TOO FAST, TOO FURIOUS

A study on traffic's impact on the perceived livability of streets in Stockholm

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Urban and Regional Planning
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LUNDS UNIVERSITET

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Front matter: Image 1: "Movement in Stockholm", *Source:* Stenberg 2018

Abstract

The cumulative growth that the market of automobiles has seen since the end of the second world war, has had a major impact on both the way we plan our societies and in the way we live our lives. In Sweden from 1950 to 1960, car-ownership increased five-fold, making it the most car-dense country in Europe at the time – bringing along with it major car-centric urban renewal schemes, such as 'Norrmalmsregleringen'. In the U.S. concerns about the social and environmental impacts of motorized traffic, sparked an interest in research on the 'livability of streets'. Donald Appleyard found in 1969 that the resident's satisfaction with their street characteristics and the amount of friends and acquaintances were inversely proportional to traffic volumes. This helped push the narrative that the advance towards auto-mobility had come at the cost of the social life and urban quality of streets and neigbourhoods. In this thesis, a similar study focusing on the impact that vehicular traffic has on streets livability has been conducted. The study uses the municipality of Stockholm as a case and seeks to answer the research question by the means of online surveys and spatial data. The results suggest that increasing vehicular traffic seems to have a somewhat negative impact on the perception of the livability of streets in Stockholm and that streets with less traffic are generally apt to be more livable according to the categories formulated in the survey. However the findings also suggest that there seems to be a quota of 'enough' cars, for which when filled, the effects of traffic seems to wear off, and for some aspects of livability even revert aforementioned trend.

Keywords:

Livability, Street life, Automobiles, Traffic volumes, Safety, Community, Urban Quality, Stockholm

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"Have the objectives of the push towards auto-mobility overshot what is best for our living conditions, allowing automobiles to take over neighborhood streets with menacingly lethal indifference?"

- *Donald Appleyard, Livable streets 2.0 (Appleyard 2021, p.xxvii)*

1 INTRODUCTION

What makes a street livable, and how has the introduction of vehicular traffic in cities affected this? When Gehl (2010b) tries to define what a livable city could look like, he proposes two extreme examples: One where there are multistory buildings, underground parking facilities, extensive automobile traffic and separation of functions with long walking distances between them. This could be represented by the modernized cities of Europe and some car-centric towns and cities of the U.S., (of course there are exceptions to this, not all car-centric cities are lifeless). In these kinds of cities, there is of course a heavy load of automobiles and high rise buildings, but less visible people. This is because pedestrian traffic is not prioritized and more or less impossible, and as a result of this far less people are out walking. Since there is less to experience on the streets but vehicular traffic, there are fewer people outside and the distances from buildings are far and offer scarce experiences. As a result of this the inhabitants of these cities prefer to stay indoors watching TV etc., sheltered from the noise and dullness caused by the automobiles (Gehl 2010b). The other type of extreme when discussing livable cities, is the city of low closely spaced buildings, accommodated for foot traffic with good areas for public life and streets connecting the residents to this outdoor public life. In these kinds of cities, often found in e.g. cities in Europe and the Middle East with enduring medieval urban design, outdoor experiences are rich because there are people walking everywhere and the public places are inviting and easy to access and use. Subsequently the indoor spaces are complemented from the use of outdoor spaces and vice versa, e.g. since the streets and public life is inviting and offers vast experiences, there is less need for private backyards to shelter from the street life.

Streets that are filled with people chatting, walking, eating and engaging in other activities are still highly valued today. Old city streets, for example, are often free from the dangers that the automobile poses, and allow for noise levels more compatible for social interaction. It could be because they draw attention to a quality of human experience in the city which, ever since the establishment of automobiles, we have lost (Taylor 2003).

1.1 Purpose & Research question

The purpose of this study is to find out if traffic impacts the perceived livability of neigbourhood streets. In doing this, it seeks to; determine the i.a. social and aesthetic impacts of heavy traffic on streets of Stockholm, as well as to fill the need to study the impact on livability caused by automobiles in a Swedish context.

Main research question:

- *How does traffic impact the perceived livability of streets in Stockholm?*

1.2 Delimitations

This bachelor's thesis examines the streets of Stockholm city (Stockholms kommun). To develop an understanding of the term 'Livability', theories of Jacobs, Gehl, Appleyard and Taylor have been used. It is important to have in mind when reading this paper that the criteria used to define livability in this paper only makes out a portion of what makes a street livable. This selection and delimitation has been made so that the impact of traffic on livability can be surveyed and studied. Further readings of the limitations of this study is elaborated in chapter five, *Methodology & Material*.

2 LITERATURE REVIEW

2.1 Studies on "Livable streets"

Donald Appleyard was a pioneer in the movement of scientists that introduced methods for understanding streets, public life, social connections and how to measure them. His main research area was of course that of the relationship between the residents and how vehicular traffic affected them. The whole of Appleyard's research is based on the questioning of if "...the objectives of the push towards auto-mobility overshot what is best for our living conditions, allowing automobiles to take over neighbourhood streets with menacingly lethal indifference"

(2021, p.xxvii). An average of 1.35 million people worldwide die every year as a result of road traffic accidents. Although 93% of all traffic fatalities today occur in low- or middle-income countries, it can happen to anyone – which Appleyard proved in a most tragicomic manner, when in Athens, being faced by the consequences of his matter of research, died in a high speed traffic accident in 1982 (WHO 2020; Anthony 1983).

For his initial study on livable streets in 1969, Appleyard (1981) chose three streets in San Francisco identical in appearance with different traffic volumes. and he studied the residents' opinion on different topics, e.g. traffic hazard, noise, stress, pollution, home territory and how many friends and acquaintances the residents on the different streets had. The methods used for this study were both interviews and observations. During the interview, residents were not told that the research was focused on the effects of traffic, so that their answers would not be influenced by their thoughts on the traffic on their streets.

The conclusion of the study was that the residents of heavy trafficked streets experienced a whole range of problems. The street was dangerous, noisy and the residents felt that their neighbourhood and sense of possession was greatly diminished by the high loads of traffic. As a measure of escaping the traffic, the street was left completely empty of human activity except for the cars. Many residents answered in the survey that they were angry with the condition, one man took it as far as to say that he wanted to dynamite the street so as to keep commuters from coming through. Appleyard also found that out of all the streets, the one with the highest load of traffic had higher rents of the two less trafficked streets, even though the two less trafficked streets were considered more livable. This, he thought, was probably because of the faster turnover of apartments on the most trafficked street. On the other hand, in the light trafficked street, life seemed more idyllic, according to the survey. The residents of this street considered the street itself to be their own territory, there were many more families with children than on the high traffic street and they let their children play freely on the sidewalks. On average the residents also had more friends and acquaintances and were much more aware of the qualities of their street (Appleyard 1981).

Residents of the light traffic street, however, were more concerned and disturbed by the occasionally appearing ‘hot-rodders’ (people who drive motor vehicles that have been specially modified to deliver extra power or speed). Appleyard (1981) thought this was because that people who expect the traffic to be heavy, tend to adapt to it and due to this the occasional “hot-rodders” will be considered just any car amongst the multiple cars driving by.

Appleyard (1981) also found that on the high traffic street, all families with children had left. He concludes that traffic might cause an out-migration, something that was partly confirmed when in a later study they were able to track down some former residents who had moved because of the burden caused by the traffic. The pattern that appeared throughout Appleyards study was that children were more often allowed to play on lighter trafficked streets, whilst families with children in general tended to move from heavily trafficked streets. A swedish study conducted by Dr. Stina Sandels (1975) studying the perception of traffic and behaviour of children in trafficked environments, showed that it is impossible for small children to fully get used to and to adapt to a trafficked environment. Adults too often argue that children are just being careless when the reality is that the young have not yet developed their “perceptual and cognitive skills" to a sufficient level to be able to fully comprehend and handle trafficked environments (Sandels 1975, p.85). This research was applicable to Appleyard (1981) when he found that many people consider the street to be an unsafe place for children. One half of all the respondents in his survey answered that they did not consider their streets to be poor or not very good for children, as well as more than one third answered that they refused their children from playing in the streets. However, the primary finding made by Appleyard was the decreasing levels of friends and acquaintances that heavier traffic loads meant for each of the streets. The residents of the light trafficked street had on average almost three times as many friends as the residents of the heavy trafficked street (Appleyard 1981).

The study was replicated a decade later by Bosselmann and MacDonald (1997), who also examined different street typologies and their respective social and environmental impacts. They found that their results were similar to the findings of Appleyard, with their take on the study providing the proof that boulevard type streets at least to some degree mitigate the negative effects of heavy traffic. When realising that there was a need for a test of this thesis in Europe, Hart & Parkhurst (2011) decided to also study the connection between vehicular traffic and social relations. The goal of the 2011 study was to replicate the Livable Streets study in a contemporary context as well as to provide a European version of the otherwise only U.S. tested thesis. The study used Bristol as a case, a particularly car traffic heavy major urban area. Just as Appleyard did, the authors located three similar streets with different volumes of traffic. Their light street contained 140 cars per day, medium street contained roughly 8,400 and their heavy street roughly 21,100 cars per day. Their results echoed the findings of Appleyard; that on the light traffic street, there was a sense of community, it had a healthy social life and the residents felt that they could rely upon each other during hard times. On the medium traffic street the residents felt the area

was lacking community, the children were advised not to make friends on the other side of the street, as to not cross the dangerous road space too often. Lastly, on the heavy traffic streets children were sometimes not even allowed to play in the front yard, and the feeling of 'home territory' was greatly reduced compared to the less trafficked streets. Probably the most important finding that Hart and Parkhurst made was that the residents of the heavy street had on average far less friends and acquaintances than people on less trafficked streets. All in all, the authors found that Appleyards findings from 1981, were applicable to a European city, in the 21st century (Hart & Parkhurst 2011).

2.2 The connection between street activity and street quality

The connection between what happens on the street and how people perceive the attractiveness of that place is a matter that the Royal Melbourne Institute of Technology and the University of Melbourne in 1978 studied. Together they found that there is a direct connection between street activity and street quality, the more human activity there is on the street, the more pleasant the experience is. Also in Europe it has been found that traffic reductions schemes along with laying out of parks, improving outdoors environments have led to greater levels of street activity (Gehl 2010b). Reducing traffic also means reducing noise levels on streets, something that many people consider vastly important. According to a U.S housing census survey of neighborhood problems in 1975, street noise was by far considered the greatest disturbance. Traffic noise in cities is pervasive, it often overrides the other sounds coming from the city. Noise is often seen as a more intrusive problem to residents of a street than the dangers from traffic. This is because by going into your home, you have escaped the dangers of being hit by a car, but just by going inside does not always solve the annoyance perceived by street noise (Appleyard 1981).

2.3 Using urban design to mitigate the negative impacts of traffic

There are many solutions to mitigate the negative impacts of traffic. Whether they seek to integrate or segregate the other forms of transportation. The integration-oriented solutions are e.g. the *Woonerf* in the Netherlands, the *Home zones* in the UK and the *Gångfartsområden* in Sweden. These concepts invite the automobile users to use the street space, but only on the pedestrians' condition and at their prefered speed. While these concepts are great at mixing motorized and non-motorized traffic, the pedestrian and how they actually perceive safety should always be emphasised (Gehl 2010).

Then there are the segregating traffic solutions, as found in e.g. residential areas planned accordingly to *The Radburn plan* (Gehl 2010b). The basic idea behind the Radburn plan is that there should be a residential area in which people could coexist with the automobile in a peaceful manner. At its birth the plan consisted of five elements, whereas four more elements were later added along the way. The three most important elements were those of the *Superblock*, meaning that the development would not follow the contemporary grid street framework and conform its own 'protected' community of around 50-80 m², the *Hierarchy of specialised roads*, meaning that specific roads were assigned specific hierarchies to differentiate between the different activities of different roads and the *Separate footpath systems*, meaning that pedestrians were displaced from the streets and assigned their own movement networks (Fagence 1973). These principles are often also found in the functionalist planned areas of the 60's and 70's. Unfortunately, surveys have shown that this concept of separation does not work the way it is intended to in practice, because pedestrians prefer taking the shorter route to their destination rather than the more lengthy separate footpath system, even though it might be more dangerous (Gehl 2010b).

Lastly, of course there are concepts which seek to reduce or even remove the need for automobiles altogether – the idea of the *La Ville du 1/4 d'Heure* (the 15-minute city) is one of them. Moreno (2010, p.100) based his idea on the concept of Chrono-urbanism, which states that the quality of urban life is "inversely proportional" to the time spent on transportation and that automobiles have only served to exacerbate this trend. Moreno describes the idea in a TED lecture as "... cities should be designed or redesigned so that within the distance of a 15-minute walk or bike ride, people should be able to live the essence of what constitutes the urban experience: to access work, housing, food, health, education, culture and leisure" (TED Talk 2020).

By ensuring these essential urban experiences for all who live in cities, we knit together the social urban fabric, which will give the effect of both shortened travel time, cutting the need for automobiles in the city, inhabitants socializing with each other and rebuilding trust and character. Transport patterns play an immense role in the 15 minute city concept. In America, an average national total of 54 hours every year are wasted by U.S. drivers due to traffic, but by making sure essentials are within a 15 minute walk, the automobile will be an unnecessary asset in the city (Moreno, Allam et al. 2021).

2.4 Summary

Since the introduction of automobiles in cities, travel times have been shortened and a whole new geography has been made available for those with access to cars. The automobile was during its first few decades a huge success and people as well as governments were envisioning a grand future where everyone had one. This envision of the automobile future came at roughly the same time as functionalist planning, which saw a major overhaul of how cities were being planned and visualized.

Unfortunately though the automobile has been proven to be hazardous both to the health of people and to the well-being of our societies. Appleyard (1981) along with others, have studied the effects that 'auto-mobility' have had upon our cities and societies and concluded that the paradigm shift in transport has had a negative impact on many levels of human well-being. Comparing streets with less traffic to streets with high traffic, the differences have been clear and the conclusion has been tested many times with the same results; residents of highly trafficked streets are more unhappy with their street's characteristics, have less friends, are restrictive of children playing in the streets and tend to want to move. This in comparison to residents of lightly trafficked streets who reportedly have more friends, feel that there is community in their neighbourhood and are generally delighted with their street's characteristics. Other research has also shown that small children are not mentally equipped to handle trafficked environments and that there is a connection between street activity and the perception of street quality – less traffic, more people, greater street quality (Appleyard 1981; Sandels 1975; Gehl 2010b). The gap that this research would fill is the need to study the impact on livability caused by the automobile in a Swedish context – much like Hart and Parkhurst (2011) when they considered it was time to revisit Appleyards thesis to see if it was applicable to the U.K. in the 21st century.

Finally, there are many urban design solutions for dealing with the negative impacts of traffic, ranging from the ones that seek to blend automobiles with people in a soft manner, to the ones that acts by segregating humans from cars, to the ones that seek to completely reform the ways cities function to cut out auto-dependency. As vehicular traffic nowadays is being criticized for its role in climate change, there is a need to also focus upon the ranging social impacts of traffic.

3 CONCEPTUAL FRAMEWORK

In this section, arguments from Jacobs, Gehl and Appleyard help build the conceptual foundation of this thesis investigating some of the phenomena that make a street livable. More specifically, the discussion will focus on safety and security, community and privacy as well as urban quality and aesthetics.

3.1 What makes a street livable

The street is the ultimate space for connection, at least it has been since the dawn of the urban settlement up until very recently. It is the first place children learn about the world outside of their home, the place where neighbours socialize, where goods and favours are exchanged and where protests and democratic movements take place etc.. The street is also the home to the transport network of the city, whether it be footpaths, horse carriages or automobiles. In this shared space lies many dangers and this conflict of space is what can either make or break the livability of streets (Appleyard 1981).

The making of lifeless cities has come hand in hand with industrialization, segregation of various city functions and an over reliance on the automobile. This has made our cities more dull, unsafe for pedestrians and in the long term monotonous. For a street to be attractive Gehl (2010b) argues, there must be some kind of uniqueness, an experience that you can not find everywhere else in the city. People moving about is the best kind of unique experience, you will surely never experience an exact scene twice on two different streets, whereas for automobiles moving around, the transport pattern is way more monotonous and predictable. Fittingly Appleyard (1981) found that ‘traffic’ was the most bothersome problem in a survey he conducted over people’s annoyances over their street’s characteristics. Likewise, the second most problematic characteristics were ‘traffic noise’.

To try and define the term *Livable*, this paper uses a range of criteria that Appleyard (1981, p.50) found to be the most desirable characteristics in a street. On a scale from not important to very important, Appleyard found that the two traits most people considered to be the most important were *safe from crime* and *clean, unlittered*, 86% considered them to be very important, whereas

14% consider them to be less important. *Safe from traffic, peaceful and quiet* and *attractive appearance* were at roughly 70% considered very important and *privacy* and *sociable, friendly* amassed 60%. Finally, good *for children* and *pleasant view* were considered very important at roughly 50%.

