

Research Proposal - ~~Swim-city?~~ The perceived accessibility of blue space in Europe's blue capital

Carla Hyenne

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Abstract

The benefits of urban nature on people’s health, for fostering community, and for climate change adaptation are widely acknowledged. Within the discourse of environmental justice (EJ), these benefits have been used to demonstrate that equitable access to healthy, unpolluted environments is a human right, with scholars like Anguelovski and Agyeman arguing that marginalised and vulnerable populations are disproportionately affected by lack of access to such spaces.

Despite extensive studies on the accessibility of urban green spaces (UGS), urban blue spaces (UBS) have not been given the same attention. Moreover, research on UGS accessibility has focused on geographical accessibility, such as proximity to home, and has seldom considered subjective experiences as influencing access. However, accessibility is a multidimensional and complex concept which cannot be reduced to spatial distribution. As Wang, Brown and Liu put forward, perceived accessibility that addresses subjectivities, socio-personal characteristics, and the quality and diversity of the space, must also be considered.

My research addresses the issue of perceived accessibility to UBS by looking at the extent to which subjective experiences and perceptions shape how (un)fairly accessible high-quality, public UBS interventions are, and what this means for the environmentally just city. I will pay special attention to socio-economic and personal characteristics such as age, gender, income, ethnicity, cultural practices, and general preferences for infrastructure and aesthetics.

Specifically, I will be looking at three blue spaces in Copenhagen located in neighbourhoods with varying socio-economic and demographic profiles. A combination of observations of human activity, surveys with users, and interviews with experts will allow me to study a variety of perspectives on UBS. I will discuss the extent to which the city of Copenhagen offers equitable opportunities for people with different backgrounds and preferences to enjoy UBS, and juxtapose this against the ideal of the environmentally just city. Given the availability of UBS in Copenhagen and the importance the city is giving to harbour baths and urban beaches, it will be particularly useful to evaluate whether Copenhagen’s UBS caters to everyone’s needs.

I argue that perceived accessibility is an important dimension of EJ, because public UBS are places of community, attachment, and well-being. Ignoring subjective experiences that differ from the mainstream can contribute to social inequalities, discrimination, and displacement.

In conclusion, my research will closely examine how perceptions shape accessibility to UBS. It will serve to understand what perceptions and experiences those who control access (city planners) must take into account if UBS are to be usable by everyone.

Literature review

This section reviews the academic literature on urban blue spaces (UBS), and incorporates literature from wider fields like urban ecology. It also introduces concepts that are central for understanding equity with regards to UBS, namely environmental justice and accessibility.

The benefits of urban blue spaces

In an urban context, UBS have undeniable positive effects which Gascon et al. (2017) summarise as “stress reduction, increased physical activity, promotion of positive social contacts, increased place attachment and the reduction of extreme temperatures”. These benefits fall under three broad categories: health and well-being, community, and climate adaptation. First, being exposed to water makes people feel better, happier, and be more active. There is an extensive repertoire of quantitative studies demonstrating these effects on people’s health and well-being (Gascon et al. 2017, Britton et al. 2020). Qualitative studies also show that exposure to UBS improves mental health, regardless of how people interact with it (Garrett et al. 2019, van den Bogerd et al. 2021). Second, UBS give people the opportunity to connect with each other and with nature. UBS revitalisation projects can be an opportunity to create community bonds by engaging residents in the design and implementation process. For example, the small-scale waterfront intervention in a deprived area of Plymouth, UK, revealed that residents who participated in the project reported a greater sense of well-being and life satisfaction due to feelings of community belonging and safety (van den Bogerd et al. 2021). Lastly, in the context of climate change, UBS can naturally alleviate pollution, heat stress, flooding or drought, and increase the climate resiliency of cities (Lin et al. 2020, O’Donnell et al. 2021).

Given the potential of UBS, and that public space is highly valued commodity in the city, revitalising unused UBS into attractive environments helps make the most of all urban areas.

The social and environmental consequences of blue urban renewal

Despite the undeniable benefits of water in the city, transforming UBS into high-quality public space can have harmful consequences on people. Two mechanisms of action are exclusionary planning, and neoliberal urban renewal. These reinforce socio-spatial inequalities by discriminating against people on the basis of socio-economic and cultural differences, or by way of racist and sexist practices.

