The shopping street in (inter)action

A quantitative research on the influence of the characteristics of the plinth and the furnishing elements on the level and types of activity in Dutch shopping streets

Master Thesis

Lissa van der Hout
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Radboud University
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Author:	Lissa van der Hout
Student number:	S1026614
Date:	August 17, 2022
Place:	Naaldwijk, the Netherlands
Supervisor research:	Huib Ernste
Second reader:	Emil van Eck
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Preface

This is my master thesis for the master Human (Urban and Cultural) Geography. The start of this research was in September 2021, which means that I devoted almost a full year to this master thesis. Despite some difficult moments, I enjoyed this period, in which I have expanded my knowledge in different ways. Firstly, I have gained knowledge on topics such as the behaviour of visitors, urban planning characteristics and research methods. Secondly, I also gained more practical knowledge by carrying out a research (almost) completely independently, with a great deal of personal responsibility for time planning, appointments, and quality.

This research on shopping streets took place during a special period in which the impact of the Covid-19 pandemic on daily life varied. Due to the pandemic, there were in the Netherlands periods of complete shop closure (with the exception of daily shops), shop restriction and complete shop opening. The combination of working on this thesis and the different Covid-19 measures made me aware of the role shopping centres have in my daily life. During the periods of shop closure, I noticed that I usually visit a shopping centre for many different reasons, without being aware of the reason. Besides purchasing a product or meet with friends, for example, I also visit a shopping centre while going for a walk to 'just' be among people. I only noticed the latter when the shopping streets were less lively due to the restrictions.

Although I already realised the importance of shopping centres for society before my thesis, this thesis has made it even more aware. I only now notice how little people are aware of importance of a well-functioning shopping centre and the influence on daily life. Only when the functioning and liveliness declines, either because of imposed Covid-19 restrictions or because of increasing long-term problems due to, for instance, internet competition, do people become aware of what they use a shopping centre for and what they will miss if it is no longer there. In my opinion, we should especially avoid this last moment of awareness, because once a shopping centre loses its liveliness and functioning because of structural problems, it is difficult to regain it. Especially in a period of increasing internet competition, it is therefore of great importance to maintain the shopping street as a lively and pleasant place, which (physically) meets the needs of the visitor and stimulates the visitor to interact with the environment. I hope to be able to contribute to this with my thesis.

I would like to thank a number of people who helped me throughout the process of my thesis. First of all, I would like to thank Huib Ernste for being my supervisor from the university. Because of his help, including answering my questions and giving feedback, my research is completed now. I would also like to thank Gilbert Bal for the internship at Roots Beleidsadvies and for pointing out links between my thesis and the professional field of urban development.

I also received help from outside the university and the internship. I would like to thank my parents, my boyfriend Rick, and my sister Anouk for motivating me and supporting me in difficult moments. Although they may not have had much input into the content of this thesis, they did help me a lot by motivating me, when necessary, with their support. Without them and their support, I would not have been able to complete my thesis within a year.

I hope you enjoy reading my master thesis.

Naaldwijk, August 17th, 2022

Lissa van der Hout

Summary

Shopping centres are under increasing pressure. The trend of increasing competition from internet sales has been visible for a longer time, but the Covid-19 pandemic has accelerated this development (CBS, 2020, 2021). Maintaining vibrant shopping centres is of great importance as these areas fulfil a major social function. These centres are not only a place of relaxation and entertainment, but also a place where people of different cultures meet, consciously or unconsciously, and therefore come to understand each other better (Gehl, 2010). It is therefore important to retain lively shopping centres, and this can be done by matching them to the needs and wishes of visitors as much as possible. Besides the presence of the desired shops, it is at least as important that a shopping street is experienced as pleasant. In such a street, visitors want to stay and interact with the shops and the shopping area. For a good experience, the physical characteristics of the street are particularly important (Gehl, 2010). Due to the large number of physical characteristics, this research decided to focus on only two aspects, namely the characteristics of the plinth and the characteristics of the furnishing elements.

The research was conducted in eight Dutch shopping streets, of which one, Steenweg (Utrecht), was given extra focus by means of a case study. Steenweg has a good central location, because the street is situated between the central station of Utrecht and the old city centre of Utrecht and has therefore a high number of visitors. At the same time, Steenweg suffers from a high vacancy rate and a low percentage of visitors that actually visit a shop (DUIC, 2011; JB Retail, B.V., 2019; Morgen Mooier Maken, n.d.). This research looked at the activities that are undertaken in Steenweg and how these are related to the characteristics of the plinth and the furnishing elements. In addition, a dataset about seven other shopping streets is used to gain insight into the relations that exist between the studied street characteristics and the activity level of visitors in multiple shopping streets. The research question central to this research is therefore: *"To what extent is the activity level in Steenweg influenced by the plinths of this street and by the furnishing elements in this street and how does this compare to other Dutch shopping streets?".*

This research differs from other studies on the behaviour of visitors as it does not investigate the often researched topics such as spending, length of visit and frequency of visit (e.g., Anselmsson, 2016; Li, et al., 2021; Teller & Reutterer, 2008; Wakefield & Baker, 1998), but focuses on the activities visitors undertake in the shopping street. The research looked at the total number of activities and divided them into three groups, namely going in, looking in and other activities. The choice to focus on the activity level instead of on other variables about the behaviour of visitors was made because, firstly, there is still a gap in the scientific literature about what influence street characteristics have on the number and type of interactions that take place, while this information is important to know if one wants to increase the functioning of a street. Secondly, it is important for Steenweg to gain insight into what activities visitors do (not do). This is because there are still relatively few shop visits, which should be stimulated first before focusing on other behaviour of visitors, such as spending.

Although the dependent variables therefore deviate from the 'standard' variables for the behaviour of visitors, the explanatory variables do correspond to existing scientific literature. By means of a literature study, four variables were chosen for both the characteristics of the plinth and the characteristics of the furnishing elements. The included characteristics of the plinth are inspired by Gehl (2010) and are façade transparency, façade rhythm, façade detailing and façade relief. These variables, or a selection of them, are also included in many other studies (e.g., Hahm, Yoon & Choi, 2019; Hassan, Moustafa & El-Fiki, 2019; Jain, Takayanagi & Malthouse, 2014). The furnishing elements include the amount of seating possibilities, the amount of greenery, the amount of other furnishing elements and the total number of furnishing elements (e.g., Gehl, 2010; Hahm, Yoon & Choi, 2019; Mehta, 2009; Wirdelöv, 2020). Both the absolute values and the density of the furnishing elements were examined.

The data for the research were collected by means of surveys and observations. The data for Steenweg were collected in May 2022 and the data for the other shopping streets in May 2021. The data collection was done in the same way in each street, with a limited number of questions about the respondent's personal characteristics being asked first and then the respondent being observed.

spread across eight Dutch shopping streets, a total of 554 respondents were observed for this research and data on 240 units were collected. The data were then analysed with SPSS using a multiple regression analysis.

This research showed that in particular the characteristics of the plinth influence the behaviour of visitors. Rhythm has the greatest influence, whereby the number of interactions per building decreases when there is one more building in a street, but this decrease is so limited that the total number of interactions in a street as a whole increases. The type of activity that is primarily influenced by façade rhythm differs between Steenweg and the analysis of the seven shopping streets. In Steenweg there is a relation with going in, while in the other shopping streets this was the case with looking in. Although this is different, both relations can be explained. After all, if there are more shops, it is possible to visit more shops, but there are also more shops to look inside. The degree to which the façade is transparent also has a positive influence on the total number of activities conducted. The transparency forms a connection between inside and outside and therefore influences the activity of going in the most in both Steenweg and the other seven shopping streets. For the two other variables about the characteristics of the plinth, a number of significant relations were found, but these are not the same between the two analyses and/or correspond to a lesser extent to the existing scientific literature.

In addition, this research has shown that it is difficult to establish the relation between furnishing elements and the activity level. This is related to the way this research was set up and therefore offers opportunities for follow-up research. A significant relation that is in line with existing scientific literature is the relation between the seating facilities and the number of other activities. This finding can be explained by the fact that other activities include the activities of sitting and waiting. However, this relation was not found in Steenweg, but this is possibly due to the fact that there is only a limited amount of seating in each street and therefore there was too little data for a good analysis for Steenweg. In addition, other significant relations with regard to the furnishing elements do not correspond to existing scientific literature and, moreover, are not visible in both analyses.

Based on this research, it can be concluded that in the eight Dutch shopping streets studied, the behaviour of visitors is more strongly influenced by the characteristics of the plinth, than by the characteristics of furnishing elements. Although a number of relations have been found between the activity level and the furnishing elements, it can be stated on the basis of this research that primarily the rhythm of the façade and the level of transparency influence the activity level.

1 Introduction

1.1 Context

Shopping streets are struggling and they need to be changed (e.g., Heebels, & Van Vliet, 2021; Lanting, Ollefers & Pustjens, 2020; Terhorst, n.d.). A major cause of the problem is the growing internet competition in recent years, which has accelerated since 2020 due to the Covid-19 crisis, according to articles written by CBS (2020, 2021). The forced closure of shops as a result of national lockdowns caused profit loss for physical shops and profit growth for online shops. Moreover, consumers are getting more used to shopping online, and they expect to continue doing so in the future. For example, before the pandemic, older people spent relatively little money online, but based on market research, it is expected that this age group will continue to shop online more often after the pandemic (Business Insider, 2020; Lanting, Ollefers & Pustjens, 2020).

Shopping streets, however, are of great importance for the vitality of cities. These streets fulfil a wide variety of functions, not all of which can be taken over by internet. There is, for instance, a strong social function, with a shopping street serving as a place of relaxation. It is also a place where people, consciously or unconsciously, meet other people (Gehl, 2010; Hanafi, El Araby, Al-Hagla, & El Sayary, 2013; IVBN, & NRW, 2016). Or quoted by Gehl: *"The city is seen as serving a democratic function where people encounter social diversity and gain a greater understanding of each other by sharing the same city space."* (Gehl, 2010, p. 109). Furthermore, the shopping street remains economically important because it is a place of employment (Heebels, & Van Vliet, 2021).

Because of the important functions, shopping streets need to remain lively places. The liveliness of a shopping street can be influenced quantitatively and qualitatively. Quantitatively this concerns the number of visitors in a shopping street and qualitatively the length of the visit of the visitors. The liveliness is in fact the sum of these two aspects. An important element to guarantee liveliness is the attractiveness of the physical environment (Gehl, 2010). Jan Gehl is a well-known architect who states, in his book *life between buildings* (2011), that it is possible to influence the activity pattern in public space through the design of the physical environment (Gehl, 2011). An element of the physical environment that Gehl has focused on more often is the plinth of a street. According to him, plinths have a strong influence on liveliness and activity levels and are able to invite or deter people (Gehl, 2010, 2011). He states that plinths have five characteristics, namely the degree of transparency, the degree of detailing, the line directions, the function diversity and the number of units that fits in 100 metres. Based on these five characteristics, plinths can be divided in different types of plinths, varying from an inactive plinth to an active plinth. The first type of plinth is characterised by little transparency and few units, whereas an active plinth is characterised by a high degree of transparency and many narrow units (Gehl, 2010). This research attempts to explain the activity level of visitors through the condition of the plinths. In addition, this research looks at furnishing elements, because these elements can also directly stimulate people to interact with the environment (Gehl, 2010). Furnishing elements that support the stay in a shopping street, e.g., seating possibilities, or that make a shopping street more welcoming and beautiful, e.g., greenery, can increase the appreciation of a street and are therefore important for a pleasant experience (Mehta, 2009; Wirdelöv, 2020).

This research has an extra focus on Steenweg in Utrecht (the Netherlands), but for methodological reasons, the analysis used data on multiple Dutch shopping streets. This makes it possible to make statements about the relation between the physical environment and the activity level with a higher validity. However, a separate analysis is carried out on the data about Steenweg. The results are checked by making comparisons with scientific literature and the findings from the analysis of the larger dataset.

1.2 Research questions and objective

As mentioned above, this research looks at the extent to which the behaviour of the visitors can be explained by the characteristics of the plinth and the furnishing elements of shopping streets. The physical environment influences the behaviour of the visitors (e.g., Gehl, 2010; Hahm, Yoon & Choi, 2019; Hassan, Moustafa & El-Fiki, 2019) and thus it is important to gain insight into this relation, in order to be able to improve the competition position and to remain the important social function of shopping streets. In this research, the choice is made to focus on the interaction between the visitor and the physical environment, called the activity level. This type of behaviour of visitors is not yet been studied very often, so there is still a gap in scientific knowledge. The knowledge is important because a high activity level has a positive influence on the liveliness of a street (Gehl, 2010).

This research looks at eight Dutch shopping streets, with an extra focus to Steenweg in Utrecht. The bigger dataset is used as a tool to explain the activity level in Steenweg based on larger patterns. For all the streets, the plinth's characteristics and the furnishing elements are looked at, followed by doing surveys and observations. The research question that is central to the research is:

> *"To what extent is the activity level in Steenweg influenced by the plinths of this street and by the furnishing elements in this street and how does this compare to other Dutch shopping streets?"*

This question is answered by means of four sub-questions which all focus on an aspect of the main question. These are:

- *What is the condition of the plinths and of the furnishing elements in the eight shopping streets?*
- *Which relations between the activity level of the visitors of Steenweg and the street characteristics of Steenweg are expected based on an analysis of earlier collected data in seven Dutch shopping streets?*
- *To what extent is the activity level of the visitors of Steenweg influenced by the physical elements of Steenweg?*
- *What differences and similarities can be seen between the expected behaviour of the visitors of Steenweg and the observed behaviour of the visitors of Steenweg?*

The results of this research are used by Roots Beleidsadvies to give advice on how to improve the liveliness of Steenweg. This research has therefore a large social importance but it is also of scientific interest. The social and scientific relevance are discussed in Chapter 1.3.

1.3 Relevance

1.3.1 Scientific relevance

The attractiveness of shopping centres has been studied for a long time, with an emphasis on the influence of the physical environment. Some earlier scientific studies on the subject assumed that consumers had no influence on location choice or that they choose based on rational considerations (King, 2020; McFadden, 1973; Oppewal & Timmermans, 1993; Reilly, 1931). In contrast, it is becoming increasingly clear that the choice of a shopping location is made on the basis of psychological and emotional experiences and that these experiences are influenced by the physical environment (Bitner, 1992; Tombs & McColl-Kennedy, 2003; Turley & Milliman, 2000).

However, the physical environment is still a broad concept and within this concept a focus must be chosen. This research looks at plinths, based on the ideas of Jan Gehl, and at furnishing elements. In this research, variables have been included that differ in the extent to which they have been studied. Moreover, the influence of the variables that have been studied earlier on the behaviour of visitors is not always clear. With regard to the presence of greenery, Mehta (2009) for instance, states that this has a direct and positive influence on the activity level of visitors, whereas Wirdelöv (2020) states that the positive influence of greenery is indirect because it reduces undesired behaviour. In a research by Hahm, Yoon and Choi (2019), there is even no significant influence of greenery. This research contributes to the understanding of relations between different variables and the behaviour of visitors.