3.1.1 Safety and security

The feeling of safety is one of the most crucial aspects for the creation and sustainability of livable streets. If there is not a sense of safety, people will not embrace the public space and therefore the streets will feel and look lifeless. Jacobs (1992, p.34) brings up this argument in her discussion on 'eyes on the street', "A well-used street is apt to be a safe street. A deserted street is apt to be unsafe". In her distinction on what makes a street safe she provides three points. Firstly, there is a need for a clear demarcation between what is private space and what is public space. Jacob argues this is because there are different kinds of settings that allow public and private life to interfuse. It does not work the same way in a city as it would do in e.g. a suburb. Secondly, as mentioned before, there must always be eyes on the street, and these 'eyes' must belong to someone who resides on the street, who cares for its appearance etc. The buildings on the street must therefore be oriented facing the street and not the other way around, so that the street is not allowed to be left in blindness. Thirdly, there must be enough sidewalk users on the street and they must appear fairly continuously. This is both to add more effective 'eyes' on the street, as well as to generate interest in the people in the buildings on the street to actually watch their street. To build upon the argument mentioned earlier by Gehl (2010, p.23), that people come where people are, the famous quote "man is man's greatest joy" applies perfectly here. If there are no people to watch, there will be less eyes on the street – because seeing people going about their day is interesting and a street empty of them simply is not (Jacobs 1992; Gehl 2010).

The reasoning here is that if there are not enough people on the streets, because of the unpleasantness caused by e.g. excessive traffic or by other factors, the streets are apt to become unsafe due to the uniterest from the residents of the street to 'watch' it when there is no human activity (Jacobs 1992).

Regarding traffic solutions for quality of urban life, people must always be able to move spatially without the fear of being run over by automobiles (Gehl 2010). Pedestrians have to be constantly aware of, heeding to and observing the relation of moving or stationary vehicles. The heavier the traffic becomes, the more we have to concentrate on it and let our experience of other urban

forms go (Taylor 2003). Extra caution must also be paid to the young, the elderly and the disabled, who are at a natural disadvantage. The modern traffic planning is still at fault today for not paying enough attention to the impact motorized traffic has on the quality of city life. What we gain from pedestrians being afraid to enter the road space, in terms of accidents, we lose in terms of pedestrian dignity and quality of urban life (Gehl 2010).

3.1.2 Community and privacy

A street without community is a street without a common identity, a sense of belonging and a social atmosphere. On the other hand, a street without sufficient levels of privacy is a place where people do not feel comfortable in the social atmosphere which may discourage the formation of a community. Privacy is a luxury and rarity, one that urban places needs to function properly. It is so much more than just 'window privacy', of course you can simply adjust the blinds to repel eyes from the streets from being able to see you in your private atmosphere of your home. The very concept of privacy is defined by the residents of a street. It concerns the control of personal intrusions, whether they are desired or not desired. The intrusion depends on the residents' expectations of the extent of their territory and to which length this territory can be intruded (Jacobs 1992; Appleyard 1981).

Jacobs (1992) writes that in cities where people are faced with the option of sharing much or nothing at all, most people choose nothing. Togetherness (another word for community) she writes, if not done correctly, is a dividing mechanic in cities. If there is no sidewalk life, because e.g. heavy traffic makes people retreat from their streets into their homes and children prohibited from playing in the streets, the inhabitants must achieve togetherness in some other way, in which private matters must be shared or settle for an overall lack of contact. It is an all or nothing kind of dilemma, where people most often lean towards sharing northing.

In the contemporary city, the automobile plays a role in the creation of personal connections. Taylor argues that the modern city has created a depersonalized society. When we walk the streets of a modern city, (or drive it in our car), we see mostly other vehicles, not the people inside them, "We relate to moving motor vehicles as if they are moving objects, not moving people, even though we know that these moving objects contain human beings" (2003, p.1620). The idea of a city is, amongst others, a place where strangers meet, but by ensuring that when one is out walking most other people on the street are isolated in a metal box, this random meeting is far less likely to take place. And since these metal boxes are moving around at a fast pace and there

are plenty of them, we are far more likely to perceive them as just objects moving around rather than strangers going places, which added up even further alienates us from the feeling of connection to the people living in the city (Taylor 2003).

And without the feeling of connectedness to the people around you, there is an ever greater challenge to form a community and maybe even trust. In regard to the matter of the 'eyes on the street' doctrine, there also needs to be a sense of support from the locals to protect the intricate life of the neighbourhood. This support Jacobs (1992) chooses to call *trust*. The development of trust in a neighbourhood is a slow process, it takes many small encounters between the residents of one street to slowly form it. When trust is somewhat in place though, it is a mechanic which serves to form a public identity of the residents of the street, a network of respect and mutual trust and a crucial resource in times of personal or neighbourhood distress. Basically, a city street without trust is a disaster, one that continuously breeds problems.

Opportunities for talking also play an immense role in the quality of outdoor urban spaces and for creating social connections. When background noise exceeds 60 dB, which is the case for most mixed traffic streets, it is almost impossible to carry on a conversation. On these kinds of streets, conversations are made up of short pre-planned sentences that have to be shouted at each other at a maximum of 15 cm distance. Only when the background noise is dropped to 15-50 dB are sounds such as footsteps, songs, soft voices distinctable. These kinds of sounds that are comprehensible on e.g. pedestrians only streets, (where the noise levels are below 45-50 dB), are an important aspect for the general ambience of the city and the physical and psychological well-being of the people living there (Gehl 2010b).

3.1.3 Urban quality and appearance

Vehicular traffic also plays an immense role in the erosion of urban quality and general appearance of streets. Gehl (2010) notes that slow traffic makes for lively streets. He compares the streets of Venice, Italy to the streets of the average modern suburban development. In Venice the traffic is mainly pedestrian and is therefore slow and reasonably quiet and the street is filled with loads of characteristics to lay your eye on. In the modern suburban development, traffic is mainly vehicular and is therefore faster than pedestrian traffic. Since the main object of the street moves by so much faster in suburban development, there are fewer reasons to linger and watch. In short – fast traffic kills lively cities. When summarizing the section about safety and traffic in his book *Cities for people*, Gehl (2010, p.95) states that "The Venice principle is hard to beat

when prioritizing city quality", by which he means that the lack of cars in Venice has created a fruitful breeding ground for urban life. He carefully adds that there of course are a lot of solutions that coordinate a coexistence between pedestrians and motorized traffic in a successful manner. But as successfully as these solutions mitigates the problems, they also provide new ones, in Gehl's (2010, p.95) own words, "A pedestrian in Venice can be forgiven for thinking that many of the recent traffic solutions represent various forms of compromises compared to the vision of a true city for people".

As mentioned before, traffic makes us alert, aware of the dangers of the streets and catches our attention. Taylor (2003) argues that even if traffic per say would not be dangerous, it would still catch our attention – as most fast moving things tend to do, e.g. dogs chasing each other in the park. When traffic is moving swiftly, the very activity of the flow and its potential danger overflows our sensory stimulation. The restless experience of the trafficked city also causes us to be mentally alert at all times, so as to not make a wrong step into the dangers of the street. For most people this induces stress and anxiety, as to be expected of lengthy periods of hyperactive sensory stimulation and cognitive activity. In order to be able to relax, city inhabitants over time become subdued when walking the streets of their home.

Taylor (2003) argues that this hyperactive experience of the modern city could be an explanation to why people often become bored when waiting for the bus. Since we are so used to observing moving objects (traffic) all day, the opportunity to stand still and be aesthetically interested in our surroundings (full of cars) is less appealing. In short, "our aesthetic experience of the city is very significantly shaped and even dominated by our experience of traffic" (Taylor 2003, p. 1623). Our aesthetic experience of the city is no longer defined by the buildings and places we are passing by, because we are not primarily attending these views. And as we have to mind the dangerous traffic at all times, other thoughts can never fully occupy our minds, leaving us to be distracted when thinking and never at peace of mind (Taylor 2003).

The cleanliness of the street is another great factor for urban quality and the appearance of the street. In the 1981 study by Appleyard, cleanliness was found to be the most desirable quality of street by the respondents. Over 50% saw cleanliness as a problem and longed to live on cleaner streets, this concern was strongest in the lower income areas that were interviewed and on the medium trafficked streets. Appleyard (1981, pp. 63-64) cites McLaughlin when trying to explain why dirt is considered such a problem: "Dirt is the evidence of imperfect life, a constant reminder

of change and decay. It is the dark side of all human activities – human because it is only in our judgment that things are dirty…". It is not our own litter that threatens us, it is the litter of other people and living on a littered street is an indirect message to the visitor of that street that we can not take care of ourselves, of our homes and of our social status. When the street becomes no-man's-land, because of traffic burden or for other reasons, many people will not consider the street as their responsibility. Appleyard (1981) found that the annoyance with littered streets were connected with higher traffic loads and when the residents were not taking care of the litter themselves, they had to rely on public maintenance, which also was seen as negatively affected by higher traffic loads.

4 BACKGROUND

4.1 The motorisation of Sweden and the case of Stockholm

During the first half of the 20'th century, the car was expensive, not much faster than going by horse and was hardly considered a substitute for the more favoured railway as a means of long distance transportation, sometimes only serving as a complement to the aforementioned mode of transport. For short distances and in urban areas though, the car was a joy, even considered as a non-polluting source of transport. This was of course in comparison to the horse carriages that fouled the cities with its horse droppings. It was not until the second world war that *bilismen* (the car centric society) of the western countries got its quantum leap. The passenger car would now be used for every daily trip and the impact it had on the cityscape, shopping habits and leisure time activities cannot be understated, which in time unfortunately made not having a car a handicap (Elsässer 2006).

It was not until the later part of the 20'th century that passenger cars in Europe, and especially in Sweden, came to be the main transportation mode. The passenger car was considered democratic; whomever could own a car, whomever could learn how to drive a car and you could now go anywhere. In the decade of 1950-60, car ownership in Sweden grew from around 250,000 to 1.2 million, leading Sweden to become the most car-dense country per capita in Europe. (Peterson 1999; Lundin 2008). And from there, the importance of passenger cars as the main means of transport only grew. In 1950 passenger cars were responsible for 40% and busses 17% of the total

share of all trips made, compared to in 2000 when that percentage was 80%, respectively 8%, *see figure 1* (not including trips made by foot or bicycle) (Elsässer 2006).

Figure 1: The evolution of motorism in Sweden 1950-2000. *Source:* Elsässer 2006

As a result of this boom of automobiles, Stockholm has been at the forefront of car centric planning in Sweden. Many and expensive urban renewal schemes have been carried out to alter the street network and layout of the inner city to accommodate these inhabitants of the 'modern city' (Tonell & Nyström 2011). One of the most renowned urban renewal projects is of course the 'modern city' project *Norrmalmsregleringen* that completely changed the urban layout of Norrmalm in the period of 1951-81. 55% of the buildings in the city district were demolished and replaced with new buildings, parking garages, wider roads, arterial streets and the new major junction for traffic in Stockholm, *Sergels Torg Rondell* (Sidenbladh 1985).

Image 2 (left): Hamngatan 22-28 seen from the west towards Malmskillnadsgatan with Sergels Torg in the background, *Source:* Petersens 1958-60

Image 3 (right): View towards Sergels Torg from Malmskillnadsgatan 32, *Source:* Petersens 1967

Along with this project, Stockholm was in 1974 divided into nine sectors, which were meant to discourage traffic from going through residential neigbourhoods. One of these sectors was *Östermalm*, where traffic was divided into two zones, where neither side could cross the zonal boundary except via the designated peripheral street. While this scheme was successful at reducing accidents, noise- and air pollution, the redirection of traffic flow however made e.g. the popular 19'th century street *Strandvägen* receive some 65 000 more vehicles per day. This along with the changing of the street pattern layout received bad press and opposition from both the conservative party as well as from the people living in Östermalm (Appleyard 1981).

5 METHODOLOGY & MATERIAL

5.1 Research Design

In this thesis different methods have been applied to understand the impact of vehicular traffic on the perceived livability of streets in Stockholm. The selected research design provides an approach to studying the livability of streets without the need to conduct a face-to-face survey, as done in similar studies on the livability of streets, (which should be avoided due to the current pandemic). Initially a literature review was conducted to study how other authors, in the same field, had carried out their research and what their results were. Once this was done, the subsequent steps were executed by weighing in each other, e.g. the chosen conceptual framework provided the base for the design of the online survey and it was through the rendering of the graphs that the findings could be discussed. In particular the research method consists of a comparison of the survey results with the traffic volume data, to split into categories of light, medium, heavy and very heavy streets. The method in this thesis differs from methods used in previous research in the same area, as this thesis has not chosen a set of streets in advance to study. Instead the resident's addresses, that were entered in the online survey, laid the base for which streets that were to be studied. When the streets had been identified, the responses were coded and paired with their corresponding traffic volume with the help of the GIS software.

One of the most interesting aspects of the livability studies by Appleyard, Hart and Parkhurst etc. is in the way they measure livability through quantitative data (Appleyard 1981; Hart & Parkhurst 2011). Since this paper is heavily inspired by aforementioned studies, it will also seek to answer the research question through the means of quantitative methods. Conducting quantitative research is advantageous for large-scale studies, in which large quantities can be surveyed and measured. This enables the research to become more wide and generalizable, rather than to provide an in-depth understanding of a singular matter (Denscombe 2018).

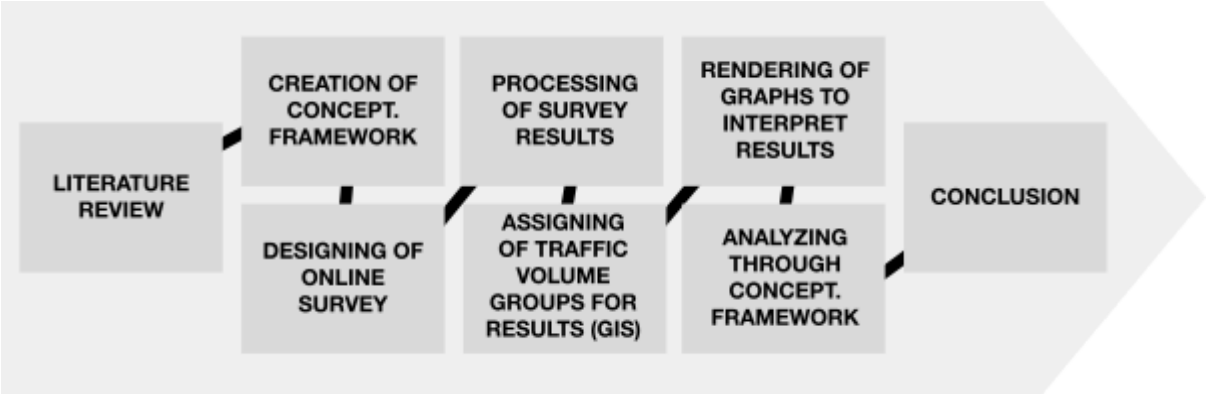


Figure 2: Research design, *Source:* Author

5.1.1 Case study method

A case study on the livability of streets in Stockholm has been conducted. The motivation behind choosing this case for this paper is the need to study the impact on livability caused by the automobile in a swedish context – much like Hart and Parkhurst (2011) when they considered it was time to revisit Appleyards thesis to see if it was applicable to the U.K. in the 21st century. The strength of using the case-study method is that it allows for depth through the understanding of a specific location, context or matter (Denscombe 2018). As Stockholm is the largest city in Sweden, it is the ideal case for studying the effects of vehicular traffic since there are many streets with different traffic volumes, which provides for a wide group of residents living on streets with ranging traffic volumes to survey.

Regarding the case-study method, Denscombe (2018) recognizes that there are problems concerning the generalization of case studies, generally case studies are not considered a research method that is apt to be particularly generalizable. As Stockholm has different cultural and geographical conditions compared to e.g. San Diego, U.S., the risk exists that the conclusion is influenced by these conditions and thus the method may not provide the same results if tested in other cities. The knowledge gained by this paper can not, without consideration, be applied to every city that has automobiles. In here lies both the strengths and weaknesses of the case-study method; it enables the specific understanding of one location, whilst decreasing the extent to which the conclusion can be generalized (Denscombe 2018). On the other hand, in some cases studies, the use of a case is not always used to examine a certain phenomenon in a specific place. Sometimes it is used to examine a phenomenon in the ‘setting’ of that case – meaning that the place itself is less important, merely used as a context for the matter of research (Farthing 2016).

As could be argued that in this paper, the case of Stockholm merely acts as a setting for the general research on traffic's impact on street livability.

5.1.2 Research method

This thesis uses a deductive approach, the essence being that it draws inspiration from previous research and therefore knows what to research and data to gather. Using a deductive approach is also common when conducting quantitative research, as in this paper. However, the research question is not formulated as a hypothesis (although it could just as easily have been), and therefore it could be argued that the research question draws inspiration from the openness of question as done in an inductive approach. But since the objective of this paper is not to develop theory, nor has no preconceptions about the topic of research, it could be considered using more of a deductive approach rather than inductive (Farthing 2016)

5.2 Survey

The use of surveys is beneficial in many ways. Firstly, it provides the researcher with a quick overview of the situation, which is favourable in studies which have a short amount of time such as this bachelor's thesis. Secondly, it in some cases does not require face-to-face interaction, which has been essential in this study due to the fact that it has been written on distance (not to mention the ongoing Covid-19 pandemic) (Denscombe 2018). The survey was carried out online instead of using physical copies, this was to both save time and as a means of reaching as many people as possible. Instead of choosing a couple of streets (based on traffic volumes) to survey and later analyze (as Appleyard did), this study first surveys people's opinions of their streets and where they live, to later in GIS connect these addresses to their corresponding roads and traffic volumes. By using this research method, it allows for a bigger pool of residents to survey. One noteworthy inclusion in the online survey is the prompt to have the setting of the street as it was before the pandemic in mind when answering the questions. This is because the traffic volume data is from 2014 and therefore the survey data needs to stem from a pre-covid context.