First, in contrast to the social bonds that can be fostered when residents are involved in revitalisation projects, connections between people and with nature can be disrupted if UBS are revitalised without considering the local community’s perceptions. As Toomey et al. (2021) demonstrate, people do attach meaning to degraded or polluted UBS, and it can’t be assumed that these hold no value for the local community. However, marginalised or stigmatised communities may find it hard to communicate their experience when consulted by planners, because they lack a common language to articulate their reality. And vice-versa: wealthy, white, males may not be capable of understanding the experience of ‘others’ (Anguelovski, Brand, et al. 2020). To this end, Toomey et al. (2021) propose using language like “place-disruption” and “place-protection” to promote mutual understanding and avoid privileging the values of mainstream groups over those of marginalised communities.

Second, cities are prioritising economic growth over well-being and community. Local governments are exploiting nature-based solutions to brand their cities as green and liveable, and to promote greening (which includes blue space) as a win-win strategy where “no one is left behind by the trickle-down of benefits from green infrastructure” (Anguelovski and Connolly 2021). Anguelovski et al. (2021) explain that with “glitzy green” renewal projects, cities try to attract a new creative class rather than addressing public UBS as a common good and prioritising the concerns of existing residents (Wessells 2014, Anguelovski, Brand, et al. 2020). These strategies perpetuate inequalities by privileging the values of white, environmentally privileged upper classes who can afford to live near nature. This phenomenon is referred to as green gentrification, where upgrading green space causes the exclusion and displacement of residents, who are priced out to a neighbourhood with less attractive nature. Given the similarities in benefits and attractivity of living near blue space, it is not farfetched to assume that *blue gentrification* also takes place.

The environmental justice principle

To articulate the phenomenon whereby natural spaces provide social and environmental benefits but at the same time discriminate against vulnerable populations, scholars have used the concept of environmental justice (EJ). EJ has evolved into the principle that everyone should have equal opportunities to access clean, healthy, unpolluted spaces, and in turn, share environmental burdens. As Agyeman et al. explain (2016), it started as a social movement in the US in the 1980s at a time when it became obvious that ethnic minority and low-income populations were disproportionately exposed to polluted and degraded land.

Since then, EJ has concretised into an academic discourse and is typically broken down into three categories: distributional justice, procedural justice, and recognition justice. Applied to public blue-green space (BGS), distributional justice refers to where these are situated in the city. Procedural justice deals with questions of discrimination in public participation and decision making. Recognition justice addresses individual and community perceptions and preferences which may influence how people interact, or not, with the space.

The applications of EJ on blue spaces are limited in comparison to green space. One study that stands out is Raymond et al.'s (2016) research on the diversity of people, activities and perceived unpleasant experiences in Helsinki's blue spaces. The wide range of opinions they find show the importance of considering a multitude of perceptions when planning UBS, because people of different age, income, gender, ethnicity, etc. have varying preferences.

It follows that environmental (in)justices take place in public space. Although there is no direct economic barrier to public space (there is no entrance fee), rarely is it fairly accessible to everyone. There exists both physical and non-physical barriers which can prevent individuals, or whole communities, from benefiting from urban nature.

Geographical vs. perceived accessibility

To date, studies that evaluate the degree to which people can make use of BGS have focused on measuring geographical accessibility, such as spatial distribution and proximity to people's homes. However, this ignores the fact that accessibility is a multidimensional concept which cannot be reduced to purely a physical dimension (Wang, Brown, and Liu 2015). Perceived access is also important to consider when studying social benefits of BGS. Are people happier and healthier because they live near nature, or because they can afford to? As Anguelovski et al. (2020) put forward, environmental justice must go further in understanding "how [...] people's experiences of place shape their perception of access".

To this end, Wang et al. (2015) suggest focusing on perceived accessibility, ie. "the quality, diversity, and size of the green spaces or socio-personal characteristics including age, income, safety, and cultural concerns", and suggests that perceived accessibility is a better determinant of green space use than proximity to home (Wang, Brown, Liu, and Mateo-Babiano 2015). This shows that in the context of environmental justice, recognition can be more influential than distributional justice in detecting unequal access to nature.

TODO: explain perceived accessibility more?