Besides knowledge on the influence of individual variables on the behaviour of visitors, this research also adds knowledge on the influence of different variables in relation to each other. Despite the fact that there are scientific studies that assume the importance of plinths and furnishing elements, to my knowledge there is no information yet about the relative influence these two characteristics have on the behaviour of the visitors in a shopping street. As a result, it is not clear within the scientific literature how these different topics relate to each other. Hahm, Yoon and Choi (2019) did investigate both characteristics, but they looked at the city centre level, which means that their research makes statements about characteristics of streets that are the most attractive. As a result, they could not make statements about how many and what type of interactions take place in a street based on the plinths or furniture. Mehta (2009) did investigate these characteristics at street level but did this in commercial neighbourhood streets. Therefore, this research can not make a statement about streets in shopping centres. It is namely known that the behaviour of visitors is different in different types of shopping centres, with more purposeful and fast-paced shopping in small shopping centres and more fun-oriented and slow-paced shopping in large centres (Evers, van Hoorn & van Oort, 2005).

Another addition to the existing scientific literature concerns the way in which the behaviour of the visitors is measured. In most studies, the behaviour of visitors is measured in terms of, among others, visiting time and spending (e.g., Anselmsson, 2016; Li, et al., 2021; Teller & Reutterer, 2008; Wakefield & Baker, 1998). This research looks at the behaviour of visitors in a different way, namely by means of activity level and the type of activity. These variables have only been included in scientific research to a limited extent, leaving a gap in the scientific literature as to what influences the activity level of visitors and which type of activity is influenced.

Examining the behaviour of visitors in terms of activity level has advantages. After all, visitors have many different types of interactions in a shopping street, whereby visit duration and spending are only influenced by a limited number of interactions. These variables therefore reflect a limited part of the behaviour of visitors, namely mainly what happens in a shop. For example, in the case of spending, it can be expected that this takes most of the time place in a shop and that it is therefore often dependent on the activity of going in. The more common ways of studying shopping behaviour are therefore often focused on the activity of going in, while it can be questioned whether this type of activity is more important for the liveliness of a street than other activities that take place outside. In addition, it can be asked whether the physical characteristics of a building and the furnishing elements of a street influence the moment the visitor is inside.

This research therefore looks at a wider range of activities, using the activity level and types of activities as an indicator of the behaviour of the visitors and therefore contributes to narrowing the gap on how the behaviour of visitors can be measured. In addition, this research also provides insight into the questions by which street characteristics the activity level is influenced and whether different activities are the result of different physical characteristics of shopping streets.

1.3.2 Social relevance

As mentioned, shopping streets are under pressure from increasing internet competition, which is reinforced by the Covid-19 crisis (CBS, 2020, 2021). However, maintaining lively shopping streets is important for the vitality of cities and because of the great social function of city centres (Gehl, 2010; IVBN, & NRW, 2016). An important aspect is therefore the liveliness of shopping streets and this can be quantitatively and qualitatively influenced. A higher activity level influences the liveliness in a qualitative way because more interactions increase the duration of the visit (Gehl, 2010). To increase the liveliness of a street, adaptations in the physical environment may be needed. Wakefield and Baker (1998), for example, argue that one should continuously monitor whether a shopping area still meets the needs of the visitor. According to them, it is important to continue to listen to the opinion of visitors after the design and construction process and, if necessary, to adjust the existing shopping street.

Physical adjustments are suitable to improve the extent to which a street meets the wishes of the visitor. Various studies have demonstrated the influence of the physical environment on the behaviour of visitors (e.g., Gehl, 2010; Hahm, Yoon & Choi, 2019; Hassan, Moustafa & El-Fiki, 2019). Jan Gehl, for instance, argues that there are different types of plinths, varying in the degree to which they are inviting or repellent. In line with Gehl, this research looks at the extent to which the activity level of visitors in a shopping street is related to the characteristics of the plinths. This information is important because Gehl states that:

> *"With this information [about the attractiveness of ground floors] as a platform, city planners can draw up an active, targeted ground floor policy to ensure the attractiveness of the ground floors in new developments and address and gradually correct problems in the existing buildings mass ..." (Gehl, 2010, p. 81)*

Secondly, the influence of furnishing elements on the activity level of visitors is investigated. There is currently no understanding of the influence of plinths and furnishing elements in relation to each other. Obtaining these insights has great advantages, because interventions in the physical living environment are often complex and costly, with different alternatives varying in these two aspects. Despite the importance of understanding the influence of different shopping street characteristics, many studies focus only on characteristics of the plinths (e.g., Gudonaviciene & Alijosiene, 2015; Jain, Takayanagi & Malthouse, 2014). This research has added value because, based on the results, it can be determined whether an increase in the activity level can be sufficiently achieved by adapting smaller furnishing elements or whether this can be better achieved by adapting the plinth. By comparing the effects of the two subjects it is possible to make targeted investments for the benefit of the liveliness of the shopping street.

Another reason this research is of social importance has to do with the fact that several streets are included in this research. In total, data from eight Dutch shopping streets are analysed, whereby one shopping street (Steenweg) has an extra focus. Because the research includes multiple shopping streets, it is possible to make statements about whether certain relations between the behaviour of the visitors and street characteristics are visible in multiple Dutch cities. Although the research is not able to generalise these findings due to the limited number of included shopping streets and the lack of an a-selective sample, it does provide insight into the question of which street characteristics have a strong influence on the level of activity. These findings can be examined on a larger scale in a follow-up research where generalisation is possible. This research is therefore a steppingstone to a larger (national) research.

The local focus on Steenweg, on the other hand, also makes it possible to give targeted advice to improve the functioning of the street in question. This advice is important because, despite its good location, Steenweg does not function as it should. Steenweg is located between Utrecht's central station and the old city centre, which means it has a large flow of visitors (JB Retail B.V., 2019). However, the street also suffers from a relatively high vacancy rate and a short visiting time (DUIC, 2021; Morgen Mooier Maken, n.d.). This research makes it possible to draw up specific recommendations for Steenweg on how the activity level can be improved by means of furnishing elements and the plinth. The improved functioning of Steenweg may also have a positive influence on the liveliness of the surrounding streets, as Steenweg is then no longer seen as a road that only connects two parts of the centre but as a fully-fledged part of the Utrecht city centre.

1.4 Structure of the thesis

This master thesis consists of five chapters. This chapter introduced the research question and the relevance of this research. The next chapter (Chapter 2) discusses relevant scientific literature. It discusses two dominant approaches to explaining choices and behaviour and it also discusses literature focused on characteristics of the plinth and furnishing elements. Chapter two concludes with the conceptual model and operationalisation for this research.

Chapter 3 describes the research method used. It explains the choices made about the research strategy, data collection and analysis method. This chapter also shows how it is aimed to achieve the highest possible reliability and validity.

Chapter 4 shows the results of the analyses carried out. It first looks at the basic conditions for a multiple regression analysis, followed by the descriptive statistics. Next, the results of the analysis over seven Dutch shopping streets are presented, as well as expectations for the behaviour in Steenweg. The chapter concludes with the actual relations between the activity level and the street characteristics in Steenweg.

The final chapter (Chapter 5) contains the conclusion and discussion of this research and provides an overview of how the research was conducted and makes the link between the existing scientific literature and the findings of this research. This chapter concludes with recommendations for follow-up research or practices and a reflection on the own research.

2 Theoretical framework

This chapter contains a review of existing scientific literature on shopping behaviour and on the physical characteristics of shopping streets. First, the development of research on personal choice and behaviour is discussed with a focus on a behavioural approach and a humanistic action approach in Chapter 2.1. Next, the work of Jan Gehl is discussed in Chapter 2.2. He is known for his vision on the liveliness of cities and on the plinths of streets. Then, an overview of existing scientific literature on furnishing elements, with a focus on resting possibilities and greenery, is given. This chapter concludes with the conceptual model and an operationalisation of the included variables.

2.1 The choices and experiences of consumers

Much research has been done on consumers' reasons for visiting shopping centres, with over time more attention paid to personal choices and experiences (Hospers, van Melik & Ernste, 2015). Early studies on visiting reasons argued that consumers do not have a personal choice but are attracted to a place based on its size and distance. An example of this is the gravitation theory which assumes a positive relation between the attractiveness of a city and its size and a negative relation between the attractiveness of a city and its distance (Reilly, 1931). At about the same time, Christaller developed his central places theory. This theory states that there is a hierarchy among cities, with areas with the highest number and most specialised facilities at the top and areas with the lowest number and least specialised facilities at the bottom. As cities grow, more specialised facilities develop there (Atzema, van Rietbergen, Lambooy & Van Hoof, 2015; King, 2020).

Christaller assumes that people always go to the nearest place where they can meet their needs. This means that people's willingness to travel differs for different facilities, depending on the extent to which a specialised facility is needed. For non-specialist facilities, which are also available in small centres, a consumer travels less far than for specialist facilities that are mainly available in large centres. There are also some shortcomings in Christaller's theory. For example, Christaller defines the nearest place measured in the absolute distance. He argues that consumers can travel equally easily in each direction and that the costs are the same for the different directions. In addition, he does not consider personal preferences of consumers with regard to, among others, the means of transport to be used or the route to be taken (Atzema, van Rietbergen, Lambooy & Van Hoof, 2015; King, 2020).

The gravitation theory and the central places theory both consider the size of a place and the distance to a place. However, it can be said that the theories differ, with Christaller's central places theory corresponding better to reality. Reilly (1931) emphasises that consumers do not have a choice, whereas Christaller argues that consumers do choose where to go. The consumers make their choice on the basis of their need for a certain facility (Atzema, van Rietbergen, Lambooy & Van Hoof, 2015; King, 2020). Although Christaller, compared to Reilly, puts more emphasis on the needs of the consumer, he still assumes that man acts in a fully rational way and has all knowledge at its disposal. In addition, he asserts that every consumer has the same wishes and that there are therefore no personal preferences. This assumption deviates from reality, where consumers do have preferences, for example the means of transport (Atzema, van Rietbergen, Lambooy & Van Hoof, 2015; King, 2020).

The focus on the rational human being is more often visible at that time. One theory that deals entirely with the rational choice of people is the discrete choice model, which assumes that a consumer chooses the option with the highest utility for every choice he makes. To achieve this, the consumer weighs the costs and benefits of various alternatives (Bray, n.d.; McFadden, 1973; Oppewal & Timmermans, 1993). The discrete choice model differs from Christaller's theory because this theory also considers aspects such as the idea that quality can differ between different places. As a result, consumers do not automatically choose the closest location, but may choose a further location if the increase in benefits exceeds the increase in costs (McFadden, 1973; Oppewal & Timmermans, 1993).

Around the 1970s, however, this rational dominance was criticised and more attention was paid to the individual and psychological aspects of the individual (e.g., Argent & Walmsley, 2007; Bitner, 1992; Bray, n.d.; Golledge, Brown & Williamson, 2007). The question how people react (mentally) to their surrounding became dominant. There are two different viewpoints, namely a behavioural approach and a humanistic action approach. The main difference between these two schools of thoughts concerns whether people's behaviour is a reaction (behavioural) to their surrounding or an action resulting from free choice (action) (Hospers, van Melik & Ernste, 2015; Werlen, 1993). Below these two schools of thoughts are elaborated in more detail.

2.1.1 Behavioural approach

A behaviourist and a behavioural approach assume that human behaviour is a reaction to the surroundings. This means that, in a certain sense, human behaviour is assumed to be imposed by the surrounding and that there is a form of determinism (Golledge, Brown, & Williamson, 2007; Werlen, 1993). A behaviourist and behavioural approach, however, differ from each other. A behaviourist approach assumes a direct relation between stimuli and behaviour, while a behavioural approach assumes a greater complexity in this relation and can therefore be seen as an extension of a behaviourist approach. A behavioural approach adds a cognitive process to the relation between stimuli and behaviour, which makes it possible that the same stimulus results in various types of behaviour by different people (Argent & Walmsley, 2007; Hospers, Van Melik & Ernste, 2015).

The idea of determinism, expanded with personal characteristics, causes this view to be widely used for research with the aim of formulating policy (Hospers, van Melik & Ernste, 2015). From a positivist view, behavioural geography attempts to investigate behaviour where the results are replicable and verifiable (Argent & Walmsley, 2007). It therefore assumes that certain laws can be established, in this case laws about how the physical environment affects the behaviour of people (with certain characteristics). This knowledge can be used to justify policy.

A behavioural approach assumes that behaviour develops via three steps. First, the receiver experiences a stimulus. After that, the receiver processes this stimulus in a cognitive process and, as a result of this process, the receiver has certain behaviour. This process is shown in Figure 1. A research that was carried out on the basis of this model concerns the impact of the built environment on visitors and employees (Bitner, 1992). Bitner uses the term moderator for the receiver and this term is adopted below. The above three steps are further explained by using examples of Bitner's research.

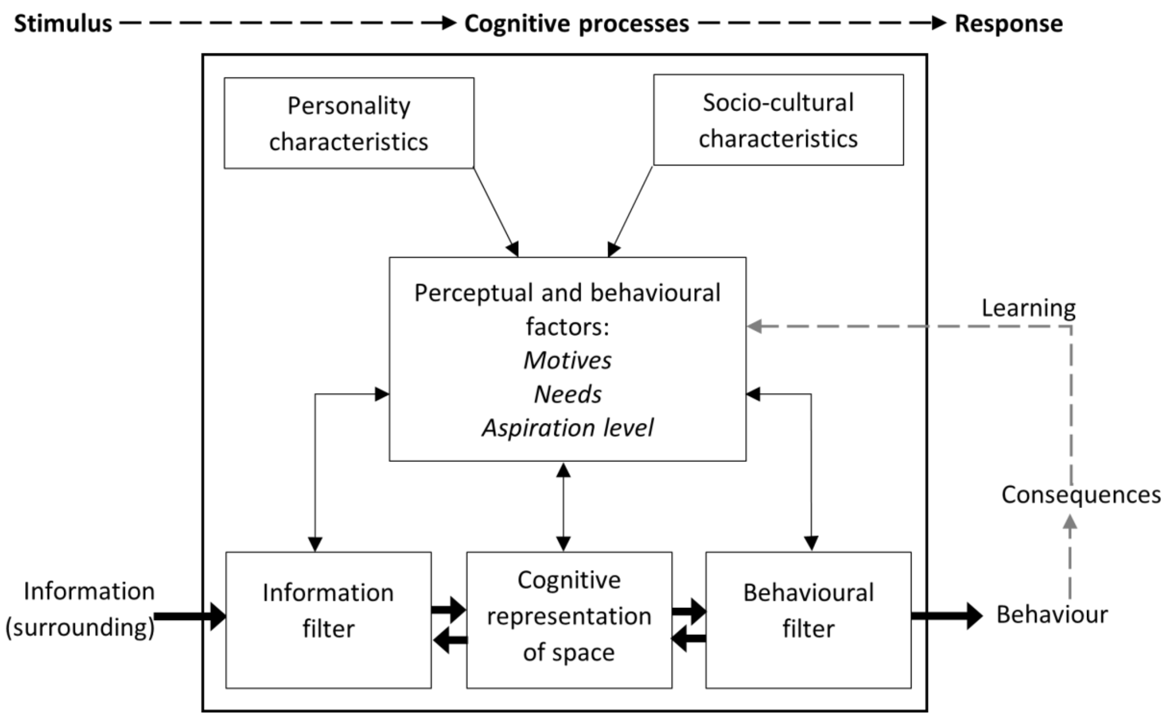

Figure 1: Behavioural model (Inspired by Werlen, 1987; in Hospers, van Melik & Ernste, 2015)

The first step in the development of behaviour from a behavioural approach relates to the stimulus. Werlen notes that *"Every object in the physical environment represents a potential 'stimulus'. In empirical research, an object is described as a 'stimulus' the moment it affects a behavioural reaction"* (Werlen, 1993, p. 9). In other words, a stimulus can include many different things, but it always activates the cognitive process of the moderator. Often, stimuli are features of the moderator's immediate environment. Applying this to shops, Bitner studied the ambience of the shop, such as temperature, sound, and odour. These characteristics are noticed by the senses, after which they, consciously or unconsciously, activate the cognitive processing in the moderator.