The online survey was conducted by using 'Google Forms', an online tool provided by Google that lets the user distribute a link on different kinds of forums. The forums used for this study were specific Facebook groups set up for residents of different sub-areas of Stockholm. These Facebook groups were the following:

- *'Vasastan'*
- *'Kungsholmen'*
- *'Vi som bor i Högdalen'*
- *'Brommagruppen på Facebook'*
- *'Händer i Hässelby-Vällingby'*
- *'Långbro - Herrängen - Långsjö - Gamla Ängsjö'*
- *'Hammarby Sjöstad'*
- *'Stockholm'*

In these Facebook groups there are combined roughly 69, 000 members, which makes for an immense selection frame for this study. After nering 500 survey answers (during a period of little more than 24 hours), it was decided that it should be closed for more answers. This, so that the time consuming effort of connecting each survey entry to its corresponding traffic volume group would only take a reasonable amount of time. Although 500 out of nearly 70 000 is a low response rate (0,7%), it was considered sufficient to be able to analyze. Allowing the survey to be open for a longer period of time would undoubtedly provide more survey answers, but they would not have a significant impact on the results, as a median answer was already establishing itself, (the survey data was examined after receiving 400 entries), with new survey data entries not altering that median.

The questions in the survey are based on a set of criteria that Appleyard (1981) found to be the most desirable characteristics in a street, (to see the full list of characteristics, *see Appendix 1*, to see the full survey, *see Appendix 2*). Some criterias that were considered very important at a high percentage, such as *near public transportation*, access to… *back yard* or *minimal air pollution* along with others were excluded as categories in the survey, as they were considered either to not be affected by vehicular traffic or were considered hard for the residents to monitor or have an opinion on. In an effort to not colour or tweak the answers, questions about traffic were not raised in the survey. This, because the intention is that the respondent should evaluate their street not with the amount of traffic in mind, (the connection between livability and traffic should be made afterwards when the survey data is paired with the traffic data). The questions themselves were made up of a scale which ranges from 1-5, with the 1 being *'very little'* and the 5 being *'very much'*. The questions were all formed so that the answer 1 always would be negative and 5 positive. For instance, the question about cleanliness is formulated *'To what extent do you consider your street to be litter free?'* and not e.g. *To what extent do you consider your street to be litter-strewn?*, so that if the respondent put down a 5 it would mean he/she thinks highly of

their street in terms of cleanliness. This is a crucial step for the discussions part of the thesis where the answers from each survey question are added up to make an average score, where a higher total score means higher perceived livability.

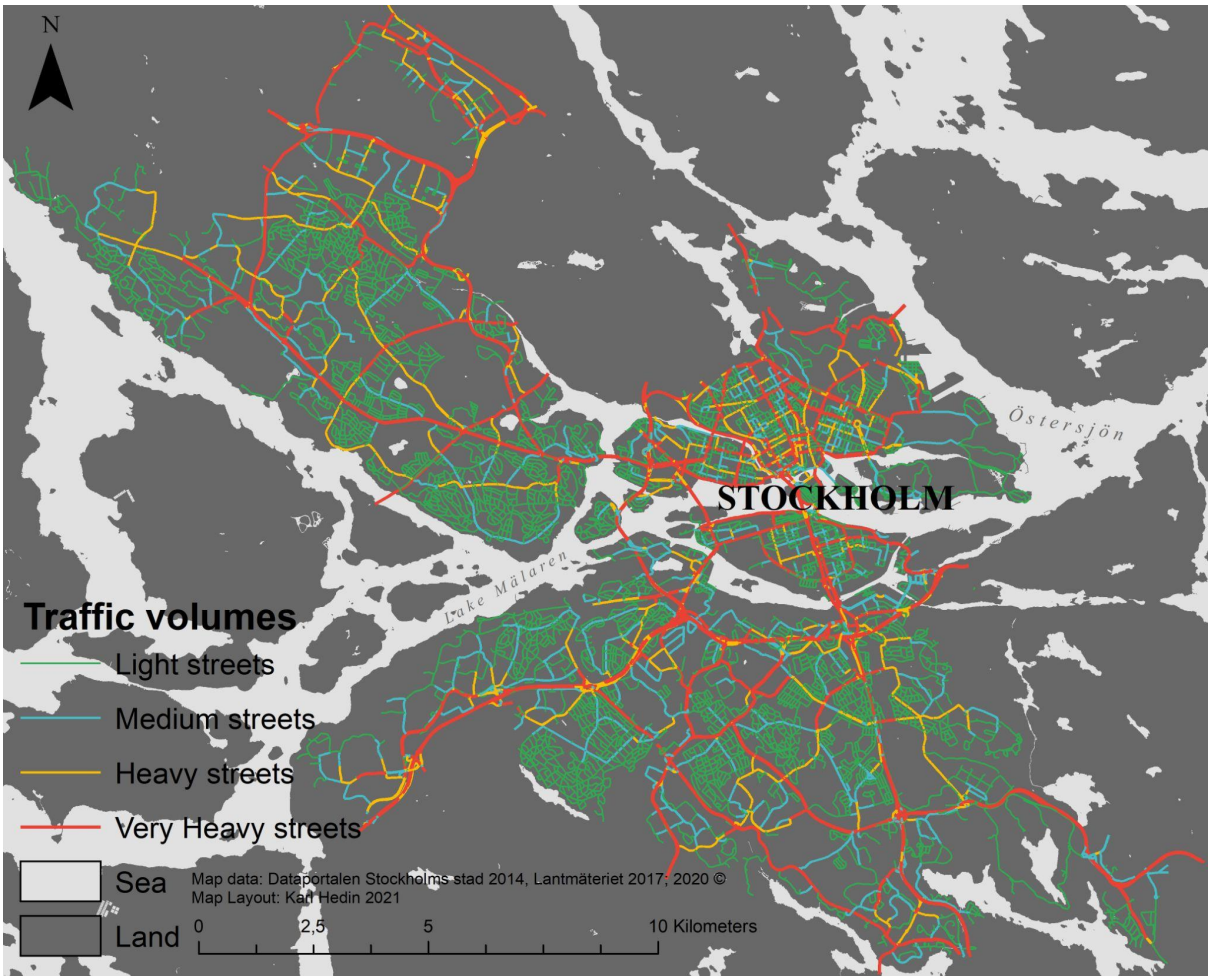
Denscombe notes that asking for the respondent's street address is a sensitive matter, one where many respondents might reason that their privacy and anonymity could be jeopardized (Denscombe 2018). Because of this, the question on where the respondent resides was placed at the top of the survey, so that if the respondent felt that they did not want to answer that question, they could just leave the survey there without answering any questions and thus not submitting incomplete answers. As a means of tending to the privacy and anonymity of the respondents, the question was formulated so that they could answer with a span of numbers from their neighbourhood. This, so that they could stay relatively anonymous and still provide data that can be linked to the traffic volume data. By being firmly clear with what the survey data will be used for, the survey being voluntary and by providing the contact information of the author as well as the possibility to review the final results, this paper tries to be in line with the code of conduct that Dencombe (2018) describes regarding the ethics of research.

When not considering aforementioned benefits of conducting online surveys, Denscombe (2018) argues that there are several disadvantages with this method. The most considerable disadvantage or concern that Denscombe (2018, p.54) brings up is the tendency to let empirical data "speak for itself". By this he means that there is a danger to focus too much on the data provided by the e.g. survey without considering the implications it could have on the research question or the theories chosen to analyze the data. Another disadvantage that could apply to this paper's survey is concerning the depth or richness of detail. Since the survey is *quantitative* and not *qualitative* it could be argued that the richness of detail and depth has been compromised in the place of the wideness provided by the quantitative approach (Denscombe 2018).

5.3 Geographical Information System

A Geographical Information System, (GIS, for short), is a computer software used to analyse spatial data. Every GIS software consists of the following mechanics: collection (import, export of data), storage (store the data you have collected), processing (change file format etc.), analysis (e.g. network analysis) and visualization (making the map readable by the recipients) (Harrie 2020). In this thesis, data collected from Dataportalen Stockholms stad (2014) has been used to link the correct traffic volume to the survey data, (containing street addresses) in ESRI's GIS

software ArcMap. In Map 1, the streets that contained traffic volumes are depicted, for some residential streets and newly built streets there were no collected traffic volume and thus they are not to be seen in the map below, nor were they used in this study (if a survey entry which contained a street address which proved to lack traffic volume data, it was deducted from the survey answer table).



Map 1:Streets in Stockholm with different traffic volumes, *Map layout:* Author

In Map 1, all the streets which have traffic volume data (from Dataportalen Stockholm stad), classified according to this study's categorization of traffic volumes can be viewed. As can be seen, the street network of the city district of *Hammarby Sjöstad* is incomplete, because that area was not fully developed back in 2014 when the data was collected. Thus, some survey entries which had entered an address on these streets, had to be deducted from the final table of survey answers that was used in the analysis, *see Appendix 3*.

The material used in the GIS analysis is based on the sources; Dataportalen Stockholms stad & Lantmäteriet. For original resolution, format, accuracy, coordinate system and geographical extent, *see table 1*, for modification of original data and the justification of that modification, *see table 2*.

Data set	Resolution	Format	Accuracy	Coordinate system	Geographical extent	Attribute
Dataportalen, Stockholm stad (2014) Stockholm's street traffic volumes	-	Vector-line format	Satisfactory	SWEREF99_TM	Stockholm municipality	
Lantmäteriet (2017) - Orthophoto -	0,25x0,25m	Raster (.tif)	-	SWEREF99_TM	Stockholm and surrounding municipalities	Orthophotos over sub-areas of Stockholm

Table 1: Data set attributes

Data	Modification of original data	Justification of modification of data
Stockholm's street traffic volumes (Dataportalen, Stockholm stad 2014)	-	-
Orthophoto (Lantmäteriet 2017)	- Merging of raster layers (Harrie 2020)	- Merged raster layers into a coherent mosaic which covered the enirity of Stockholm municipality

Table 2: Modification of original data

To create a mosaic of aerial photos of Stockholm, the Orthophotos from Lantmäteriet were merged. The merging of the orthophotos went well because they were between data with the same attributes and properties (Harrie 2020).

The actual analysis of the traffic volume data is a manual quantitative classification of the traffic volumes (Harrie 2020). Ballas (et al. 2017) suggests that the use of GIS is preferend and could prove lucrative when examining transportation patterns in cities. Even though a spatial analysis was never conducted through GIS in this method, the collection, processing and visualization of the downloaded data proved very useful (Harrie 2020; Ballas et al. 2017). As for the classification of the traffic volume data, the criterias for each traffic group was set up in consideration to Appleyard's (1981) formation of traffic volume groups, *see table 3*. A deliberate reduction in

traffic per traffic volume group was done for this paper's traffic volume groups – with the vast population differences between Appleyard's case city, San Francisco and this paper's case, Stockholm justifying the reduction of vehicles per traffic volume groups. The highest trafficked 'street', which actually is part of the E20 (a trans-european highway), is *Essingeleden* which daily carries up to 159 600 motorized vehicles. On the other hand, there are a near majority of streets which have the lowest number of vehicles daily, which is 50 – one of them is *Storkyrkobrinken* in Gamla Stan.

	Light streets	**Medium streets**	**Heavy streets**	**Very Heavy streets**
Appleyard's categorization of traffic volumes	0-2000	2000-10 000	10 000-20 000	20 000-
This paper's categorization of traffic volumes	0-2000	2000-5000	5000-10 000	10 000-

Table 3: Traffic volume group classification. *Source:* Appleyard 1981

The chosen classification of streets provided a more balanced number of streets for each category, which worked well for the chosen case – Stockholm, *see Map 1*. If Appleyards's classification would have been used, the very heavy streets category would be limited almost exclusively to inter city highways and other major roads which not many people live adjacent to, this in turn would provide a very small research pool to survey. As Maantay and Ziegler (2006) suggests, the choice of classification highly impacts the way the viewer interprets a map and in this case the statistics/graphs. Classifying the data according to e.g. the *Natural breaks* principle could provide more 'just' traffic volume groups, but would as previously mentioned yield such narrow research pools for e.g. the very highly trafficked streets that a survey would prove almost impossible. It is also vital for this thesis to classify the data similarly to the way Appleyard, so that a comparison of results can be discussed.

Since a street in the traffic volume data was divided up into subsections that did not contain streets numbers but different traffic volumes, a joining of the survey data and traffic volume data was unfortunately impossible, as two tables that do not have a common attribute can not be merged (Harrie 2020). This proved to be a time consuming problem that was dealt with manually by going through every entry and cross-checking the address with Eniro maps (Kartor.eniro.se 2014) and then locating that street in ArcMap. An example of how the street address search was

done can be found in *Figure 3* and *Map 2*. For the cross-check with Eniro maps if the correct sub section of street had been chosen, the Orthophoto was essential to be able to compare the GIS map with the Eniro map.

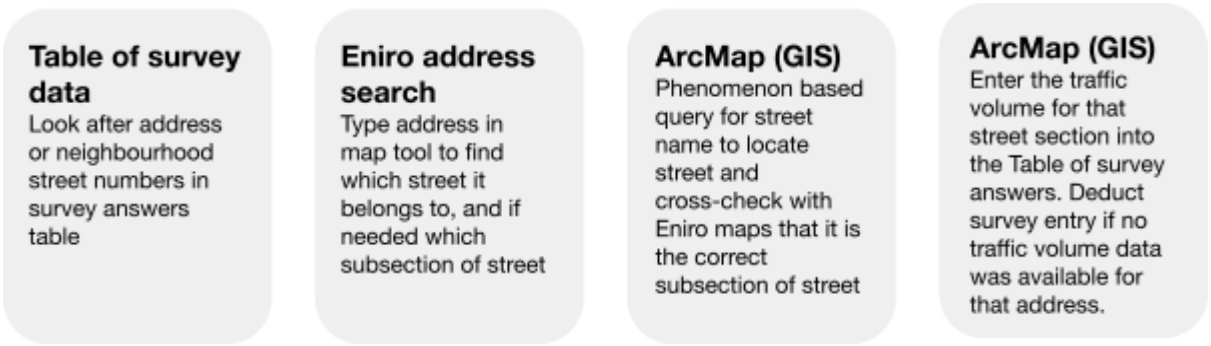
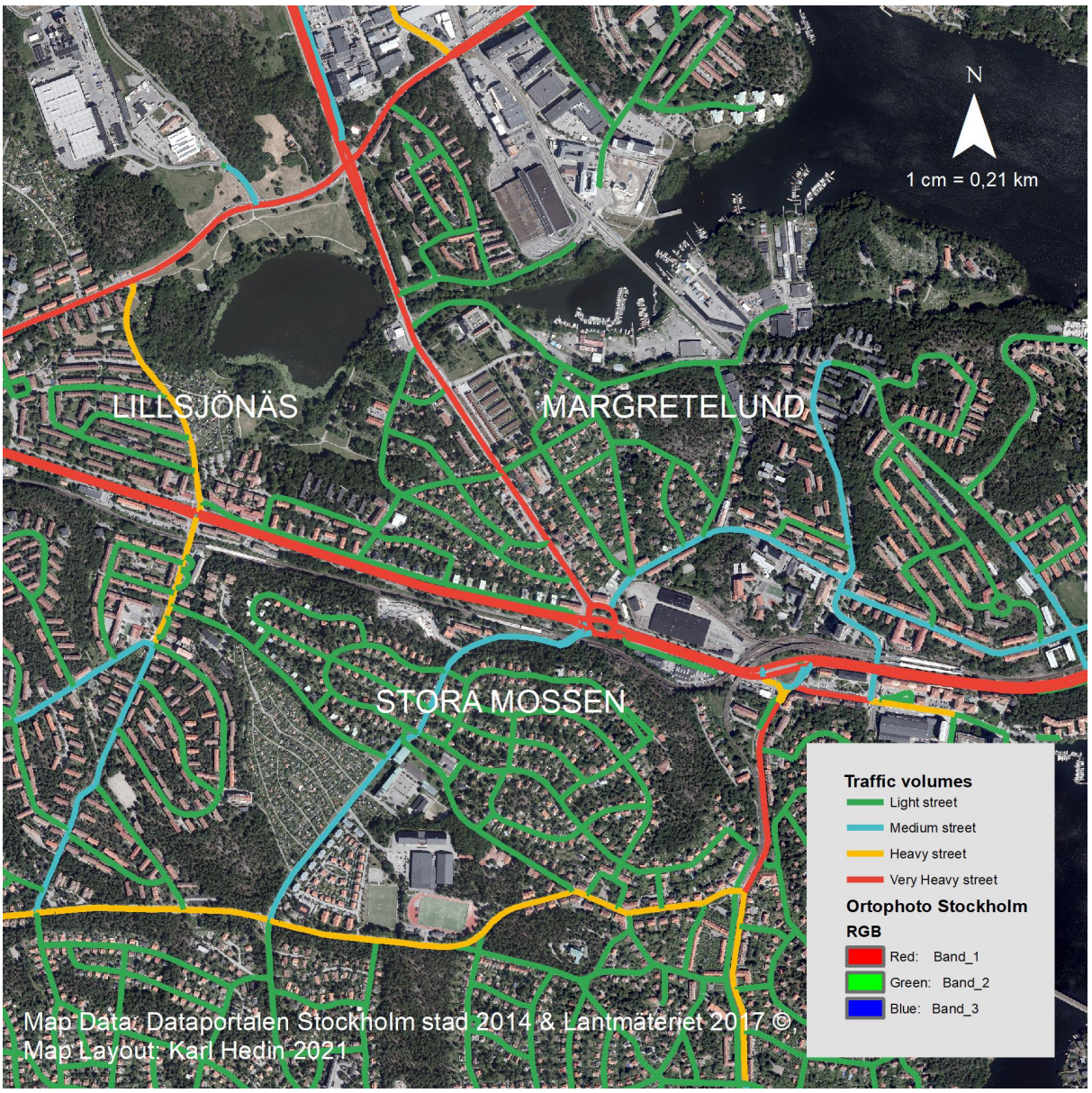


Figure 3: Street locating process, *Source:* Author



Map 2: Example map for survey data/GIS data analysis (Alvik vicinity), *Map layout:* Author

Given that the traffic volume data from Stockholm stad is a source of secondary nature, there may be grounds for misinterpretation or incorrect use of the data. The data has not been collected for the purpose of answering this paper's research question, which may have led to a misinterpretation or distortion of the data (Denscombe 2018). Meanwhile, there are upsides with the data being collected by Stockholm stad. There are always data liability issues when conducting a GIS analysis, and really always when using secondary data for any analysis in any way. If the data is secondary we might not know who has verified it, who is responsible for ramifications of using the incorrect data, etc.. There is no clear answer to any of these questions, but by being aware of them, we might avoid entrapping ourselves in them (Maantay & Ziegler

2006). In this paper the used data is collected from Stockholm stad and Lantmäteriet, two governmental agencies. Even though the data liability is not entirely verified, it is at least collected from two trusted sources that do not have an economical interest which might have affected the collecting of the data.