Research intention

Although evidence shows that perceived accessibility is significant in determining use of parks, there are limited studies that translate this idea to UBS. However, UBS are particularly interesting because natural water bodies like rivers or lakes are relatively immobile and cannot be planned in the same way as public parks. Thus, when it comes to providing equal opportunities to access UBS, perceived accessibility becomes more relevant than geographical distribution. This makes it worthwhile to explore the subjective experiences of UBS users, in order to understand the barriers to achieving environmental justice.

Problem Statement

The principle of environmental justice entails equitable access to clean, unpolluted environments, such as high-quality public UBS. This is important because exposure to water bodies improves people's health and well-being, and being at the waterfront can build relationships within a neighbourhood or community. In reality, a multitude of barriers exist which may prevent individuals or communities from visiting UBS even if they live nearby. The barriers include physical characteristics like preferences for the quality, size, or infrastructure of the site; and non-physical characteristics like socio-economic and personal factors including income, age, gender, ethnicity or cultural concerns. Understanding this phenomenon is important because public UBS are places of community, identity, attachment, and well-being. Ignoring subjective experiences that differ from the mainstream can contribute to social inequalities, discrimination, and displacement.

Given the above, my research aims to answer the following question: **to what extent do subjective experiences and perceptions shape how (un)fairly accessible high quality, public blue space interventions are, and what does this mean for the environmentally just city?**

Research Design

The questions I need to address in order to answer the research question are:

1. What are the perceived-accessibility factors that influence people's access to different UBS across the city

Plural, no?
↓

2. How do the UBSs compare in terms of perceived accessibility
3. Are there equal opportunities in the city for a diversity of people with subjective experiences to use UBS

My research will be explanatory because I aim to explain whether or not there are equal opportunities for people to access UBS. I will take an inductive approach, whereby my theory will emerge from the data I will collect on people's uses and perceptions of UBS, and on the quality and diversity of the sites. The theories framing the research are environmental justice - everyone should have equal access clean, unpolluted, healthy environments - and perceived accessibility - the subjective, socio-personal, preferential characteristics that shape access.

Comparing UBS to understand elements of environmental justice has been done by Raymond et al. (2016) in their research on the activities and perceptions of users ~~in over 100 UBS~~ in the Helsinki Metropolitan Area. To assess whether the city offers a diversity of UBS for a diversity of users based on perceived accessibility, I will also conduct a qualitative comparison of at least three cases in the city of Copenhagen.

Data Collection

Who is using the UBS, for what purpose, how they feel about it, why do they choose this particular space, and what enables or inhibits their visit

The data collection method should allow me to gather information on who is using the UBS, for what purpose, how they feel about it, why do they choose this particular space, and what enables or inhibits their visit. To this end, Raymond et al. used Public Participation GIS (PPGIS). PPGIS is recommended as research method which "might uncover local spatial knowledge and perceptions" (Anguelovski, Brand, et al. 2020), and has been used by BlueHealth researchers to "uncover spatial aspects of people's relationships with blue spaces" (BlueHealth n.d.).

To uncover the importance of physical versus non-physical factors with regards to park accessibility, Wang, Brown and Liu (2015) took another approach. They conducted surveys which asked questions based on accessibility variables. They operationalised these variables into questions using Likert scales, which turned variables like "perceived socio-personal accessibility" into "are there any socio-personal issues (eg. perceived safety issues or antisocial behaviour, etc) that make you avoid visiting this park?", to which respondents could answer from "no concerns at all" to "very high concerns".

Another method employed for studying people's interactions with UBS are social impact assessments. In their research, Toomey et al. (2021) combine observations and short interviews with users to analyse people's place making practices at a UBS. They qualify this as a social assessment method "designed to gather information on a specified geographic area through quantitative counts of human activity and signs of human use, coded interview data tagged to specific locations, and qualitative field notes capturing participant observations" (Toomey et al. 2021).

The research method I will use will be based on a combination of observations and surveys, and will incorporate structural survey elements from Wang, Brown and Liu's operationalisation of accessibility variables.

Observations

Field observations will consist of structured quantitative data and qualitative data. Observations will be made on three things:

1. The type of **activity** people are carrying out - what people are doing when they are at the UBS, eg. swimming, playing, walking, sitting, etc
2. **Signs of human interventions** which say something about the character of the space , eg. signs of activities and events, signs of care or neglect, art and writings, environmental stewardship, and more
3. **Qualities of the experience**, which is anything people could find particularly pleasant or unpleasant, eg. the facilities and infrastructure, trash, pollution. For this, I will borrow the list of perceived problems and unpleasant experiences elaborated by Raymond et al. (2016)

Surveys

Observations will be ~~combined with~~ rapid interviews with UBS users. The aim of these interviews is to gather more personal insights on UBS perceptions. There will be a mix of closed-answer responses with Likert scales, and open-answer responses.

