



Help! No bus to get to the supermarket:

The relationship between perceived liveability and accessibility for older people in Groningen and Drenthe

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Abstract

Currently, in Dutch politics, in the media, and in research, the disappearing amenities in the rural parts of the Netherlands are frequently discussed. Often they associate the disappearing amenities with a decrease in perceived neighborhood livability. However, previous research has shown that this relationship is not as linear as they make it appear (Weijer, 2011). The disappearing amenities are a problem for older people because they are a segment of the population vulnerable to this issue due to declining mobility. Previous research has shown that if older people perceive their liveability and accessibility as low, it negatively affects their autonomy, life quality, and health status and could lead to social vulnerability (Moor et al., 2022; Andrew et al., 2012). Therefore this research aims at understanding the relationship between perceived liveability and perceived accessibility to amenities in the provinces of Groningen and Drenthe. This research used an ordinal regression model in SPSS and used 2861 answers from a citizen panel.

The results show a significant negative relationship which means older people who experience problems with accessing amenities are more likely to think negatively about their liveability than older people who do not experience problems accessing amenities. This could partially be explained by the actual disappearing amenities but possibly also by the disappearing place where older people have social interactions. Income was found to have the most negative influence on this relationship. Future research should focus on fully understanding the importance of amenities that also hold a social function and their relationship with perceived liveability for older people.

Keywords: Perceived liveability; Perceived accessibility; Population decline; Decline in amenities; Population aging; Groningen; Drenthe

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1. Introduction

In December 2022, the NOS published an article (Kompeer, 2022) about the new public transport timetable in the Netherlands. In this new timetable, many, often rural, bus lines were discontinued. The article continued by explaining that in sparsely populated areas in the Netherlands, not only were bus lines discontinued, but also other amenities such as supermarkets are disappearing. Figure 1 shows grey areas, which are places in the Netherlands that do not have a supermarket that is reachable by bike or public transport within 15 minutes. These maps show the apparent consequences of the disappearing amenities because they visualize how people living in the more sparsely populated areas must travel further to a supermarket. Many of those areas are in the provinces of Groningen and Drenthe (North-East of the Netherlands, marked with a circle in Figure 1).

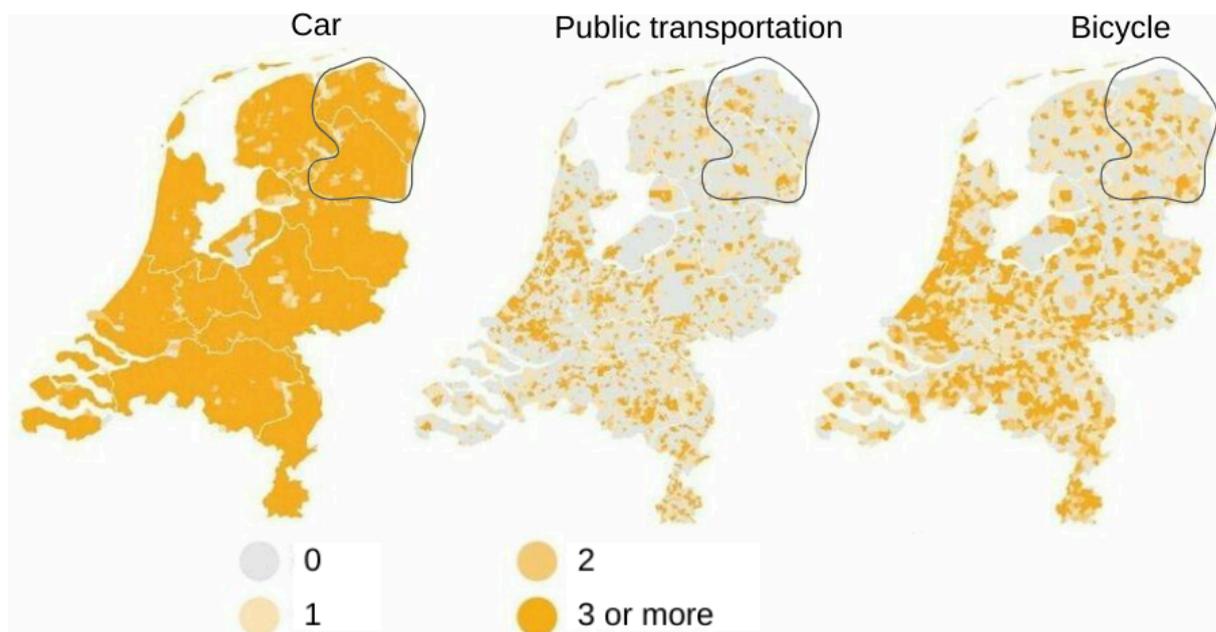


Figure 1 - Accessibility of supermarkets with different means of transportation within 15 minutes. Retrieved from Kompeer (2022).

A decline in amenities in the North-East of the Netherlands is a phenomenon that is not only observed with the discontinued bus lines and poor accessibility of supermarkets but is also seen in other areas. For example, for the municipality of Hogeveen (in the province of Drenthe), the distance to the closest library changed from 1.5km in 2010 to 3.4km in 2021 (CBS StatLine, 2022). This decline in amenities is not immediately a problem, as explained by Christiaanse (2020). She does note that basic facilities such as schools, supermarkets, and GPs might not always be necessary in every village, but accessibility to them is essential. For some residents traveling further to an amenity is not a problem, but for many older people (aged 65 and above), the increased travel distance is a problem. For many older people though, their mobility is the first that starts declining because of their declining health. Because of the lower mobility and older people living alone longer, getting to their everyday amenities becomes more complicated. However, how difficult this truly is, is difficult to measure. Some older people can walk a distance of 400 meters comfortably, whereas for others, this is already too far. Because of this, rather than looking at the distance between where older people live and an amenity is located, a more individualized method is needed to understand how reachable amenities are. This concept is called perceived accessibility.

Currently, when in Dutch politics and society, perceived accessibility is discussed, many politicians argue that with the decline in amenities, the liveability of the neighborhood in these areas comes into danger (Oostveen, 2023). How much these two concepts relate, though, and what demographic features like income, living environment, and gender could potentially influence it, is something that is not yet thoroughly researched and agreed on (Oostveen, 2023). Oostveen (2022) looked at

perceived accessibility in the province of Groningen from a policymaker's perspective and concluded that municipalities overestimate how accessible amenities are compared to the perceived accessibility of the residents themselves. He argued that part of this overestimation is the lack of data on which the policymakers base their policies. Alongside this, research by Christiaanse (2020) also focused on disappearing amenities in Friesland (a province on the west side of Groningen). She found that the decline in amenities does not necessarily occur in areas with population decline. Instead, it happens more often in smaller towns. Both argued that more attention should go to people with (lower) mobility, like older people.

When putting all this together, we can conclude that the decline in amenities is happening primarily in more rural areas in Groningen and Drenthe, and the number of older people will grow in the coming years (de Jong et al., 2022). Nevertheless, at the same time, the relationship between perceived liveability and perceived accessibility is not fully clear, while politicians and policymakers assume it is. So, to improve the political debate and for policymakers to better equip rural areas to deal with issues they will face in the coming years, a better understanding of the relationship between the two concepts is essential. Therefore the main research question for this research is:

How does perceived accessibility relate to perceived liveability for older people living in neighborhoods and villages in Groningen and Drenthe, and what demographic characteristics influence the relationship?

The sub-questions of the research question are:

- What is the perceived accessibility of older people to amenities in the provinces of Groningen and Drenthe?
- What is the perceived liveability of older people in the provinces of Groningen and Drenthe?
- How does perceived accessibility relate to perceived liveability?
- How do demographic characteristics influence the relationship between perceived accessibility and perceived liveability of older people in Groningen and Drenthe?

2. Theoretical Framework

This chapter is divided into different parts. Firstly, a clear definition of the main concepts and categorization of the different types of amenities is given. After this, a closer look is given to what is already known about how perceived liveability and perceived accessibility are interlinked. The next section is devoted to which demographic characteristics influence both concepts. Then the conceptual model is shared, and the hypothesis is given.

2.1 Definitions and categorization

Before diving into the theoretical framework, a clear definition of the two main concepts, perceived liveability and perceived accessibility, is needed. Liveability is a topic often discussed in policy regarding shrinking populations in rural areas of the Netherlands and the rest of the world. Often though, the concept is not specifically defined in these debates, while in science, many different definitions exist depending on the scale of liveability. This research aims to understand liveability from a personal perspective. This means it is looked at from a neighborhood scale. Often, when scientific articles investigate liveability on a lower scale, like on a neighborhood level, they use the definition by Leidelmeijer et al. (2008): "In geographical context, liveability usually refers to the degree to which the physical and the social living environment fit individual requirements and desires." This research will use this concept of neighborhood livability because it incorporates the physical and social environment with the individual's needs and preferences. This is important because this research aims at older people and their personal experiences with accessibility. As explained in the introduction, the needs of each older adult can be different, and because of it, it is complicated to make it a measurable variable. Using this concept of livability, it looks at how a person's personal experience with their environment fits their needs and desires. Because we are looking at a person's experience rather than the actual environment of the person, it means we are working with the concept of perceived liveability rather than liveability.

The second concept used in this research is perceived accessibility. Accessibility can be split up into four different dimensions according to Geurs and van Wee (2004) and Ritsema van Eck (2001), which are: the transport dimension (mode of transport), land-use dimension (the built environment), temporal dimension (travel times), and an individual dimension (the individual cost and opportunities to travel). For many years the most focus went on the first three dimensions because these dimensions can objectively be measured. They measured this by asking how long/far a person has traveled or if an amenity is in their neighborhood. However, with the aging population in the world, recently, more focus has come to the individual dimension. As explained in the introduction, the possibility of reaching a destination greatly depends on a person's mobility. The importance of the individual dimension is also underlined by Geurs and van Wee (2004) because, according to them, the individual dimension strongly affects the other dimensions. With this renewed interest in perceived accessibility also came new definitions. The definition made by Pot et al. (2021): 'the perceived potential to participate in spatially dispersed opportunities' is the definition used in this thesis. In their article, they explain that with opportunities, people can "engage in activities distributed across space" (Pot et al., 2021, p.2). They explain that reaching amenities is included in their concept. So, in other words, the definition of perceived accessibility is the possibility for people to go to different places and activities in different places.

The amenities that older adults usually visit can be categorized into different types. Katayama et al. (2020) used 13 amenities categories, some of which can also be used for this research: (local) grocery stores, schools, and libraries. These three are also recognized by the Dutch national government and international studies as important, as well as local doctors (GP) and cash machines (ATMs) (Christiaanse, 2020). Katayama et al. (2020) also had different categories for food (restaurants, bars, and coffee shops), which in this research will be classified as one category (cafe) according to Carr et al. (2011). Lastly, Katayama et al. also mentioned fitness facilities, but this amenity is broadened to

fitness/sports clubs for this research. This is because, in the Netherlands, it is common for people to be part of a sports club, which means that it should also be included in the research.

Churches and community centers are also marked as important amenities for people to meet and socialize (Heenan, 2010 and Jeffres et al., 2009). Even though they are both important for socializing, churches, and community centers are not the same, which is why both are included in this research but separate from one another. Lastly, at the beginning, the significance of public transport was already explained. Because of its importance, bus stops and train stations are included as one category.

Thus, the categories used in this research are (local) grocery stores, schools, libraries, GP, ATMs, cafe, fitness/sports clubs, churches (which include other worship places), community centers, and public transport.

2.2 Perceived liveability and perceived accessibility

As mentioned before, many studies have been conducted regarding liveability in general, including liveability for older people. All studies agree that living in a place with high liveability is important for older people. For example, Moor et al. (2022) explain that if the residential environment is not liveable for older people, it will harm them. It negatively affects their autonomy, life quality, and their health status declines. Most importantly, they argue that low livability often leads to social vulnerability for older people. Social vulnerability includes a person's social support, social engagement, and socio-economic status (Andrew et al., 2012). An older people's social network declines when they cannot reach places like their family, friends, or other meeting points such as libraries. For some, this gets to the point that they have hardly any social contacts left, which means they are socially vulnerable. Especially older people in more rural areas are at risk of becoming socially vulnerable. However, Miedema (2017) has shown that loneliness, a form of social vulnerability, is also common for older people living in urban areas. This is why focusing on both rural and urban areas is important.

To prevent social vulnerability, perceived accessibility is often looked at. For example, Hofferth (1998) and Glendinning (2003) both argue that with less accessibility to amenities, people are more dependent on each other. This is in line with what Lättman et al. (2018) argue because they too argue that when amenities have high perceived accessibility, it positively impacts social inclusion, the overall well-being of an older person and promotes physical activity. All of these aspects of perceived accessibility are positive for older people. While in turn, the closure of amenities in neighborhoods and villages has many negative impacts. When an amenity closes, higher intentions to leave a neighborhood or village are often reported (Lättman et al., 2018). This also harms the reported liveability of people in those places.