5.4 Reflections

The research design and methods were chosen according to the time set out to complete this bachelor's thesis and to be able to answer the research question. Unfortunately, errors along the way have complicated matters and made it more time consuming than what was initially intended. In spite of the satisfactory findings provided by the research method, some weaknesses can be identified, e.g. a triangulation of methods could have been used to strengthen the validity of the findings and/or a 'mixed methods' approach could have been made, meaning that a mix of both quantitative and qualitative approaches could have been used to improve the analysis of the study. The mixed method approach would ensure that the limitations of one type of data is balanced out by the strengths of the other (Denscombe 2018). Another limiting part of the chosen methods is the range of limitations that had to be made to fit the time frame and size of the study. Since this thesis is mostly interested in the relations between traffic and street livability, this study has not taken commercial or public amenities, urban form or street layout and their effect on street livability into consideration. Neither has it taken into consideration the socio-cultural status of the street, different kinds of housing alternatives, family constellations, age nor the impacts of the Covid-19 pandemic on social life. If there were more time for writing this thesis, these criterias would greatly improve the outcome of this study and make the findings more credible.

The method and analysis of this thesis could also potentially have caused trouble regarding ecological fallacy (Maantay & Ziegler 2016). Although the graphs made from the results of the methods show how the average resident of a street within a specific traffic group perceives the livability of their street, the results do not represent every individual being. Some people may like living on heavily trafficked streets and do not consider traffic to affect the livability of streets, even though it is clear that most people that took the survey thought otherwise.

As for when it comes to objectivity, the role of the researcher, his influence and interpretation of data are key for the results of the thesis. In choosing, what concepts to include, what methods to use, how to interpret the results, the researcher plays an immense role and therefore 'openness'

needs to be valued and sustained throughout the whole research process (Denscombe 2018). What the researcher's standpoint and values on the matter of research is, is therefore of the utmost importance, one that can affect the objectivity of the whole study. Farthing (2016, p.17) notes that "All theory is to greater or lesser degrees normative, i.e., suffused with values and embedded within a social and historical context", meaning that all research is subjective to some extent and that the values of the researcher both helps guide the research process but also provides the researcher with certain preconceptions. As previously mentioned, the motivation behind the chosen matter of research and the choice of research question stems from an interest in Appleyard's (1981) studies in livability and Jacobs (1992) theories on the 'Death and Life' of cities. Both authors and their corresponding works are critical of the impact planning for automobiles has had on social and urban life. The values provided by these have shaped the research design of this thesis and provided aspiration to study the impact motorized traffic has on the livability of streets.

6 RESULTS

414 people answered the survey in swedish as well as 77 people in english, amounting to a total of 491 answers. From all these answers a range of entries had to be deducted, such as answers that left out their address, did not fully complete the survey and/or had put in addresses for which there was no traffic volume data. After this deduction was completed a total of 397 entries remained, whereas 25 were entries of the very heavy streets category, 21 from the heavy streets, 88 from the medium streets and 199 from the light streets category. Figure 2 summarizes the results.

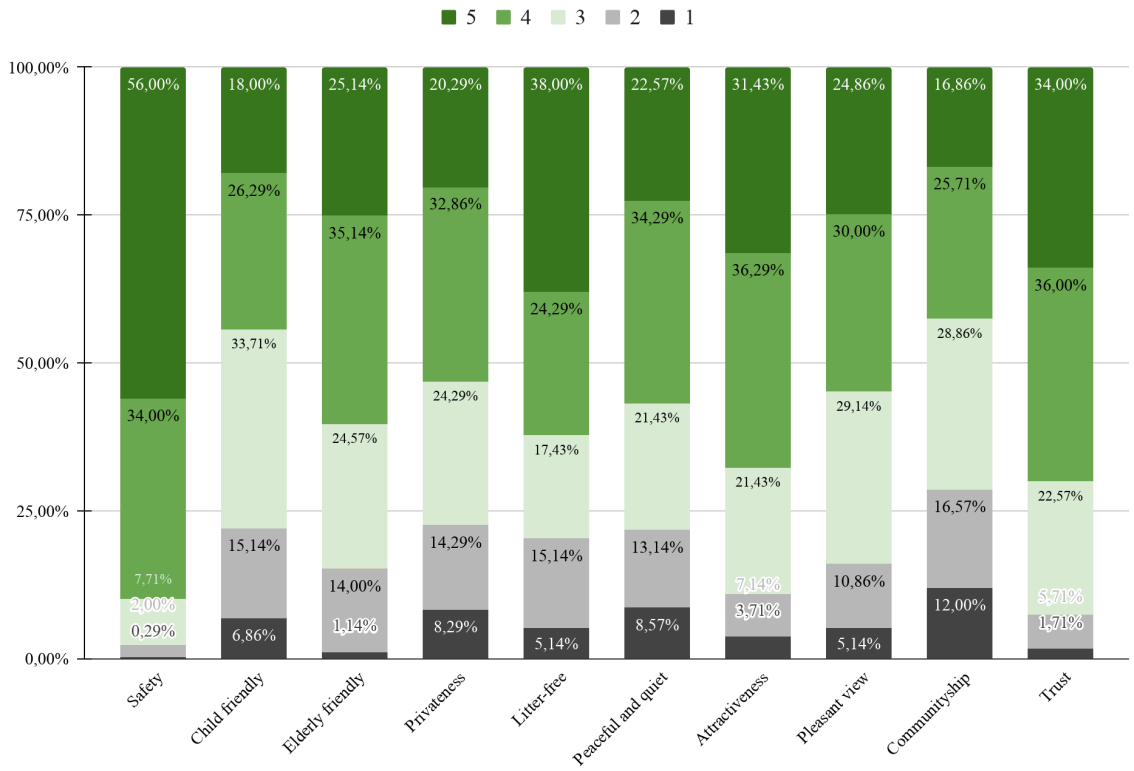


Figure 4: Survey answer distribution per question

The graph shows a range of different results, where almost not any two criteria answers are the same. What can be taken away from the survey instantly is that there is a large majority of positive answers, in all but two questions the outcome was either a four or a five, with one question consisting of a majority of only the highest option, (five). (The survey ranges from 1 to 5, with 1 meaning *very little* and 5 meaning *very much*, as in *'To what extent do you find your street attractive?'*).

The perceived feeling of safety on the respondent's streets got the most positive answers, where 56% answered that they feel *very much* safe along with 34% who consider themselves to be safe to an extent of four out of five, *see Appendix 2* for survey format. As a result of so many positive answers, the question about safety also got the least number of negative answers on perceived safety, with well under 1% entering a 1 as well as only 2% entering a 2.

After the survey answers on '*Safety'*, that proved to be an outlier in its rate of positive to negative share, the survey answers proved that respondents were second most satisfied with the cleanliness of their streets – *'Litter-free'*. 38% answered five, meaning that they consider to an extent of *'very much'* that their streets is clean.

If we add together the positive survey answers, four and five, from each criterion, we find that *'Trust'* is the aspect that most people consider their street to have. This is of course a very compelling finding – that most people trust each other on the streets of Stockholm. Only about 8% answered that they felt that they held *very little* (1) or (2) trust to the people on their streets, which also happens to be the lowest percentage of negative answers a survey question received.

The survey question that got the most negative answers, after the outlier result from the safety question, was the one concerning community, "*To what extent do you feel there is a sense of community between the people who live on the same street as you?*". 12% answered 1, meaning that they felt to a *very little* extent that there is a sense of community in their neighbourhood, along with roughly 17% that answered 2.

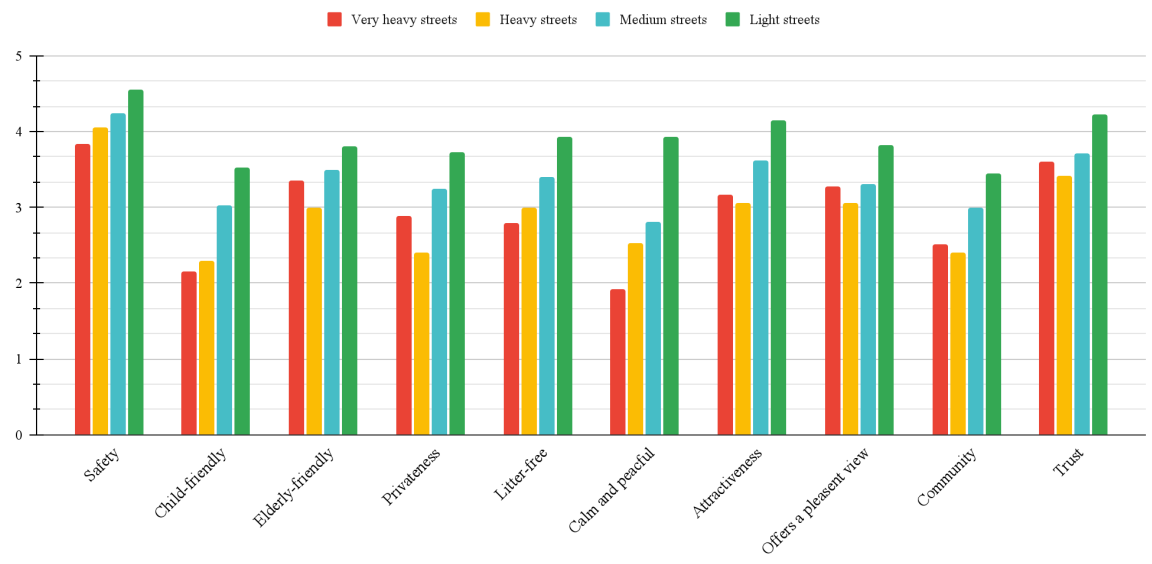


Figure 5: Survey answer distribution per question for each traffic volume group

When viewing the average survey answers per traffic group per question, we can see a decent unison pattern. For every question, the light streets had the highest average score, the same applies for the medium street. When viewing the average respondents answer for the heavier trafficked streets the pattern disappears. In only half of categories did the very heavy streets receive the lowest average score.

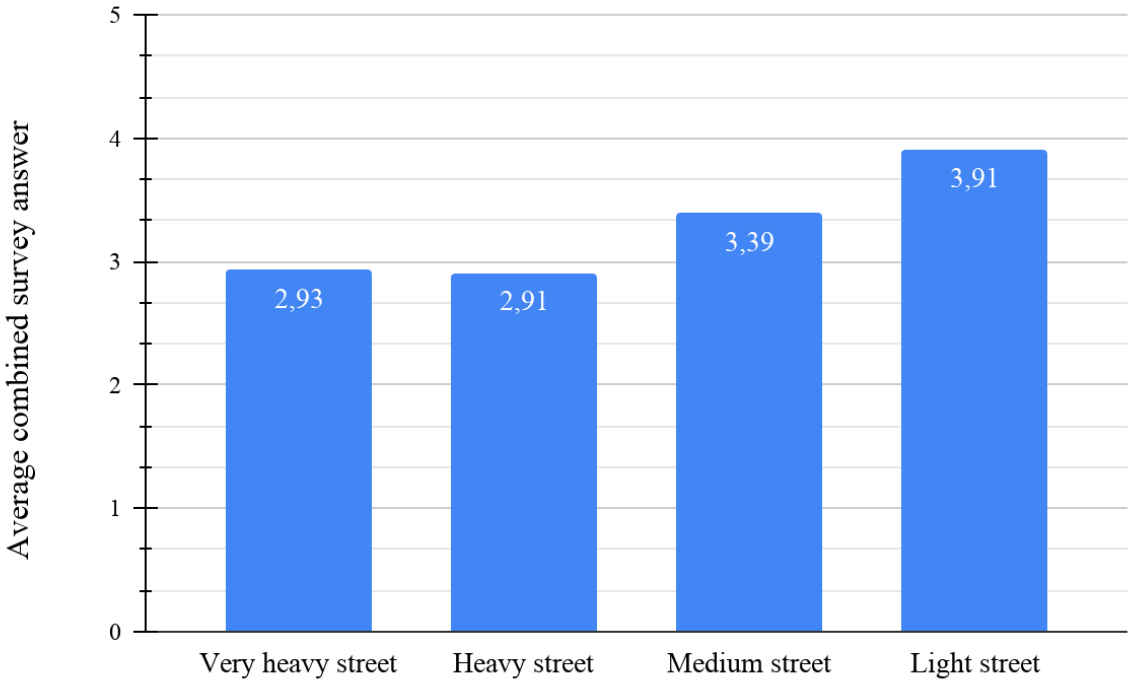


Figure 6: Average survey answer combined for each traffic volume group

When adding up the average survey score for each traffic volume group, we can see that in general people living on lighter trafficked streets are more content with the livability of their streets than people living on heavier trafficked streets. One exception is that the very heavy trafficked streets group, which got an average score slightly higher than that of the heavy trafficked streets group.

7 DISCUSSION

By splitting the graph with all categories into three smaller graphs for each subcategory, such as *Safety and security*, we can more clearly see the pattern of the theme and more easily analyze the findings from the theoretical framework.

7.1 Safety and security

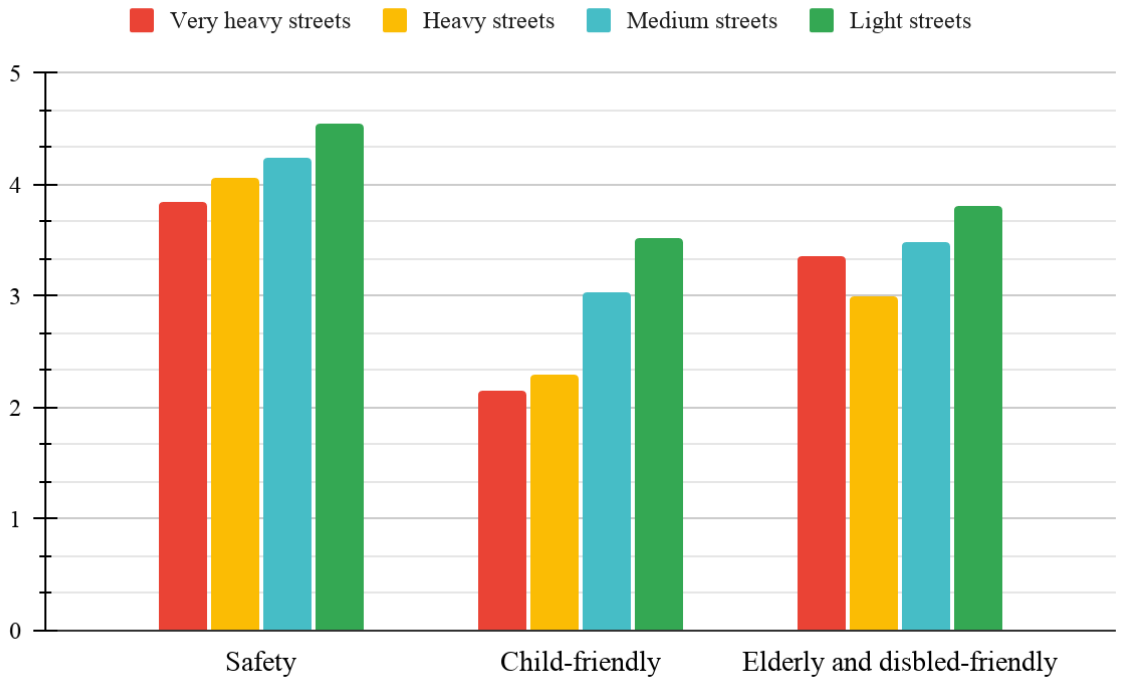


Figure 7: Survey answer distribution on safety and security per traffic volume group

For the '*Safety'* category, there is a very even spread of answers making out a slope where the conclusion can be drawn that, even though the margins are very small, the residents of the light streets feel more safe and that the feeling of safety decreases as the traffic increases. This lack of perceived feeling of safety could be explained by the 'eyes in the street' doctrine laid out by Jacobs (1992). When incorporating her theory that the more people there are 'watching' the streets, the better, with Gehl's (2010b) argumentation that no one likes to watch a street derived of life and that watching people is more interesting than watching passing cars; it makes sense that the feeling of safety drops as traffic volumes increases. Correspondingly, if there is excessive traffic right outside your window, you would probably feel that the unpleasantness caused by the cars, loud noise levels, exhausts, etc., would drive you to go inside your building to get away. If the traffic made you shelter inside from the noise levels etc. probably others living on the same street have done the same, leaving the streets empty of people. And since people come where people are, the lack of human activity on the streets and sidewalks may, or even will, deter any activity to happen there in the future. Which will affect the amount of 'eyes' on the street in a negative manner, since most people do not enjoy watching a street rid of life (Gehl 2010). Besides, the amount of people on the sidewalks are not only paramount for drawing other people out on the streets, (and in length attracting eyes in the buildings to the street), it is also important

to add to the effective eyes on the street level, as to act as a backup if the eyes in the buildings lost interest in watching the streets (Jacobs 1992). And with all this in mind, the assumption could be made that the streets with less traffic, who also by-the-way to a greater extent felt there was a sense of community and trust on their streets; *see figure 8*, considered themselves to be more safe because their streets were hosts to less traffic.