The cognitive processing of the stimulus is the second step in the development of behaviour according to a behavioural approach. Often, this step happens without the moderator being aware of it, but it influences behaviour. The behavioural approach assumes that the cognitive processing causes different people to react differently to the same stimulus (Werlen, 1993). In the square in Figure 1, the cognitive process is shown schematically and shows the importance of personal and socio-cultural characteristics. Bitner (1992) distinguishes these characteristics in continuous and situational characteristics. Continuous characteristics are not likely to change often and are for example personal characteristics. An important personal characteristic is the extent to which a moderator is able to process stimuli. Arousal-avoiders have a poor ability to filter stimuli and may become over-stimulated, while arousal-seekers experience the same place as pleasant (Bitner, 1992; Grossbart, Mittelstaedt, Curtis & Rogers, 1975). A situational characteristic can change more often by the same moderator and examples of that are the shopping motive or the mood of the moderator (Bitner, 1992).

In addition, the cognitive process also consists of developing what Bitner (1992) calls *internal responses* and corresponds to *representations* in Figure 1. Figure 1 focuses only on cognitive responses, while Bitner states that there are also emotional and physical responses. The cognitive response is about the thoughts and expectations the moderator has about a place in comparison with other places, the so-called alternatives. The moderator creates a categorisation of alternatives, whereby the categories have different characteristics. Based on the cognitive response, the moderator has, for instance, a different thought and expectation of a luxury shop than of a budget shop (Finn & Louvière, 1996). The emotional response is about the degree to which someone feels pleasure, arousal, and dominance. A high degree of pleasure and dominance is experienced as pleasant. Dominance manifests itself, among others, in a high degree of choice, making the visitor feel in control. On the other hand, the degree to which arousal is experienced as pleasant differs between arousal-seekers and arousal-avoiders (Grossbart, Mittelstaedt, Curtis & Rogers, 1975). The physical response is about the physical experience of a place. A negative experience, e.g., noise pollution or unsafety due to fast and close driving traffic, can directly result in avoidance behaviour because visitors want to leave a physically unpleasant place. This type of response influences the cognitive and emotional response because an unpleasant place worsens the thoughts of a person (cognitive response) and reduces pleasure (emotional response) (Bitner, 1992; Grossbart, Mittelstaedt, Curtis & Rogers, 1975).

The third step is the actual behaviour that is the result of the cognitive response. Bitner states that there are roughly two types of behaviour, namely approach and avoidance behaviour. Approach behaviour is the most desired in shopping streets because people stay in and interact with the surrounding (Turley & Milliman, 2000). As mentioned above, the consumer experience is positively related to the physical environment. Therefore, an approach behaviour may be reached with the right physical surrounding.

A frequently heard criticism of a behavioural approach is that it assumes that behaviour is a reaction to the environment. In this approach, behaviour is influenced by personal characteristics, but it is assumed that people with the same characteristics react in the same way (Argent & Walmsley, 2007). This form of determinism is not recognised in a humanistic action approach, which is further explained below.

2.1.2 Humanistic action approach

In contrast to the behavioural approach described above, a humanistic action approach does not assume that people's behaviour is a reaction to stimuli. Whereas the behavioural approach states that people's behaviour is deterministically determined, a humanistic action approach states that people have a free choice in developing their behaviour. Therefore, a humanistic action approach emphasises action instead of reaction. A major difference between action and reaction relates to the question to what extent it is intentional, where an action is carried out with a certain intention, whereas a reaction stems from certain factors and stimuli (Werlen, 1993).

As shown in Figure 2, the intention of an action is central in an action model. This differs from a behavioural approach, where the stimuli are seen as the start of the development of behaviour. The intention arises from the initial situation, which can be seen as the context. Next, the intention leads to certain behaviour (action) through which a new situation develops. The moderator's intention is therefore based on the way in which he perceives the initial situation and this is related, for example, to his norms and values. Therefore, the perception of the initial situation is subjective, and it can differ between different people. On the basis of this perception the moderator creates a subjective definition of the initial situation (see the top left in Figure 2) (Werlen, 1993).

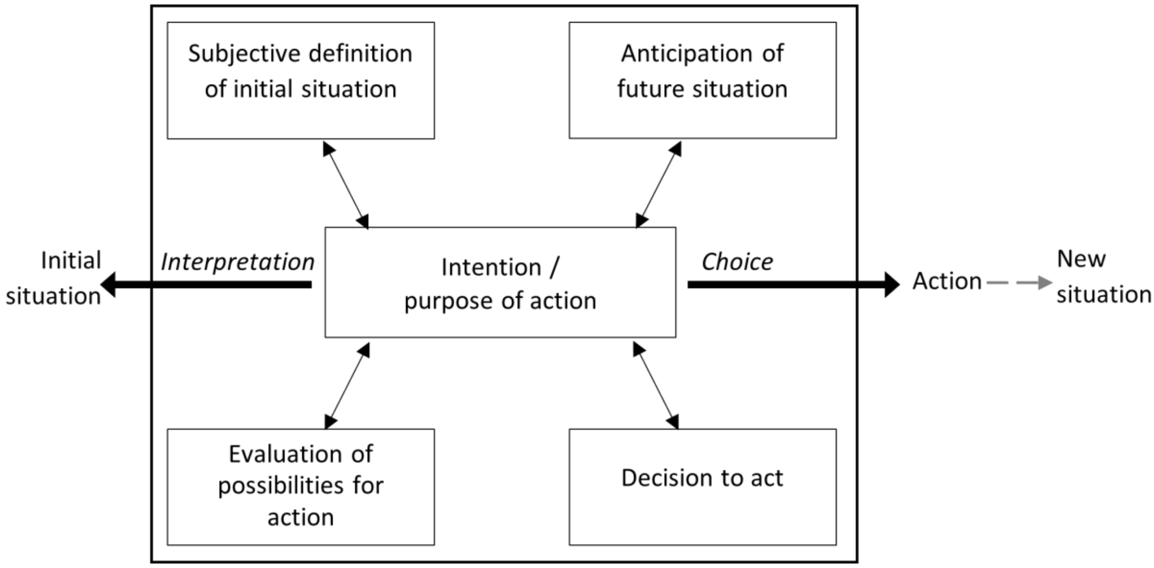

Figure 2: Humanistic action model (Inspired by Werlen, 1987; in Hospers, van Melik & Ernste, 2015)

Based on the difference between a stimulus and an intention as the basis for developing behaviour, there is a difference between a humanistic action approach and a behavioural approach as to what extent the moderator is conscious and in control. A behavioural approach states that there is a form of determinism, whereby stimuli, via a cognitive process, result in certain behaviour. A humanistic action approach, on the other hand, states that the moderator himself makes conscious choices. In Figure 2 this is shown by the 'evaluation of possibilities for action' and 'decision to act'. This makes clear that a moderator has various possibilities for action and choices, and that he can therefore determine his own behaviour. This also shows the difference between a reaction (behavioural approach) and an action (humanistic action approach) (Werlen, 1993).

Based on the interpretation of the initial situation and the intention, the moderator chooses a certain action. This action is his/her behaviour and results in a new situation. From this new situation the moderator continues to act, so that the new situation can be seen as an initial situation for a new action (Werlen, 1993). In a certain sense, this means that there is still a form of determinism, namely path dependence. A major difference with the behavioural approach, however, is that the moderator

can change its path by making certain choices. This allows the moderator to exert more influence on its own behaviour, and therefore the degree of determinism is smaller.
Phenomenology is an example of a movement that considers intention to be important. This theory assumes that people never perceive the material world neutrally, but that they perceive it through a certain subjective experience. This subjective experience is based on the phenomena they use to give meaning to the material world. This is how people create a subjective world, based on phenomena, which they consider to be true. However, certain phenomena are experienced in the same way by many people, which is why they are seen as general rules. As a result, different people exhibit the same behaviour when faced with a widespread phenomenon (Creswell & Poth, 2018). In contrast, phenomena can also be used to express one's own identity and maintain one's own values, for example, because the way people look at a phenom may differ (Compeau, Monroe, Grewal & Reynolds, 2015).

A research that applies this model is about the widespread phenomenon of 'gift shopping' and the different ways people experience this phenomenon. Their experience with it is a form to express your own identity. While one respondent indicated that she enjoyed buying spontaneous gifts for her loved ones as a token of appreciation, another respondent said that she did not buy any gifts other than those on a wish list. The second respondent's fear of buying the wrong present has as result that her decision to act is not to buy spontaneous presents. The first respondent's pleasure in giving gifts, however, makes her decision to act to buy a gift in the hope that the recipient appreciates it. The respondents' perception of the phenomenon of gift shopping leads them to create their own behaviour (Compeau, Monroe, Grewal & Reynolds, 2015).

The above example shows that a phenomenological approach aims to understand a certain action or phenomenon. This type of approach provides therefore more depth to a research than a behavioural approach. Moreover, a phenomenological approach is often linked to qualitative research methods, which makes it possible to examine subjective opinions (Creswell & Poth, 2018). A behavioural approach is often linked to a statistical, quantitative research method to enable the formulation of general laws (Argent & Walmsley, 2007). Whereas in a behavioural approach personal characteristics are often superficially examined, such as age and gender, a phenomenological approach tries to understand the person better and the researcher tries to fully understand the respondent (Creswell & Poth, 2018).

2.2 The vision of Jan Gehl

A researcher who looked at cities from both a behavioural and an action approach is Jan Gehl. He examined the influence of the physical environment on the behaviour and experience of people. Gehl states that a successful city automatically becomes more successful because *"people come where people are"* (Gehl, 2010, p. 65). According to Gehl, a lively, and therefore successful, city is a relative concept depending on the size of the space. A lively city can be reached via quantitative manners, attracting many visitors, and via qualitative manners, increasing the visit duration. Liveliness is namely the product of the number of people and the time people spend in a city. A higher activity level therefore increases the liveliness of a city in a qualitative way (Gehl, 2010). Below, there is a look at ways in which the plinths and furnishing elements of a street can affect the behaviour of visitors. These elements are often elaborated by Gehl as elements with an impact on the behaviour of visitors and the liveliness of cities.

2.2.1 The plinths of streets

The plinth of a street is important according to Gehl (2010, 2011) because it is the area where indoor and outdoor activities come together and it influences the degree to which a city is experienced as inviting and lively. In addition, plinths are capable of influencing people's behaviour, for example via the edge effect. This means that people seek out a place at the plinth if they have to wait. An explanation for this is that plinths provide a feeling of safety by protecting someone's back and making someone somewhat inconspicuous, while still being able to see all activities in front of him/her. However, not all plinths are inviting to stay or to interact with in another way, but a plinth that encourages interaction results in a livelier city. A soft edge is an inviting plinth, where there is (visual) contact between inside and outside, while a hard edge has little interactions (Gehl, 2010, 2011).

According to Gehl, a distinction can be made between five types of plinths. Ranked from softest to hardest, these are the active street, the friendly street, the mixture street, the boring street, and the inactive street. These streets are characterized by five characteristics of the plinths, namely the façade rhythm, the function diversity, the transparency of units and the degree of façade relief and the degree of façade detailing. Table 1 provides an overview of the five types of streets and the corresponding characteristics of these streets (Gehl, 2010).

	Active	Friendly	Mixture	Boring	Inactive
Units/100m (façade rhythm)	15-20	10-14	6-10	2-5	0-2
Function variety	Large	Some	Modest	Almost no	No
Passive units	No/few	Few	Some	Many	All
Façade relief	Vertical	Vertical enough	Modest	Mostly horizontal	Horizontal
Façade details	Many	Many	Few	Few/no	No

Table 1: Characteristics of the plinths according to Gehl (2010, p.241)

The hardest edge is in an inactive street. In this type of street, there is little interaction between people and their surroundings and people generally walk fast. These streets can even create an unsafe feeling because one feels unseen. A hard façade manifests itself in a low façade rhythm, little transparency, no functional diversity, and little façade detailing. Soft and inviting plinths are the places where there is (visual) contact between inside and outside and people walk slower. These plinths are characterised by a high degree of transparency, a great function variety, a good façade rhythm and many façade details (Gehl, 2010, 2011). Below the different characteristics of plinths are elaborated further.

Façade rhythm

Gehl (2010) states that a lively city is characterised by a high façade rhythm. According to him a good rhythm of façades, where new elements are continuously visible, keeps walking interesting and makes distances seem shorter. An ideal rhythm means that the visitor is able to see something new every five seconds, so that he remains stimulated, while at the same time the visitors does not become over-stimulated. Considering the walking speed of consumers, this goal is achieved if a 100-metre street segment has 15 to 20 units (Gehl, 2010, p. 77).

People seem to prefer streets with a higher number of buildings. These street have a higher attraction to people because a high number of buildings often corresponds to a large variety of options to go to. It can even be claimed that a cluster of buildings is the most influential factor in declaring staying time of visitors (Hahm, Yoon, & Choi, 2019). Hassan, Moustafa and El-Fiki (2019) conducted a research on the relations between staying activities and characteristics of façades. Their research agreed with the idea that a high façade rhythm has positive effects on the liveliness of a city. With a high façade rhythm there is a higher degree of staying activities on the sidewalks, while in street segments with a low façade rhythm there were few staying activities.

Function variety

The function variety is the second aspect mentioned by Gehl (2010). The diversity in the type of shops and the functions of shops affects the behaviour of consumers. When it comes to the type of shops, a distinction can be made, for example, between branches and local shops, or low-budget shops and exclusive shops. The type of shops present in a shopping street can influence the consumer's image of that area. The presence of many low-budget shops gives the image of low prices, but also of lower quality (Finn & Louvière, 1996), while the presence of many exclusive shops gives the opposite image.

On the basis of the needs that consumers have, they choose which shops they are interested in and thus interact with.