On the other hand, according to Weijer (2011), the closure of an amenity (or the threat of closure) has a bigger negative impact than when a service was not there in the first place. So, for example, if a village never had a supermarket, it affects people's perception less than when a village used to have a supermarket but closed over time. This has led to a new focus on having good meeting places rather than always having services in more rural areas in the Netherlands. Leidelmeijer et al. (2008) also argued that having some amenities near a person's house and having higher perceived accessibility to those few amenities is important in the Netherlands specifically. They argued that the closer a public meeting place, such as a community center, the better people feel about the liveability of the specific place. Still, this does not cancel out the need for certain amenities. Logher (undated) states that health care services such as a local doctor are important for liveability and should be well accessible.

2.3 Demographic characteristics

Demographic characteristics influence perceived accessibility and liveability. As previously explained, Geurs and van Wee (2004) have split accessibility into four elements, of which the individual dimension is one and influences all other elements. They explain that the individual dimension is made up of capabilities and needs. Capabilities are determined by, for example, a person's income and education level. Whereas the needs are determined by factors such as age.

The most common demographic characteristic written about in research influencing perceived accessibility is age. As people age, their mobility declines, and in Western society, this means they stay closer to home as they get older (Lätmann et al., 2019 and Jamei et al., 2022). In these researches, the conclusion was that often, with aging, the perceived accessibility declines. When we look at the population of this research, people above 65, a steep decline in mobility happens. A person that is 65 years old is often more mobile than a person who is 90 years old. Because of this, people above 65 are commonly split into two categories. The first category is people between 65 and 74, commonly called the young-old. The people in this category are often recently retired from work and their mobility is slowly declining but walking, cycling, and even driving is often still possible. This is vastly different for the second category, those above 75 years old. These people, often called old-old, experience much greater mobility challenges. The old-old are often unable to drive anymore and the distance they can cycle and walk is vastly decreasing. This is on average for the whole age group. When looking at individuals, the situation can be different. This is why it is preferable to use a person's health status rather than a person's age but when this is not available, age is a possible substitution because research has proven mobility declines with age (Jamei et al., 2022).

Alongside age, Geurs and van Wee also referred to income and education levels. For both characteristics, the problem is that some studies find both have an insignificant influence on perceived accessibility, while others find a significant difference. For income, the studies that do find a significant difference, the conclusion is that people with lower income perceive that transport systems and urban services have lower accessibility compared to people with higher income. At the same time, people living in low-income areas find their areas more accessible on a walking level than people in high-income areas. This is underlined by other research, such as by Schmöcker et al. (2008), because people with higher incomes use their cars as a transportation mode more often than people with lower incomes. Similar results have been found for education, where lower-educated people have lower perceived accessibility.

Finally, a demographic characteristic that could influence perceived accessibility is gender. When looking at mobility, previous research has shown that there is a difference between men and women (Páez et al., 2007). Li et al. (2012) and Schmöcker et al. (2008) both argue that older men travel more and if women travel, they tend to rely more often on public transport. Although there are few studies on the effect of gender on perceived accessibility, Jamei et al. (2022) have shown that in Sweden, women have higher perceptions of accessibility than men.

When linking these characteristics to perceived liveability and researching which demographic characteristics influence perceived liveability, one runs into a problem. Previous research has shown that many different determinants exist for perceived liveability. Badland et al. (2014) found over 100 determinants for liveability. However, their research argued that 11 domains are the most impactful. Of these 11 domains, three overlap with the demographic characteristics of Geurs and van Wee: income, education, and age.

Alongside these three, multiple other dimensions that Badland et al. mentioned, are related to people's surroundings, like the domains Public open space and Natural environment. In the Netherlands, the SCP (Sociaal Cultureel Planbureau) showed in one of their studies that there is a difference between people living in villages and cities and how they perceived the liveability (Steenbekkers, et al., 2017). This research was done in 2011 and 2014, which means the results cannot be used for this research, but it does show that the urbanization rate is something that should be included.

When looking at perceived accessibility, there is a similar difference between rural and urban areas. Based on CBS (2023) data, we can see that people who live in Aa en Hunze have 1,4 supermarkets within 3 km. In the city Groningen there are 18,4 supermarkets within 3 km. This shows the clear difference between the accessibility of supermarkets in more rural and urban areas. This difference entails that depending on where a person lives, they have more supermarkets nearby and are more likely to have easier access to them. Because of this, it is important to include an urbanization rate on a personal level, which, for this research, will be called the living environment. Thus, for this research, the included demographic characteristics are age; income; education; gender, and a person's living environment.

2.4 The Conceptual model

Below this research's conceptual model can be seen in Figure 2. On top, in the bigger font size, are the two main concepts of this research: perceived accessibility of amenities and perceived liveability for older people. There is an arrow from perceived accessibility to perceived livability for older people because this research aims to investigate if and how this relationship exists. It should be noted that previous research has shown there is also an argument to be made that perceived liveability influences perceived accessibility, as Antonelli and Vizzari (2017) argue in their article. However, this research only focuses on how perceived accessibility influences perceived liveability. Below the two concepts, demographic characteristics and living environment can be seen because this research also aims to investigate how they influence the potential relationship between perceived accessibility and perceived liveability.

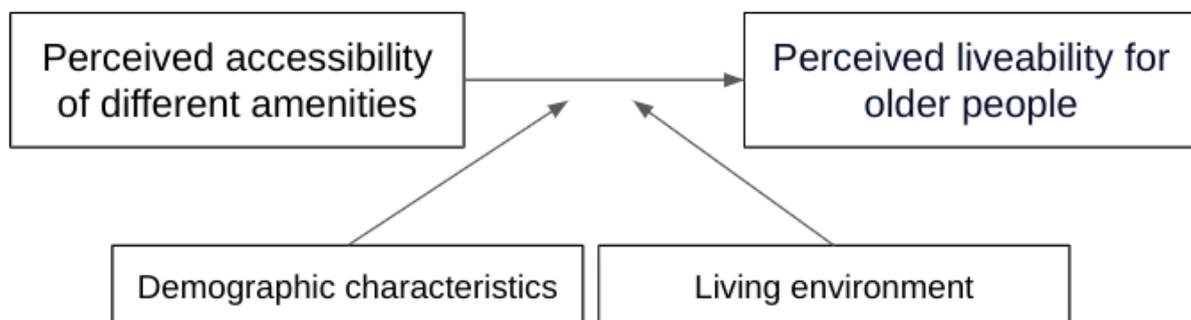


Figure 2 - Conceptual model

2.5 Hypothesis

Judging on the theoretical framework and the conceptual model, hypotheses can be made for this research. This research hypothesizes a significant relationship between perceived liveability and perceived accessibility.

For the (relevant) subquestion, the hypotheses are:

- There is no significant difference in the perceived accessibility of amenities among older people in the provinces of Groningen and Drenthe.
- There is no significant difference in the perceived livability among older people in the provinces of Groningen and Drenthe.
- Demographic characteristics do not significantly influence the relationship between perceived accessibility and perceived livability of older people in Groningen and Drenthe.

3. Research design

3.1 Research area

Groningen and Drenthe are two provinces in the North East of the Netherlands. By Dutch standards, both provinces are considered mainly rural, with a few urban areas, such as the cities of Assen and Groningen (CBS, n.d.). Both places are expected to experience some challenges in the coming years. Firstly, between 2021 and 2035 a population decline is expected by CBS (2023), which is indicated on the left map in Figure 3. Both provinces are predominantly blue and grey, which means a population decline. Only in urban areas, especially in the city of Groningen, an increase in population is expected. Overall though, the population of both provinces is expected to be declining.

Secondly, this population decline is even more problematic because both provinces will be experiencing ‘double aging’ (CBS, 2023). Double aging means that younger people are moving out of these areas while the older population stays behind and lives longer. This is why the total number of people above 65 will increase dramatically in the coming years in Groningen and Drenthe, which can be seen on the right map in Figure 3, where the percentage of the population above 65 years in 2035 per municipality can be seen.

The increase of older people in the population is extra problematic because currently, many municipalities in Drenthe and Groningen already have many older people living there. According to CBS (2023), 21% of the population of Groningen and almost 25% of the population of Drenthe is over 65 years old.

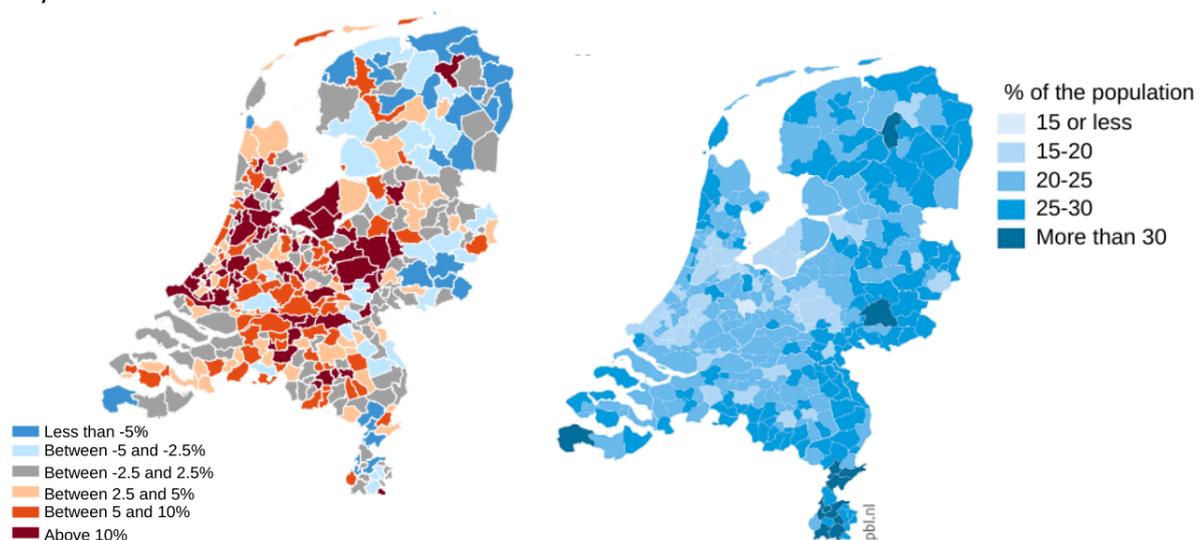


Figure 3 - The left map indicates the population growth per municipality between 2021-2035. The right map indicates the inhabitants age 66 and above per municipality in 2035. Both maps are retrieved from CBS (2023).

3.2 Method of data collection

The data used in the research has been collected by CMO STAMM. CMO STAMM is an independent knowledge center focused on collecting data on social issues and monitoring demographic trends for the provinces of Groningen and Drenthe. They collect this data by using citizen panels, one for each province. The people in the panels are selected through purposive sampling. This means that CMO STAMM will only send invitation letters to join their citizen panels to people with specific characteristics. By doing this, they try to make their citizen panels as representative as possible for both provinces. In both provinces, the citizen panel consists of around 6000 participants. The people in the citizen panels get sent surveys with many different demographic/social topics. To also gain longitudinal data, they send some surveys (with sometimes slight changes) to their citizen panel on a (two-) yearly basis. The data this research is based on is from longitudinal research on overall well-being and was carried out in November 2022. The main research question was: “How

satisfied are you with residing, working, and living (in general) in Groningen/Drenthe?”. The original questions of the survey which are used in this research can be found in Appendix 1.

As explained in the previous sections, the population of this research consists of older people (65+ years old) living in the provinces of Groningen and Drenthe. This means the sample comprises 3019 people (1796 for Drenthe and 1223 for Groningen).

3.3 Ethical considerations

Several ethical considerations are taken into account while conducting this research. Firstly, participation in the citizen panel is voluntary and people are not obligated to complete the survey. Alongside this, they can withdraw from the panel at any moment they would prefer. Informed consent is ensured from the first time people are contacted to become part of the citizen panels. The invitation letter explains what being part of the panel implies and what will be done with the results. This information can also be found on their website (CMO STAMM, n.d.). Anonymity is also ensured by removing the names of the respondents and all other contact information. Alongside this, the data is immediately anonymized, so no answers panel members give can be traced back to an individual. CMO STAMM stores the data on a drive with limited access for employees and no access for people from outside the company.