Then there is the feeling of safety from traffic, which also falls under the same question about safety, (in hindsight it would have been useful to separate the question in the survey on general safety into two questions, one regarding traffic safety and concerning crime safety). We can add all safety and security categories, with the two others arguably concerning the matter of traffic safety more, in this analysis to form a somewhat of a traffic safety index, *see figure 6*.

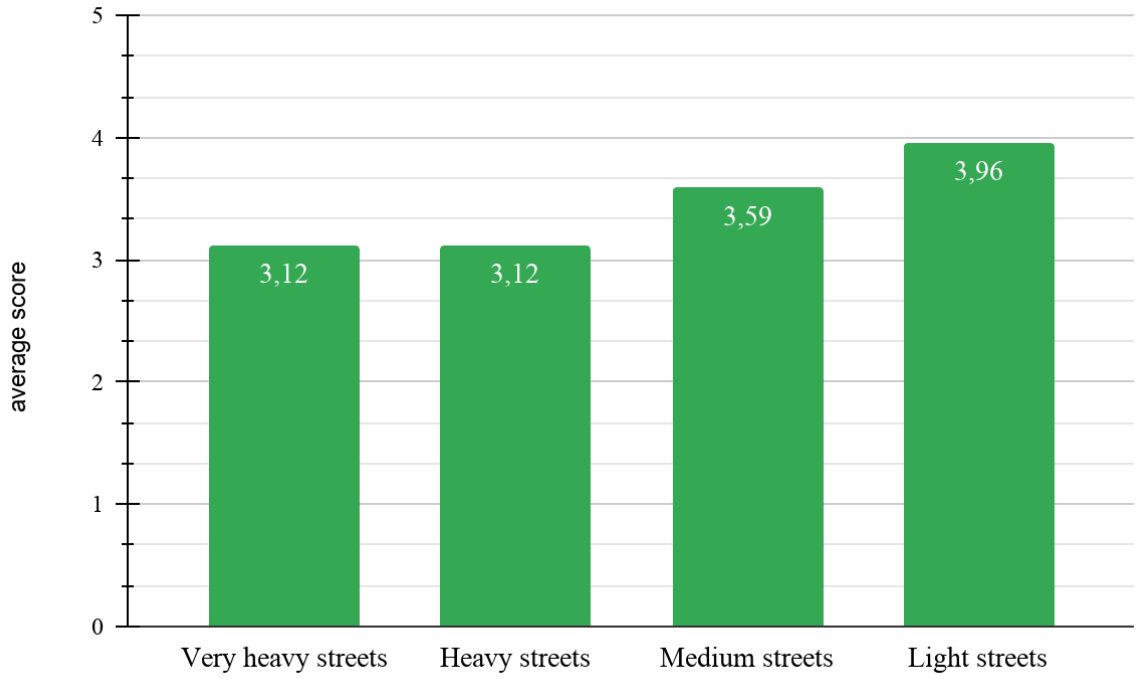


Figure 8: Combined average answer of safety and security, per traffic volume group

This graph is very similar to the results from the categories on the above graph, with one outlier being that very heavy streets and heavy streets now have the same average score. Concerning the relation between the different trafficked streets, in Appleyard's (1981) study he found that traffic safety was a concern on all streets, with the heavy street being the most concerned (there was no very heavy street in his 'three streets survey'). Furthermore, he found that regardless of the age

groups, the light street was considered safe, the medium was somewhere in between safe and unsafe and heavy was unsafe.

As we can see in figure 6, where ‘somewhere in between safe and unsafe’ would be a score of 2,5, the medium streets are far better off than in Appleyard’s study, as well as the heavy and very heavy streets who also have an average answer higher than the median. This could be stemming from the fact that Stockholm today is far less trafficked than San Francisco in the 70’s, and/or because the categories for what makes a street heavy/medium/light are lower, (to suit the lower levels of traffic in Stockholm), in this thesis than in Appleyard’s. Nonetheless, the relation between different kinds of traffic volume groups and the feeling of traffic safety is the same, up until the heavy streets and very heavy streets category where the relationship suddenly ends. It seems as when a street reaches a certain quota of traffic the negative impacts of it are washed out. This in length could be explained by Appleyard’s (1981, p.27) theory on the adaptation of people in heavily trafficked environments, ”When people expect traffic to be heavy they tend to adapt to it and tolerate it”.

The reason as to why there is no difference between the heavy streets and the very heavy streets could also be explained by Taylor’s (2003, p.1622) theory on “sensibility both hyperactive and dulled”. In order for people living in heavily trafficked environments to not become visually overstimulated, hyperactive and anxious when walking their streets, they to some extent dull their senses and become numb to the awareness of the many automobiles (Taylor 2003). And with this in mind, it could explain why there is a difference between the streets with less automobiles, that are easy to observe and take heed of without becoming overstimulated and ‘numbed’, and why there is not on the streets with greater levels of traffic. Again it seems like, whenever the quota of ‘enough’ automobiles is filled, the relationship between perceived feeling of safety, (or in this case *danger*), and increasing levels of vehicular traffic diminishes.

A final reflection on why the very heavy streets and the heavy streets does not have different levels of perceived safety although having differing levels of vehicular traffic, is that Stockholm stad probably knows that their most heavily trafficked streets are dangerous for their inhabitants, especially the elder, the young and the disabled, and have implemented safety measures accordingly. Which could have affected the levels of perceived safety on the very heavy streets category.

7.2 Urban quality and appearance

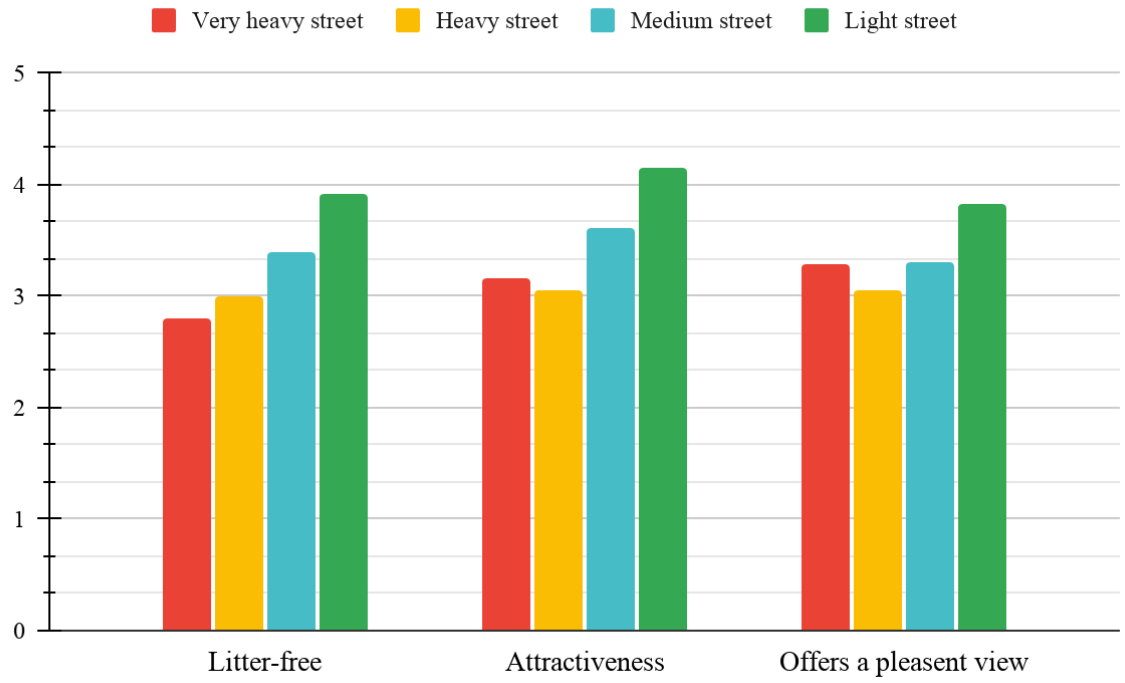


Figure 9: Survey answer distribution on urban quality and appearance per traffic volume group

The overall results, *see figure 7*, show that there is a great difference between the light streets and the medium streets, while the very heavy streets and the heavy streets are differentiated. Appleyard (1981) presents an explanation to why this could be; the highest trafficked streets are the most visible streets and therefore it is only natural that the city takes most care of these, whether its street cleaning, maintenance or general appearance. In his study Appleyard actually found that the residents of the very heavy streets were less concerned with appearance, crime and litter and than on the less trafficked heavy streets (Appleyard 1981). Although Appleyard's explanation suits as an explanation for the categories *'Offers a pleasant view'* and *'Attractiveness'* it does not apply to the category *'Litter-free'* in which the Very heavy streets scored lower than subsequent traffic volume groups. Although the previous explanation does not apply here, Appleyard (1981) did find that annoyance with littered streets were connected with higher traffic loads, which does apply to the findings of this paper's survey.

Another explanation why the very heavy streets received an average score higher than that of the heavy street in attractiveness could be the phenomenon Appleyard (1981) brings up regarding heavy traffic volumes, that residents of heavily trafficked environments tend to adapt to the excessive amounts of traffic (Appleyard 1981). Which in this case could explain why

attractiveness in general is considered higher on the very heavy streets than the heavy streets. This reasoning could also apply to the 'Offers a pleasant view' category. After all, once you have volumes up to 10 000 cars circulating your home everyday, the distinction between 10 000 and 14 000 is maybe not rather noteworthy – the added cars just blend in in the ever present congestion on the street. On the other hand, the results from the 'Attractiveness' and 'Offers a pleasant view' categories are contrary to what Taylor (2003) argues about the visual dullness made out by cars in cities. The constant need to observe traffic in order not to be harmed by it has caused the city dweller to be subdued by the sight of cars and therefore seeing vehicular traffic on the streets is not appealing. So by this logic the more cars there are, there should be lowered levels of satisfaction with the view of the streets. This according to the survey seems to be true, up until streets of 10 000 + cars where paradoxically the satisfaction with the street view is higher than that of the heavy streets (5 000 - 10 000 cars). Again this could be explained by the argument Appleyard (1981) brings up regarding the adaptation of people towards traffic on really heavy trafficked streets.

In all three categories, the traffic volume groups that have the highest average score are the light and the medium streets. In the 'Attractiveness' category, the light streets are far better off than the medium street, scoring roughly 0,5 points higher. By judging the results of the attractiveness category, *see figure 7*, and the combined graph on safety and security, *see figure 6*, we can see that there is a clear trend of increasing levels of traffic and lower levels of perceived safety and attractiveness. Gehl (2010) suggests that the very nature of motorized traffic repels people from going into the streets and getting run over, which is a good thing. This briefly mitigates the amount of road accidents, (which again is a good thing), but in length it suffocates the urban quality as people are afraid of entering the streets (Gehl 2010). By applying this theory to the aforementioned categories, it could serve as an explanation as to why the results shows such a trend. Again this 'trend' does not apply fully to the very heaviest of trafficked streets, as it seems that when a certain quota has been filled the negative impacts of traffic are not showing or even start reversing the trend.

The most cohesive category of all under the urban quality and appearance subcategory, that shows a very clear trend throughout all traffic volume groups is the 'Litter-free' category. These results are both easy to interpret and hard to grasp. Appleyard (1981) explains that when a street becomes no-man's-land, (could be because of the traffic burden or for other reasons), many people will not see the street as their responsibility and thus will not seek to clean it personally. In his survey he found that the annoyance with littered streets were connected with higher traffic

loads, and that when the residents were not taking care of the litter themselves, they had to rely on public maintenance. Another discovery made by Appleyard was also that cleanliness was the joint most desirable quality of a street, *see Appendix 1* (Appleyard 1981). When considering that, at least back in the 70's in San Francisco, cleanliness was considered the most attractive trait of a street, it is not an irrational thought that the general cleanliness of the respondents street has weighed in on the respondents answer on the 'Attractiveness' category.

7.3 Community and privacy

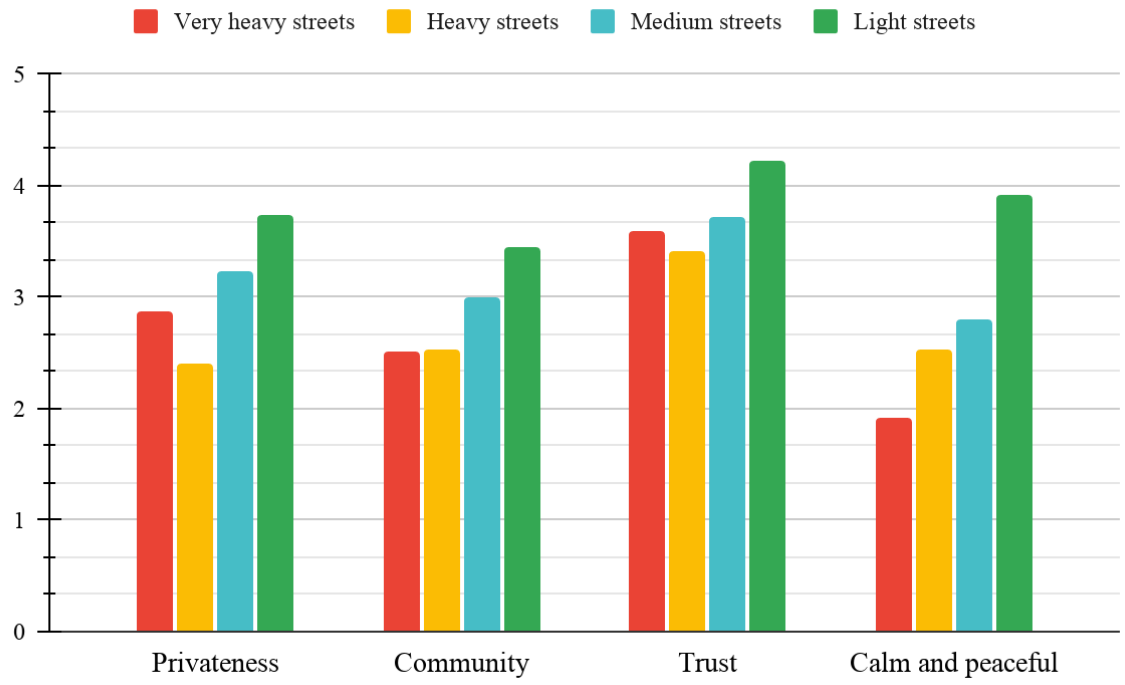


Figure 10: Survey answer distribution on community and privacy per traffic volume group

In Appleyard's research he found that the feeling that the residents' privacy had been invaded, (meaning they felt they could be less private) made out an U-curve, where the medium and heavy streets felt they could be less private on their streets and vice versa with the light and very heavy streets (Appleyard 1981). This resembles pretty neatly the findings of this paper's survey. Of course, Appleyard's survey concerned the question of 'lack of' privateness and this paper's survey concerns the 'access to' privateness. However, did the survey provide similar results, where the light streets have the average highest score of privateness, the medium streets lower than that and the heavy streets even lower than that of the medium. Noteworthy is the fact that the

very heavy streets average score is lower than that of the medium streets, which was not the case in Appleyard's study. Despite this, the score that the very heavy streets got for the *'Privateness'* category is unusually high compared to the heavy streets and is in fact the largest recorded difference between the two traffic volume groups. This suggests that even though Appleyard's findings were not entirely applicable to the results of this paper's survey, the general trend that could be spotted in his survey is also somewhat visible in this survey's 'Privateness' category.

