

A City for Students

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1 Introduction

My data collection project focused on answering the question of examining how students see their immediate neighbourhoods as a way to investigate how an ideal neighbourhood would look like for them. It aims to provide a perspective to the ongoing development in Nordhavn, Copenhagen [COBE Architects, 2023], relating to the concept of 15-minute cities [Allam et al., 2022]. The main findings of the study include that students are more drawn to green spaces and identify them, as well as other facilities, such as grocery stores and libraries, being important to be close by, and dislike noisy areas as well as places beyond the human scale.

2 Data Analysis

Collecting data from 18 participants through a pre- and a post-survey and the Eye Level City App published by Gehl Architects allowed me to see their insights through multiple types of data (237 images with 889 textual and numerical annotations) and settings (i.e., sitting at their desks when completing the survey and going for a walk in their neighbourhood) [Madsen et al., 2023]. Despite a small sample size, the dataset is rich in detail and uncovers stories and may prompt questions for further investigation.

2.1 Pre-Survey: Participant Data

The demographic background of participants is summarised in Figure 1. The students are generally happy with their neighbourhood (they gave 4.22 points on average, with 3 being the lowest and 5 being the highest rating), although only a few would give it the highest score possible.

2.2 Eye Level City App Data

2.2.1 Categories and Ratings

The participants could allocate multiple categories to each picture. “Natural Space”, “Recreation/Leisure”, “Community”, and “Transportation” are represented the most (see Figure 2). This possibly indicates that participants were rather drawn to green spaces on

their walk or found more interesting pictures to take in those areas (i.e. there are more interesting details in a park than in a grocery store, of which most of the participants only submitted 1-2 pictures).

It is clear that some categories, such as “Recreation/Leisure” and “Community” were mostly rated positive, while others, such as “Natural Space” and “Transportation” rather show mixed results (see Figure 3).

2.2.2 Categories and Textual Annotations

The textual data I collected can be easily investigated by counting the words after pre-processing. As also shown in the images below, words, such as “green”, “water”, “walk” and “love” are often mentioned under “Natural Space”, while “water”, “nature”, and “people” are often allocated to images categorised as “Recreation/Leisure”, uncovering a closer connection between categories, that can be also identified in their co-occurrence matrix. (see Figures 4 and 5).

2.3 Geodata

Combining the Eye Level City App dataset with Open Street Map data provided by Geofabrik, it is possible to identify whether the images were actually taken in a green space, a road, etc., or how close they are. This information could be combined with what categories each image is associated with, and what ratings it got (see Figure 6).

2.4 Post-Survey

In the post-survey, participants indicated their likes, dislikes and wishes for their neighbourhood (see Figure 7). Keywords, such as “grocery stores”, “close”, “nature” and “city” were listed more frequently by participants when elaborating on what makes their neighbourhood ideal. Under “missing”, distance measures (such as “close”, “closer” and “nearby”), and needs for specific facilities and qualities (such as “library” and “community”) were mentioned. When talking about their dislikes of the neighbourhood, participants mentioned words related to transportation (“road”, and “station”), noise (“loud”, “busy”) as well as size (“big”).

3 Collaborators

External partner: Gehl Architects

Main supervisors: Kristoffer Albris, *Assistant Professor at the Department of Anthropology* and Clara J. E. Vandeweerd, *Assistant Professor at the Department of Political Science and the Center for Social Data Science*

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References

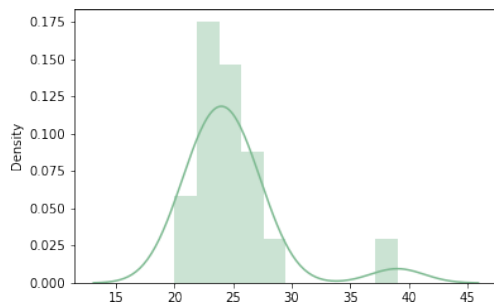
[Allam et al., 2022] Allam, Z., Allam, Z., Bibri, S. E., Chabaud, D., and Moreno, C. (2022). The ‘15-minute city’ concept can shape a net-zero urban future. *Humanities social sciences communications*.

[COBE Architects, 2023] COBE Architects (2023). Nordhavn. <https://www.cobe.dk/place/nordhavn>. Retrieved on 15/09/2023.