3.4 Operationalizations and analysis

This research used the statistical computer program SPSS to analyze the data. Below in Table 4, the operationalization of the different concepts can be found. To correctly examine the data, different steps were taken. Firstly, the data was explored and checked by using descriptive statistics. This included checking for any abnormalities in the data and for all variables, such as outliers. Secondly, the right regression was determined. This was done by looking at the assumptions of the regression. If all assumptions are met, the regression can be used. If not, data transformations were needed. Thirdly, the regressions were done. Because there are control variables next to the dependent and independent variables, first, a regression was done between only the dependent and independent variables. After this, the control variables were added, one at a time. By doing this, it can be clear how the control variables influence the correlation between perceived liveability and perceived accessibility. To make sure the regression was robust, the control variables were also added in different sequences. The data did not have any notable differences. After this was done, the regressions were interpreted. The significance level of this research is 95%. However, at times a significance level of 90% is used. When a significance level of 90% is used, it is specifically named.

Table 4 - Operationalization model

Variable	Values	Type of data
Perceived liveability ¹	How satisfied are you with the liveability of your village or neighborhood? The answer is given on a scale between 1 and 10.	Ordinal
Perceived accessibility ¹	Do you experience problems with reaching the following amenities? Supermarket; Local shop; General practitioner; School/study; Bus stop/train station; ATM; Café; Sport club/gym; Library; Church/Place of worship; Community center The answer options are (in this order): I do not use this amenity; Yes, often; Yes, every now and then; No, never or hardly ever.	Ordinal
Age ²	Young-old (ages 65 to 74) Old-old (age 75+)	Binary
Income ³	Low (Less than €2000,- gross income per person per month)	Ordinal

	Middle (Between €2001,- and €4000,- gross income per person per month) Higher (Above €4001,- gross income per person per month)	
Living environment ⁴	Not/hardly urbanized: fewer than 1000 addresses per square kilometer Moderately urbanized: 1000 to 1500 addresses per square kilometer Strongly/extremely urbanized: 1500 or more addresses per square kilometer	Ordinal
Gender	Male, female	Binary
Education	Low (no education; only primary school education; vmbo degree; mbo-1 degree) Middle (havo/vwo degree; mbo-2 degree; mbo-3 degree; mbo-4 degree) High (hbo or university degree)	Ordinal

¹In appendix 1, the original questions and answer options in Dutch that were asked by CMO STAMM can be found.

²The age is put into two categories according to Abdel-Ghany et al. (1997).

³The income division is based on CBS (2022).

⁴The living environment is researched by looking at the degree of urbanization. The data uses the degree of urbanization according to CBS (undated) and is calculated by dividing the number of houses within 1 km near a specific house by the surface.

⁵The total amount means the total number of people that answered the question. In total, 2861 people were used in the research.

3.5 Assumptions and Goodness-of-fit statistics

In the table above, it can be seen that all dependent and independent variables are either ordinal or binary. This means that an ordinal regression will likely fit the data best. To check this, the assumptions of the ordinal regression first need to be met (NCRM, 2022), which are:

- The dependent variable are ordered
- One or more of the independent variables are either continuous, categorical or ordinal
- No multicollinearity
- Assumption of parallel lines (proportional odds)

Firstly, the dependent variable, the perceived liveability, is a scale from 1 to 10 with equal intervals which means it is an ordinal variable. Secondly, the independent variable, perceived accessibility, has the values: 'Yes, often'; 'Yes, every now and then'; 'No, never or hardly ever'; 'I do not use this amenity'. These values can be ordered, meaning this is an ordinal value. This means that the first two assumptions are met.

Thirdly, no multicollinearity is required. There are multiple ways of testing for multicollinearity. In this research, the Statistics VIF is used. In this case, when a dependent variable or a control variable has a VIF value of below 10, there is no multicollinearity between the variable and the dependent variable. As shown in Table 5, all values are well below 10, meaning there is no multicollinearity between the dependent and control variables and the independent variable. Thus, the third assumption is also met.

Table 5 - shows the Collinearity Tolerance and the Statistics VIF between the dependent and control variables and the independent variable. Retrieved from SPSS.

	Collinearity Tolerance	Statistics VIF
Supermarket	0,754	1,327
Local shop	0,915	1,092
GP	0,791	1,264
School/study	0,871	1,148
Train station/bus stop	0,845	1,183
ATM	0,883	1,133
Cafe	0,834	1,199
Sportsclub/fitness	0,834	1,198
Library	0,802	1,247
Church	0,892	1,122
Community center	0,86	1,163
Gender	0,943	1,06
Income	0,83	1,205
Living environment	0,828	1,208
Education	0,959	1,043
Age	0,958	1,043

Lastly, the assumption of parallel lines (also known as proportional odds) needs to be met. This assumption is met when the model is not significant according to the significance level of the test of parallel lines (at a significant level of $p < 0.05$) (NCRM, 2022). Because the regression was run multiple times, the significance level of the test of parallel lines (TPL) is reported separately in Table 5. From these results, we can conclude that the only time the model became significant was with model 3, when income was added. In the end though, the significance level was well above the set significance level ($0.494 > 0.05$), which means the last assumption was met. Because all of the assumptions for an ordinal regression are met, the ordinal regression is used in this research.

Table 6 - Table showing the significant levels of the parallel lines test (TPL), Model fitting information (MFI), and the Goodness-of-fit (GoF).

		TPL	MFI	GoF
Model 1	Only dep. & indep. variables	0,203	<,001	0,147
Model 2	Add Gender	0,117	<,001	0,999
Model 3	Add Income	0,005	<,001	0,004
Model 4	Add Living environment	0,78	<,001	0,995
Model 5	Add Age	0,371	<,001	1
Model 6	Add Education	0,494	<,001	1

Before the regressions are run, a closer look at how well the data fits the model is done, which is done by a goodness-of-fit test and by looking at the model fitting information. For each regression above in Table 9, the model fitting information (MFI) and the Goodness-of-fit (GoF) are shown. The model fitting information needs to be significant ($p < 0,05$). Because all p-values are below 0.001, the conclusion can be made that the model significantly improves fit compared to the null model. Secondly, the Goodness of Fit test needs to be not significant. This would mean there are no significant differences between the observed data and the fitted model. As seen in Figure 9, all significant levels are well above 0,05, except for the third model, when the control variable income was added. This means that the regression model can still be used, but some carefulness with the interpretation of the regression needs to be kept.

4. Results

4.1 Descriptive statistics

Dependent and independent variables

First, the main variables: the dependent and independent variables. Below, in Table 7, the descriptive statistics of all dependent and independent variables can be seen, and Appendix 2 shows the frequency distribution. Of all the people that answered the survey, 3019 were above 65. Of those 2861 were useful for this research. This difference exists because not all corresponding questions were answered, so these people were excluded from the research. From these tables, a few things can be concluded. Firstly, when looking at the dependent variable (Satisfaction liveability), the distribution is normal but is skewed to the right because the mean is 7,78 (on a scale from 1 to 10). Secondly, the independent variables though are not normally distributed. This is the case because the options 'I have never used this amenity' (number one) and the option 'I have no problem accessing these amenities' (number four) are chosen most often. Because of this, the mean in Table 7 does not always give the proper indication. So, it is better to look at the distribution to understand what amenities older people find most difficult to access. Based on this, it can be concluded that most older people often experience problems accessing public transportation (train station/bus stops) and the ATM.

Table 7 - Descriptive statistics of the dependent and independent variables.

	Minimum	Maximum	Mean	Std. Deviation
Satisfaction liveability	1	10	7,78	1,068
Supermarket	1	4	3,9	0,422
Local shop	1	4	2,73	1,467
GP	1	4	3,88	0,446
School/study	1	4	1,37	0,981
Train station/bus stop	1	4	2,65	1,419
ATM	1	4	3,48	0,929
Cafe	1	4	2,35	1,47
Sportsclub/fitness	1	4	2,35	1,468
Library	1	4	2,61	1,465
Church	1	4	1,93	1,368
Community center	1	4	2,55	1,47

Control variables

Then, the control variables. This research has five control variables: age; income; living environment; gender, and education. In Figure 8, the age distribution of the respondents can be seen. From this table, it clearly shows that the majority of the respondents are between the ages of 65 and 70. Because of the age distribution, the first value of the variable age (65-74) will be bigger than the second group (75+). There are no problematic outliers for this variable.

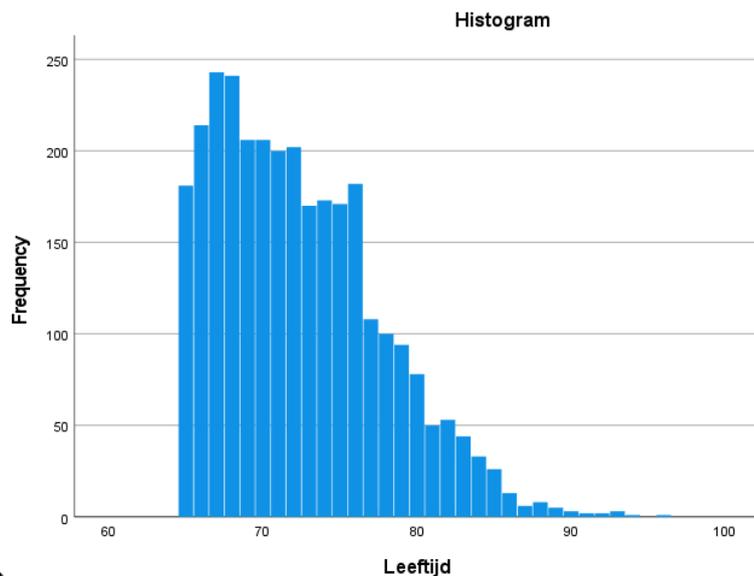


Figure 8 - Histogram with the age distribution, the mean, standard deviation, and the number of people in the sample. Retrieved from SPSS.

The descriptive statistics of the control variables gender, income, education, and living environment (STED 2) can be found in Table 9. Moreover, Appendix 2 shows the frequency distribution of these variables. Most of the sample is male (62,5%), most people are higher educated (51.4%), and most are in the highest income bracket (37,9%). Even though the distribution is abnormal, they can still be used for this research.

Table 9 - Descriptive statistics of the variables income, education, and urbanization rate.

	Minimum	Maximum	Mean	Std. Deviation
Gender	0	1	0,37	0,484
Income	1	3	2,25	0,762
Living environment	1	3	2,69	0,608
Education	1	3	2,31	0,795

4.2 Regression analysis

The table with the estimates and corresponding significance levels of the regression can be found in Appendix 3. Firstly, some variables' significance levels stand out when looking at the results. Unfortunately, the variables church and sports club are not significant. Not on a 95% or 90% significance level. The local shop variable is only partly significant at a 90% significance level, which is why a 90% significance level is used for this variable. Of the control variables, gender and education are not significant.

The first amenity is supermarkets. Here a negative relationship exists. This means that the more likely an older person is to experience problems with accessing a supermarket, the lower they are likely to experience their liveability compared to older people who have no problem accessing a supermarket. When adding the control variables, income seems to have the biggest influence because when income is added, the relationship becomes much more negative and stays stable after this. Local shops (on a 90% significance level) have some interesting results. The people who answered that they sometimes experience problems accessing local shops have a negative relationship with

perceived liveability. Whereas people who often experience problems with accessing local shops have a positive relationship with their perceived liveability. The control variables do not seem to influence the relationships.

Next are the GP's. Here a 90% significance level is used to gain more answers. For the people who do use the GP but often experience problems with accessing them, a negative relationship with perceived liveability is reported. Here again, income seems to have the biggest influence. Conversely, people that do not use the GP report a positive relationship with perceived liveability. Here, control variables do not influence the relationship.

Even though most people in the sample reported that they did not use the school/study amenity, there were still some significant estimations. These estimations reported a negative relationship for the people that often experience problems accessing schools/studies. Because there are only two significant estimations, little can be said about how the control variables affect the relationship.

After this, public transportation (train station/bus stop). Only the people who answered that they do not use public transportation ended up with a significant value. They reported a negative relationship with perceived liveability. Of the control variables, the living environment was the most influential. Still, this was a small difference.

The amenity ATM has some significant values on a 90% level, which is why we will use a 90% significance level for this variable. The regression shows a negative relationship between people who often and sometimes have problems accessing an ATM and perceived liveability. When adding the control variables, for people that often experience problems with the accessibility of ATM's, age has the biggest influence. Here the relationship became more negative. For the people that answered sometimes, not enough values were significant when the control variables were added to say something about it.

For the accessibility to cafes, a negative relationship is reported for those who do not use the amenity. Here the control variable changes it in different ways. Income makes the relationship much less negative and age makes it more negative again. Both control variables do not make the relationship as negative as the original model, with only the dependent and independent variables.

Like local shops and GP, the library reported different results depending on the value. A positive relationship can be seen for those who answered that they do not use the amenity. Here the control variable age and income have the biggest influence, making the relationship more positive. For the people that do experience a problem with accessing libraries. A negative relationship exists and no control variables influence this a lot.

Lastly, the accessibility to community centers. A 90% significance level is used here because more results are significant. There is a negative relationship between the people that do not use the library and their perceived liveability. The living environment is the most influential of the different control variables. It makes the relationship less negative.