Specifically, ~~I will ask~~ ^{taken alongside} users ^{will be asked} what they are doing at the site (or what they usually like to do) why they choose to come here; how often they visit and how far they travel; if there is anything preventing them from accessing the site; where else they like to go that is close to the water;

what do they particularly enjoy at this or other sites; when was the first time they visited the site, and if they have noticed changes since; and on a scale, how safe/clean/attractive the space is.

Data analysis

Quantitative data from the observations and closed-answer responses will be entered into a spreadsheet for analysis. Pivot tables are a popular way to organise data to make it easier to find patterns. Statistical analysis ?? Spatial analysis

Qualitative field observations and open-ended survey responses will be encoded. The coding scheme will be updated after each day of data collection, and serve to identify key concepts. When the encoding is complete, clustering may be applied to the codes.

} cite
something?

After the data has been organised, encoded and analysed, I will do a comparative analysis across the UBS. A distinction will also be made between the UBS where data was collected, and other UBS survey respondent have mentioned.

The results from the analysis will be highly subjective, since that is the nature of perceptions. Therefore, I will not be producing an exhaustive representation of people's experiences of UBS across Copenhagen, but rather a more holistic discussion based on access and justice.

Case study

As previously mentioned, the research will compare perceived accessibility in three (or more) UBS.

The context of Copenhagen

To assess the opportunities residents have to access UBS in everyday life, the sites should be located in a single city. Copenhagen makes for an interesting case for the following four reasons. First, Copenhagen is located on the Kattegat strait, has 92 km of coastline, and as such water features prominently in the urban landscape (Comertler 2017). Second, the city trying to position itself as a world leader in sustainability and is doing so by making its shoreline attractive. Since 2002, there have been more than ten blue space rehabilitation projects in the form of harbour baths and urban beaches (VisitCopenhagen n.d.). Third, Copenhagen is experiencing an increase

in poverty and ethnic segregation (Moller and Larsen 2015), as well as a growing racist discourse in the media and politics. For example, through the classification of some neighbourhoods as ‘ghettos’ (Simonsen 2008). This evolving socio-economic landscape and its surrounding discourse make it important to understand who feels like they can access UBS, and who might not. Finally, Copenhagen’s reputation as “the most liveable city” (VisitDenmark 2021), due in part to the swimming spots in the harbour, begs the question - for whom is the city liveable?

Potential cases

With Copenhagen as a location for the research, specific units of analysis must be defined. Every UBS and neighbourhood will have a different set of social, economic, political, cultural or environmental conditions which influence who uses the space, why, and how they feel. In order to uncover these conditions, the units of analysis should be scoped to specific locations on the waterfront, and match three criteria. First, the UBS should allow people to carry out a multitude of activities like sitting, swimming, eating, playing sports, sunbathin, etc. Second, the sites should have been rehabilitated by the city, be public and free to use. Third, because perceived accessibility is rooted in socio-economic, cultural and personal characteristics, the UBS should be located in neighbourhoods distinct socio economic status. Social economic status (SES) has been recognised as influencing perceived access to green space, with scholars like Wang, Brown and Liu showing that people in neighbourhoods with lower SES have lower perceived accessibility to parks (2015).

The maps in Figures 1 and 2 represent income and citizenship statistics of neighbourhoods in Copenhagen, retrieved from Denmark’s statistic bank (City of Copenhagen 2022). These statistics, along with the list of harbour baths and beaches on the VisitCopenhagen website (VisitCopenhagen n.d.), served to shortlist five UBS: the Sandkaj harbour bath, the Svanemøle beach, the Sluseholmen harbour bath, the Amager beach and the Kastrup sea bath (see Figure 3). I will likely not be able to analyse five spaces, but at this stage a more detailed neighbourhood analysis and a visit to the spaces is required to make a final decision.

I also considered inland UBS such as lakes or rivers, which would be interesting to compare with the high-profile harbours and beaches. However I could not identify any that seemed like places with much activity (ie., it was not possible to linger, swim, play sports, fish, etc.). Visiting these spaces in person might change my interpretation.