Diversity in the range of functions is about the extent to which a shopping area is able to satisfy multiple needs. A higher diversity of functions results in a higher attractiveness of this area (Hahm, Yoon, Choi, 2019; Hassan, Moustafa & El-Fiki, 2019). Research by Hassan, Moustafa and El-Fiki (2019), for example, shows that there are fewer staying activities in an area with a small variation in functions than in an area with a large diversity. There is no unambiguous selection into which categories different functions can be classified. Many distributions often contain categories about 'daily shopping', 'non-daily shopping', 'fashion and luxury', 'leisure', 'relaxation and entertainment', ‘restaurants’ and 'vacancy' (DTNP, 2015; Locatus, 2010; Platform 31, Detailhandel Nederland, & Stedennetwerk, 2014).

Besides the fact that there is no unambiguous division of functions, it appears that the degree to which functions influence the behaviour of consumers differs between studies. On the one hand, several studies show that the presence of recreational functions in shopping areas has a large positive influence on the behaviour of consumers (Kim, 2002; Van den Berg & Borgers, 2013; Wakefield & Baker, 1998). On the other hand, Teller and Reutterer (2008) claim that the entertainment function has little or no influence.

Blind and passive units

A third element that, according to Gehl, has a great influence on the interaction with the built environment, is the extent to which a façade is passive or blind. A passive or blind façade does not stimulate human senses and does not make interaction between (people in) the outdoor space and the indoor space possible. Therefore, people move around more quickly (Gehl, 2010). If there is a long stretch of passive façade, it appears that people have fewer staying activities here (Hassan, Moustafa & El-Fiki, 2019) and it is even possible that people feel unsafe (Gehl, 2010).

The opposite of a blind and passive façade is a transparent and open façade. A transparent façade is characterised by a lot of windows and/or doors. Due to its openness, this type of façade stimulates our senses and allows interaction between inside and outside (Gehl, 2010). A transparent façade is also said to have an additional attraction for passers-by, thus increasing the interaction between inside and outside (Hassan, Moustafa & El-Fiki, 2019; Jain, Takayanagi & Malthouse, 2014). These increasing interactions also result in more spontaneous interactions. For instance, research by Gudonaviciene and Alijosiene (2015) shows that consumers are more likely to make an impulse purchase when there is a transparent façade, as they are (unconsciously) attracted by a product in the shop that is visible outside.

However, a fully transparent façade is also not desirable, because when a street has both blind and transparent façades, people often choose to stop at the blind façades. These blind spots are experienced as good places to wait. This can be explained because blind façades provide more a feeling of a protected back. If a street does not have a good place to wait, this can negatively influence the length of the visit (Gehl, 2010). Therefore, a limited amount of blind or passive façades between transparent façades is desirable.

Façade relief and façade details

The fourth and fifth characteristics are about smaller elements of the plinth, namely façade relief and façade details. Façade relief is about the direction of lines on the plinth and façade details is about the enrichment of the plinth, among others via colours and embellishments. Both elements influence the behaviour of the visitors in the same way because they both have influence on the focus of the eye. They help to ensure that an environment is experienced on a human scale, and that visitors do not feel overwhelmed by buildings. A physical environment that is perceived to be on a human scale is experienced as more pleasant (Gehl, 2010; Hassan, Moustafa & El-Fiki, 2019).

Applying this to the façade relief, vertical lines create a livelier façade with more focus on units nearby, while horizontal lines move the focus to elements further away. Façade details also ensure that the visitor focusses more on the immediate surrounding. Both elements result in a slower walking pace of visitors and more interaction with the direct surrounding (Gehl, 2010). In addition, façade details (e.g., pillars) can be used as a resting possibility for visitors (Gehl, 2010). Advantages of resting places are elaborated further in Chapter 2.2.2.

2.2.2 The furnishing elements

Besides the characteristics of the plinths, also furnishing elements have influence on people's behaviour (Gehl, 2010; Wirdelöv, 2020). When people wait, they often choose a place near the plinths or near furniture. Quoted by Gehl: *"If spaces are desolate and empty - without benches, columns, plants, trees, and so forth - (...) it can be very difficult to find places to stop"* (Gehl, 2011, p. 153). The absence of furniture can influence the activity level in a negative way and reduce the quality of a visit, expressed in the duration of visit. However, adding more furniture does not guarantee a desired effect and therefore it is important to think carefully about the functional use of the space (Gehl, 2011; Kim, & Runyan, 2011).

There are many types of furniture, e.g., waste bins, street lighting, advertising signs, resting possibilities, and greenery (Hahm, Yoon & Choi, 2019; Wirdelöv, 2020). The two latter are elaborated on in this chapter. A focus on resting possibility is chosen because this is an often-mentioned furnishing elements (Gehl, 2010; Hahm, Yoon & Choi, 2019; Wirdelöv, 2020). The focus on greenery is the result of increasing attention for greenery in city centres, because of the growing emphasis on sustainability and climate. Therefore, greenery is likely to be more present in city centres in the future (Raskovic & Decker, 2015).

Resting possibilities

The liveliness of a place, as a product of the number of visitors and the length of the visit, can be positively influenced by the extent to which there are suitable places to wait and rest. Besides the quantity of resting possibilities, the quality is also important. For example, a good resting place feels as a safe place, preferably with a protected back, a view of passers-by, no noise or rubbish pollution. However, the degree to which a resting place is experienced as being of good quality differs according to personal characteristics. For instance, the demands people have for a good-quality resting place differ between age groups, with children having limited demands and older people having more extensive demands, such as a handrail (Gehl, 2010).

A distinction can also be made between primary and secondary resting places. Primary resting places are the furnishing elements whose main purpose is resting and these are generally of a higher quality. A 'real' bench or chair is an example. Secondary resting places, on the other hand, are places in public space where people can sit or lean, but which were originally created with a different purpose. Examples of secondary resting places are steps one can sit on or a pillar in the façade one can lean against. Despite the fact that this second type of resting place may seem less important at first, the presence of these places does contribute to the liveliness of a street. People often choose the primary options, but if these are occupied, a secondary resting place can still increase the length of the visit and thus the liveliness of the place (Gehl, 2010; Mehta, 2009). Besides that, the presence of resting places influences visit duration, the presence of seating has a positive influence on shopping behaviour. In the research of Hahm, Yoon and Choi (2019), this variable is even the second most important variable in explaining the number of visitors that visit a shopping street. The most important variable is, according to them, ‘improved streetscape’ which contains public projects of improvement.

Despite the positive influence that resting facilities can have on the liveliness of a place, it can also be argued that too many resting places can cause avoidance behaviour. For example, research has shown that visitors avoid a shopping centre if their freedom of movement is too restricted by obstacles or if they perceive the place as too crowded (Kim, & Runyan, 2011). Although Kim and Runyan focus on kiosks, the same negative effects can occur with an excess of benches. After all, these narrow the walking route and, as mentioned above, increase the crowdedness of a street. It is therefore important to find the balance between providing resting possibilities and maintaining freedom of movement in order to prevent an unpleasant experience, which results in avoidance behaviour (Bitner, 1992; Turley & Milliman, 2000).

Greenery

In spatial planning, great emphasis is placed on planting greenery in inner cities as a means of increasing the sustainability of a place, but also of increasing the quality of life. The presence of greenery has a positive influence on people's willingness to stay (Raskovic, & Decker, 2015). In addition, greenery in front of shops can have a positive influence on the interaction that passers-by have with units. Small greenery, such as plants and flowers, can be used to personalise a building and generate more passive and active interaction with a building (Mehta, 2009). At the same time, Mehta (2009) also states that large greenery can have a positive influence on the visiting time at warm moments because the presence of trees creates shade. This makes the accommodation climate more pleasant. Raskovic and Decker (2015) also mention that the presence of trees has a positive influence on visitors' appreciation of a place. They state that a place with more trees is considered to be esthetical more pleasing and that people therefore stay there longer and return more often.

Despite the fact that Mehta (2009) and Raskovic and Decker (2015) state that greenery has a positive influence on the interaction of visitors, Gehl only puts a small focus on this as a furniture element. He argues that greenery can mainly have a positive influence on the extent to which a seating area is experienced as suitable (Gehl, 2010). Here, he does not emphasise the inherent qualities of greenery but rather emphasises on greenery as a means of enhancing the positive effects of seating. Other studies are also less positive about the individual qualities of green. For example, greenery has no significant influence on shopping behaviour in the research by Hahm, Yoon and Choi (2019) and Wirdelöv (2020) argues that the quality of greenery has to do with the fact that empty spaces are filled and therefore there is less room for unwanted behaviour.

2.3 Conceptual model

Based on this literature review, the conceptual model in Figure 3 is developed. It was decided to adopt a behavioural approach. Although this approach, compared to a humanistic action approach, puts a lot of emphasis on determinism, a behavioural approach is better suited for this research. By means of a behavioural approach, statistical insights can be obtained into which relations exist between the physical shopping environment and the interaction of the visitor with the environment. The theoretical framework described above shows that there is currently no insight into the relative influence of plinths and furnishing elements on the activity level of visitors. A behavioural approach makes it possible to generate these insights. A humanistic action approach, which focuses more on in-depth insights, should assume that the relations between the physical environment and the behaviour of visitors exist and focusses more on the 'why' question. Since this research aims to gain insight into the relations between the physical characteristics and the behaviour of visitors, a behavioural approach is more appropriate.

To develop useful knowledge on the interactions between life in public space, five questions need to be asked, namely: How many? Who? Where? What? and How long? (Gehl & Svarre, 2013). These five questions are included in the conceptual model drawn up. For each type of variable is clarified which question(s) of Gehl and Svarre it answers. After that, it explains how the various variables are measured (Chapter 2.3.1).

The independent variables are about the physical characteristics of the plinths and the furniture. These variables provide an answer to the question 'where' (Gehl & Svarre, 2013), since it is expected that interactions occur at a particular place because of the physical characteristics. The characteristics of the plinths are measured by means of four variables, which correspond to the characteristics Gehl has named. However, it is decided to exclude function variety as independent variable and add it as control variable, because it changes relatively often. The variables about the plinth characteristics are therefore rhythm, transparency, façade relief, and façade details.

The furnishing elements are measured by means of resting possibilities, greenery, other furniture, and total amount of furniture. The choice for resting possibilities is made because it is a direct way to stimulate interaction, as described above (Gehl, 2010; Hahm, Yoon & Choi, 2019; Mehta, 2009).

Literature about the influence of greenery does not have one clear position (Hahm, Yoon & Choi, 2019; Mehta, 2009; Wirdelöv, 2020). However, it is important to have knowledge of the relations in order to match the surrounding as much as possible to the wishes of the visitors. Because there are many more furnishing elements, the variable 'other' is added. Finally, the variable total number of furnishing elements is also included as an overarching variable of the aforementioned furnishing elements.

The dependent variables about the activity level of visitors answer the questions 'How many' and 'What'. Firstly, the activity level is considered by the total number of interactions (How many) with the physical environment. Secondly, different types of interactions are distinguished, namely going in, looking in and other activities. A conscious choice was made to measure the behaviour of visitors in terms of activity level and not in terms of e.g., spending or length of visit. The latter subjects have been studied more often (Anselmsson, 2016; Li, et al., 2021; Teller & Reutterer, 2008; Wakefield & Baker, 1998) and only reflect a limited part of the activities of visitors. Spending and duration of visit are namely often more strongly influenced by what happens in the shop than by what happens outside. In addition, the question can be asked whether physical characteristics outside still have an influence on the behaviour of the visitor inside.

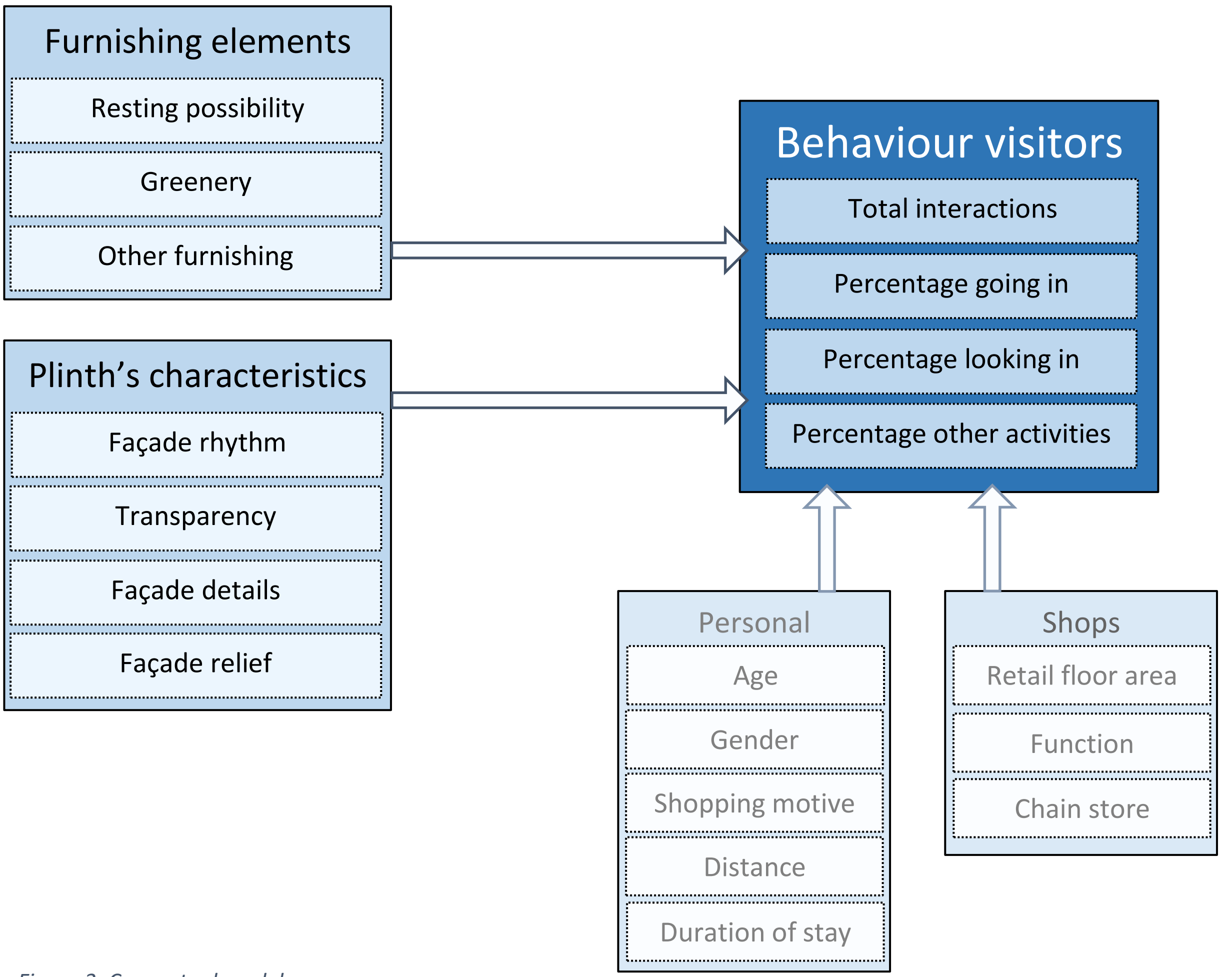

Figure 3: Conceptual model

Finally, the control variables are about two subjects and answer different questions. The first group deals with the 'Where' question and contains variables about the shops in buildings. These control variables are retail floor area, function, and the question if the shop is part of an (inter)national chain. It is known from scientific research that the function of a shop can influence the behaviour of the visitors. The presence of a leisure function, e.g., a catering establishment, could significantly influence the length of a visit (Janssen, van den Berg & Borgers, 2013; Kim, 2002). On the other hand, there are also studies that state that there is no relation between leisure and perceived attractiveness (Teller & Reutterer 2008). With regard to the control variable 'chain store', research has shown that chain stores have a high degree of attractiveness because of the recognisability of these shops and the security they offer (Damian, Curto & Pinto, 2010). Therefore, these shops are expected to have a higher activity level than local shops.