To touch upon the other categories of the community and privacy subcategory, the category *'Calm and peaceful'* follows the same trendline as it did in Appleyard's survey, where there is more traffic there is more annoyance/less satisfaction with the sound levels. The other two categories *'Community'* and *'Trust'* were not specifically monitored by Appleyard (1981, p.70), but they can be linked to the results he found concerning the number of "Households know on this side of street" and "Households known on the other side of street". The first of these two shows only a slight decrease in known households as vehicular traffic increases whilst the latter shows a steep plunge as vehicular traffic increases. What can be added to this is the fact that Appleyard has proven that the amount of friends/acquaintances decreases severely as traffic increases (in his study there were an average of 3.0 friends and 6.3 acquaintances per person on the light street and for the heavy street those numbers were 0.9 respective 3.1) (Appleyard 1981). As we can see in figure 8, both the 'Community' and 'Trust' categories at first show a correlation between increased traffic and less satisfaction with the two categories, just as in Appleyard's findings. But as in the case for previous categories, that trend does wear off as the heavy streets traffic volume group is introduced though.

An initial reflection that comes to mind when viewing the community and privacy results, *see figure 8*, through the theories of Gehl on what effect vehicular traffic has on the soundscape of urban areas is that the categories 'Privateness' and 'Calm and peaceful' could possibly affect each other. Gehl (2010b) notes that opportunities for talking play an immense role in the quality of outdoor urban spaces and for creating social connections, and that when noise levels exceed 60dB (as it often is on mixed traffic streets) it is nearly impossible to carry on a normal conversation (Gehl 2010b). And as Appleyard notes, noise is often seen as an intrusive problem to residents of a street, one that people solve by going indoors and shutting the windows (Appleyard 1981). The reflection lies in the reasoning that if the noise levels are perceived as an annoyance, people are less likely to talk to each other on the streets and probably shy away from the loud streets. This, in length, could possibly have the effect that the residents private sphere is intruded less often as the general amount of encounters are fairly lower on streets where the residents stay indoors and

tend to avoid chatting in the streets. However this reflection does not apply on the light or medium streets, where there is a high perceived feeling of privacy although there is less traffic and subsequent noise levels.

On streets where there is heavy traffic, it would make sense if there is little privacy, since there are so many people passing by and seeing you, it would be easy to assume; more people, less privacy. But as mentioned in the previous paragraph, the very heavy street has an average score higher than that of the heavy streets, which excludes this assumption.

Taylors (2003) reasoning about the depersonalising effect that vehicular traffic has on cities and societies could help when commenting on the 'Privateness' and 'Community' categories. The modern city, Taylor argues, has created a depersonalized society, one where the most visible component of the streets is vehicles. As we mostly see vehicles as moving objects, we tend to not see the people inside them and as a result of this we are far less likely to encounter strangers on the sidewalks – because most other people on the streets are hidden inside their metal box. When traffic volumes increase, sidewalk activity decreases, Gehl (2010b) argues, and when incorporating the high noise levels that traffic carries with it, it is even harder for conversations to take place even when an encounter of people on the street has been made. Taylor (2003) also argues that we are far more likely to perceive vehicular traffic as just objects moving around rather than strangers going places, which added up even further alienates us from the feeling of connection to the people living in the city (Taylor 2003). And as we can see in the 'Community' category, *see figure 8*, the average score declines as vehicular traffic increases, until the familiar trend of the quota of enough cars has been filled and there is no more/less decline.

Admittedly the theory of the depersonalised city could also be used to comment on the category 'Trust'. Us humans are more like to trust people that we know, (or at least know of), and as vehicular traffic increases, which leads to less encounters on the residents side of the street and especially on the opposite side (as proven by Appleyard) along with Jacobs theorizing on the formation of trust in neigbourhoods; it is far less likely that a network of trust is established if there are less encounters happening on the streets (Appleyard 1981, Jacobs 1992). Considering this, with Taylor's theory in mind, it is appealing to draw the conclusion that trust generally declines as traffic volume increases. But yet again the very heavy streets traffic volume groups have an average higher score than of the heavy streets, *see figure 8*, which suggests that there in fact is a quota of 'enough' cars that breaks the otherwise coherent trend of traffic increase → livability decline.

7.4 Livability of streets

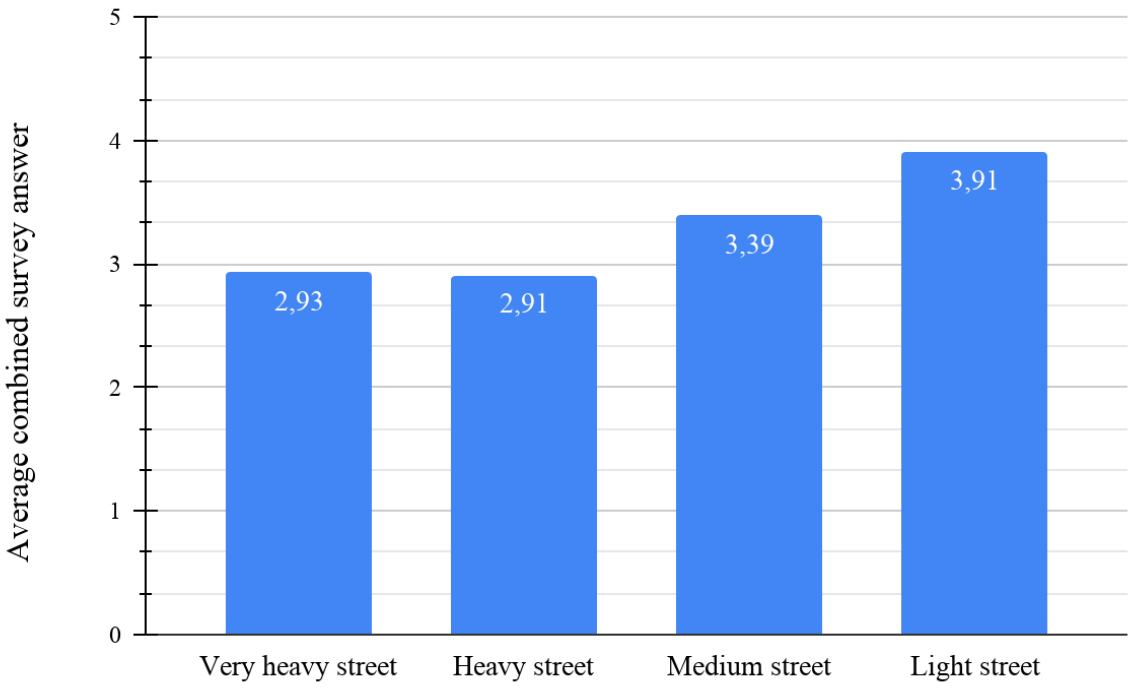


Figure 6: Average survey answer combined for each traffic volume group

When finally adding all categories together, we get a comprehensive view of the overall results of 'livability' of streets in Stockholm, (at least, as it is formulated after the criteria in the survey), divided into the traffic volume groups. Here we can clearly see the aforementioned 'quota' that somewhere in between the volumes of heavy streets and the very heavy streets, affects the perceived livability of streets. Appleyard (1981) could offer many reasons for why this could be; e.g. the highest trafficked streets are the most visible streets and therefore it is only natural that the city takes most care of these or the phenomenon that residents of heavily trafficked environments tend to adapt to the excessive amounts of traffic and therefore not perceive excessive traffic as nuisance. There are certainly more explanations for this phenomenon, however studying this 'quota' could prove an interesting subject to dig deeper into in further research.

8 CONCLUSION

Undeniably, each category can be interpreted in many ways and the theories in this paper can be used to both explain and question the findings from the survey. What can be declared is that increasing levels of vehicular traffic seems to impact the perceived livability of streets in Stockholm, at least up to a point where a quota of an unknown number has been reached. When this quota (which lies somewhere between the heavy streets and the very heavy streets traffic volumes) has been reached, further increasing traffic volumes for some categories does not seem to affect the residents' opinion of their street to a larger extent. In some cases the highest traffic volume groups even breaks the general trend by having a higher average score than the subsequent traffic volume group. However, determining the livability of streets is a complicated matter and one where there are many factors to consider, whereas traffic volume is only one of them. Yet, the results could point to the verdict that increasing vehicular traffic has a somewhat negative impact on the perception of the livability of streets in Stockholm and that streets with less traffic are generally apt to be more livable according to the categories formulated in the survey.

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10 APPENDICES

Appendix 1: The most desirable characteristics in a street

Table “What is important”, the most desirable characteristics in a street for people deciding on what street they want to live (Appleyard 1981, p. 323).

Descriptions	Total responses for "very important" %
Safe from crime	86
Clean, unlittered	86
Near public transport	79
Neighbor's upkeep	78
Minimal air pollution	75
Attractive appearance	74
Greenery along street	71
Cost of housing	69
Back yard, garden	69
peaceful, quiet	68
Walking conditions	67
Safe from traffic	67
Privacy	63
Shopping close	63
Sociable, friendly	58
Parks nearby	56
Good weather	55
Easy for car transportation	54
Good for children (play)	54
Convenient to work	51
Convenient to downtown	47
Pleasant view	47
Front yard, garden	43
Fairly level ground	40
Interesting people, activity	39

Schools close to home	38
Prestige of area	34
Distinct area	29
Neighbors of same ethnic group	13

Appendix 2: Online survey on street livability

The survey on street livability in its entirety, (the english version).

Survey on street livability

Hello! My name is Karl Hedin and I'm currently writing my bachelor's thesis in Urban Planning at Lunds University. My thesis seeks to find out whether there is a connection between peoples opinion of their residential street and different volumes of traffic. I will compare the answers I get from this survey with traffic volume data that I have received from the city of Stockholm to see if people who live on lightly trafficked streets possibly have more positive opinions about their streets and vice versa. When taking this survey, please imagine the setting of the street before the Covid-19 pandemic and subsequent gradual shutdown.

If you have questions about my survey, my study or anything else feel free to contact me! My phone number is +4676 808 87 89 and my email is karl.hedin.4600@student.lu.se

The reason I ask for your street number is so that I can compare it with the traffic data I have from Stockholm stad. The street number is needed to be able to determine which area along a street, e.g. Sveavägen, the respondent refers to with his answers. Since there is a lot of difference in traffic volume on different parts of long streets such as. Sveavägen, it is important to know which area the answers in the survey refers to.

On which street do you reside? (e.g. Jungfrugatan 19) *If you do not want to enter a street number, you may enter your neighbourhood street number span (e.g. Junfrugatan 6-26)

Ditt svar

How long have you lived on your current address?

- ◯ Less than 1 year
- ◯ Less than 5 years
- ◯ More than 5 years

To what extent do yo feel safe on your street? (safe from speeding cars, crime, to bicycle etc.)

	1	2	3	4	5	
very little	○	○	○	○	○	very much

To what extent do you consider your street to be child-friendly? (okay to answer even if you do not have children)

	1	2	3	4	5	
very little	○	○	○	○	○	very much

To what extent do you consider your street to be safe for the elderly and disabled?

	1	2	3	4	5	
very little	○	○	○	○	○	very much

To what extent do you feel you can be private on your street?

	1	2	3	4	5	
very little	○	○	○	○	○	very much

To what extent do you consider your street to be litter free?

	1	2	3	4	5	
very little	○	○	○	○	○	very much

To what extent do you consider your street to be calm and peaceful?

	1	2	3	4	5	
very little	○	○	○	○	○	very much

To what extent do you find your street attractive?

	1	2	3	4	5	
very little	○	○	○	○	○	very much

When viewing your street through the windows in your building: to what extent do you think it offers a pleasant view?

	1	2	3	4	5	
very little	○	○	○	○	○	very much

To what extent do you feel there is a sense of community between the people who live on the same street as you?

	1	2	3	4	5	
very little	○	○	○	○	○	very much

To what extent do you trust the people living on the same street as you?

	1	2	3	4	5	
very little	○	○	○	○	○	very much

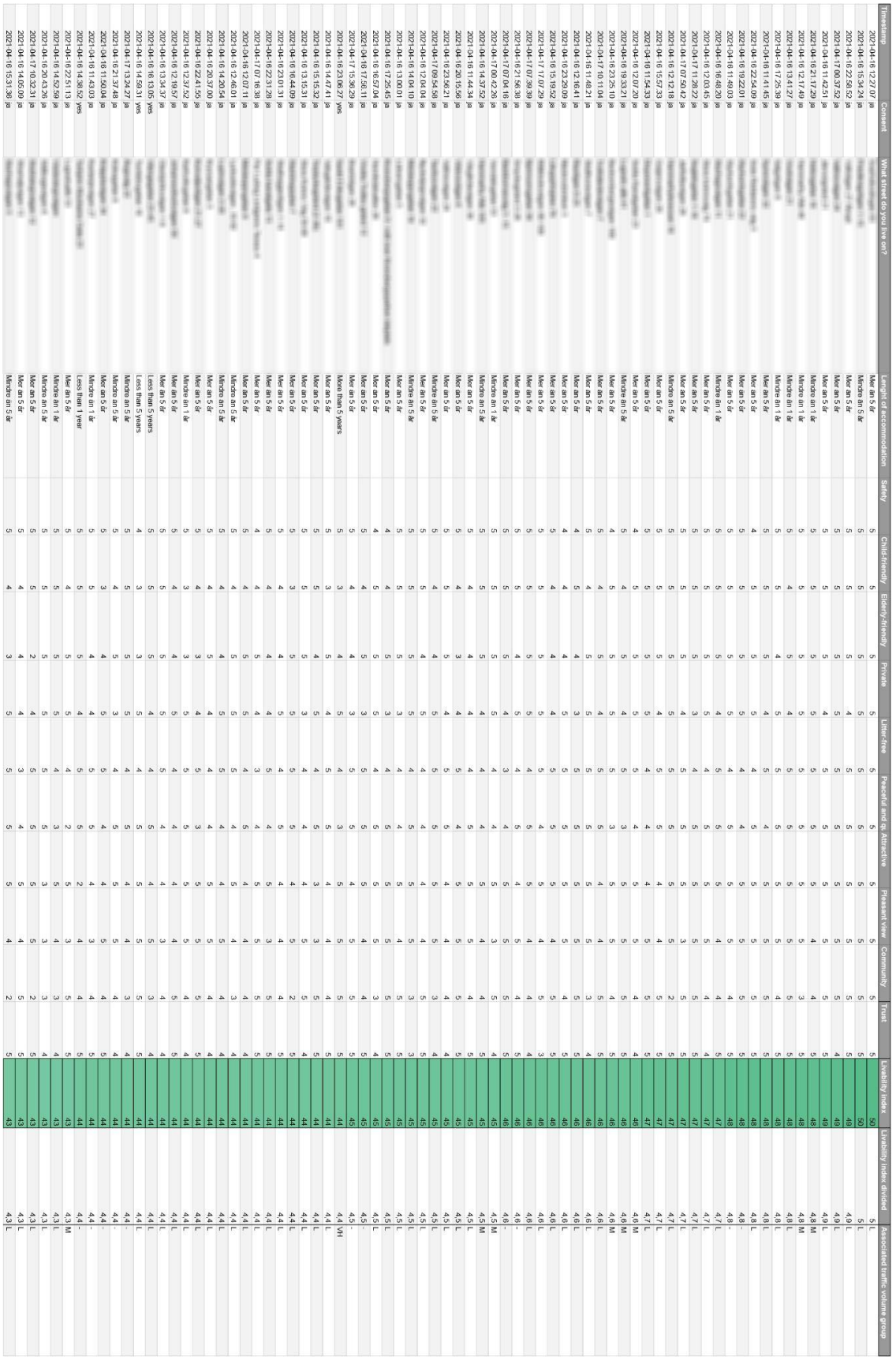
Do you accept that your answers are used for the above purposes? Anonymity and that all answers are used only for research purposes is guaranteed.

