces can remedy the lack of suitable places for study during exams or sufficient space for group work. More on-campus events, for instance, different exhibitions or students' markets, can result in a more lively campus.

- Sociality (Interactive, cooperative, inclusive, diverse)

Despite the diversity, the existence of various programs, national and international students, and sharing common spaces on the Gløshaugen campus, not all students and programs have satisfying communications, interactions, and cooperation. The social network should be strengthened. Findings showed that being in a shared space does not necessarily end in cooperation but encouraging students from different programs to engage in joint activities together can be helpful. These joint activities can be academic and nonacademic activities, for example, arranging events for different occasions.

- Participation (Personalization and expression of opinions, needs and requirements)

Many students showed interest in making changes on the campus to personalize and make it more comfortable based on their needs. Not many students feel that they are part of the decision-making process or are allowed to make changes. Additionally, the process of making changes on the campus is not clear for most of the students; they did not know who the right person was to approach and share their desirable changes. Providing a clear procedure for making any changes and accurate information from competent authorities to review and approve changes can eliminate this confusion. Students should involve in creating arts and decorating on the campus. Moreover, the future campus project provides great opportunities to involve students in the process of changing existing spaces and creating new ones. A Survey of students about their opinions and spaces they need with co-design, co-creating methods, and feedback on the quality of changes can be helpful.

University campuses play a significant role in making a supportive environment for students' social interactions. One of the solutions that can enhance the students' interactions is to identify situations that students start an interaction with others and provide prerequisites of these situations. According to this research findings, students tend to communicate with whom they have something in common or while they have physical activities or waiting for something or moving on the campus. The following elaborates these situations.

There are usually so many people on the campus and the researcher's observations indicated that students typically do not speak to someone they do not know but need to know a little about that person. For instance, students tend to talk to someone they know has a common interest or something in common. As students said, it is easy to talk to students in their student office because they know they are studying the same program. This point can be used to make more interaction spots. As an illustration, by designing interactive bulletin boards, students can stick their interests on the board and discuss their favorite topics with students with similar interests. Another idea is to create zones by distinguishing the color of chairs and dining tables of canteens. Each zone can represent a specific interest, such as the different genres of the movies, different types of sports or hobbies, and topics can change every week or month. This zoning gives students a chance to understand that students sitting in this zone have a specific interest and this can be a starter of a conversation or discussion.

Apparently, students are eager to communicate and interact when they use their bodies and have physical activities. Since students mentioned that they socialize when they are running

or doing sports. Therefore, by providing proper spaces for sports such as ice skating, winter sports and sports courts, not only outdoor open spaces are being used but also students can interact more, and physical activities benefit their health.

It seems students are likely to communicate with others when waiting for something. For example, when they are waiting to get coffee from the coffee machine or waiting to use the printer. However, it does not always happen as it is not usual when students are waiting for a bus. So, these spaces have the potential to increase social interactions and maybe by providing some simple facilities, interactions can facilitate better. Considering a place to sit near the coffee machine or set a simple game at the bus stop can fill the waiting time with social communication.

Increasing the movement of students on the campus can also increase the likelihood of interactions. If students are limited to one place and one building on the campus, their interactions might be restricted to a specific group. Yet if they are encouraged to move on the campus to attend different classes and lectures or do group works with different groups, they will have more chance to encounter different students and expand their relationships.

## **7.1 Recommendation for future research**

Based on the results and findings of this research, the rate of interactions of students with people whom they do not know that much such as students from other faculties or people from outside the university or even university staff is very low. Therefore, more studies are needed to figure out the reason for this and find solutions to create more active and inclusive open spaces on university campuses.

Due to the Corona situation, there were limitations regarding access to people and holding in-person workshops. With the removal of restrictions of the Corona situation, more research can be conducted to get people's opinions about the open spaces of campuses. More workshops can be carried out to co-design and get people's feedback regarding the connection of the campus to the community and the city of Trondheim.

One of the impacts of Covid-19 on the university that seem to be a long-term impact is creating a hybrid way of study. More study and research can be defined to understand how this mixed way of study can influence campuses, both inside the classrooms as well as outside the classrooms and open spaces.