The second group is about the personal characteristics of the respondents and answers the 'Who' and 'How long' questions. This group contains five variables, namely age, gender, shopping motive, travelled distance and duration of stay. Age is included because it is known that people of different ages visit a shopping street differently (Anselmsson, 2016; Jisana, 2014). For example, the walking pace of older people is slower, they have a greater need for resting facilities and they have higher demands on the quality of resting facilities (Gehl, 2010). Besides different age groups, it is also known that men and women visit a shopping centre differently. Men often try not to visit more shops than necessary, which also makes it likely that they have a lower overall activity level. In addition, women are more likely to be window shoppers (Anselmsson, 2016). The same difference exists between hedonistic and utilitarian visitors, where hedonistic visitors come with entertainment as their goal and utilitarian visitors have a clear, often useful, goal in mind (Teller, Reutterer & Schnedlitz, 2007). It is therefore likely that hedonic visitors have a higher activity level than utilitarian visitors. With regard to distance travelled, a positive correlation is expected between distance travelled and activity level. If one has to travel longer, it is more likely that one wants to fulfil several desires at once, so that one has to travel less often to the shopping centre and that the benefits outweigh the cost. This corresponds to the maximum utility theory, as described by Oppewal and Timmermans (1993). The last personal characteristic is the length of visit. It is expected that a higher visit duration also results in a higher activity level (Gehl, 2010).

2.3.1 Operationalisation

This research contains twenty variables on five subjects, namely the behaviour of the visitors, plinth's characteristics, furnishing elements, respondents characteristics and shop characteristics. Below, it is discussed in more detail how the corresponding variables were measured per subject. Table 2 gives an overview and a more detailed overview can be found in Appendix 1.

The dependent variables of this research belong to the subject of the behaviour of the visitors. This subject contains four variables, namely the number of interactions and the percentages of the activities of going in, looking in and other activities. The data on these variables were obtained through the observation of visitors during the data collection. All four variables are on interval-ratio level. The number of interactions is expressed as an absolute number and the other three variables as a percentage. Based on work by Gehl, this research distinguishes seven types of interactions. These are: going inside, looking inside, shopping while standing, talking while standing, talking while sitting, sitting, and waiting (Gehl, 2016, p. 82). The last five types of interactions are part of the category other interactions in this research.

A second subject in this research is the plinth's characteristics and is measured by means of four variables, namely the façade rhythm, transparency, façade details and façade relief. The first two variables are of an interval-ratio level, whereby the façade rhythm is expressed in the number of units that fit into a 100-metre segment of the shop in question. For the transparency variable, the percentage of the façade that is a window and/or door is calculated for each unit. The last two variables are of ordinal level and are both expressed in a classification of three levels based on the types of streets from Table 1, based on Gehl. The data for the four variables come from the location scans in the shopping streets.

The third topic contains three variables on the furnishing elements in shopping streets. These variables are all of interval-ratio level and are expressed in the number of elements per area. An area is half the width of a shopping street and the length of a unit. Because these length and width measurements can differ between units and streets, the value per area is converted to 50 square meters to express the density for furnishing elements. This makes it possible to compare the different values. The data for these variables were also collected via a location scan.

As control variables, three variables have been included on the subject of shop characteristics. One of the variables concerns the retail floor area and is expressed in square metres. This variable is of interval-ratio level. The other two variables within this subject are of nominal level and concern the question whether the shop is part of a (inter)national chain store and the question which function the shop has. A list of Locatus (2010) is brought down to five types of shops and three other categories. There are therefore eight categories, namely: daily shops, fashion and luxury shops, leisure shops, shops focussed on household's products, restaurants, vacant units, houses, and other uses.

The last topic contains control variables on personal characteristics of the respondent. Two of these are of nominal level, namely gender (expressed in male and female) and shopping motive (expressed in run shoppers, fun shoppers and unknown shoppers). The other three variables are of interval-ratio level and are about age, distance travelled and visiting time. Age is expressed in whole years, distance travelled in kilometres to one decimal and visiting time in minutes. The data for these five variables were obtained from the surveys.

	Subject	**Variables**	**Measuring**
Dependent variable	Activity Level	Number of interactions	Number of interactions per unit
		Percentage going in	Percentage of going in of all interactions
		Percentage looking in	Percentage of looking in of all interactions
		Percentage other activities	Percentage of multiple activities off all interactions (actions: standing; stand & look; stand & talk; sitting; sit & talk; waiting)
Independent variables	Plinth's characteristics	Façade rhythm	Amounts of units that fit in 100m
		Transparency	Transparent percentage of façade per unit
		Façade details	Classification (1. Active; 2. Mixture; 3. Inactive)
		Façade relief	Classification (1. Active; 2. Mixture; 3. Inactive)
	Furnishing elements	Resting possibilities	Number of resting possibilities per area[1]
		Greenery	Number of greenery per area[1]
		Others	Number of other furniture per area[1]
		Total	Number of all furnishing elements per area[1]
Control variables	Shop characteristics	Retail floor area	Total m^2 per unit
		Chain store	Yes/No
		Function	Dominant function per unit
	Personal characteristics	Age	Average age in years of the visitors with interaction
		Percentages of gender	Percentages of male and female
		Percentages of shopping motive	Percentages of fun, run and unknown shoppers
		Distance	Average distance travelled in kilometres by the visitors with interactions
		Duration of stay	Average duration of stay in minutes by the visitors with interactions

[1] An area is the length of a unit multiplied with half the width of the street

Table 2: Operationalisation of variables

3 Methodology

3.1 Research strategy

This research examined the extent to which the activity level in Dutch shopping streets, and especially Steenweg, can be explained on the basis of the physical environment, with a focus on plinths and furnishing elements. The research has three phases, namely visualising the condition of the plinths and the furniture, formulating expectations about the activity level, and finally analysing the activity level in Steenweg and explaining the similarities and differences with the formulated expectations. Per phase the best fitting research approach is explained below, based on Verschuren & Doorewaard (2010).

In the first phase, a location scan was carried out, in which the conditions of the plinth and the furniture were mapped out. The research question central to this phase was: "*What is the condition of the plinths and of the furnishing elements in the eight shopping streets?".* To answer this question, a quantitative research method was used, where the data for these variables are empirically collected. All variables were measured per building, despite the fact that this is more difficult for some variables, for example for the façade rhythm and the variables about the furnishing elements. For the façade rhythm it is calculated how often the specific unit fits in 100 metres, a segment often used by Gehl. Due to a too small diversity of streets, it is not possible to measure the influence of the façade rhythm of a whole street on the activity level. The furnishing elements were considered in areas of the length of a unit and half the street width. Because these areas may vary from one area to another, the values have been converted to an equal area to express the density.

The second phase focused on the second sub-question, namely *"Which relations between the activity level of the visitors of Steenweg and the street characteristics of Steenweg are expected based on an analysis of earlier collected data in seven Dutch shopping streets?".* This question was answered based on a quantitative analysis of a dataset on seven Dutch cities. A quantitative method is appropriate because this research question seeks to understand what relation exists between physical characteristics of a shopping street and the activity level of visitors. A qualitative research, on the other hand, would focus on why there is a relation (Verschuren & Doorewaard, 2010). This research does not aim to answer the 'why' question but aims to gain insight into whether there is a significant relation between the physical environment and activity level of visitors, and if so, it aims to give insight into how strong this relation is. A quantitative research method is best suited for this purpose. Based on this analysis and on the physical characteristics of Steenweg, expectations about the behaviour of the visitors in Steenweg have been drawn up.

In the last phase, two sub-questions were central, namely: "*To what extent is the activity level of the visitors of Steenweg influenced by the physical elements of Steenweg?"* and "*What differences and similarities can be seen between the expected behaviour of the visitors of Steenweg and the observed behaviour of the visitors of Steenweg?".* This phase is again done via a quantitative research, in which, based on own collected data, insight is created into the influence of the façade and the furnishing elements on the activity level of visitors in Steenweg. Corresponding to the previous phase, this phase of the research sought to understand whether there is a significant relation between the physical elements and the activity level of visitors, and how strong this relation is. The aim of this phase is not to gain insights in the question why this relation exists. It was also checked whether the observed activity level corresponds with the expectations drawn up. If this does not correspond, possible explanations for this have been examined.

3.2 Data collection

As mentioned above, a quantitative research method is the most suitable way to carry out this research. However, a quantitative research method has less depth compared to a qualitative research method, because in a quantitative method of data collection it is often not possible to ask more questions about a respondent's answer, while this is common with qualitative methods of data collection (Verschuren & Doorewaard, 2010). However, a quantitative research method is more suitable for this research. In the existing scientific literature, little research has been done into the relative influence of the plinth and the furnishing elements. As Chapter 2 has shown, existing research often focuses on one of the two groups of independent variables. In addition, the behaviour of the visitors is often measured via other characteristics than the activity level, e.g., length of visit or expenses (Anselmsson, 2016; Li, et al., 2021; Teller & Reutterer, 2008; Wakefield & Baker, 1998). Because there is still little insight into the relations that exist between the activity level and the physical characteristics of a shopping street, this research looks at these relations. Conducting qualitative research would be too early, because in that type of research it is important that a relation is known.

When carrying out quantitative research, it is important to have a dataset as large as possible. The large amount of data is necessary to be able to make statements with a higher reliability and to examine relations (Korzilius, 2008). Therefore, this research uses existing datasets on seven Dutch shopping streets and expands them with a new dataset on Steenweg. The streets studied are: Burchtstraat (Nijmegen), Grotestraat (Ede), Grote Marktstraat (Den Haag), Grote Noord (Hoorn), Kalverstraat (Amsterdam), Koopgoot (Rotterdam), Raadhuisstraat (Roosendaal) and Steenweg (Utrecht). The data were collected by means of a survey and observations. A survey is an accessible way to collect and process large amounts of data. A disadvantage of a survey is that it is not possible to add extra questions or change questions after data collection. This is related to the anonymity of the respondents (Field, 2018; Verschuren & Doorewaard, 2010). To avoid having to make changes afterwards, or questions being not usable, a literature study (see Chapter 2) was carried out beforehand, which showed the potential influence of many variables. This made it possible to include a selection of those variables in the research that may have a significant influence on the activity level of visitors.

The data were all collected using a similar survey and conducting observations. However, the survey forms differ because the survey is carried out in different streets. As can be seen in Appendix 2, the survey contains a schematic representation of the shopping street. As a result, different surveys have been used, but they have all been drawn up in the same way and can be filled in in the same way. This makes it possible to analyse the different datasets together. In addition, the use of surveys guarantees the validity of the research, as it is possible for another researcher to analyse the data again if necessary and thus to control the research (Korzilius, 2008). Chapter 3.3 mentions how this research deals with the validity and reliability of the results.

The existing datasets are from 2021 and collected for a research project by the firms Roots and Ruimteverhaal. These datasets were collected on a weekday between 9:30 am and 5:00 pm. The data for Steenweg in Utrecht is also collected on a weekday (Wednesday) during the same times to enable comparison. After all, it is possible that the behaviour of visitors on weekdays differs from weekend days. By choosing the same day and time, an attempt is made to reduce the deviation in datasets caused by external factors. However, there are other external factors that lie beyond the power of the researcher, such as the weather. In the existing datasets, an attempt was made to keep this influence as small as possible by collecting the data on the same day. It was expected that the chance of strongly varying temperatures and precipitation would then be as small as possible. However, this could not be done for the data for Steenweg, because these data were collected one year later.

3.2.1 In vivo approach

The data are collected through an *in vivo* approach, which means that the data are collected at the research location. This has the advantage that the actual behaviour of consumers is investigated. If one would choose for an *in vitro* approach, in which the data collection does not take place at the research location, the respondent would have to think back to what his/her behaviour was during a visit (Teller & Reutterer, 2008). This is not a desirable circumstance in this research, because the level of activity (the number and type of interactions) is partly unconscious, which makes it impossible to investigate if an *in vivo* approach is not used.

However, the choice of the *in vivo* approach also has a disadvantage. Using this approach means that it is not possible to draw a sample of respondents for the data collection. After all, it is not known which visitors are in the shopping street at the time of data collection. This makes it a non-probability sampling method, where not everyone has an equal chance of participating in the research (Korzilius, 2008). Moreover, it is not possible to gain insight into the non-response. Because passers-by are questioned, there is no insight into who does not visit the shopping street. As a result, a certain 'group' may be missing or may be overrepresented. The lack of this information affects the generalizability of the results (Teller & Reutterer, 2008). However, this research aims to make statements about the activity level in Steenweg and the other shopping streets. Therefore, this disadvantage of this approach does not outweigh the disadvantage of the *in vitro* approach, where no statements can be made about the actual behaviour of visitors (Teller & Reutterer, 2008). Therefore, the choice is made to use an *in-vivo* approach.

3.2.2 Research area

This research is conducted with data on eight different shopping streets in the Netherlands. The cities are spread over five provinces. In Noord Holland, the streets Kalverstraat in Amsterdam and Grote Noord in Hoorn were investigated. In Zuid Holland, the Koopgoot and Grote Marktstraat, in Rotterdam and Den Haag respectively, were examined. In Gelderland, Burchtstraat in Nijmegen and Grotestraat in Ede were investigated. For Noord-Brabant, Raadhuisstraat in Roosendaal was examined and finally Steenweg in the province of Utrecht. A map showing the cities in which surveys were conducted is depicted in Figure 4.

Figure 4: Map with an overview of the included cities (Edited; Source: schoolplaten, n.d.)

The shopping streets, except Steenweg in Utrecht, were chosen because they were part of a project conducted by Roots beleidsadvies, Platform31 and Ruimteverhaal. This research, called in Dutch 'binnenstadsbezoeker centraal' (translated to English: inner-city visitor central), aimed to give advice per shopping street based on the behaviour of visitors. To become part of the project, cities had to apply in the past. For this research, Steenweg in Utrecht was added. This street is an interesting case study because it has a good location, between the central station and the old inner city, but at the same time, the potential is not utilized to its maximum. Because this street was not part of the project 'binnenstadsbezoeker centraal' and has these striking characteristics, it is given extra attention in this research.

Although all the shopping streets studied are located in the central shopping area of the respective city, the shopping streets do differ in the type of shopping area they are. Most studied streets, namely those in Rotterdam, Den Haag, Amsterdam, Nijmegen, and Utrecht are located in the 'city centre' shopping area, Hoorn and Roosendaal belong to the category 'large main shopping area' and Ede belongs to 'small main shopping area' (KVK regional data, n.d.). Different types of shopping areas have different characteristics. Locatus (n.d.) states, for example, that an inner city has at least 400 shops, while a main shopping area has between 100 and 200 shops. A large main shopping area is somewhere in between, with 200 to 400 shops. Despite the different centre classifications, the shopping streets are similar in that they are located in the central shopping area of the cities and that they are centrally located within the shopping areas.