→ maybe make this sand more objective?

Sandkaj Harbour Bath is open for swimming year-round. It is located in the Nordhavn neighbourhood of the Østerbro district, which is referred to as “the newer part of town”, a new and

exciting area where cafes and restaurants keep opening and create a buzzing feel around the bathing zone” (VisitCopenhagen n.d.). Indeed, the population of Nordhavn has grown significantly since 2015, and income? (City of Copenhagen 2022).

Svanemøle Strand is also located in the Østerbro district north of the Sandkaj harbour, the Svanemøle beach opened in 2010. It has sand, a pier, and a promenade. Swimming is allowed to take place year-round.

Sluseholmen Harbour Bath is the latest harbour bath to open in 2012, after the city decided to clean up the harbour and make it accessible for swimming to the public. It is a “protective lagoon” (VisitCopenhagen n.d.) with four different pools for children, youth, exercising, diving. It is supposedly used mainly by families living in the relatively quiet and new neighbourhood (Bak 2015), due to it being out of reach compared to popular baths in the centre. This site is interesting because so far, it is intended for the local community and is not (yet?) attracting a wider crowd. Plus, both the neighbourhood and baths are new. This makes it a good location to understand how people are shaping the area, as it develops.

Amager Beach is, of course, a beach with sand, but also grassy lawns, it is allowed to barbecue, there are sports facilities, and many waterfront activities like volleyball, kite-surfing and snorkeling. There is a bathhouse open year-round with a wooden deck on one end of the beach.

Kastrup Sea Bath is just south of Amager beach, with views of Saltholm Island and Sweden, equipped with an award-winning architectural structure made of azobe wood, which is highly resistant to weathering and pests. It is equipped with changing rooms, showers, lockers, swimming facilities, and people can dive from the structure. The water around the structure is deep and thus not ideal for children or those uncomfortable in deep water.

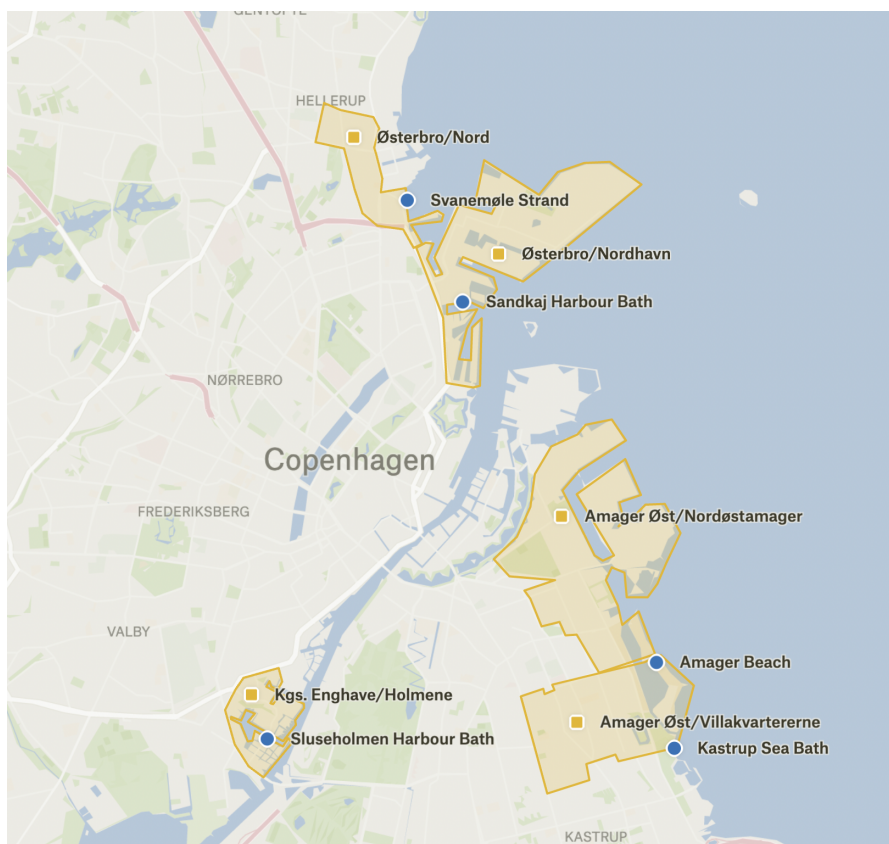


Figure 1: A map of Copenhagen with the shortlisted blue spaces (blue dots) in their respective District/Neighbourhood (yellow areas labelled with yellow squares)