Next are the significant control variables. Firstly, income. Here the highest income category is the reference category and all the other categories have a negative estimate. This means that older people in lower income categories are less likely to be satisfied with their living environment than older people with a higher income.

A significant level of 90% for the living environment is used to make all the values significant and, therefore, useful. The reference category is not/hardly urbanized and the estimate is negative. This means that older people who live in moderately, strongly or extremely urbanized environments are

less likely to give their liveability a higher score than those living in an environment that is not/hardly urbanized.

Lastly, age, for which old-old (75+) are the reference category. Age also has a negative estimate, which means that older people between 65 and 74 are less likely to give their living environment a higher score than old-old people.

5. Discussion

Based on the regression analysis results, even though not all variables and values were significant, some conclusions can be drawn. Two amenities were not significant at all, which are sport clubs/fitness and church. Because they are insignificant, we conclude that the data does not provide evidence of a positive or negative relationship. This does not mean there is no relationship or effect, but this data does not provide it.

To understand the other results, it is important to understand the difference between the different answer options. Firstly, people could choose if they do not use the facility. The rest of the options were about how much difficulty they experienced accessing the different facilities. To analyze the results, we make a difference between these two groups of answers.

Firstly, the answers that were given regarding how difficult it is to access amenities. Of the amenities that were significant, only local shops had a positive relationship, whereas the rest had all negative relationships. This means that for most amenities when people experience difficulty accessing these facilities, they are also more likely to have a negative experience with their liveability. Lastly, we need to zoom into the facility school/study. Here also a negative relationship was recorded. However, the frequency distribution in Appendix 2 shows that almost all older people do not use the facility. This is likely due to the fact that most people in the sample are retired and therefore do not go to school or are studying anymore. Because so few people use the facility in the first place, it is chosen to leave it out of the research.

Secondly, the people that do not use the facilities, compared to the people that do use them but have no problem accessing them, still are more likely to experience their surroundings badly for most amenities. The exceptions to this are the GP and library because they have a positive relationship. Lastly, the control variables. Of all the control variables, income influenced the answers the most. After this was age and living environment. A few times no control variables influence the model.

The results show that when people experience low accessibility to amenities it seems to negatively affect their perceived liveability. The impact of this is underlined by Lättman et al. (2018). They argued that when older people have low accessibility it negatively affects their social inclusion and makes them more socially vulnerable. Many of the amenities that show a negative relationship have a social function in them like the (local) grocery store and the library. In the Netherlands many supermarkets have a small coffee corner where people can sit and have a chat. Alongside this, often many groups of older people can be found in front of or near a grocery store where they will meet up with each other. Libraries in the Netherlands often have a table with newspapers and also something to drink like coffee and tea. Here too, many older people can also meet with each other. When accessibility to those places becomes more complicated for older people they can become socially isolated and with that experience their environment is likely more poor than the people who have no problem accessing it (Lättman et al., 2018).

At the same time a different explanation could be given why GP's and ATM's have a negative relationship. This answer can be found when looking at Leidelmeijer et al. (2008). They argued that when an amenity disappears that used to be there, people experience their environment lower. There are multiple reasons for this but one of the most important ones is that people have more difficulty accessing the amenity. CBS data (2023) has shown that in Drenthe and Groningen there has been a decline in GP's and ATM's. Especially in the more rural areas a decline in ATM's and GP's can be seen and this is also where many older people live.

When adding the control variables for these negative relationships, it became clear that income has the most impact. Especially for the variable supermarkets, income seems to make the relationship much more negative. This means that income heavily influences how well people perceive their

environment and how accessible they feel the supermarket is. This is interesting because, as explained by Geurs and van Wee (2004) and Schmöcker et al. (2018), people with lower income experience more problems with accessing transport systems than people with higher income. With these results, a similar conclusion can be made. A possible explanation for this can be in what Schmöcker et al. (2018) argued. They said that people with lower income experience more problems with transportation systems, whereas those with higher incomes use their cars more often. With the decline in supermarkets in some areas, this could mean that traveling further for older people with higher incomes is easier. With that, they experience fewer problems with accessibility.

The results also show what people who do not use some of the facilities think about their liveability compared to those who do use them but have no problem accessing them. Community centers, cafes, train station/bus stops, and supermarkets are the amenities that have a negative relationship. The positive relationships are with GP's and libraries. This means that when a person who does not use public transportation, for example, reports lower liveability than a person who does use it but can easily get there. This finding suggests that people who do not use amenities likely report lower liveability. This could be an explanation of what Lätmann et al. (2018) argued in their article. Older people who do not use the facility, miss out on the social interaction at the amenities and therefore report a lower liveability.

The control variable gives an interesting perspective on this. It shows that the living environment influenced community centers and train station/bus stop stops most. The living environment itself also has a negative relationship with perceived liveability. This means that older people living in more rural areas are likely to perceive their liveability as lower.

This research shows that the automatic cognition of when amenities disappear, older people find their liveability less, seems to have some truth in it. However this can partially be explained by the actual disappearing amenities but it could also be explained by the disappearing place where older people have social interaction. For policymakers and politicians this means they should focus on keeping the necessary amenities accessible, even if they are disappearing and giving older people a different place to meet up with one another. By doing this older people can still live as independent as possible while not becoming socially isolated.

Like all research, some caution must be considered when using these results. Firstly, as explained in the results section, most people in the sample are higher educated, have a higher income and are male. As explained in the theoretical framework, there is previous proof that people with higher income and/or education experience fewer problems accessing amenities. Which means that the sample is not a perfect reflection of the population. Alongside this, only people's perceived accessibility was asked, not their mode of transport and health status. Both of these things can give more insight and understanding of why people experience their accessibility in a certain way.

6. Conclusions

This research aimed to identify the relationship between perceived liveability and perceived accessibility for different amenities for older people and what demographic characteristics influence the relationship. The research was conducted in the Dutch provinces of Groningen and Drenthe. It has shown a negative relationship for most amenities, which means the more problems a person experiences with accessing amenities, the more likely they are to think negatively about their liveability compared to people who have no problems accessing the amenity.

These results were gained using a regression analysis based on data from a research company (CMO STAMM) and the reference category was those who use the amenities but do not experience problems accessing them. The results were significant on either a 95% or 90% significance level, and the values that were not significant were excluded from the research.

Moreover, the results were not completely in line with the hypothesis. Before the research started, it was assumed a relationship existed, but it was unclear what direction the relationship was. The research has shown a negative relationship exists between older people who experience problems accessing amenities and their perceived liveability compared to those who do not experience problems accessing amenities with their liveability. Income seems to influence the relationship the most.

The reason for this negative relationship can possibly be found in the function of the amenities. GP and ATM's have a practical function and, according to CBS (2023), they have been disappearing in Groningen and Drenthe. Leidelmeijer et al. (2008) argued that people's perceived liveability declines because an amenity used to be there but now not any more. While the other amenities which had a negative relationship, all had a social function in them. As argued by Lättman et al. (2018) older people likely experience a decline in livability when their accessibility declines because they miss out on social interaction with other (older) people.

For policy makers and politicians this means they can use the argument of "when amenities disappear, their liveability goes down", but focus should go on how to deal with this. Some practical amenities like the GP and ATM's should be accessible while others with a social function in them can possibly be replaced by another place where older people can meet up.

For future research, the mode of transport and people's health status should be included in the research. This will explain why some people have difficulty accessing certain amenities. Secondly, further research is needed to understand the importance of the social aspect in perceived accessibility and how it affects the relationship with perceived liveability further. This has been attempted in this research; however, because the data could not meet the assumptions of different regression models and was often not significant enough, this could not be fully researched.

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Appendix

Appendix 1 - Survey questions in Dutch

Below the original relevant survey questions that were asked in the survey by CMO STAMM can be found.

4. 2. Hoe tevreden bent u met de leefbaarheid in uw dorp of wijk?

Hiermee bedoelen we het goed kunnen wonen en leven in het dorp of de wijk waarin u woont. Woont u in een buitengebied, neem dan telkens het gebied in gedachten dat u als woonomgeving ervaart.

Geef u alstublieft een rapportcijfer tussen de 1 en 10. Het cijfer 1 staat voor de laagste waardering en het cijfer 10 voor de hoogste waardering.

	1	2	3	4	5	6	7	8	9	10
Cijfer	<input type="checkbox"/>									

39. 24. Hoe mobiel beschouwt u zichzelf buitenshuis op een schaal van 1 tot 10?

Het cijfer 1 betekent dat u niet mobiel bent en niet zonder hulp bijvoorbeeld de supermarkt kunt bereiken. 10 betekent dat u volledig mobiel bent en overal zelfstandig naartoe kunt gaan.

	1	2	3	4	5	6	7	8	9	10
Cijfer	<input type="checkbox"/>									

41. 25. Hoe tevreden of ontevreden bent u in het algemeen over de voorzieningen in uw dorp of wijk?

Geef u alstublieft een rapportcijfer tussen 1 en 10. Cijfer 1 staat voor de laagste waardering en cijfer 10 voor de hoogste waardering.