In addition, it was decided to investigate segments rather than whole shopping streets. The selected segments were at least 100 metres long and were a good reflection of the entire street. The choice to use segments was made because of the feasibility of the research. When surveying an entire street, there is a big chance that a respondent does not visit the entire street, but only a part. This is because all shopping streets have several side-roads. It is therefore possible that different respondents, despite visiting the same shopping street, visit different parts of a shopping street. As a result, the physical environment with which respondents interact is not the same. By shortening to a segment, a section with as few side-roads as possible could be chosen, thus increasing the chance of respondents visiting the same area. In addition, with a longer shopping street, it is more complicated to observe respondents for the entire stretch, as there is a chance that they visit also more shops. The waiting time for an interviewer therefore increases considerably, which means that fewer respondents can be recorded. Table 3 contains an overview of the characteristics of each shopping street.

	Total length of street	**Length of segment** (in metres)	**Number of units**	**Between addresses**
Burchtstraat *(Nijmegen)*	292	145	29	Burchtstraat 1 Marikenstraat 32
Grotestraat *(Ede)*	620	120	26	Grotestraat 21 Grote straat48
Grote Marktstraat *(Den Haag)*	429	130	22	Grote Marktstraat 44a Grote Marktstraat 169
Grote Noord *(Hoorn)*	420	106	27	Grote Noord 53 Grote Noord 102
Kalverstraat *(Amsterdam)*	676	120	25	Kalverstraat 183 Kalverstraat 230
Koopgoot *(Rotterdam)*	276	120	30	Beursplein 1 Beurstraverse 41
Raadhuisstraat *(Roosendaal)*	426	156	32	Raadhuisstraat 26 Markt 1
Steenweg *(Utrecht)*	236	150	49	Steenweg 6 Steenweg 58

Table 3: Overview of characteristics per street

3.3 Reliability and validity

3.3.1 Reliability

When conducting a quantitative research, it is important that the research has high reliability. This means that when the research is repeated, similar results are found, because unconscious errors in the research have been prevented (Field, 2018; Vennix, 2016). It can be said that a researcher can partly influence the reliability of a research, but it is also partly outside the control of the researcher.

An example of a factor that is beyond the control of the researcher is the weather (Janssen, Van den Berg & Borgers, 2013). Because the research takes place in an outdoor shopping street, the weather can change and therefore maybe influence the activity level of visitors. All datasets, with the exception of Steenweg, were collected on the same day. This choice was made to reduce the chance of variations in the weather, such as temperature differences. However, there are factors, such as precipitation and cloud cover, which can vary greatly from place to place, despite the fact that the data collection took place on the same day. This choice therefore sought to limit variation in a factor over which the researcher has no influence, but which cannot be excluded. The data for Steenweg was collected later, so the chance of different weather conditions is larger. However, by collecting the data at the same time of year, an attempt was made to minimise this difference.

Although there are factors that are beyond the control of the researcher, a large part of the reliability of a research is related to the choices made by the researcher. These choices mainly relate to the data collection. As mentioned in Chapter 3.2, in a quantitative research it is important to have as large a data set as possible. To achieve this, a researcher can, for example, choose to use a survey for data collection, as this is an efficient way of collecting data (Verschuren & Doorewaard, 2010). In order to generate as large a data set as possible, three choices were made for this research. First, a survey research method was chosen, in this way a large number of respondents could easily be interviewed. Secondly, the choice was made to have several interviewers visit a street at the same time, so a larger number of visitors could be addressed and thirdly, the choice was made to combine several datasets and to expand these datasets with a new dataset about the Steenweg.

The choice to observe with multiple interviewers can also limit the reliability of a research if they do not all understand the concepts of this research in the same way (Field, 2018). In order to prevent different interviewers from using different meanings of a concept, an explanation of the research and what each concept means was given beforehand. In addition, the explanations of the different types of activities were also given on each observation form, so that the interviewer could check during the observation whether he was using the correct criteria. For instance, for the activity of looking in it was decided that the activity must last at least three seconds before it is considered to be an activity. By setting these rules, the different interviewers observed using the same criteria and the reliability of this research is enhanced.

3.3.2 Validity

In quantitative research, it is particularly important that the chosen method and measuring instruments are capable of measuring the subject, this is called the validity (Field, 2018). Validity can involve various aspects which are further explained below.

Firstly, it is important that the subjects in the research are measured as a whole, named content validity (Field, 2018; Korzilius, 2008). Thus, the variables should cover the different aspects of the same subject. Through the literature study (Chapter 2), insight was gained into important elements of the plinth, of furnishing elements and of the behaviour of the visitors. This made it possible to include these concepts as fully as possible in the research through different variables. In order to measure the subject of plinth characteristics, four out of five of the characteristics drawn up by Gehl (2010) are adhered to, namely façade rhythm, transparency, façade relief and façade details. Additional literature also emphasised the importance of (one of) these variables (Gudonaviciene & Alijosiene, 2015; Hahm, Yoon, & Choi, 2019; Hassan, Moustafa, & El-Fiki, 2019; Jain, Takayanagi & Malthouse, 2014). The measurement of furnishing elements is done via four variables, namely seating possibility, greenery, other furnishing elements and total number of elements. The first two are often mentioned in literature and therefore specific factors (Hahm, Yoon and Choi, 2019; Mehta, 2009; Raskovic & Decker, 2015; Wirdelöv, 2020). Because the big variety of furnishing elements, the third variable is included in this research. In this way, all different types of furniture are included. The total number of elements has been added to check whether there are significant relations without a division into groups. With regard to the activity level of visitors, work by Gehl (2016) is considered. Based on this work, eight types of interactions are distinguished (See Appendix 1). These eight types of interactions were then categorised into three groups, namely going in, looking in and other interactions.

Another form of validity concerns the question whether the results of a research are based on the included explanatory variables or whether they are caused by other (not included) variables. This is called the internal validity (Korzilius, 2008). In order to increase this form of validity control variables are used. The control variables for this research are chosen based on a literature study (Chapter 2), which provides insight into the relations between different subjects. This makes it possible to add variables that, according to existing literature, have a significant influence on the dependent variable. In this research, these variables are about characteristics of the respondent (Anselmsson, 2016; Gehl, 2010; Teller, Reutterer & Schnedlitz, 2007) and about shop characteristics (Damian, Curto & Pinto, 2010; Janssen, van den Berg & Borgers, 2013; Kim, 2002; Teller & Reutterer, 2008).

A final form of validity is external validity, which concerns the generalizability of the results (Korzilius, 2008). Drawing a sample is important for this, but this is not possible in this research due to the *in vivo* approach. Therefore, external validity can not be guaranteed. However, the use of a dataset covering several shopping streets increases external validity, as visitors from several shopping streets had the chance to be included in the research.

3.4 Data analysis

The data analysis was done through three steps. Firstly, by means of the descriptive statistics, insight was generated into the dataset. In this phase of the analysis, for example, averages and extreme values of variables have been examined.

Secondly, multicollinearity tests have been performed. By means of this type of test, insight was gained into the extent to which different variables match with each other (Field, 2018). If different variables have a high degree of similarity, it is important to remove one of the matching variables until there is no longer a high degree of similarity. Because the independent variables are of different measurement levels (nominal, ordinal, and interval ratio), different types of tests for multicollinearity have been used, respectively Cramer's V, Spearman's Rho, and Pearson Correlation (De Vocht, 2020; Field, 2018). Also, a Variance Inflation Factor (VIF) was used for the metric variables (Field, 2018).

The last step assessed the relations between the variables in the conceptual model. For this purpose, multiple regression analyses have been used. By means of these analyses, the relations between the independent variables and the dependent variables could be expressed in an equation, which shows the relative influence of the different independent variables. An important criterium for this type of analysis is that the different variables must all be of an interval-ratio level. However, as mentioned in Chapter 2.3.1, there are also variables of nominal and ordinal level. These have therefore been converted into dummy variables. Hereby, the different categories have been converted to a value, so that they could be expressed in numbers. Dummy variables were made for the variables of façade details, façade relief, chain store and function.

3.4.1 Considerations

The choice for a multiple regression analysis was made deliberately, despite the fact that this method of analysis has disadvantages. These disadvantages are related to the fact that this research contains two research units, namely buildings and persons. Officially, it is not possible to use a multiple regression analysis to compare two different research units, but in practice this can be done by considering one of the two units as a characteristic of the other. In this research, the characteristics of persons interacting with a unit are seen as characteristics of that particular unit. However, the question whether it is permissible to distort data in this way is a debate within science (Hox & Kreft, 1994).

A statistically better method of analysis is the multilevel theory. This method is capable of comparing different research units without modifying the data. In multilevel theory, different research units are analysed by breaking them down into different hierarchical levels. With this analysis, it is also possible to see whether the variability in the outcomes is attributable to the different levels by means of the Intraclass Correlation (ICC) (Field, 2018). This makes it statistically the best method, but it is also a more complicated analysis. Therefore, the chance of misinterpreting the results is higher (Hox & Kreft, 1994). In addition, critics question whether the results with a multilevel theory are different from the results of multiple regression analysis. Also, more time is needed to conduct a multilevel theory.

Based on these disadvantages of a multilevel theory and the question of whether the results are different, it is decided to use a multiple regression analysis in this research, in which one research unit is expressed as a characteristic of the other research unit, namely in the unit of the building. This choice was made because of the limited time available due to the end of the academic year and the desire of Roots, the internship company, for understandable and easy to explain results to its clients. Moreover, the variables with persons as the research unit are only the control variables. A follow-up research may be able to conduct the same research through a multilevel theory, but for this research this option is beyond the means (period) and desire of the internship company.

4 Analysis

4.1 Dataset

The dataset contains information on eight different shopping streets with a total of 554 respondents, 240 units and a street length of over one kilometre. For the analysis of Steenweg, there are data of 147 respondents, 45 units and a street segment of 158 metres, which makes Steenweg the longest investigated segment and also the one with the most units and the most respondents. It is therefore possible to conduct a separate analysis on Steenweg for a case study. Table 4 shows the composition of the dataset per street.

	Number of respondents	**Length of street segment** (metres)	**Number of units**
Burchtstraat *(Nijmegen)*	55	145	29
Grotestraat *(Ede)*	52	120	26
Grote Marktstraat *(Den Haag)*	44	130	26
Grote Noord *(Hoorn)*	68	106	27
Kalverstraat *(Amsterdam)*	89	120	25
Koopgoot *(Rotterdam)*	67	120	30
Raadhuisstraat *(Roosendaal)*	32	156	32
Steenweg (Utrecht)	147	158	45
Total	554	1055	240

Table 4: Information about the data per street

Prior to the analysis, the presence of outliers in the dataset was examined. The limit for an outlier was set at three standard deviations. Although three outliers were found, it was decided not to remove them. The purpose of removing outliers is to remove possible measurement or research errors and thus to adjust the test statistics (Field, 2018). However, removing outliers can also be seen as data modification if there is no apparent reason to consider a value as incorrect. In this research, there are no reasons to consider values as measurement or research errors, but the values were actually observed. An extreme value in which a units has many interactions is caused by the popularity of the shop and not by measurement errors. Removing these units can therefore be seen as data modification for the sake of significance but would at the same time distort reality.

An overview of tables showing the extent to which the dependent variables are normally distributed is included in Appendix 4. This shows that there is no complete normal distribution, but that the dependent variables approach it. In order to check whether the degree of normal distribution affects the significance, the dependent variables were converted to a logarithm. However, the analysis shows that there are no major differences in significance, so it was decided to mention the analysis with the normal (non-converted) data. This makes it possible to better interpret the strength of relations.

4.2 Multicollinearity

A prerequisite for a multiple regression analysis is that there is insight into the extent to which a variable or multiple variables explain the same as another variable or other variables. To check this, several tests can be used. First, the Cramer's V, Spearman Rho and Pearson Correlation can be used to assess whether two variables explain the same aspect of the independent variables. The three tests are used for variables of nominal, ordinal, and interval-ratio level, respectively. However, it is also possible that several independent variables jointly correspond to another independent variable. To assess whether this is the case, the Variance Inflation Factor (VIF) is used. However, this test is only suitable for variables that are metric, thus interval-ratio (Field, 2018). The variables of nominal and ordinal level are therefore not included in this test. Based on the above tests, points of attention have become clear.

Firstly, the Cramer's V test shows that the variables of chain store and function are strongly related to the variables of transparency and retail floor area. This should be considered in the analysis by also including a model without the variables of chain store and function. It is possible that the inclusion of all four variables affects the results of the multiple regression analysis. It is not possible to check with the VIF whether function or chain store are related to multiple variables. This is because these two variables are non-metric.

In addition, the Pearson Correlation test shows that the variables of the number of furnishing elements in total has many similarities with the variables about the number of resting possibilities and about the other furnishing elements. The same goes for the total number of activities and the activities of going in, looking in and other activities. Both correlations can be logically explained because both furniture total and action total are overarching variables. These high correlations are no reason to remove several variables, but are reason to assess different models, varying the included variables.

Finally, there is a high correlation between the variables of percentage of men and percentage of women, as well as between the variables of percentage of run shoppers and percentage of fun shoppers. This correlation can be explained by the fact that the variables male and female together form 100 percent and that the percentage of run shoppers and the percentage of fun shoppers is also almost 100 percent. In the latter group, the percentage of motive unknown is low. Again, this correlation does not give cause to remove variables, as one of the variables is omitted by default when carrying out the analysis. This prevents variables that measure the same thing from being included in a model more than once.

Therefore, based on the various multicollinearity tests, it was decided not to remove a variable, but to include both the specific furnishing elements and the total number of furnishing elements not in the same model. If the above variables are not both included in a model, the highest value of the VIF is 2.868 and the lowest tolerance value is 0.349. Only with a VIF higher than 10 or a tolerance value lower than 0.1 is there a reason to remove variables (Field, 2018). This is not the case in this research.

4.3 Descriptive statistics

4.3.1 Dependent variables – Activity level

Multiple dependent variables are included in this research, namely the total number of interactions and the percentages of how many people go in, how many look inside and how many other activities take place. The dataset contains information about 954 individual activities, spread across the eight different Dutch shopping streets. The fewest activities took place in Raadhuisstraat in Roosendaal, namely 32, and the most activities took place in Steenweg, namely 341. This strong difference is partly influenced by the number of respondents per street, 32 and 147, respectively. If one converts the total number of activities into the number of activities per visitor, the average in Steenweg is still higher (average 2.32 activities per visitor) than in Raadhuisstraat (average of one activity per visitor).