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## 9 APPENDICES

### Appendix A

#### Survey questionnaire

1. How old are you?
  - ☐ 18-23
  - ☐ 24-27
  - ☐ 28-32
  - ☐ Above 32
2. Which gender are you?
  - ☐ Male
  - ☐ Female
  - ☐ Other
3. What is your nationality?
4. What is your level of study?
  - ☐ Bachelor's
  - ☐ Master's
  - ☐ PhD
  - ☐ Other
5. In which faculty are you studying?
6. How long have you been living in Trondheim?
  - ☐ Less than 6 months
  - ☐ 6 months to 1 year
  - ☐ 1 year to 2 years
  - ☐ 2 years to 3 years
  - ☐ 4 years and more
7. How many years have you been studying at NTNU?
  - ☐ 6 months or less
  - ☐ 6 months to 1 year
  - ☐ 1 year to 2 years
  - ☐ 2 years to 3 years
  - ☐ 4 years and more
8. What first comes to your mind when you think about the Gløshaugen Campus?
9. How often are you physically present on the campus during an ordinary term?
  - ☐ Once a week
  - ☐ 2 or 3 times per week
  - ☐ Almost all the 5 days
  - ☐ Every other week
  - ☐ Almost never
10. Where do you spend your time most on the campus when you do not have any classes?
  - ☐ Outdoor spaces
  - ☐ Canteen
  - ☐ Library
  - ☐ Empty classrooms
  - ☐ Group workplace

- Individual workplace
- prefer to go back home
- Other
- If you choose other please specify
- .....

11. What is your purpose to connect with others and what kind of social interactions do you usually have on the campus?

- Doing sports or physical activities
- Doing homework and assignments
- Talking while you are eating
- Randomly talking to students or university staff
- Talking to your friends to share your feelings, exchange information or academic thoughts
- Participating in student's association activities
- Spending time and having fun with friends
- Playing games
- Other
- If you choose other please specify
- .....

12. Which groups of people do you like to socialize with the most on the campus?

- Friends
- Classmates
- Students from your faculty
- Students from other faculties
- University staff
- People from outside the university
- Anyone
- Other
- If you choose other please specify
- .....

13. From your point of view what characteristics of the campus spaces promote the social interactions?Furniture

- Furniture
- Light
- Safety
- Cleanliness
- Color
- Greenness and nature view
- Joint activities
- Other
- If you choose other please specify
- .....

14. To what extent do you agree Gløshaugen campus spaces in general

	Highly agree	Agree	Disagree	Highly disagree	Don't know

can support social interactions of students?					
provides you opportunities to interact with students of different backgrounds?					
can support social interactions of students during a pandemic like Covid-19?					
could have supported social interactions of students during the Corona virus pandemic?					

15. To what extent do you

	Very high	High	Moderate	Low	Very low
feel satisfied with the range of extracurricular activities and programs on the gløshaugen campus?					
feel accepted as a part of the campus community?					
feel that you have the power and					

opportunity to change the spaces on the campus upon your opinion?					
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16. What is your favorite public place outside the Gløshaugen campus to socialize?  
You can write the location here and also go to this page "<https://arcg.is/1C4vOD0>" and pin your location on the map!
17. What is your favorite place on the Gløshaugen campus to socialize?  
You can write the location here and also go to this page "<https://arcg.is/1C4vOD0>" and pin your location on the map!
18. Please give your suggestions to improve the social interactions of students on the Gløshaugen campus?



## Appendix B

### Interview Questions

#### ☐ Nationality and backgrounds

1. How old are you?
2. What is your nationality?
3. Which program are you studying and in which faculty?
4. How long have you been and will be living in Trondheim and how long have you been studying at NTNU?

#### ☐ Social interactions

5. What does social interaction mean to you? What kind of activities represent socialization for you?
6. What motivate you to connect other people? What are your goals?
7. What kind of space encourage you to socialize?
8. Which groups of people do you like to socialize the most?
9. What characteristics of the space are important to have social interactions? Furniture? Light? Safety?

#### ☐ Investigating characteristics of spaces

10. What kind of space do you imagine in your mind for a university campus? What is your expectation from a university campus? Can you visualize your dream campus?
11. Which place comes to your mind first when you think about university campus?
12. Can you explain one your single day in the campus? How do you spend your time outside the classes?
13. Where do you socialize on the campus most? What do you do usually? How can you describe the space you socialize?
14. Do you consider cultural activities can encourage social interactions?