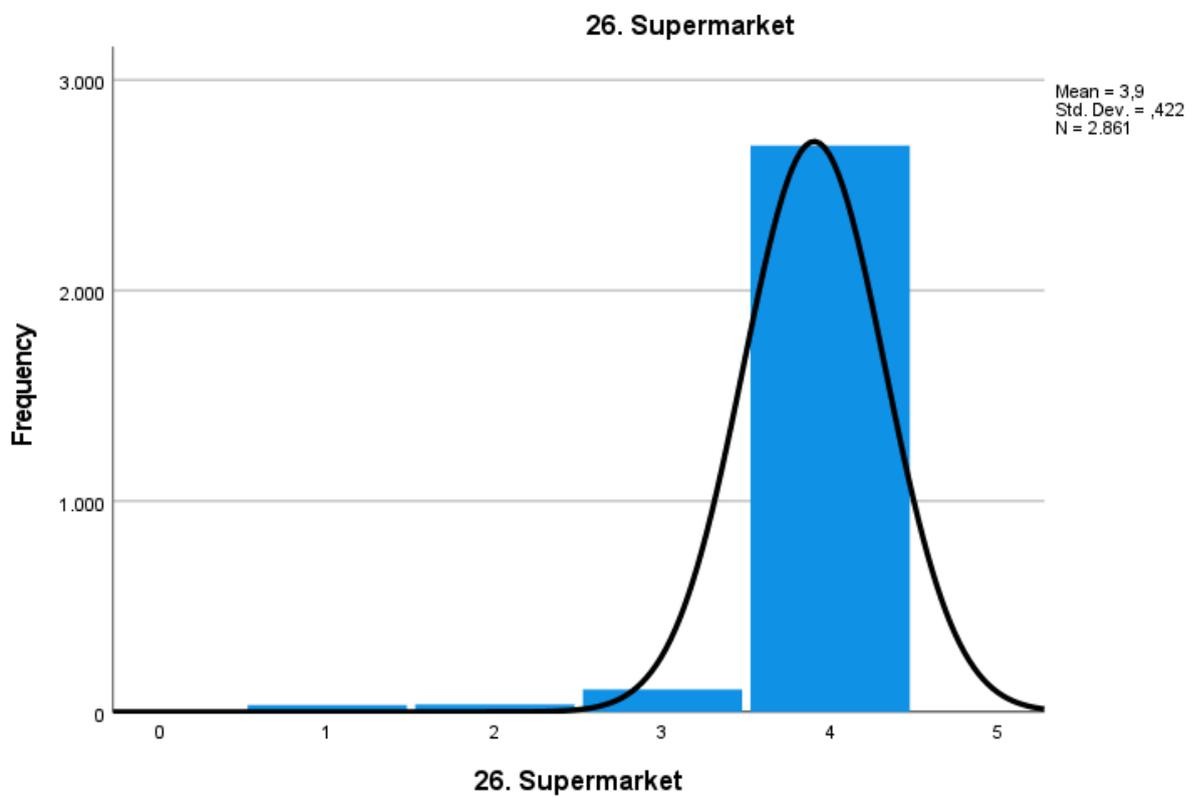
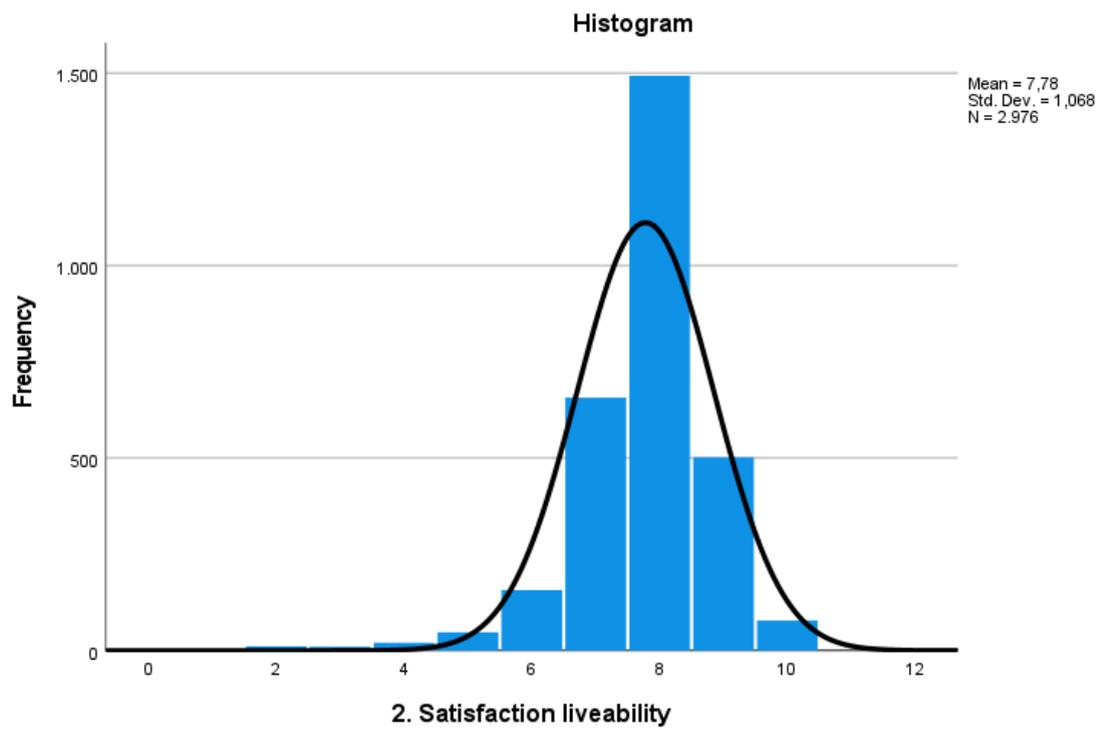
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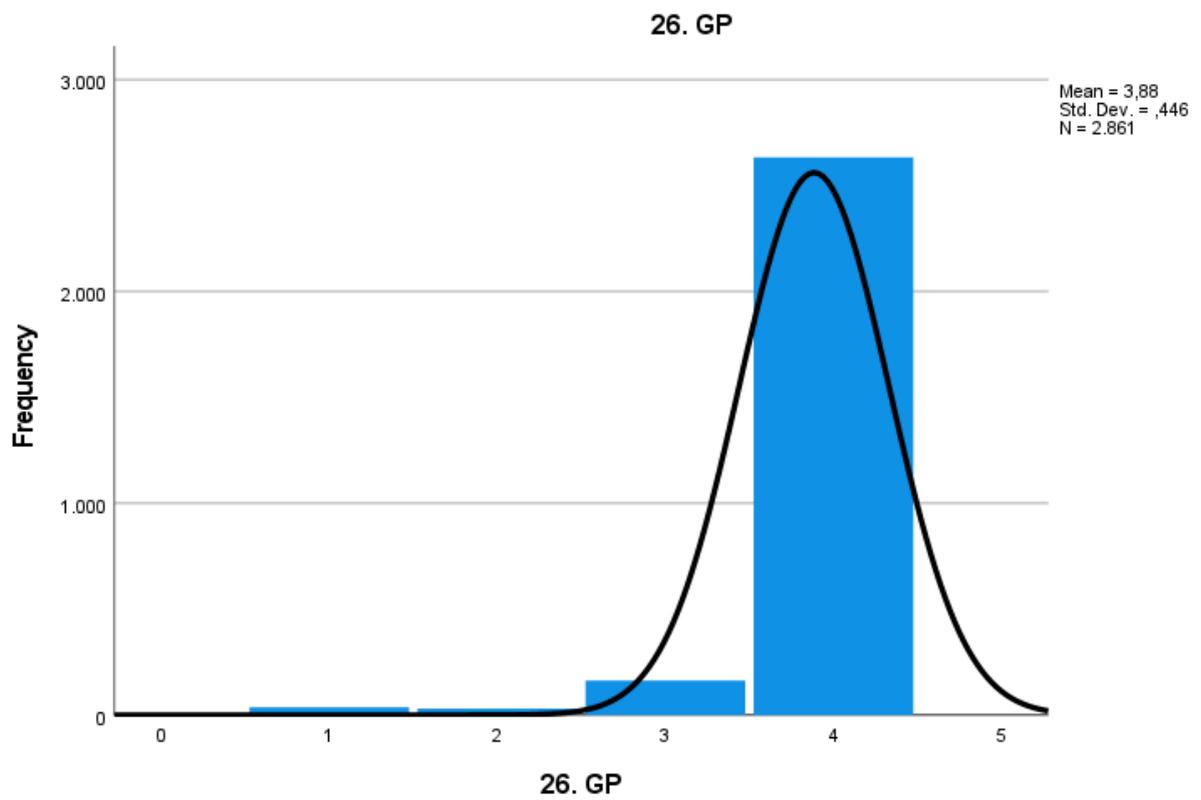
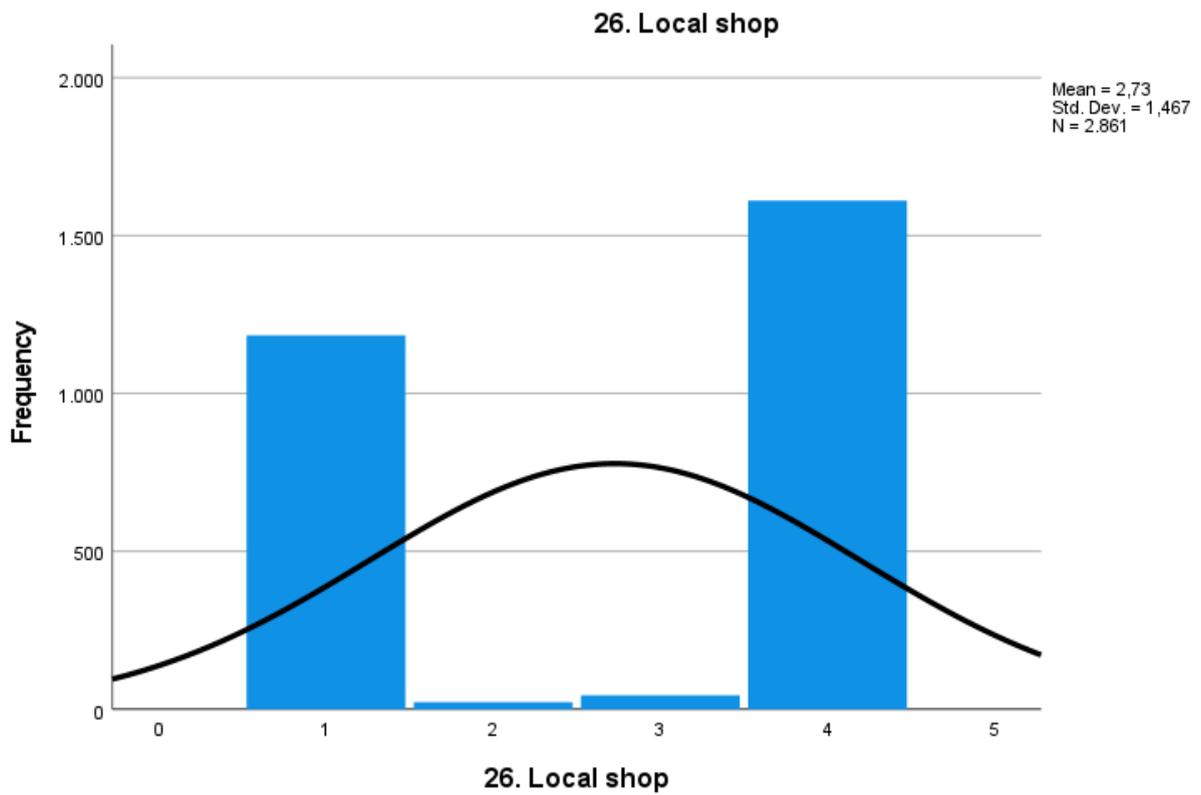
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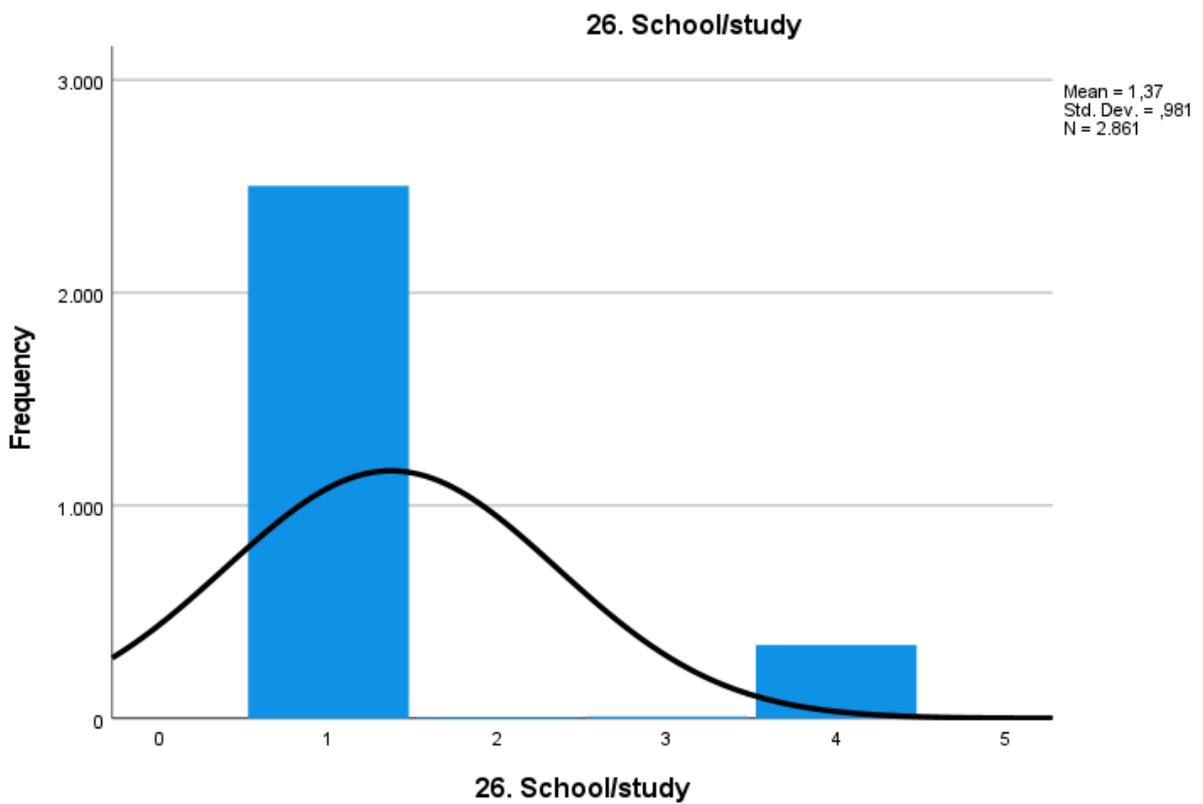
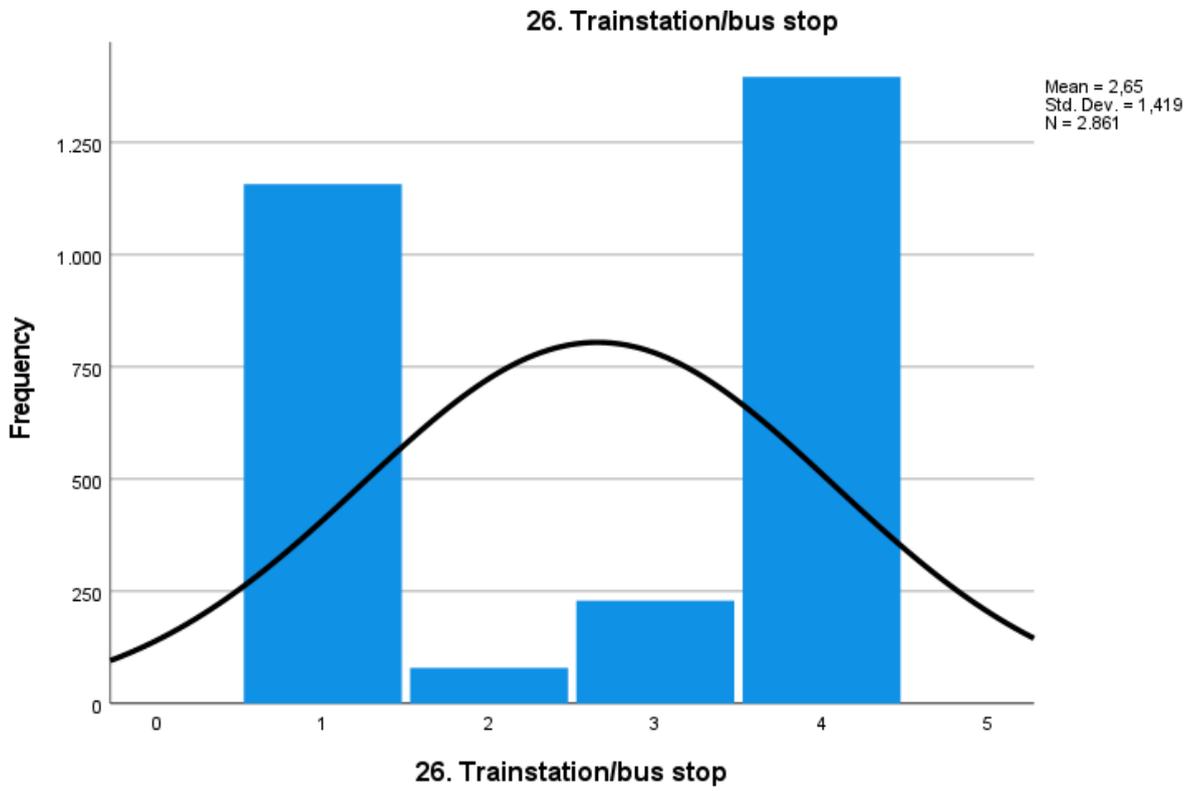
43. 26. Ervaart u wel eens problemen om de volgende voorzieningen te bereiken?
(State only one answer per question)