If one looks at the average number of activities per unit per street, it turns out that the units in Steenweg have the most interactions on average, namely seven and in Raadhuisstraat in Roosendaal the fewest per unit. However, if one expresses the average number of interactions per unit in terms of the percentage of visitors who have had interactions with units, it turns out that Raadhuisstraat is still the lowest scoring street, but that Steenweg is no longer the highest. The street with the highest average number of activities per unit expressed as a percentage of the total number of visitors is Grote Noord in Hoorn. In this street, each units attracts an average of 8.8 percent of visitors. Grotestraat in Ede follows Hoorn where each unit had on average interaction with 7.7 percent of the visitors.

Also, the unit with the most interactions (30) is located in Steenweg, namely the building of Omoda. However, when the absolute maximum number of interactions is divided by the number of visitors per street, it turns out that the units with the highest percentage of visitors interacting is located in Grotestraat. In total, 28 percent of the visitors in that street interacted with the building of H&M, while this was 20 percent at the building of Omoda in Utrecht.

The descriptive statistics also show that in every shopping street there is at least one unit with which there was no interaction. If one looks at this group of units, one sees that the data for Roosendaal deviate considerably from the data for the other streets. Roosendaal has 26 units without interaction, whereas the street with the second highest score (Burchtstraat, Nijmegen) has only eight units without interaction. The other streets have two to seven units without interaction. These data therefore show that Raadhuisstraat in Roosendaal deviates strongly.

In addition to the number of interactions per unit, the dataset also contains information about which interactions have taken place. A distinction is made between eight types of interactions, namely: going inside, looking inside, standing still, standing and talking, standing still and looking, sitting or leaning, sitting and talking and waiting (Gehl, 2016). The most common activity is looking inside. This activity was observed 399 times (42 percent of all activities). Going inside is the second most frequently observed activity, with 335 observations (35 percent of all activities). All the other interactions took 220 times place, which is 23 percent of the total activities. Sitting or leaning and talking while sitting or leaning are the least observed activities, with both three observations (0.3 percent of all activities).

4.3.2 Independent variables – Characteristics of the plinths

Four different variables were used to measure the plinth characteristics of units. These are façade rhythm, transparency, façade details and façade relief. The first two variables are of interval-ratio level and the last two variables are of ordinal level. The ordinal variables have three categories which are based on Gehl's (2010) descriptions. These are good quality (combination of action and friendly by Gehl), neutral quality (mixture by Gehl) and bad quality (combination of boring and inactive by Gehl).

Façade rhythm is expressed in the number of units that fit into 100 metres of the unit in question. The descriptive statistics show that Steenweg has the narrowest units and therefore the highest rhythm. On average, a unit in Steenweg fits 18.3 times in 100 metres. Grote Noord has the second highest rhythm, with an average of 18.0. The lowest rhythm and therefore the widest units are located in Rotterdam's Koopgoot. Here a unit fits an average of 11.8 times in 100 metres. Grotestraat has the second widest units with an average of 13.0. In the other streets, the units fit an average of 13.4 to 17.7 times in a segment of 100 metres. Applying these averages to Gehl's idea that a lively street contains 15 to 20 units per 100 metres, it turns out that four streets do not meet this requirement. These are Koopgoot (11.8), Grotestraat (13.0), Grote Marktstraat (13.4) and Burchtstraat (14.8). The other four shopping streets do comply with Gehl's wishes. It is striking that Kalverstraat does comply with Gehl's idea, while this street also contains the widest unit in the dataset, which only fits 2.2 times in 100 metres. To still comply with Gehl's idea, the other units in the street must therefore be very narrow.

Transparency is expressed in the percentage of the façade that consists of windows or public door(s). Vacant units have been given a value of zero, as much of the façade has been stickered to hide the vacancy and there is little to see in the shop. Steenweg has the lowest transparency, with an average of only 37.7 percent. This low average is largely due to the fact that many units (10) were vacant. Raadhuisstraat in Roosendaal also has a low transparency, namely 38.9 percent. In this street, this low percentage is mainly influenced by the presence of houses. The most transparent street is Grotestraat in Ede. This street has an average transparency level of 70.6 percent. This is also the only street without vacancy, and the most transparent unit in this street has a percentage of 91. In the Koopgoot, too, a transparency level above 90 percent was measured (93.3 percent). This street is also the second most transparent street in the dataset (average of 69.5 percent).

With regard to relief, more than half of the units have no clear dominance of horizontal or vertical lines, but the lines on the façade are a mixture of the two directions. Only 13 percent have a clear dominance of horizontal lines and 33 percent have mainly vertical lines. The street with the lowest percentage of units with mainly horizontal lines is Burchtstraat in Nijmegen. Here only 3.4 percent of the units have mainly horizontal lines. Steenweg has the most horizontal lines, with 26 percent of the units. The street with the most vertical lines is Kalverstraat in Amsterdam (44 percent) and the street with the least vertical lines is Grote Marktstraat in Den Haag (15.4 percent).

The last variable on plinth characteristics concerns the extent to which the façade is detailed. In the whole dataset, 39.8 percent of the units has average detailing, 33.6 percent have a lot of detailing and 26.6 percent have little or no detailing. The street with the most units with a lot of detailing is Raadhuisstraat, where 56 percent of the units have a lot of detailing. The street with the fewest units with a lot of detailing is Grotestraat in Ede. Although Ede has few units with a lot of detailing, it is not the street with the least detailed units. This is the Grote Marktstraat in Den Haag, with 38.5 percent of the units belonging to this category. Raadhuisstraat is not only the street with the most detailed units, but also the street with the fewest non-detailed units. Only 6.3 percent of the units in this street belong to the category with few details.

4.3.3 Independent variables – Furnishing elements

The furnishing elements in a street are often not directly linked to units. Therefore, in this research, the street is divided into surfaces, the length of which corresponds to the length of a unit and the width of which corresponds to half the width of the street. These surfaces therefore do not correspond to each other in terms of surface area. This research therefore looks at both the absolute number of furnishing elements and the density of the furnishing elements. The density is calculated by converting the values per surface to surfaces of 50 square metres. The descriptive statistics include both the absolute (non-converted) values and the density (converted) values.

Looking at the average number of furnishing elements per unit in absolute terms, it turns out that Koopgoot has the most furnishing elements (4.3 per unit). Grote Marktstraat and Steenweg also have high averages, with 3.8 and 3.5 furnishing elements per unit, respectively. Kalverstraat and Grote Noord have few furnishing elements, with an average of 0.5 and 0.7 furnishing elements per unit. Converted to the average number of furnishing elements per 50 square metres, Steenweg has the highest density with an average of five elements per 50 square metres, followed by the Koopgoot (3). The descriptive statistics about the specific types of furnishing elements are briefly discussed below.

With regard to resting possibilities, the data shows that the majority of the units do not have seats. In five streets the average number of seating facilities per unit is rounded off to zero, which means that there is less than half a seating facility per unit in these street. The descriptive statistics even show that Kalverstraat and Grote Noord have no seating facilities in the entire street. In three streets, namely Grote Marktstraat, Koopgoot and Steenweg, there is a rounded off average of one seating facility per unit. This is the same if one looks at the absolute number of seating facilities and the density of the seating facilities. It is also striking that the distribution of seating areas in a street differs widely. In the three streets with one seat on average per unit, the maximum absolute number of seats per unit is six. These values do differ when converted to 50 square metres. In that case, Grote Marktstraat and Koopgoot have a maximum density of four seats per 50 square metres and Steenweg has a maximum density of eight seats.

Also, with regard to greenery, there is on average less than one green element per unit. Only in Grote Marktstraat and Raadhuisstraat is there on average one green element per unit. The maximum number of green elements per unit is in Raadhuisstraat, with seven green elements at one unit. However, this is an exceptionally long (42 meters) unit. If this number of green elements is converted to 50 square metres, there are only two green elements. This shows that the density is therefore low. In Grote Noord, Grotestraat and in the Koopgoot, too, there are at most two green elements per 50 square metres.

The streets, on the other hand, have many other furnishing elements. Only Grote Noord and Grotestraat have a rounded off average of zero other furnishing elements per unit. The other streets all have an average of one other furnishing element per unit. The unit with the most other furnishing elements in absolute terms are on Burchtstraat and Koopgoot, with nine other furnishing elements. Converted to density, these are only two and three elements per 50 square metres, respectively. Kalverstraat and Steenweg stand out with regard to the density of other furnishing elements, with a maximum of eight and ten furnishing elements per 50 square meters, respectively.

4.3.4 Control variables – Characteristics of the shop

In addition to the characteristics of the plinth, data are available for this research on the characteristics of the use of units. These data concern the retail floor area, the function and whether the unit is part of an (inter)national chain.

The data show that the retail floor area is by far the highest in Grote Marktstraat. This street has an average retail floor area of 2,297 square metres, which is strongly influenced by two units, namely the unit of the Bijenkorf (16,470 square metres) and the former Hudson Bay building (12,005 square metres). The average retail floor area of the remaining units in Grote Marktstraat is 1,103 square metres, which is still above the average of all shopping streets together (507). The shopping street with the smallest average retail floor area is Raadhuisstraat, where units have an average of 166 square metres of retail floor area.

Most of the shops in the dataset are fashion and luxury shops. A total of 116 units belong to this category, which equals 48 percent. This category is the most present in every shopping street, with the lowest percentage (25%) in Raadhuisstraat and the highest percentage (66%) in Kalverstraat. A total of 14 percent of the units are vacant, which is the second most common 'use' of units. Raadhuisstraat and Steenweg both have a remarkably high vacancy rate of 22 percent. The street with the lowest vacancy rate is Grote Marktstraat with only 3 percent. In addition, based on the descriptive statistics, it can be concluded that all eight shopping streets have at least one vacant unit, one daily shop and eight fashion and luxury shops.

Finally, most of the shops in the dataset belong to a national or international chain of shops. 42 percent of the shops are not part of a chain and 58 percent are. Vacant units are included in the 'no-chain store' category. Apart from two streets, Steenweg and Raadhuisstraat, every shopping street has more chain stores than non-chain stores. In Steenweg, the ratio is equal, with 23 chain stores and 23 non-chain stores. In Raadhuisstraat, the ratio is quite different from the rest, where 94 percent of the units belong to non-chain stores and only 6 percent to chain stores. In Grotestraat, there are proportionally the most shops belonging to a chain store, namely 81 percent. This is followed by 77 percent in Grote Marktstraat.

4.3.5 Control variables – Personal characteristics

The survey contains a total of five different personal characteristics, two of which were only surveyed in Steenweg, namely gender and age. For each street, data are available on the motive of the visit, distance travelled to the shopping street and length in minutes of the visit.

In the dataset, the visiting motive of 423 respondents is known. Of these respondents, 56 percent are run shoppers and 44 percent are fun shoppers. Only in Steenweg did more fun shoppers participate in the survey, namely 54 percent, compared to 46 percent run shoppers. The street with the largest percentage of run shoppers is in Roosendaal, where 80 percent have a clear purpose for visiting the shopping street.

Although there are more run shoppers than fun shoppers, the fun shoppers did conduct more activities. Of all the activities performed, fun shoppers did 52 percent of them. In Kalverstraat and Grotestraat in particular, fun shoppers performed a substantial percentage of the activities, 62 and 60 percent, respectively. Shopping streets where many activities were undertaken by run shoppers are Raadhuisstraat, Burchtstraat and Grote Noord. In the last two streets run shoppers are responsible for 51 percent of the interactions.

In addition to the visit motive, the research also looked at the average distance travelled by the visitor. This average is the highest in Steenweg, namely 35 kilometres. For a visit to Burchtstraat (Nijmegen), respondents travelled the second longest distance, namely 22 kilometres. The shortest average distance travelled is covered on Raadhuisstraat in Roosendaal, which is only 6.9 kilometres. The average distance travelled by respondents to reach the other shopping street varies between 12.6 and 22.0 kilometres.

The average visiting time of respondents varies between five and eight minutes. The duration of visits between the shopping streets therefore corresponds reasonably well. In Ede and Nijmegen, the visiting time is the longest (eight minutes). Grote Marktstraat in Den Haag has the shortest average visiting time, with only five minutes. However, the segments differ in length, which also influences the length of the visit. If the average visiting time of each segment is converted into 100 metres, Ede and Hoorn show the longest visiting times, namely seven minutes per 100 metres. Raadhuisstraat and Grote Marktstraat have the shortest visiting times per 100 metres, two and three minutes, respectively. Even with an average of two minutes per 100 metres, the average walking speed is considerably lower than the average walking speed of five to six kilometres per hour, which is the result of the interactions with the surrounding.

4.3.6 Descriptive statistics of Steenweg

A total of 178 respondents were surveyed and observed in Steenweg. In total, 147 respondents visited the entire segment of Steenweg. The remaining 31 respondents left the street at a side-road or turned around in the street. These 31 respondents were therefore removed from the dataset on Steenweg, leaving a total of 147 respondents in the dataset. Table 5 and Table 6 contain an overview of the descriptive statistics of Steenweg, which are explained in more detail below.

Of the 147 respondents in the dataset about Steenweg, 53 are male and 92 are female. The number of respondents divided by visiting motive shows that 67 respondents visit Steenweg with a specific purpose, the run shoppers, and that 80 respondents belong to the category of fun shoppers. Visitors to Steenweg are on average 39 years old, with the youngest respondent being 11 and the oldest 82. In addition, these visitors travel an average of 34.7 kilometres to visit Steenweg and the average visit lasts about seven minutes, of which three minutes is spent on average outside.

A total of 341 interactions were conducted in Steenweg. The activities that occur most frequently are looking inside (150 times), going inside (93 times) and standing still (standing still, shopping and talking still, 95 times). Looking at these interactions from the respondent's point of view, it appears that a respondent has on average 2.3 interactions, of which on average 0.6 activities take place inside and 1.7 activities outside. However, not all visitors interact in the shopping street. A total of 110 out of 147 respondents interacted and they have on average 3.14 activities, of which 0.85 take place inside and 2.28 outside.

Looking from the units at the number of interactions, there is an average of seven interactions per unit. Of the 45 units, only two had no interactions. The unit with the most interactions is Omoda, which has 30 interactions. Of all activities in Steenweg, 27 percent belonged to the activity of going in, 42 percent to the activity of looking in and 30 percent were other activities.

The units in Steenweg have an average transparency of 38 percent. This is a low average, but this is due to the fact that there are many empty units (10). With regard to the façade rhythm, the units in Steenweg fit on average 18.3 times in 100 metres. This is between the 15 and 20 units Gehl aims for, which means that the units have a good rhythm on average. The narrowest unit, the building of Leonidas, even fits 31.3 times in 100 metres. With regard to detailing, Steenweg also scores well. Most units (20) have a lot of façade detailing, which according to Gehl (2010) positively influences the liveliness of a street. However, there are also 15 units with little or no façade detailing. Also, with regard to relief, it can be said that more units have positive characteristics (vertical lines) than negative characteristics (horizontal lines), namely 17 units with mainly vertical lines and 12 units with mainly horizontal lines.

In Steenweg, there is an average of 3.5 furnishing elements per unit, with these belonging mainly to the category of other furnishing elements. Greenery has the least presence, with an average of zero green elements per unit in Steenweg. It is thus present to a small extent, but this is so limited that it does not increase the average. The greenery that is present is not public greenery but owned by shops. With regard to seating facilities, there is an average of one seating facility per unit. It is important to note here that seating facilities are clustered and therefore many units do not have seating.