- ○ yes
- ○ no

Skicka

Appendix 3: Final table of survey answers used in the analysis

As a means of protecting the respondents, the addresses have been blurred out



Timestamp	Consent	What street do you live on?	Length of accommodation	Safety	Child-friendly	Elderly-friendly	Private	Litter-free	Peaceful and qu	Attractive	Pleasant view	Community	Trust	Livability index	Livability index divided	Associated Traffic volume group
2021-04-16 17:27:07	ja	[redacted]	Mer än 5 år	5	5	5	5	5	5	5	5	5	5	50	5 L	5 L
2021-04-16 15:34:24	ja	[redacted]	Mindre än 5 år	5	5	5	5	5	5	5	5	5	5	50	5 L	5 L
2021-04-16 22:58:52	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	5	5	5	5	49	4.9 L	4.9 L
2021-04-17 00:37:52	ja	[redacted]	Mer än 5 år	5	5	5	5	5	5	5	5	5	4	49	4.9 L	4.9 L
2021-04-16 11:42:51	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	5	5	5	5	49	4.9 L	4.9 L
2021-04-16 21:17:29	ja	[redacted]	Mindre än 1 år	5	5	5	5	5	5	5	4	4	5	48	4.8 M	4.8 M
2021-04-16 12:17:49	ja	[redacted]	Mindre än 1 år	5	5	5	5	5	5	5	5	5	5	48	4.8 M	4.8 M
2021-04-16 13:41:27	ja	[redacted]	Mindre än 1 år	5	4	5	5	5	5	5	5	5	5	48	4.8 L	4.8 L
2021-04-16 17:25:39	ja	[redacted]	Mindre än 1 år	5	5	4	5	5	5	5	5	4	5	48	4.8 L	4.8 L
2021-04-16 11:41:45	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	5	5	5	5	48	4.8 L	4.8 L
2021-04-16 22:54:09	ja	[redacted]	Mer än 5 år	4	5	5	5	4	5	5	5	5	5	48	4.8 L	4.8 L
2021-04-16 13:22:01	ja	[redacted]	Mer än 5 år	5	5	5	5	5	4	5	4	5	5	48	4.8 -	4.8 -
2021-04-16 11:49:03	ja	[redacted]	Mer än 5 år	5	5	5	5	5	5	5	5	5	5	48	4.8 -	4.8 -
2021-04-16 16:48:20	ja	[redacted]	Mindre än 1 år	5	5	5	5	4	4	5	5	4	5	47	4.7 L	4.7 L
2021-04-16 17:03:45	ja	[redacted]	Mer än 5 år	5	5	5	5	5	5	5	5	5	4	47	4.7 L	4.7 L
2021-04-17 11:28:22	ja	[redacted]	Mer än 5 år	5	5	5	5	3	5	5	5	4	5	47	4.7 L	4.7 L
2021-04-17 07:50:42	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	5	5	5	5	47	4.7 L	4.7 L
2021-04-16 12:12:18	ja	[redacted]	Mindre än 5 år	5	5	5	5	5	5	5	3	5	5	47	4.7 L	4.7 L
2021-04-16 15:57:33	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	4	5	2	5	47	4.7 L	4.7 L
2021-04-16 11:54:33	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	4	5	5	5	47	4.7 L	4.7 L
2021-04-16 12:07:20	ja	[redacted]	Mer än 5 år	5	5	5	5	5	4	5	5	4	4	46	4.6 M	4.6 M
2021-04-16 19:33:21	ja	[redacted]	Mindre än 5 år	5	4	5	5	5	5	5	5	5	5	46	4.6 M	4.6 M
2021-04-16 22:25:10	ja	[redacted]	Mer än 5 år	4	4	5	5	5	4	5	5	5	5	46	4.6 M	4.6 M
2021-04-17 10:11:04	ja	[redacted]	Mer än 5 år	5	5	5	5	5	5	5	5	4	5	46	4.6 L	4.6 L
2021-04-16 11:48:21	ja	[redacted]	Mer än 5 år	5	4	5	5	5	5	5	5	4	5	46	4.6 L	4.6 L
2021-04-16 12:16:41	ja	[redacted]	Mer än 5 år	5	5	5	5	5	5	5	5	5	5	46	4.6 L	4.6 L
2021-04-16 22:29:09	ja	[redacted]	Mer än 5 år	4	4	4	5	5	5	5	5	5	5	46	4.6 L	4.6 L
2021-04-16 15:19:52	ja	[redacted]	Mer än 5 år	5	5	4	4	5	5	5	4	5	5	46	4.6 L	4.6 L
2021-04-17 17:07:29	ja	[redacted]	Mer än 5 år	5	5	5	5	5	5	5	5	5	3	46	4.6 L	4.6 L
2021-04-17 07:39:39	ja	[redacted]	Mer än 5 år	5	5	5	5	5	5	5	4	5	4	46	4.6 L	4.6 L
2021-04-16 21:56:38	ja	[redacted]	Mer än 5 år	5	5	4	5	4	5	5	4	4	5	46	4.6 L	4.6 L
2021-04-17 07:04:16	ja	[redacted]	Mer än 5 år	5	5	5	5	3	5	5	5	5	5	46	4.6 L	4.6 L
2021-04-17 00:42:26	ja	[redacted]	Mindre än 1 år	5	5	5	4	4	4	5	5	5	5	46	4.6 L	4.6 L
2021-04-16 14:37:52	ja	[redacted]	Mindre än 5 år	5	5	5	4	4	5	5	5	4	5	45	4.5 M	4.5 M
2021-04-16 11:44:34	ja	[redacted]	Mer än 5 år	5	4	4	4	4	5	5	5	4	5	45	4.5 L	4.5 L
2021-04-16 22:56:21	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	4	4	4	5	45	4.5 L	4.5 L
2021-04-17 09:54:58	ja	[redacted]	Mindre än 5 år	5	5	4	4	5	5	5	4	3	4	45	4.5 L	4.5 L
2021-04-16 12:04:04	ja	[redacted]	Mer än 5 år	5	5	4	4	5	5	4	4	5	4	45	4.5 L	4.5 L
2021-04-16 14:04:10	ja	[redacted]	Mindre än 5 år	5	5	5	5	4	5	5	5	3	5	45	4.5 L	4.5 L
2021-04-16 13:00:01	ja	[redacted]	Mer än 5 år	4	4	5	5	4	4	5	5	5	3	45	4.5 L	4.5 L
2021-04-16 17:25:45	ja	[redacted]	Mer än 5 år	4	4	5	3	5	5	5	4	5	5	45	4.5 L	4.5 L
2021-04-16 16:57:04	ja	[redacted]	Mer än 5 år	5	5	5	5	5	5	5	5	3	4	45	4.5 L	4.5 L
2021-04-16 17:58:11	ja	[redacted]	Mer än 5 år	5	4	4	3	5	5	5	5	4	5	45	4.5 L	4.5 L
2021-04-17 15:38:29	ja	[redacted]	Mer än 5 år	5	4	4	3	5	5	5	4	5	4	45	4.5 L	4.5 L
2021-04-16 22:06:27	yes	[redacted]	More than 5 years	5	3	4	4	5	5	4	5	5	5	45	4.5 -	4.5 -
2021-04-16 14:47:41	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	4	4	4	5	44	4.4 VH	4.4 VH
2021-04-16 15:15:32	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	4	3	5	5	44	4.4 L	4.4 L
2021-04-16 13:15:31	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	4	4	5	4	44	4.4 L	4.4 L
2021-04-16 16:44:09	ja	[redacted]	Mer än 5 år	5	5	5	5	4	5	4	4	5	5	44	4.4 L	4.4 L
2021-04-16 22:01:31	ja	[redacted]	Mer än 5 år	5	4	4	5	4	5	4	4	4	5	44	4.4 L	4.4 L
2021-04-16 22:32:28	ja	[redacted]	Mer än 5 år	5	5	4	4	5	5	4	3	5	5	44	4.4 L	4.4 L
2021-04-17 07:16:38	ja	[redacted]	Mer än 5 år	4	4	5	4	5	5	4	5	5	5	44	4.4 L	4.4 L
2021-04-16 12:07:11	ja	[redacted]	Mer än 5 år	5	4	5	4	5	5	4	4	5	5	44	4.4 L	4.4 L
2021-04-16 12:46:01	ja	[redacted]	Mer än 5 år	5	4	5	4	5	5	4	4	4	5	44	4.4 L	4.4 L
2021-04-16 14:20:54	ja	[redacted]	Mindre än 5 år	5	4	4	4	5	5	4	4	3	4	44	4.4 L	4.4 L
2021-04-16 20:37:00	ja	[redacted]	Mer än 5 år	5	4	4	4	5	5	4	4	4	4	44	4.4 L	4.4 L
2021-04-16 22:41:55	ja	[redacted]	Mer än 5 år	5	4	3	4	5	5	4	4	4	5	44	4.4 L	4.4 L
2021-04-16 12:37:52	ja	[redacted]	Mindre än 1 år	5	3	3	4	5	5	5	4	4	5	44	4.4 L	4.4 L
2021-04-16 12:19:57	ja	[redacted]	Mer än 5 år	5	4	4	5	5	5	4	4	5	5	44	4.4 L	4.4 L
2021-04-16 13:34:37	ja	[redacted]	Mer än 5 år	5	5	5	5	4	4	4	3	4	4	44	4.4 L	4.4 L
2021-04-16 16:03:05	yes	[redacted]	Less than 5 years	5	5	5	4	4	5	4	5	3	4	44	4.4 L	4.4 L
2021-04-16 14:59:31	yes	[redacted]	Less than 5 years	4	3	5	4	4	4	4	5	3	5	44	4.4 L	4.4 L
2021-04-17 13:24:27	ja	[redacted]	Mindre än 5 år	5	5	5	5	5	5	4	4	3	4	44	4.4 -	4.4 -
2021-04-16 21:37:48	ja	[redacted]	Mer än 5 år	5	4	4	3	4	5	4	5	4	4	44	4.4 -	4.4 -
2021-04-16 11:50:04	ja	[redacted]	Mer än 5 år	5	3	4	5	5	5	4	5	4	5	44	4.4 -	4.4 -
2021-04-16 11:43:03	ja	[redacted]	Mindre än 1 år	5	5	4	4	5	5	5	3	4	5	44	4.4 -	4.4 -
2021-04-16 14:36:52	yes	[redacted]	Less than 1 year	5	5	5	4	5	5	4	4	4	5	44	4.4 -	4.4 -
2021-04-16 12:51:13	ja	[redacted]	Mer än 5 år	5	4	5	4	4	2	5	4	5	5	43	4.3 M	4.3 M
2021-04-16 14:52:59	ja	[redacted]	Mindre än 1 år	5	5	5	5	4	4	5	4	5	5	43	4.3 L	4.3 L
2021-04-16 20:43:26	ja	[redacted]	Mindre än 5 år	5	5	5	5	5	5	5	3	3	4	43	4.3 L	4.3 L
2021-04-17 10:32:31	ja	[redacted]	Mer än 5 år	5	5	5	4	5	5	5	5	2	5	43	4.3 L	4.3 L
2021-04-16 14:06:09	ja	[redacted]	Mer än 5 år	5	4	4	4	3	5	5	4	5	5	43	4.3 L	4.3 L
2021-04-16 15:31:36	ja	[redacted]	Mindre än 5 år	5	4	3	5	5	5	5	4	5	5	43	4.3 L	4.3 L

2021-04-17 16.39.12	yes	[illegible]	More than 5 years	4	4	4	5	5	4	4	4	3	3	40	4	-
2021-04-16 11.51.51	ja	[illegible]	Mindre än 1 år	5	4	4	4	4	4	4	4	2	4	39	3,9	M
2021-04-16 11.51.17	ja	[illegible]	Mer än 5 år	5	3	3	3	4	4	5	5	4	3	39	3,9	M
2021-04-17 10.44.45	ja	[illegible]	Mindre än 5 år	5	4	5	5	4	2	3	4	2	5	39	3,9	M
2021-04-17 10.09.40	ja	[illegible]	Mer än 5 år	3	3	3	4	3	4	5	4	5	5	39	3,9	M
2021-04-16 17.24.05	ja	[illegible]	Mer än 5 år	5	3	1	3	4	4	5	5	4	5	39	3,9	M
2021-04-16 14.05.54	ja	[illegible]	Mindre än 5 år	5	3	5	3	5	4	4	3	3	4	39	3,9	M
2021-04-17 07.11.03	ja	[illegible]	Mindre än 5 år	5	4	4	4	5	3	3	5	3	3	39	3,9	L
2021-04-16 18.01.51	ja	[illegible]	Mindre än 5 år	5	5	5	4	2	3	4	3	3	5	39	3,9	L
2021-04-16 18.40.40	ja	[illegible]	Mer än 5 år	5	4	4	3	4	2	5	4	4	4	39	3,9	L
2021-04-16 18.26.38	ja	[illegible]	Mer än 5 år	4	3	4	3	5	5	4	4	3	4	39	3,9	L
2021-04-16 14.06.33	ja	[illegible]	Mer än 5 år	5	3	3	4	4	5	4	2	4	5	39	3,9	L
2021-04-16 12.55.57	ja	[illegible]	Mindre än 5 år	5	3	3	3	5	5	3	3	4	5	39	3,9	L
2021-04-16 12.40.15	ja	[illegible]	Mer än 5 år	4	4	4	3	3	4	5	5	3	4	39	3,9	L
2021-04-16 22.45.41	yes	[illegible]	More than 5 years	5	1	3	5	4	3	5	4	5	4	39	3,9	L
2021-04-16 18.48.22	yes	[illegible]	Less than 5 years	4	3	4	4	5	4	4	4	3	4	39	3,9	L
2021-04-17 00.32.12	ja	[illegible]	Mindre än 5 år	5	4	4	4	3	5	4	3	3	4	39	3,9	-
2021-04-17 02.11.43	ja	[illegible]	Mer än 5 år	4	4	4	2	4	4	5	4	4	4	39	3,9	-
2021-04-16 20.54.01	ja	[illegible]	Mindre än 5 år	5	4	5	1	4	4	5	5	2	4	39	3,9	-
2021-04-17 05.09.30	ja	[illegible]	Mer än 5 år	5	3	4	4	4	5	4	4	3	3	39	3,9	-
2021-04-16 11.40.33	ja	[illegible]	Mindre än 1 år	5	4	5	4	2	4	5	4	3	3	39	3,9	-
2021-04-16 13.28.18	ja	[illegible]	Mer än 5 år	5	4	4	2	3	4	5	5	3	4	39	3,9	-
2021-04-16 15.07.58	yes	[illegible]	Less than 5 years	5	5	5	4	2	3	5	3	5	2	39	3,9	-
2021-04-16 12.47.44	ja	[illegible]	Mer än 5 år	5	3	4	4	4	5	5	3	1	4	38	3,8	M
2021-04-16 12.27.41	ja	[illegible]	Mindre än 5 år	5	4	4	3	4	4	4	3	3	4	38	3,8	M
2021-04-16 13.30.01	ja	[illegible]	Mer än 5 år	5	3	4	4	4	3	4	4	3	4	38	3,8	M
2021-04-16 11.57.30	ja	[illegible]	Mer än 5 år	5	2	5	3	4	3	5	4	3	4	38	3,8	L
2021-04-17 15.33.06	ja	[illegible]	Mer än 5 år	5	4	4	3	4	4	4	4	2	4	38	3,8	L
2021-04-17 07.22.51	ja	[illegible]	Mindre än 1 år	5	3	4	4	5	3	5	3	3	3	38	3,8	L
2021-04-16 14.27.27	ja	[illegible]	Mer än 5 år	3	5	3	4	5	5	4	3	2	4	38	3,8	L
2021-04-16 13.02.09	ja	[illegible]	Mer än 5 år	5	2	3	2	4	4	5	5	3	5	38	3,8	L
2021-04-16 13.42.22	ja	[illegible]	Mer än 5 år	4	3	3	3	4	4	4	3	5	5	38	3,8	L
2021-04-16 13.59.31	ja	[illegible]	Mindre än 5 år	5	5	5	3	2	4	3	2	4	5	38	3,8	L
2021-04-16 23.53.26	ja	[illegible]	Mindre än 5 år	5	4	4	4	4	3	3	2	4	5	38	3,8	L
2021-04-16 22.18.07	ja	[illegible]	Mer än 5 år	3	3	3	5	4	4	5	5	2	4	38	3,8	L
2021-04-16 23.56.05	ja	[illegible]	Mer än 5 år	4	4	3	3	4	4	5	3	3	5	38	3,8	L
2021-04-16 19.45.33	ja	[illegible]	Mindre än 5 år	5	5	4	3	4	4	4	3	3	3	38	3,8	L
2021-04-16 15.42.49	yes	[illegible]	More than 5 years	5	4	4	3	2	3	5	4	4	4	38	3,8	L
2021-04-16 14.29.56	yes	[illegible]	More than 5 years	4	3	3	4	4	5	4	4	3	4	38	3,8	L
2021-04-16 23.01.27	ja	[illegible]	Mer än 5 år	5	3	4	5	3	2	4	4	4	4	38	3,8	H
2021-04-16 13.32.46	ja	[illegible]	Mindre än 5 år	4	5	5	2	4	4	4	4	2	4	38	3,8	-
2021-04-16 22.56.18	ja	[illegible]	Mer än 5 år	4	4	4	3	4	3	4	4	4	4	38	3,8	-
2021-04-17 08.14.14	yes	[illegible]	More than 5 years	4	3	5	3	4	4	3	4	4	4	38	3,8	H
2021-04-17 08.28.04	ja	[illegible]	Mer än 5 år	4	4	5	4	4	2	3	4	3	4	37	3,7	VH
2021-04-16 19.04.42	ja	[illegible]	Mindre än 5 år	4	4	2	4	4	2	5	3	4	5	37	3,7	M
2021-04-16 13.51.51	ja	[illegible]	Mer än 5 år	5	2	2	5	5	2	5	5	3	3	37	3,7	M
2021-04-16 15.59.36	ja	[illegible]	Mindre än 5 år	5	4	3	4	4	5	4	4	1	3	37	3,7	M
2021-04-16 11.45.34	ja	[illegible]	Mer än 5 år	5	5	5	4	5	2	4	2	1	4	37	3,7	M
2021-04-17 11.04.47	ja	[illegible]	Mer än 5 år	4	3	3	4	4	4	4	4	3	4	37	3,7	L
2021-04-16 13.52.26	ja	[illegible]	Mer än 5 år	5	3	3	4	3	4	4	4	2	5	37	3,7	L
2021-04-16 22.24.20	ja	[illegible]	Mer än 5 år	5	4	4	3	1	4	5	4	3	4	37	3,7	L
2021-04-16 11.44.36	ja	[illegible]	Mindre än 5 år	4	3	3	4	4	4	4	4	3	4	37	3,7	L
2021-04-17 08.20.19	ja	[illegible]	Mindre än 5 år	5	3	4	1	4	3	5	4	3	5	37	3,7	L
2021-04-16 16.47.43	ja	[illegible]	Mer än 5 år	5	3	2	4	3	4	4	3	4	5	37	3,7	L
2021-04-16 17.40.40	ja	[illegible]	Mer än 5 år	5	3	4	2	4	2	4	4	4	5	37	3,7	L
2021-04-16 13.41.41	ja	[illegible]	Mindre an 5 år	5	3	4	1	4	5	4	4	3	4	37	3,7	L
2021-04-17 12.31.13	ja	[illegible]	Mindre än 1 år	5	2	3	5	5	2	4	4	3	4	37	3,7	L
2021-04-17 07.30.14	ja	[illegible]	Mer än 5 år	3	4	4	4	2	3	3	5	5	4	37	3,7	L
2021-04-16 14.31.15	yes	[illegible]	Less than 1 year	5	3	4	4	5	3	5	2	1	5	37	3,7	L
2021-04-17 03.10.04	yes	[illegible]	More than 5 years	4	4	4	3	3	3	4	5	3	4	37	3,7	H
2021-04-17 07.17.26	ja	[illegible]	Mindre än 5 år	5	4	5	4	4	3	2	2	4	4	37	3,7	-
2021-04-16 11.54.29	ja	[illegible]	Mindre än 5 år	5	3	3	4	4	5	4	4	2	3	37	3,7	-
2021-04-16 11.50.51	ja	[illegible]	Mer än 5 år	5	3	4	4	2	4	4	5	2	4	37	3,7	-
2021-04-17 08.45.22	ja	[illegible]	Mer än 5 år	4	4	4	3	4	4	3	3	3	5	37	3,7	-
2021-04-16 13.14.00	ja	[illegible]	Mindre än 5 år	4	4	5	4	2	3	3	4	4	3	36	3,6	VH
2021-04-16 15.10.15	ja	[illegible]	Mindre än 5 år	3	5	5	4	3	3	4	3	4	2	36	3,6	M
2021-04-16 15.19.53	ja	[illegible]	Mindre än 5 år	5	3	4	3	4	1	3	4	4	5	36	3,6	M
2021-04-16 11.49.02	ja	[illegible]	Mindre än 5 år	5	3	4	3	4	4	4	3	3	3	36	3,6	L
2021-04-16 17.17.36	ja	[illegible]	Mindre än 5 år	5	2	2	3	4	5	4	3	4	4	36	3,6	L
2021-04-16 11.47.59	ja	[illegible]	Mindre än 5 år	4	3	4	3	3	4	3	5	3	4	36	3,6	L
2021-04-16 17.09.17	ja	[illegible]	Mer än 5 år	4	3	4	4	4	3	4	3	3	4	36	3,6	L
2021-04-16 23.48.37	ja	[illegible]	Mindre än 5 år	4	3	4	4	3	3	4	4	4	3	36	3,6	L
2021-04-16 11.37.56	ja	[illegible]	Mer än 5 år	5	3	4	5	2	4	4	3	2	4	36	3,6	L
2021-04-17 07.21.22	ja	[illegible]	Mer än 5 år	5	3	3	3	4	3	4	3	4	4	36	3,6	L
2021-04-16 15.13.26	ja	[illegible]	Mer än 5 år	4	4	4	3	4	5	3	3	3	3	36	3,6	H