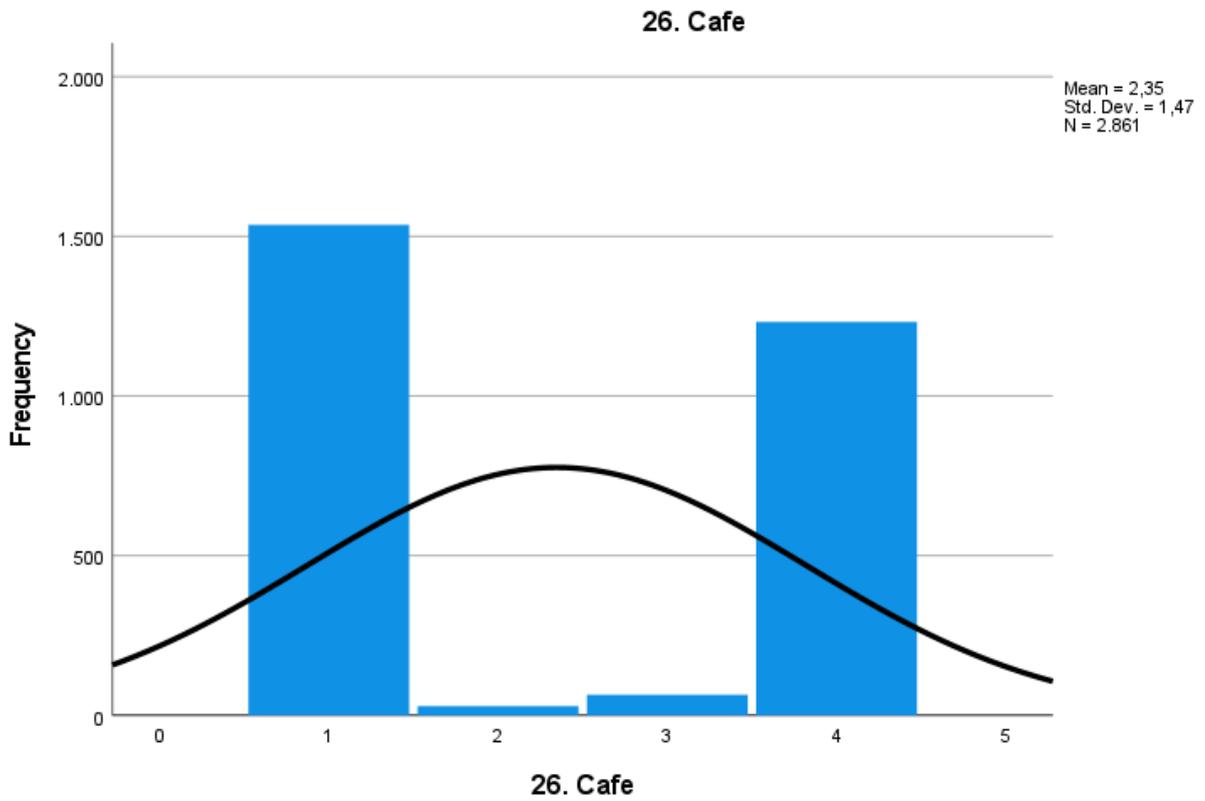
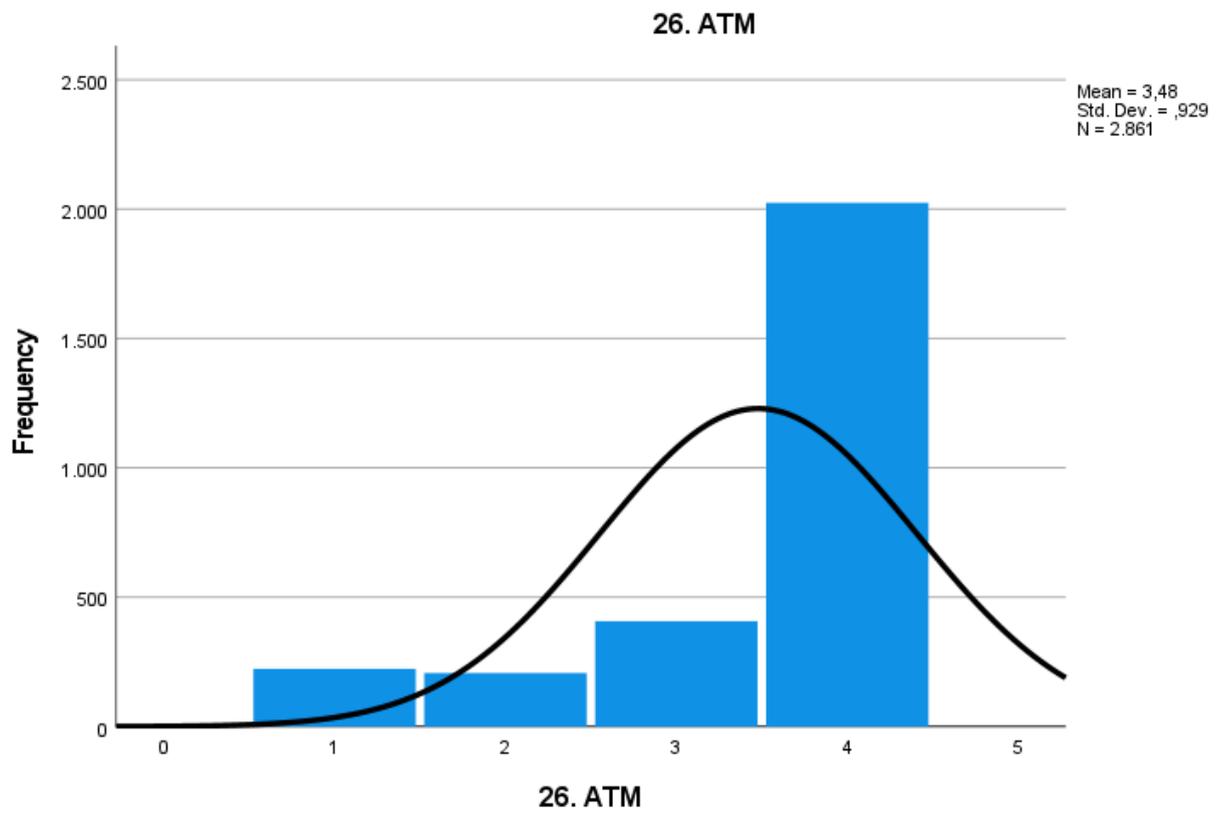
	Ja, regelmatig	Ja, af en toe	Nee, zelden of nooit	Ik maak geen gebruik van deze voorziening
Supermarkt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buurtwinkel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Huisarts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School/ studie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bushalte of treinstation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pinautomaat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Café	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sportvereniging / sportschool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bibliotheek	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kerk/gebedshuis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dorpshuis/ Wijkcentrum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

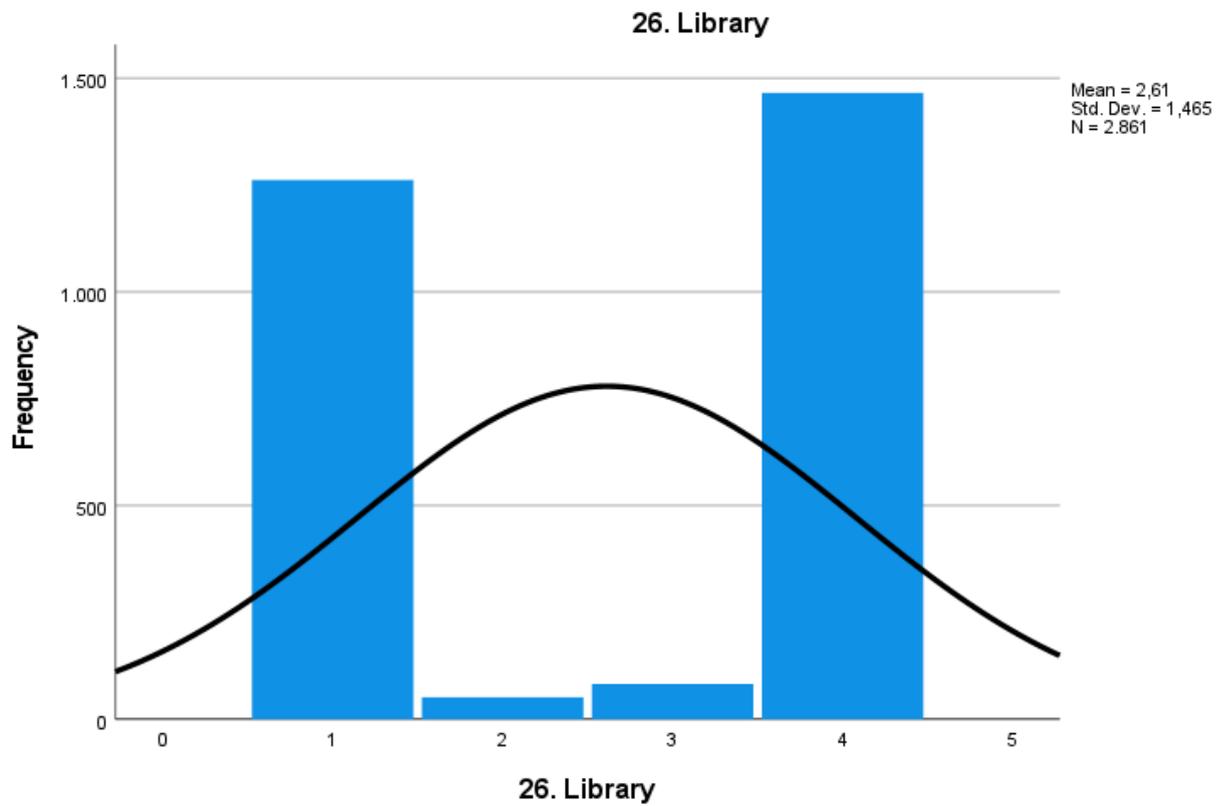
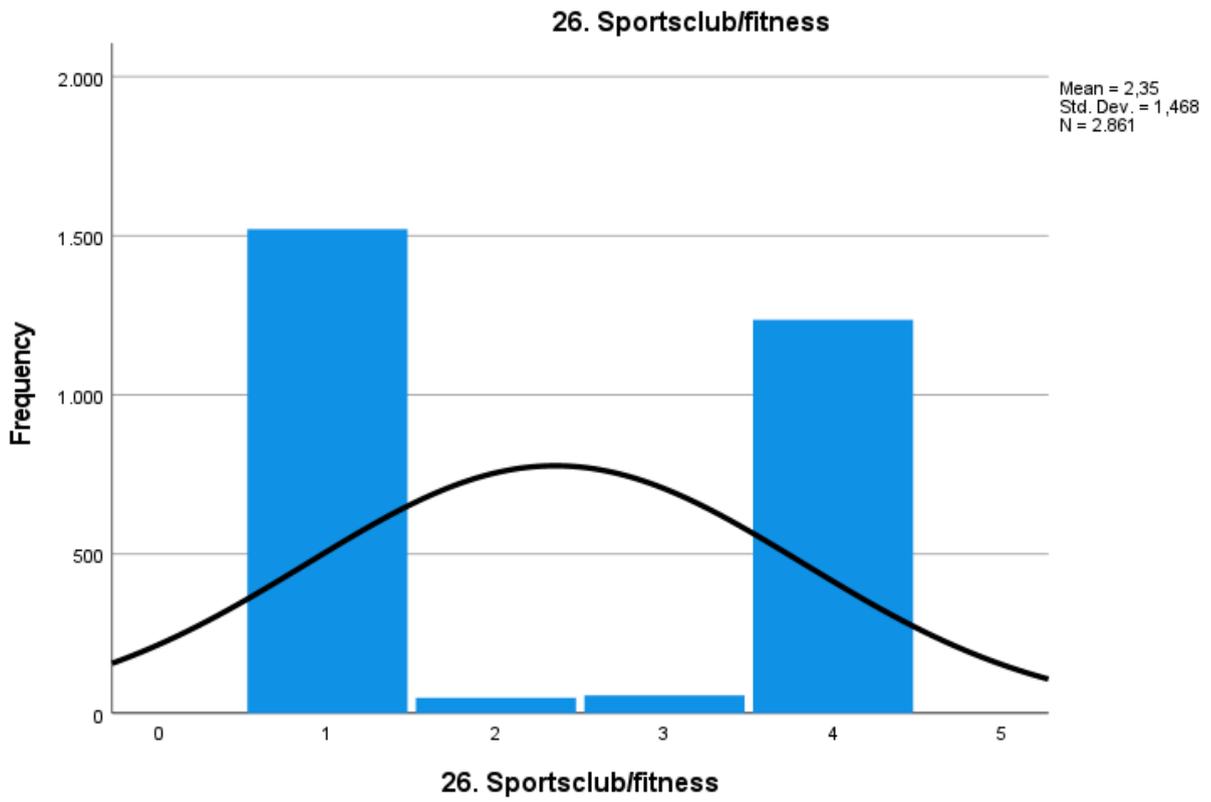
Appendix 2 - Frequencies distributions variables