Timeline and feasibility

Many more people spend time at the water in summer compared to than winter. Therefore, I aim to collect my data starting in August and going up to November. This should allow me to capture a wide range of users and uses. Even swimming culture is big in Denmark and people do use UBS all year, winter swimmers are a very particular group of people compared to the more general population I aim to interview. I will also be collecting data at different times of the day (morning, afternoon, evening) and week (weekdays, weekend, holidays).

This means that I will not have completed the literature review before the data collection phase, but I don't foresee this being an issue as long as the observation and survey protocols are ready.

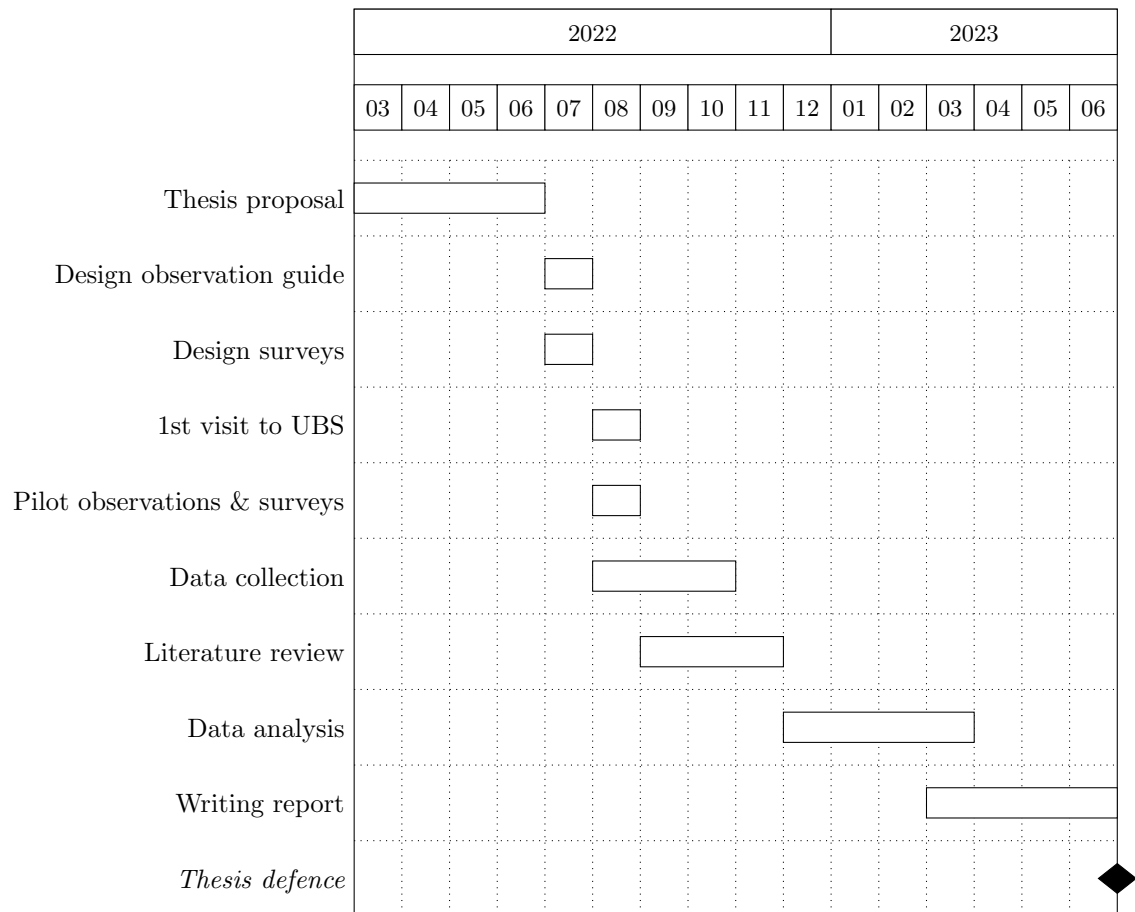


Figure 2: Timeline for the research

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