2021-04-16 12.15.32	ja	[illegible]	Mer än 5 år	4	4	3	3	2	4	3	5	2	2	32	3,2	L
2021-04-16 18.24.57	ja	[illegible]	Mindre än 5 år	4	2	2	2	3	4	5	5	2	3	32	3,2	L
2021-04-16 15.17.05	ja	[illegible]	Mer än 5 år	5	1	3	3	2	2	3	3	5	5	32	3,2	L
2021-04-17 06.22.28	ja	[illegible]	Mer än 5 år	4	2	2	4	4	4	2	2	4	4	32	3,2	L
2021-04-17 14.55.24	ja	[illegible]	Mer än 5 år	3	1	2	3	5	3	3	4	4	4	32	3,2	L
2021-04-16 21.17.29	ja	[illegible]	Mindre än 5 år	4	2	3	5	2	3	5	5	1	2	32	3,2	L
2021-04-16 21.04.09	yes	[illegible]	More than 5 years	4	3	4	3	2	3	4	2	4	3	32	3,2	L
2021-04-16 19.29.12	ja	[illegible]	Mindre än 5 år	4	3	4	3	4	3	4	2	1	4	32	3,2	-
2021-04-16 14.17.43	yes	[illegible]	Less than 1 year	5	3	5	1	1	3	2	4	3	4	31	3,1	VH
2021-04-17 02.06.36	ja	[illegible]	Mer än 5 år	5	3	4	5	2	3	3	2	1	3	31	3,1	VH
2021-04-17 07.26.54	yes	[illegible]	More than 5 years	2	3	3	5	2	2	4	4	2	4	31	3,1	VH
2021-04-16 22.46.06	yes	[illegible]	More than 5 years	5	2	4	2	4	1	3	1	4	5	31	3,1	VH
2021-04-16 13.57.32	ja	[illegible]	Mindre än 5 år	4	3	3	3	3	3	4	2	3	3	31	3,1	M
2021-04-17 08.33.11	ja	[illegible]	Mer än 5 år	5	3	3	4	4	2	3	2	2	3	31	3,1	M
2021-04-16 19.17.10	ja	[illegible]	Mindre än 5 år	4	2	4	3	1	2	3	5	3	4	31	3,1	M
2021-04-16 21.31.14	ja	[illegible]	Mer än 5 år	4	3	4	2	3	3	3	3	3	3	31	3,1	M
2021-04-16 11.50.21	ja	[illegible]	Mer än 5 år	3	3	4	2	2	3	4	4	2	4	31	3,1	L
2021-04-16 13.29.51	ja	[illegible]	Mindre än 5 år	4	2	3	2	4	4	4	3	2	3	31	3,1	L
2021-04-16 18.43.33	ja	[illegible]	Mer än 5 år	4	2	3	2	2	3	4	4	3	4	31	3,1	L
2021-04-16 13.53.11	ja	[illegible]	Mer än 5 år	4	3	2	3	4	2	3	3	3	4	31	3,1	L
2021-04-16 19.05.05	ja	[illegible]	Mer an 5 år	4	3	3	4	2	4	4	2	2	3	31	3,1	L
2021-04-16 15.08.52	ja	[illegible]	Mer an 5 år	5	2	5	3	2	4	3	1	3	3	31	3,1	L
2021-04-17 13.44.17	ja	[illegible]	Mer än 5 år	3	3	3	2	3	2	4	3	4	4	31	3,1	L
2021-04-16 14.16.08	ja	[illegible]	Mindre än 1 år	4	1	2	3	3	2	5	3	4	4	31	3,1	H
2021-04-16 14.34.09	yes	[illegible]	More than 5 years	5	2	3	2	3	2	4	4	2	4	31	3,1	H
2021-04-16 22.28.05	ja	[illegible]	Mindre än 5 år	5	4	4	2	2	4	3	3	1	3	31	3,1	-
2021-04-16 22.44.59	ja	[illegible]	Mindre än 5 år	4	3	3	3	2	4	2	2	4	4	31	3,1	-
2021-04-16 14.27.47	ja	[illegible]	Mindre än 5 år	4	1	4	4	2	3	4	4	1	3	30	3	M
2021-04-16 16.28.55	ja	[illegible]	Mindre än 1 år	4	3	4	4	2	1	3	3	2	4	30	3	M
2021-04-16 15.51.13	ja	[illegible]	Mer än 5 år	3	2	3	3	1	2	4	5	4	3	30	3	M
2021-04-16 19.35.05	ja	[illegible]	Mer än 5 år	4	2	2	3	4	3	4	3	2	3	30	3	M
2021-04-16 17.07.35	ja	[illegible]	Mer än 5 år	4	3	3	2	4	2	2	2	3	5	30	3	L
2021-04-17 10.31.50	yes	[illegible]	Less than 5 years	5	3	5	2	4	3	3	2	1	2	30	3	L
2021-04-17 09.22.23	ja	[illegible]	Mer än 5 år	5	2	2	2	4	3	4	3	2	3	30	3	-
2021-04-16 12.22.28	ja	[illegible]	Mer än 5 år	2	1	3	1	4	1	5	5	2	5	29	2,9	VH
2021-04-16 14.37.28	ja	[illegible]	Mer än 5 år	5	1	2	2	4	3	2	2	3	5	29	2,9	M
2021-04-16 12.56.20	ja	[illegible]	Mer än 5 år	5	3	2	1	4	3	3	4	2	2	29	2,9	M
2021-04-17 12.12.49	ja	[illegible]	Mer än 5 år	3	3	3	2	3	4	1	3	3	4	29	2,9	M
2021-04-16 20.04.56	ja	[illegible]	Mindre än 1 år	5	2	4	1	2	4	5	3	1	2	29	2,9	L
2021-04-16 16.41.19	ja	[illegible]	Mer an 5 år	4	2	2	5	3	1	2	3	3	4	29	2,9	L
2021-04-16 17.03.04	yes	[illegible]	More than 5 years	5	3	3	2	3	3	3	1	2	4	29	2,9	L
2021-04-16 14.20.21	yes	[illegible]	More than 5 years	4	1	4	1	3	2	4	4	2	4	29	2,9	H
2021-04-16 21.16.47	ja	[illegible]	Mindre än 5 år	4	3	3	4	2	3	2	2	2	4	29	2,9	-
2021-04-16 13.38.47	ja	[illegible]	Mindre än 5 år	4	2	2	4	3	2	3	3	1	4	28	2,8	M
2021-04-16 23.49.19	ja	[illegible]	Mindre än 1 år	5	2	3	1	3	2	4	4	1	3	28	2,8	M
2021-04-16 13.02.38	ja	[illegible]	Mindre än 5 år	4	3	4	2	3	3	3	1	2	3	28	2,8	M
2021-04-17 08.52.51	yes	[illegible]	More than 5 years	3	1	1	1	2	1	5	5	5	4	28	2,8	M
2021-04-16 18.49.26	ja	[illegible]	Mindre än 1 år	4	3	3	2	3	3	3	2	2	3	28	2,8	H
2021-04-16 21.37.26	ja	[illegible]	Mindre än 5 år	2	3	3	4	1	2	3	4	3	3	28	2,8	H
2021-04-16 13.56.39	ja	[illegible]	Mindre än 1 år	4	2	2	3	4	3	2	3	2	3	28	2,8	H
2021-04-16 19.54.58	ja	[illegible]	Mindre än 5 år	2	2	3	5	3	1	5	1	1	5	28	2,8	-
2021-04-17 11.51.35	ja	[illegible]	Mer än 5 år	4	2	3	1	3	4	2	5	1	3	28	2,8	-
2021-04-17 16.03.40	ja	[illegible]	Mindre än 5 år	5	3	3	1	1	2	5	5	1	2	28	2,8	-
2021-04-16 19.14.49	ja	[illegible]	Mindre än 5 år	4	3	3	2	2	2	3	4	2	3	28	2,8	-
2021-04-16 18.49.26	ja	[illegible]	Mindre än 1 år	4	3	3	2	3	3	3	2	2	3	28	2,8	H
2021-04-16 12.07.23	ja	[illegible]	Mindre än 5 år	4	2	2	2	4	2	4	1	3	3	27	2,7	M
2021-04-17 14.18.23	ja	[illegible]	Mindre än 5 år	5	3	2	3	2	1	2	2	3	4	27	2,7	L
2021-04-16 12.53.59	ja	[illegible]	Mer an 5 år	4	3	2	1	4	1	2	2	4	4	27	2,7	H
2021-04-16 23.06.12	ja	[illegible]	Mindre än 1 år	3	2	2	3	3	3	3	3	3	2	27	2,7	-
2021-04-16 22.58.33	ja	[illegible]	Mindre än 5 år	5	3	3	2	4	3	1	1	1	3	26	2,6	VH
2021-04-16 15.57.02	yes	[illegible]	Less than 5 years	2	1	2	4	3	2	3	3	2	4	26	2,6	VH
2021-04-17 03.25.10	ja	[illegible]	Mer än 5 år	3	2	2	2	1	1	2	4	4	5	26	2,6	M
2021-04-16 22.21.12	ja	[illegible]	Mer än 5 år	3	1	2	2	2	1	4	2	5	4	26	2,6	M
2021-04-17 15.56.52	ja	[illegible]	Mer än 5 år	3	1	2	3	3	1	3	2	3	5	26	2,6	L
2021-04-17 08.02.45	yes	[illegible]	Less than 5 years	3	1	1	2	3	2	4	3	3	3	25	2,5	VH
2021-04-16 22.09.50	ja	[illegible]	Mer an 5 år	3	1	2	2	4	2	4	3	1	3	25	2,5	M
2021-04-16 18.28.52	ja	[illegible]	Mindre än 5 år	3	2	4	1	4	3	2	2	1	3	25	2,5	M
2021-04-17 11.27.07	ja	[illegible]	Mindre än 1 år	3	2	2	1	4	1	1	3	4	4	25	2,5	M
2021-04-16 19.38.29	yes	[illegible]	More than 5 years	4	1	3	1	3	4	2	2	1	4	25	2,5	L
2021-04-16 11.57.26	ja	[illegible]	Mer än 5 år	4	2	2	1	2	2	3	3	3	3	25	2,5	H
2021-04-16 15.55.23	ja	[illegible]	Mer än 5 år	3	2	2	2	3	2	2	3	3	3	25	2,5	-
2021-04-16 12.09.13	ja	[illegible]	Mindre än 5 år	4	1	4	3	2	1	2	3	1	3	24	2,4	VH
2021-04-16 17.07.32	ja	[illegible]	Mindre än 5 år	4	2	3	3	2	2	1	1	3	3	24	2,4	M
2021-04-16 16.05.51	ja	[illegible]	Mer än 5 år	5	1	1	4	4	3	2	1	1	2	24	2,4	L
2021-04-16 22.53.51	ja	[illegible]	Mer an 5 år	2	2	2	2	3	3	4	3	1	2	24	2,4	L

2021-04-16 19.07.44	ja	[redacted]	Mer än 5 år	4	2	3	3	1	1	3	2	1	3	23	2,3	M
2021-04-16 19.35.04	ja	[redacted]	Mer än 5 år	3	1	2	1	2	2	4	2	3	3	23	2,3	L
2021-04-16 14.07.38	ja	[redacted]	Mindre än 5 år	4	3	2	2	2	3	2	1	1	3	23	2,3	L
2021-04-17 07.14.33	ja	[redacted]	Mer än 5 år	4	1	2	4	2	1	1	2	3	3	23	2,3	H
2021-04-17 11.34.34	ja	[redacted]	Mindre än 5 år	4	2	4	1	3	2	2	2	1	2	23	2,3	-
2021-04-16 12.53.59	ja	[redacted]	Mer än 5 år	2	3	2	1	2	1	2	2	4	4	23	2,3	H
2021-04-17 10.23.51	ja	[redacted]	Mindre än 5 år	4	2	4	1	2	1	2	1	1	4	22	2,2	VH
2021-04-16 20.43.22	yes	[redacted]	More than 5 years	1	1	1	3	2	1	3	3	4	3	22	2,2	M
2021-04-16 23.22.51	ja	[redacted]	Mer än 5 år	4	1	3	1	2	1	3	3	1	3	22	2,2	H
2021-04-16 19.59.44	ja	[redacted]	Mer än 5 år	3	1	2	3	3	1	1	3	2	2	21	2,1	VH
2021-04-17 14.22.50	ja	[redacted]	Mer än 5 år	4	1	2	1	1	1	1	2	4	4	21	2,1	VH
2021-04-17 00.46.58	ja	[redacted]	Mer än 5 år	4	1	2	3	2	1	3	1	2	2	21	2,1	M
2021-04-17 09.09.37	yes	[redacted]	Less than 5 years	4	2	2	2	2	2	3	1	1	2	21	2,1	M
2021-04-16 19.23.44	ja	[redacted]	Mer än 5 år	4	1	3	3	2	1	1	2	1	3	21	2,1	H
2021-04-17 07.55.04	ja	[redacted]	Mindre än 5 år	4	2	2	3	3	1	1	1	1	3	21	2,1	-
2021-04-16 13.05.42	ja	[redacted]	Mer än 5 år	4	2	4	1	2	1	3	1	1	1	20	2	M
2021-04-17 16.14.41	ja	[redacted]	Mindre än 5 år	4	3	2	2	1	1	1	3	1	2	20	2	M
2021-04-17 13.47.50	ja	[redacted]	Mer än 5 år	2	1	2	2	2	1	3	3	1	3	20	2	L
2021-04-16 16.08.47	ja	[redacted]	Mindre än 1 år	4	1	3	1	1	1	3	3	1	1	19	1,9	VH
2021-04-16 18.02.12	ja	[redacted]	Mer än 5 år	4	2	2	1	2	1	2	1	2	2	19	1,9	H
2021-04-17 07.25.29	ja	[redacted]	Mindre än 5 år	2	1	3	3	1	3	2	1	1	2	19	1,9	-
2021-04-16 11.54.45	ja	[redacted]	Mer än 5 år	3	1	1	1	2	1	1	1	1	3	15	1,5	VH
2021-04-16 20.30.25	ja	[redacted]	Mer än 5 år	1	1	1	1	1	1	3	1	1	1	12	1,2	M