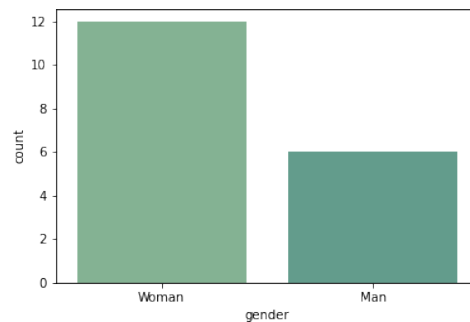
[Madsen et al., 2023] Madsen, A., Burgos-Thorsen, S., Gaetano, C. D., Ehn, D., Groen, M., Niederer, S., Norsk, K., and Simonsen, T. (2023). The urban belonging photo app: A toolkit for studying place attachments with digital and participatory methods. *Methodological Innovations*.

Figures

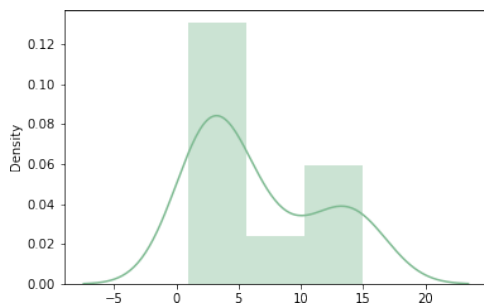
Figure 1: Distribution of Various User Characteristics