15. What kind of cultural activities are organized in the campus?
16. What kind of cultural activities do you participate in?
17. From your point of view, where on the campus:
  - o there is a sense of vitality?
  - o there is a possibility of socialization and spontaneous encounters?
  - o you would like to use in different times of the day (at nights, at weekends)?
  - o you feel free for your actions?
18. Do you have a membership to any student clubs?
19. How has this club affected your social interactions on the campus?
20. Do you prefer to have club activities on the campus? Why?
21. How does campus help this club?
22. What is your definition of inclusiveness in the campus? Do you think campus should be open to everyone or just students and university staff? why?
23. What kind of leisure activities do you do on the campus? When, and where?
24. Is there any place on the campus that you would like to change in a way that you like? How space allows you to shape it according to your needs and activities?

☐ **Influence of the pandemic**

**25. How your activities changed during and after the pandemic? How did you socialize during the restrictions?**

26. How much of that is related to the space of the campus?
27. What is your experience from the university campus since corona has happened?
28. Do you think Corona change the use of campus space?
29. How campus could have supported social interactions during the pandemic?
30. From your opinion, could campus mitigate mental problems of students during the pandemic?
31. How do you assess the campus after corona happened regarding the interactions?

☐ **Recommendations**

32. Do you have any suggestions about the social interaction on the campus for the future?

## Appendix C

### The information and consent letter

Are you interested in taking part in the research project

***” Lessons learned from the pandemic to become a more supportive campus for students' social interactions, case study Gløshaugen Campus.”***

I (Shayesteh Shahand) am a master's student in Urban Ecological Planning at NTNU and this is an inquiry about participation in my master's thesis. If you are a student at NTNU, I am here to hear your voice and make a difference with each other's help! By participating in this survey, you will have a share to improve the social life of students on the Gløshaugen campus. In this letter I will give you information about the purpose of the project and what your participation will involve.

#### **Purpose of the project**

It is a master's thesis with the main purpose of how campuses can encourage students to have more social interactions under any circumstances even during a crisis.

#### **What does participation involve for you?**

If you chose to take part in the project, this will involve that you are interviewed. The interview will take approx. 45 minutes and include questions about your experiences and expectations of social interactions on the university campus. If you are comfortable, I will record your voice and take notes during the interview.

#### **Participation is voluntary**

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

#### **Your personal privacy – how we will store and use your personal data**

We will only use your personal data for the purpose specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

#### **What will happen to your personal data at the end of the research project?**

The project is scheduled to end in June. The personal data will be stored on the student's computer with consideration of security measures such as setting a password. It means that the student herself has access to data and the data will be shared with the supervisor. The data will be used in this master thesis, future publications, and articles anonymously and will be deleted after two years. Before the publication, you will receive your quotations and you have the opportunity to confirm, modify or reject them up to one week after receiving them, otherwise, it is considered approved. Additionally, the interpretation and use of the data in publications depends on the opinion of the student and supervisor.

#### **Your rights**

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and

- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

### **What gives us the right to process your personal data?**

We will process your personal data based on your consent.

Based on an agreement with the Norwegian University of Science and Technology (NTNU), NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

### **Where can I find out more?**

If you have questions about the project, or want to exercise your rights, contact:

- Student, Shayesteh Shahand, by email: (Shaysts@stud.ntnu.no) or by telephone: +47 405 88 605
- Supervisor, Savis Gohari Krangsås, by email: (savis.gohari@ntnu.no) • Data Protection Officer (DPO) – NTNU, Thomas Helgesen, by email: (Thomas.helgesen@ntnu.no) or by phone: +47 93079038. • NSD – The Norwegian Centre for Research Data AS, by email: (personverntjenester@nsd.no) or by telephone: +47 55 58 21 17.

Yours sincerely,

Project Leader Student

(supervisor)

Savis Gohari Krangsås Shayesteh Shahand

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## **Consent form**

I have received and understood information about the project **“lessons learned from the pandemic to become a more supportive campus for students' social interactions, case study Gløshaugen Campus”** and have been given the opportunity to ask questions. I give consent:

- to participate in an interview
- for my personal data to be quoted anonymously in master thesis and future publications.
- to receive data and quotations (without mentioning my name in the publication) before the publication and I have the opportunity to confirm, modify or reject them up to one week after receiving otherwise it is considered approved.

I give consent for my personal data to be processed until the end date of the project, approx. *June 2022*.

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(Signed by participant, date)