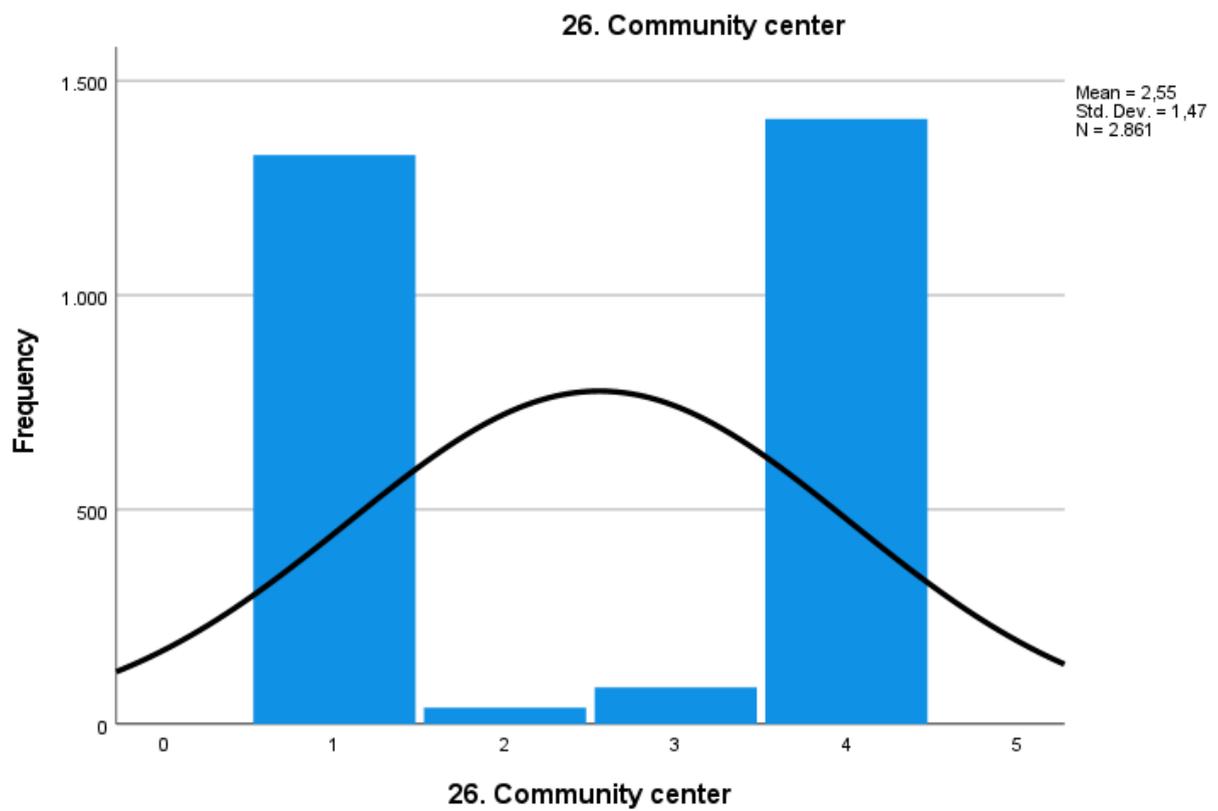
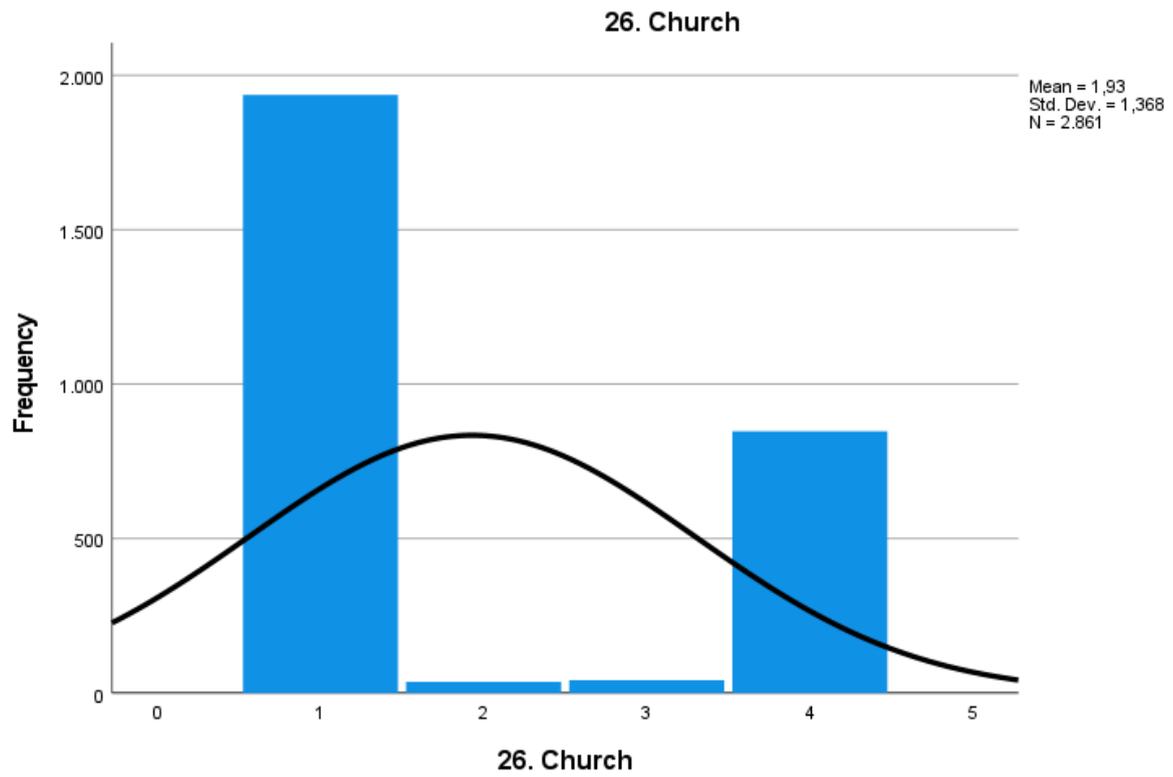


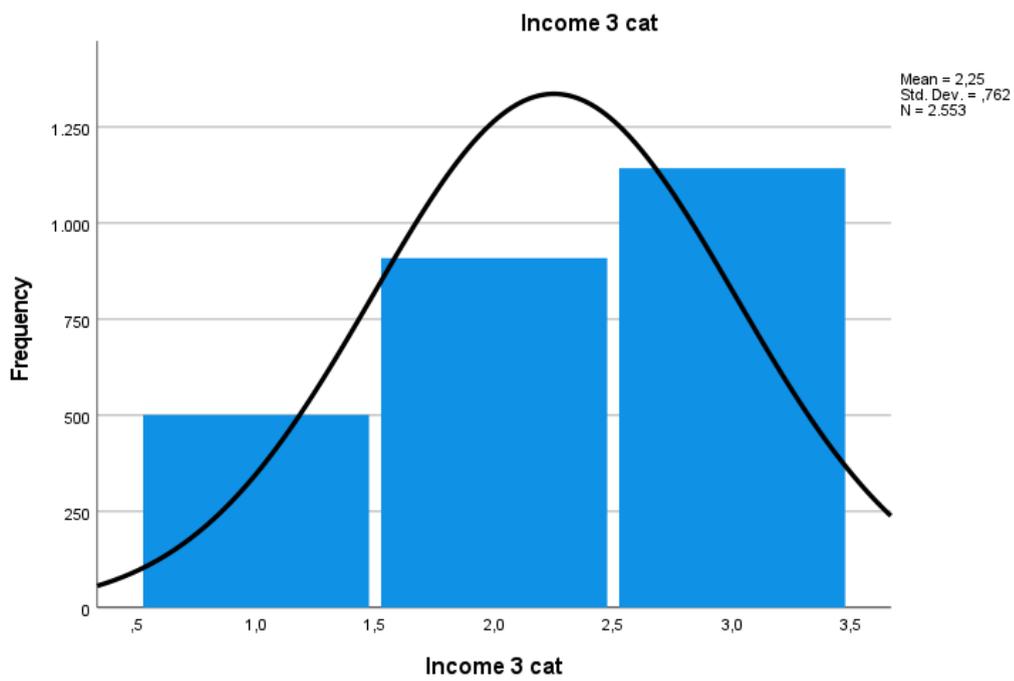
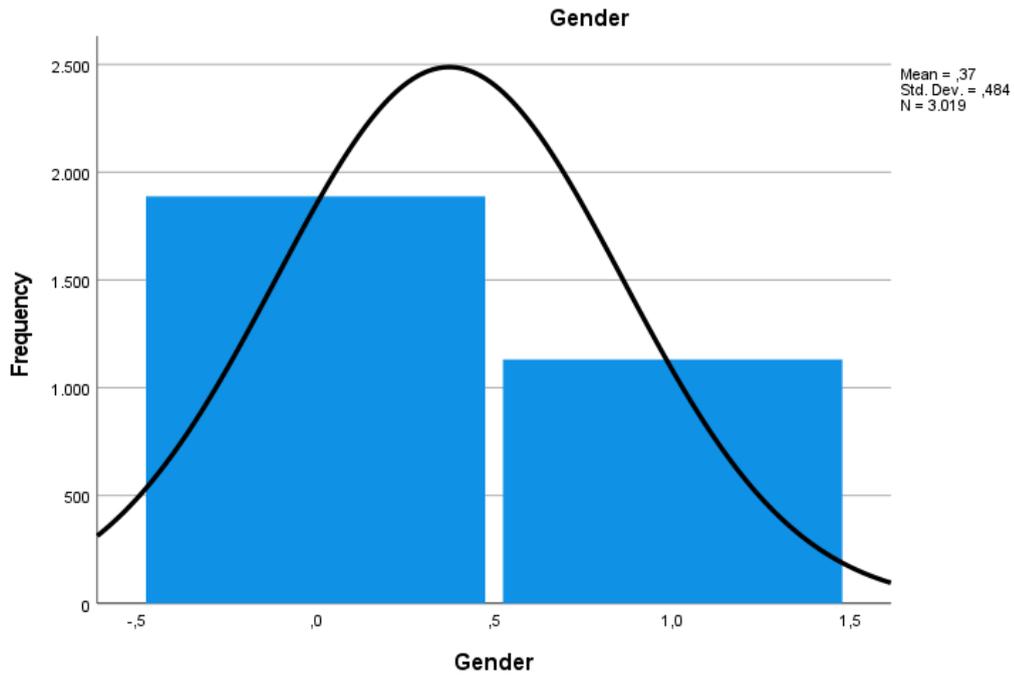