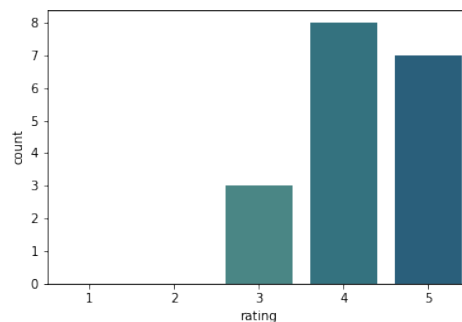
(a) Users' Ages



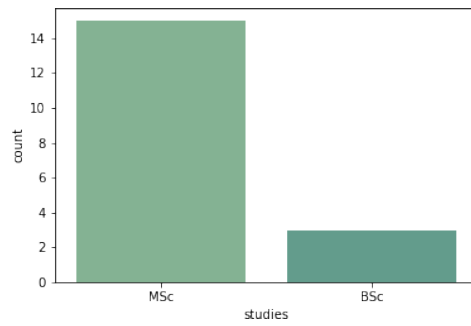
(b) Users' Gender



(c) Users' Months at Current Address



(d) Users' Ratings



(e) Users' Studies Level

Figure 2: Count of Categories

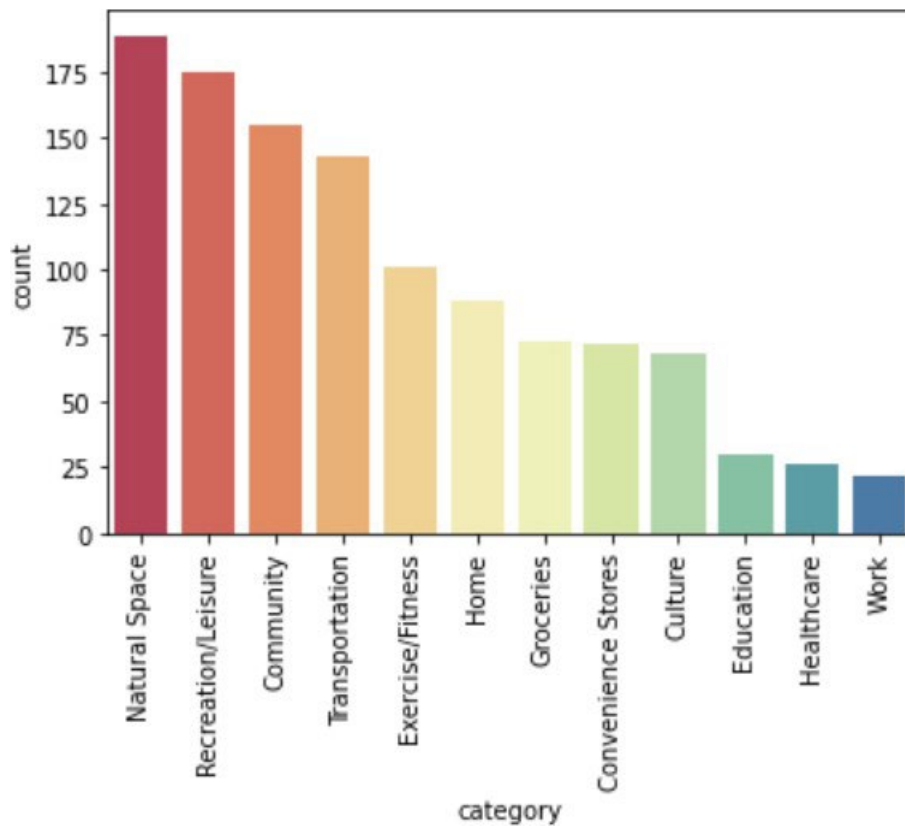


Figure 3: Percentage of Ratings per Category

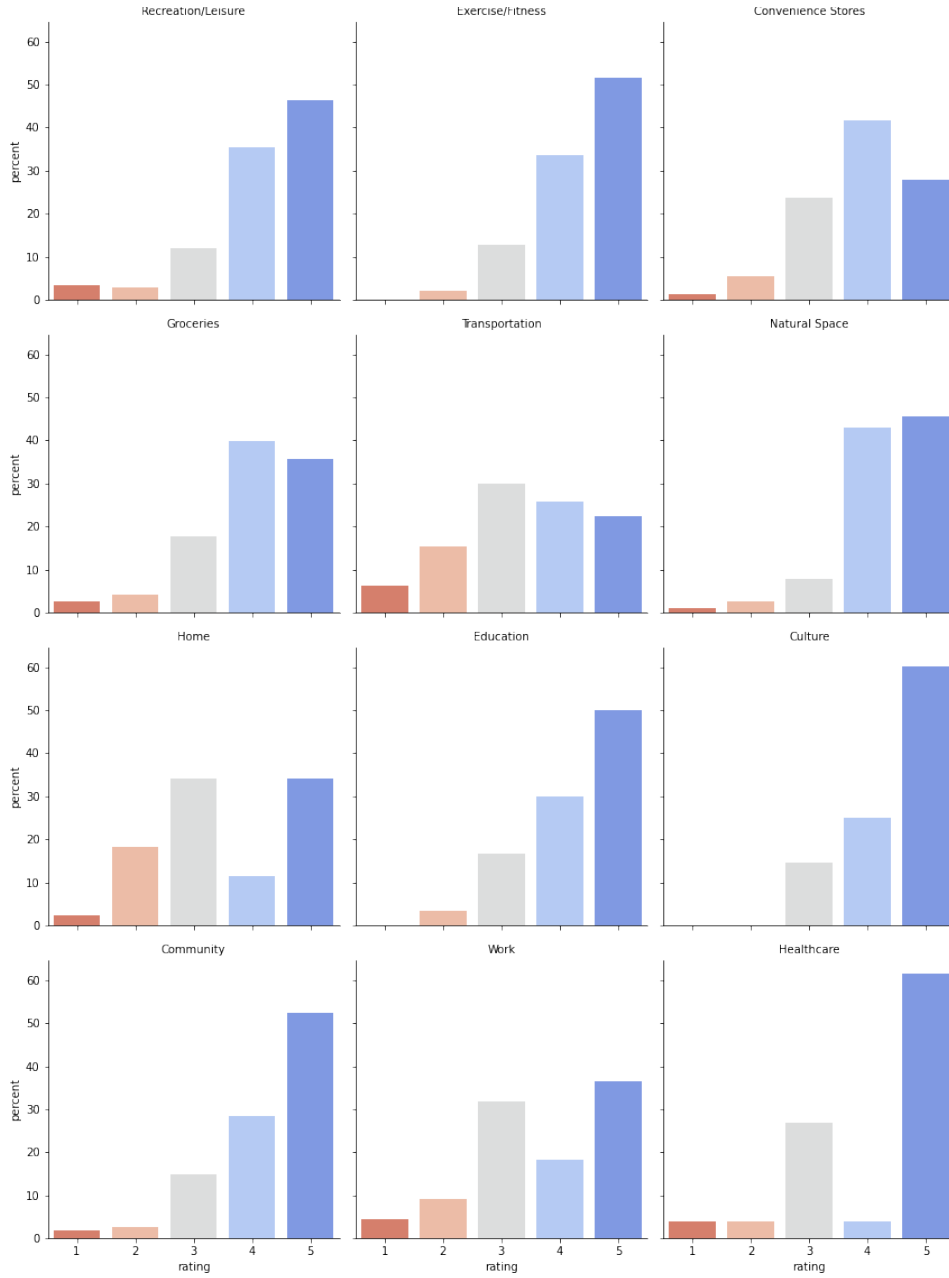


Figure 4: Category Co-occurrence

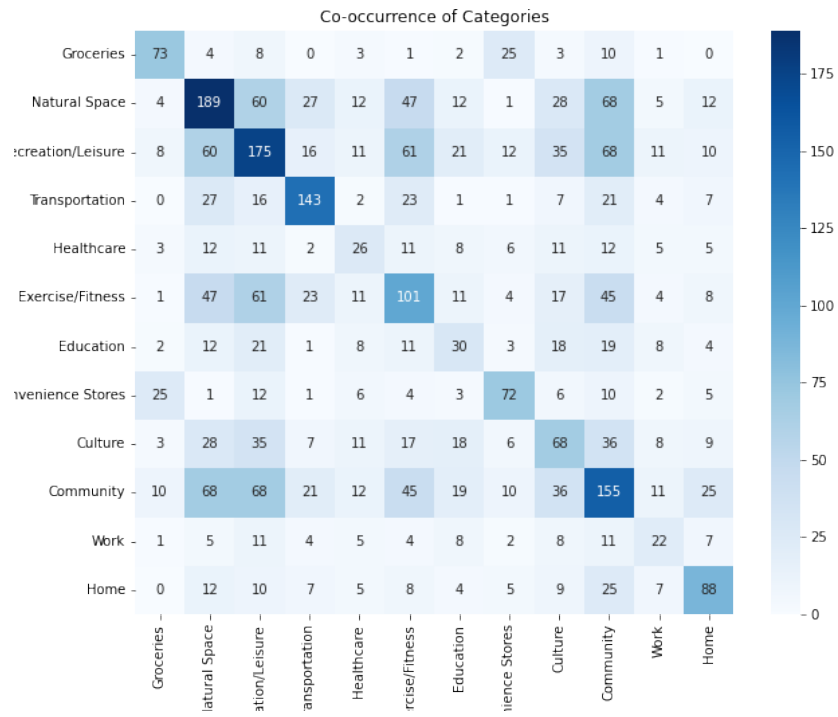