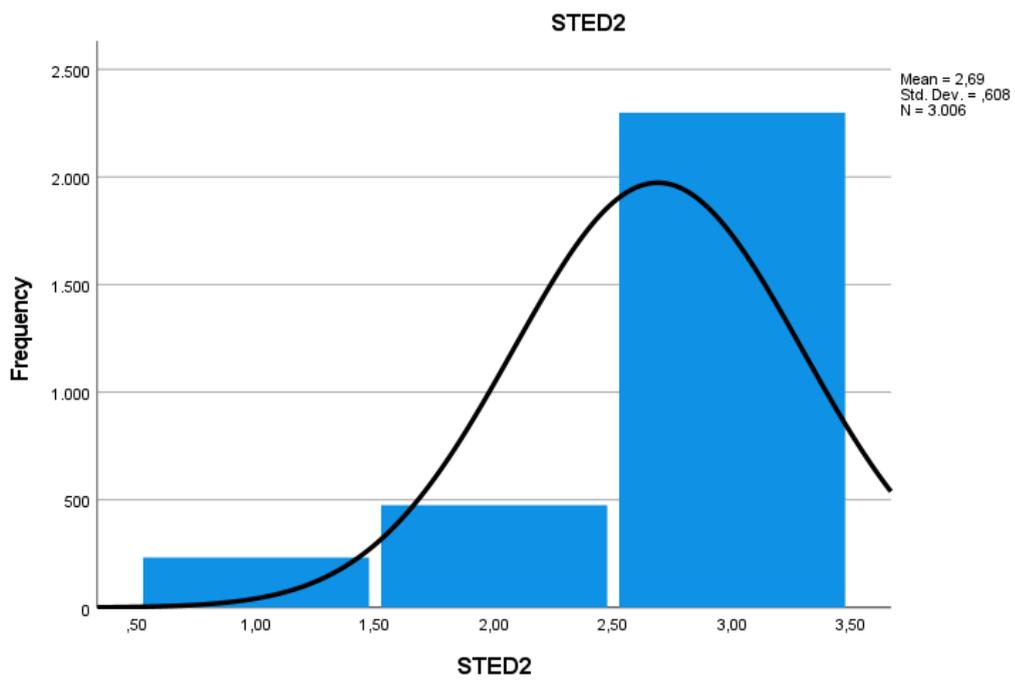
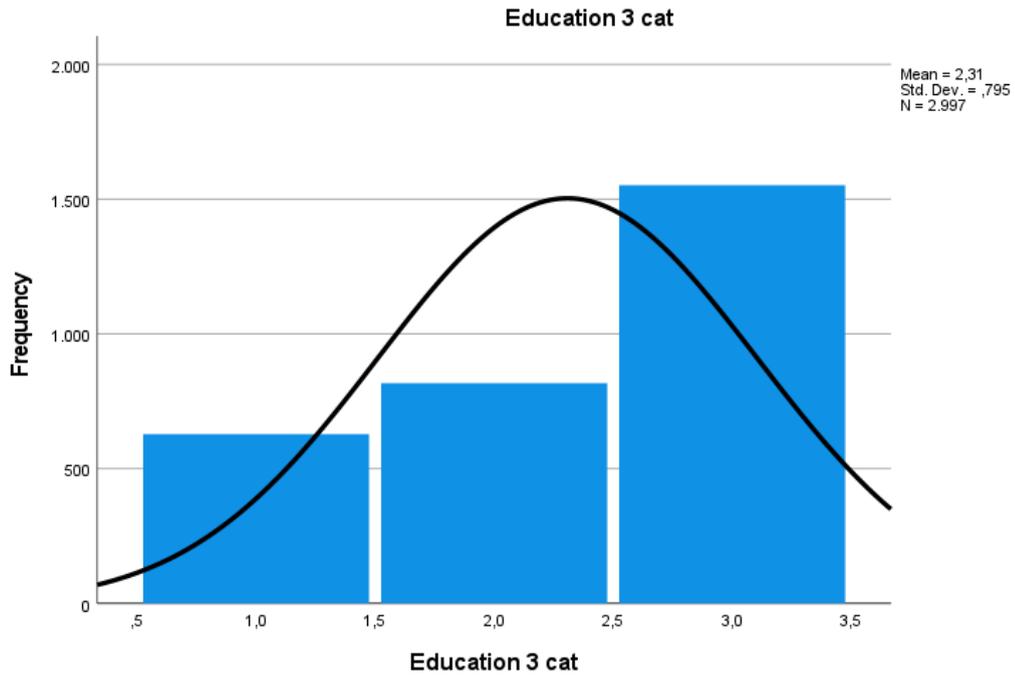












Appendix 3 - Ordinal regression results

Parameter Estimates

		Estimate	Sig.	Estimate	Sig.	Estimate	Sig.	Estimate	Sig.	Estimate	Sig.	Estimate	Sig.
Perceived liveability	[Q5_1 = 2]	-6,13	<,001	-6,096	<,001	-6,699	<,001	-6,743	<,001	-6,898	<,001	-6,889	<,001
	[Q5_1 = 3]	-5,476	<,001	-5,441	<,001	-5,862	<,001	-5,906	<,001	-6,06	<,001	-6,052	<,001
	[Q5_1 = 4]	-4,816	<,001	-4,781	<,001	-5,216	<,001	-5,259	<,001	-5,414	<,001	-5,406	<,001
	[Q5_1 = 5]	-4,019	<,001	-3,985	<,001	-4,355	<,001	-4,399	<,001	-4,554	<,001	-4,546	<,001
	[Q5_1 = 6]	-2,897	<,001	-2,863	<,001	-3,181	<,001	-3,224	<,001	-3,38	<,001	-3,371	<,001
	[Q5_1 = 7]	-1,255	<,001	-1,221	<,001	-1,547	<,001	-1,589	<,001	-1,741	<,001	-1,733	<,001
	[Q5_1 = 8]	1,074	<,001	1,109	<,001	0,844	<,001	0,803	<,001	0,653	<,001	0,662	<,001
	[Q5_1 = 9]	3,315	<,001	3,35	<,001	3,15	<,001	3,126	<,001	2,976	<,001	2,985	<,001
	Supermarket	[Q43_1=1]	-0,847	0,012	-0,843	0,012	-1,211	0,001	-1,23	<,001	-1,243	<,001	-1,256
[Q43_1=2]		-0,853	0,023	-0,856	0,023	-1,256	0,005	-1,264	0,005	-1,286	0,004	-1,301	0,004
[Q43_1=3]		-0,985	<,001	-0,984	<,001	-1,147	<,001	-1,15	<,001	-1,158	<,001	-1,154	<,001
[Q43_1=4]		0a	.	0a	.	0a	.	0a	.	0a	.	0a	.
Local shop	[Q43_2=1]	-0,089	0,234	-0,087	0,246	-0,083	0,31	-0,089	0,277	-0,094	0,254	-0,094	0,254
	[Q43_2=2]	0,459	0,305	0,459	0,304	0,884	0,085	0,887	0,084	0,866	0,091	0,876	0,088
	[Q43_2=3]	-0,522	0,086	-0,527	0,084	-0,323	0,347	-0,313	0,362	-0,305	0,375	-0,307	0,371
	[Q43_2=4]	0a	.	0a	.	0a	.	0a	.	0a	.	0a	.
GP	[Q43_3=1]	0,504	0,117	0,507	0,115	0,687	0,065	0,663	0,075	0,648	0,082	0,651	0,081
	[Q43_3=2]	-0,869	0,019	-0,858	0,021	-0,78	0,066	-0,754	0,075	-0,738	0,082	-0,735	0,083
	[Q43_3=3]	0,094	0,585	0,093	0,59	0,086	0,654	0,098	0,609	0,089	0,644	0,086	0,656
	[Q43_3=4]	0a	.	0a	.	0a	.	0a	.	0a	.	0a	.

School/study	[Q43_4=1]	0,049	0,678	0,053	0,658	0	0,999	0,019	0,883	0,005	0,968	0,007	0,956
	[Q43_4=2]	-1,633	0,047	-1,61	0,05	-3,155	0,105	-3,189	0,101	-3,176	0,103	-3,153	0,106
	[Q43_4=3]	-0,603	0,34	-0,604	0,339	-0,618	0,425	-0,657	0,397	-0,652	0,401	-0,632	0,416
	[Q43_4=4]	0a	.										
Train Station/bus stop	[Q43_5=1]	-0,212	0,01	-0,214	0,009	-0,221	0,014	-0,248	0,006	-0,248	0,006	-0,257	0,005
	[Q43_5=2]	-0,137	0,554	-0,132	0,569	-0,136	0,594	-0,164	0,523	-0,173	0,5	-0,17	0,507
	[Q43_5=3]	-0,113	0,423	-0,108	0,445	0,011	0,941	0,008	0,96	0,008	0,959	0,007	0,963
	[Q43_5=4]	0a	.										
ATM	[Q43_6=1]	-0,185	0,177	-0,186	0,174	-0,112	0,46	-0,105	0,492	-0,101	0,51	-0,103	0,5
	[Q43_6=2]	-0,591	<,001	-0,595	<,001	-0,605	<,001	-0,616	<,001	-0,621	<,001	-0,618	<,001
	[Q43_6=3]	-0,187	0,079	-0,188	0,078	-0,192	0,101	-0,188	0,11	-0,189	0,107	-0,191	0,103
	[Q43_6=4]	0a	.										
Café	[Q43_7=1]	-0,29	<,001	-0,288	<,001	-0,233	0,006	-0,251	0,003	-0,264	0,002	-0,269	0,002
	[Q43_7=2]	0,254	0,514	0,253	0,515	0,403	0,327	0,389	0,345	0,441	0,285	0,437	0,29
	[Q43_7=3]	-0,14	0,581	-0,143	0,571	-0,189	0,489	-0,19	0,486	-0,177	0,516	-0,184	0,501
	[Q43_7=4]	0a	.										
Sportsclub	[Q43_8=1]	-0,021	0,793	-0,021	0,792	0,048	0,577	0,04	0,642	0,037	0,674	0,038	0,663
	[Q43_8=2]	-0,106	0,732	-0,107	0,729	0,113	0,741	0,117	0,733	0,099	0,773	0,101	0,768
	[Q43_8=3]	-0,397	0,145	-0,4	0,142	-0,231	0,453	-0,23	0,454	-0,246	0,425	-0,249	0,419
	[Q43_8=4]	0a	.										
Library	[Q43_9=1]	0,138	0,087	0,134	0,098	0,204	0,022	0,198	0,026	0,203	0,023	0,199	0,026
	[Q43_9=2]	-0,515	0,085	-0,523	0,081	-0,307	0,355	-0,29	0,382	-0,286	0,389	-0,295	0,376
	[Q43_9=3]	0,118	0,611	0,121	0,603	0,115	0,65	0,119	0,641	0,128	0,614	0,132	0,604
	[Q43_9=4]	0a	.										

Church	[Q43_10=1]	0,047	0,568	0,045	0,587	0,002	0,983	0,007	0,941	0,02	0,822	0,026	0,773
	[Q43_10=2]	-0,08	0,812	-0,084	0,804	-0,511	0,17	-0,509	0,171	-0,519	0,163	-0,518	0,165
	[Q43_10=3]	0,208	0,522	0,208	0,524	0,14	0,688	0,136	0,696	0,15	0,666	0,155	0,656
	[Q43_10=4]	0a	.										
Community Center	[Q43_11=1]	-0,185	0,015	-0,185	0,015	-0,196	0,018	-0,163	0,053	-0,163	0,053	-0,163	0,053
	[Q43_11=2]	0,219	0,509	0,215	0,517	-0,017	0,966	-0,062	0,875	-0,081	0,836	-0,085	0,829
	[Q43_11=3]	0,18	0,43	0,176	0,442	0,138	0,578	0,144	0,56	0,139	0,575	0,132	0,595
	[Q43_11=4]	0a	.										
Gender	[Gender=0]			0,056	0,45	-0,019	0,819	-0,018	0,832	-0,038	0,647	-0,034	0,687
	[Gender=1]			0a	.								
Income	[Income_cat3=1]					-0,635	<,001	-0,622	<,001	-0,633	<,001	-0,656	<,001
	[Income_cat3=2]					-0,304	<,001	-0,287	0,001	-0,296	<,001	-0,308	<,001
	[Income_cat3=3]					0a	.	0a	.	0a	.	0a	.
Living environment	[STED2=1,00]							-0,262	0,077	-0,274	0,065	-0,277	0,063
	[STED2=2,00]							-0,223	0,038	-0,23	0,032	-0,235	0,029
	[STED2=3,00]							0a	.	0a	.	0a	.
Age	[Age=1,00]									-0,173	0,04	-0,172	0,041
	[Age=2,00]									0a	.	0a	.
Education	[Education_cat3=1]											0,082	0,458
	[Education_cat3=2]											-0,001	0,991
	[Education_cat3=3]											0a	.
a. This parameter is set to zero because it is redundant.													