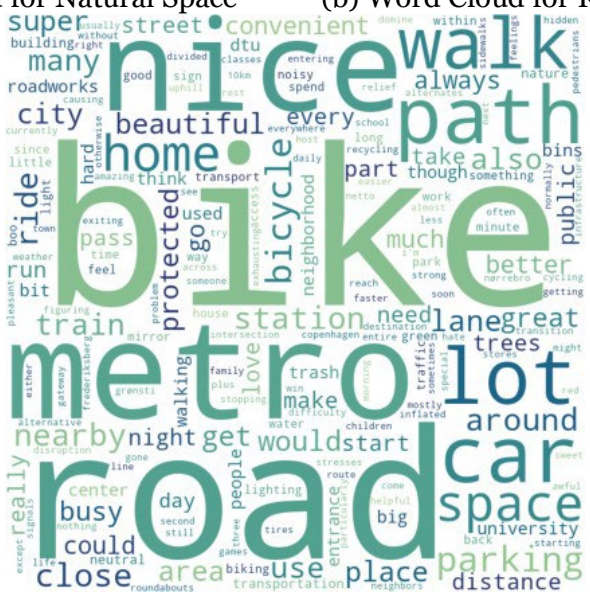


Figure 5: Word Clouds for Different Categories



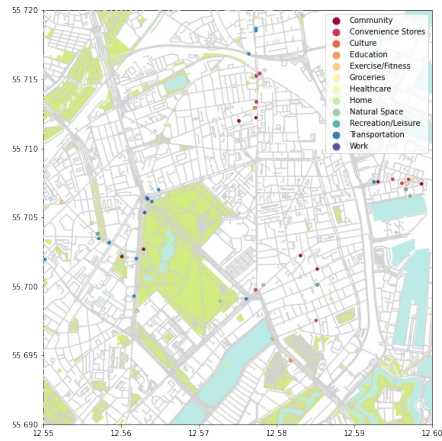
(a) Word Cloud for Natural Space

(b) Word Cloud for Recreation/Leisure

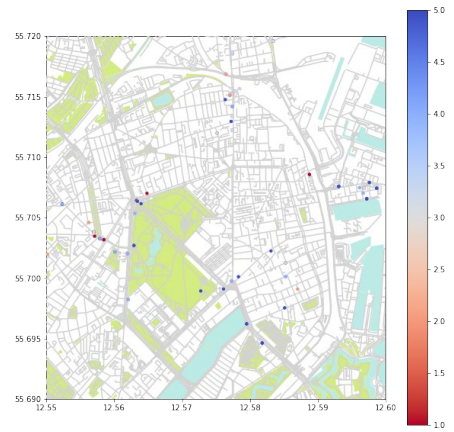


(c) Word Cloud for Transportation

Figure 6: Geospatial Distribution of Images in Østerbro



(a) Geospatial Distribution of Images in Østerbro by Category



(b) Geospatial Distribution of Images in Østerbro by Rating