The shops in Steenweg are generally small. The average retail floor area is 180, but this is greatly increased by the museum and HEMA, which have a retail floor area of 2174 and 1594, respectively. The average retail floor area of the other units in the street is 99 square metres. In addition, in

Steenweg there are exactly as many chain stores as independents (23 to 23). Looking at the function of the units, there is a clear dominant function, namely fashion and luxury. Half (23) of all the units belong to this category. The second largest category is vacant units (10 units).

	Mean	Maximum	Minimum
Activities per respondent	2.4	11.0	0.0
Activities per unit	7.4	30.0	0.0
Percentage going in	19.9	100	0.0
Percentage looking in	44.2	100	0.0
Percentage other activity	31.6	100	0.0
Façade rhythm	18.3	31.3	5.0
Façade transparency	37.7	70.0	0.0
Resting possibilities	1.1	6.0	0.0
Greenery	0.2	4.0	0.0
Other furnishing elements	1.2	6.0	0.0
Total furnishing elements	3.5	18.0	0.0
Age	39.1	82.0	11.0
Distance travelled to street	34.7	101.0	0.0
Duration of stay in street	3.9	49.0	0.0

Table 5: Descriptive statistics of the metric variables of Steenweg

Subjects	**Categories** Count						
Activities specific	**Go in**	**Look in**	**Stand**	**Stand & Look**	**Stand & talk**	**Sit**	**Talk**
	93	150	24	43	28	1	2
Actions grouped	**Going in**	**Looking in**	**Other activities**				
	93	150	98				
Details	**No**	**Few**	**Many**				
	15	11	20				
Relief	**Horizontal**	**Mixture**	**Vertical**				
	12	17	17				
Gender	**Male**	**Female**					
	53	92					
Shopping motive	**Run shopper**	**Fun shopper**					
	67	80					
Function	**Daily**	**Fashion & luxe**	**Leisure retail**	**Restaurants & Leisure**	**Vacant**	**Other**	
	3	23	2	7	10	1	
Chain store	**Yes**	**No**					
	23	23					

Table 6: Descriptive statistics of the nominal and ordinal variables of Steenweg

4.4 Analysis of seven Dutch shopping streets

A multiple regression analysis was used for the statistical analysis. First, an analysis was carried out on the data of the seven shopping streets studied earlier. Different models have been assessed, varying in the number of subjects included. Model 1 contains the variables about plinth characteristics or furnishing elements. Model 2 contains both subjects and Model 3 has Model 2 as its basis and is expanded with data on shop characteristics or personal characteristics. Model 4 contains all the four different subjects.

The first group of explanatory variables concerns the characteristics of the plinth and, as mentioned earlier, contains four variables, namely façade rhythm, transparency, detailing and relief. Detailing and relief are here of ordinal level and therefore included as dummy variables in the analysis. For detailing, the units with an average amount of detailing were included as the reference category, and for relief, the units with a mix of horizontal and vertical lines.

The analysis shows that there is in every model a significant relation between the façade rhythm and the total number of interactions. If this variable is broken down into three types of interaction, namely going in, looking and other interactions, it shows that the façade rhythm only has significant influence on the activity of looking in. There is no significant relation with the other two types of interaction. Contrary to the expectations based on scientific literature from an urban planning perspective (Gehl, 2010; Hassan, Moustafa & El-Fiki, 2019), this research shows that there is a negative relation between the façade rhythm and the number of interactions per unit. This means that as a street has more units, the number of interactions per unit decreases. From a more economic perspective, the deviation from the expectation based on Gehl's work can be explained. This is because this research was carried out with the research unit of buildings, whereas Gehl looked at a whole street. This means that the different units in a street are each other's 'competitors'. The narrower a unit is, the greater the chance is that a passer-by does not interact with a unit because, in the meantime, he interacts with another unit. In other words, the chance that a passer-by 'misses' a unit (or several units) because he is interacting with a unit is greater if the units are narrower. As a result, the average number of activities per unit decreases with higher façade rhythms. However, the reduction in the average number of interactions per unit does not mean that there are fewer interactions in a street as a whole. If one more unit fits in a segment of 100 metres, there are 0.07 (the average B of Models 1 to 4, see table 7) fewer activities. This shows that the average number of interactions per unit is very slightly affected, considering that each unit has on average multiple interactions. Therefore, this means that with an increase in units in the street, the average number of interactions per unit decreases, but the total number of interactions in a street increases. This finding of this research thus corresponds to Gehl's reasoning.

Also, the variable transparency has a significant influence on the number of interactions per unit in many cases. Only in Model 3a and Model 3b, there is no significant influence. This research shows that transparency has a positive influence on the number of interactions, whereby especially the activity of going in is influenced by this variable. In a limited number of models, the variable of other activities is also influenced by the degree to which a façade is transparent. These findings are in line with what was expected based on scientific literature, which states that a high degree of transparency ensures that contact between inside and outside is possible (Gehl, 2010; Hassan, Moustafa & El-Fiki, 2019; Jain, Takayanagi & Malthouse, 2014). This reasoning also explains why transparency primarily affects the activity of 'going inside', as transparency is a connecting factor between inside and outside. However, the analysis shows that the transparency level of a façade has a weaker influence on the total number of activities than the façade rhythm, but that the difference in the strength of the influence is not exceptionally large. This is because the standardised B of façade rhythm is on average around -0.160 and the standardised B of transparency is on average 0.130. This means that when one more unit fits in a segment of 100 metres (the rhythm of the façade), the number of interactions with a unit decreases by 0.16 and that if the transparency level increases by one percent, the number of interactions increases by 0.13.

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	2.297	.938	.015	1.775	1.003	.078	3.225	1.275	.012	.019	.859	.982	.657	1.143	.566
Rhythm	-.083	.026	.002	-.074	.027	.008	-.095	.031	.003	-.045	.023	.050	-.069	.027	.011
Transparency	.033	.010	.002	.038	.010	.000	.021	.013	.109	.016	.009	.063	.024	.011	.031
Details no	-.901	.729	.218	-.698	.730	.341	-.732	.724	.313	-.327	.606	.590	-.348	.620	.575
Details many	-1.351	.685	.050	-1.267	.680	.064	-1.321	.682	.054	-.093	.573	.871	-.221	.591	.709
Relief hor.	2.404	.974	.014	2.130	.971	.029	1.909	.960	.048	1.742	.808	.032	1.625	.822	.050
Relief vert.	1.858	.657	.005	1.791	.651	.006	1.407	.658	.034	.759	.545	.165	.838	.560	.136
Seating abs.				-.448	.260	.086	-.478	.268	.076	-.406	.215	.061	-.403	.229	.080
Greenery abs.				-.358	.347	.303	-.300	.343	.383	-.158	.285	.580	-.202	.291	.487
Other abs.				.467	.210	.028	.337	.215	.118	.232	.178	.193	.187	.185	.314
Control variables															
Shop character	No			No			Yes			No			Yes		
Visitor's character	No			No			No			Yes			Yes		
Observations	194			194			194			194			194		
Adjusted R^2	.180			.199			.237			.461			.455		
Sig F-test	<.001			<.001			<.001			<.001			<.001		

Table 7: Output table of the multiple regression analysis with the absolute number of interactions and the specific furnishing elements in the seven shopping streets

	Model 1b			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	2.854	.346	.000	2.388	.972	.015	3.988	1.220	.001	.422	.825	.609	1.165	1.092	.288
Rhythm				-.086	.027	.002	-.102	.031	.001	-.053	.022	.019	-.074	.027	.006
Transparency				.033	.010	.002	.016	.013	.203	.014	.009	.122	.021	.011	.053
Details no				-.860	.739	.246	-.906	.726	.214	-.388	.609	.525	-.437	.620	.481
Details many				-1.332	.688	.055	-1.371	.685	.047	-.083	.575	.885	-.220	.591	.711
Relief hor.				2.378	.979	.016	2.085	.963	.032	1.809	.810	.027	1.694	.822	.041
Relief vert.				1.864	.659	.005	1.465	.662	.028	.764	.547	.164	.860	.561	.127
Seating abs.	-.301	.282	.287												
Greenery abs.	-.335	.377	.375												
Other abs.	.598	.221	.007												
Furniture abs.				-.031	.083	.712	-.075	.084	.374	-.070	.068	.305	-.085	.071	.235
Control variables															
Shop character	No			No			Yes			No			Yes		
Visitor's character	No			No			No			Yes			Yes		
Observations	194			194			194			194			194		
Adjusted R^2	.025			.177			.255			.456			.453		
Sig F-test	.050			<.001			<.001			<.001			<.001		

Table 8: Output table of the multiple regression analysis with the absolute number of interactions and the total number of furnishing elements in the seven shopping streets

The detailing of a façade also has a significant influence on the total number of activities in some cases. Based on this research it can be said that a unit with an above average detailed façade has fewer interactions. Especially the activity of going in is strongly negatively influenced by detailing. This negative relation does not correspond to what was expected based on scientific literature (Gehl, 2010; Hassan, Moustafa & El-Fiki, 2019). However, the correctness of the significant relation found can also be questioned because it is only present in the small models (up to and including Model 3a). Another finding from this analysis is that a unit with few details does not significantly stimulate more or less interactions than a unit with an average amount of detailing.

The last variable about the characteristics of the plinth is the façade relief. The analysis shows that a unit with more vertical lines has significantly more interactions than a unit without a clear line direction. This finding was also expected based on literature (Gehl, 2010 Hassan, Moustafa & El-Fiki, 2019), as vertical lines ensure that people's focus is on the immediate surroundings and not on something in the distance. However, this significant relation is only visible in the smaller models (up to and including model 3a). There is a significant relations with regard to façade relief that does not correspond to the literature. Namely, based on the analysis it can be said that units with many horizontal lines also stimulate more interactions than units without a clear line direction. This relation was not expected, because horizontal lines actually bring the focus to the distance, which makes people walk faster (Gehl, 2010). Remarkably, this relation seems to be even stronger than the relation with vertical lines, namely an increase of 1.9 activities with horizontal lines and an increase of 1.4 activities with vertical lines. It can be concluded from this that the activity level in this research is more positively influenced by units with predominantly horizontal lines than vertical lines. An explanation why this finding deviates from existing scientific literature can not be found based on this dataset. Figure 5 shows the above-mentioned relations schematically.

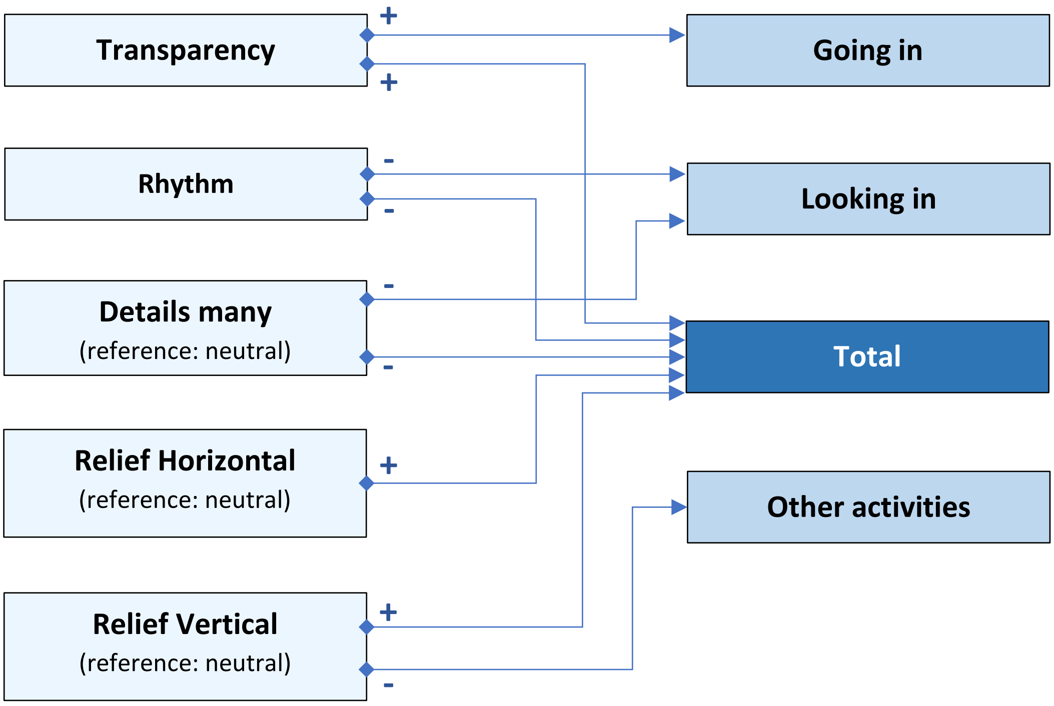

Figure 5: Significant relations between the plinth characteristics and the activity level in seven Dutch shopping streets

The second group of explanatory variables concerns the furnishing elements. These variables are less often significant, with the amount of greenery not even being significant in any model. This means that on the basis of this analysis it can be said that there is no relation between greenery and the total number of interactions. Also, if one looks at the density per 50 square metres, or if one divides the interactions by type of interaction, no significant relation is found with the variable of greenery. A possible explanation for this finding is that there was only limited greenery in the shopping streets studied, resulting in the fact that many units have a value of zero. It is possible that there would be a significant relation if there was more greenery present. However, for this research it can be concluded that the activity level of visitors in the studied shopping streets is not influenced by the extent to which there is greenery present.

Despite the fact that no significant relation was found between the activity level and greenery, significant relations were found with the other variables that belong to the group of furnishing elements. These are shown schematically in Figures 6 and 7 and are explained further below. Figure 6 shows the relations that exist when looking at the absolute number of furnishing elements and Figure 7 when looking at the density of the furnishing elements, so the number of furnishing elements per 50 square metres.

In contrast to greenery, seating has in almost every model a significant influence on the total number of interactions, with a negative correlation visible between these two variables. This relation is visible for both the absolute number of seating possibilities and the density of seating possibilities. The negative relation is remarkable because based on scientific literature it was expected that seating areas offer a moment of rest and cause visitors to stay longer in a shopping street and have more interactions (Gehl, 2010; Hahm, Yoon & Choi, 2019; Mehta, 2009). In addition, the analysis shows that the presence of seating facilities, again the absolute number and density, has a significant positive influence on the category of other activities. The positive relation with this type of interaction can be explained by the fact that this category includes activities such as sitting and waiting.

The other variables concerning furnishing elements show varying degrees of significance. For example, the variable of other furnishing elements shows both significant and non-significant relations. In the models with less variables, this variable has a negative significant influence on the variable of other activities. Because the significant relation is only visible in the small models, the actual influence of this variable on the other activities can be doubted. If more variables are included, the explanatory power namely disappears.

Furthermore, there is no significant relation between the total activity level per unit and the absolute number of furnishing elements. However, it is the only variable that has a significant influence on all three types of activities, with the variable of other activities being affected the least and the variable of going in the most. This applies both to the absolute number of the total furnishing elements and to the density of the furnishing elements. The relation between the total number of furnishing

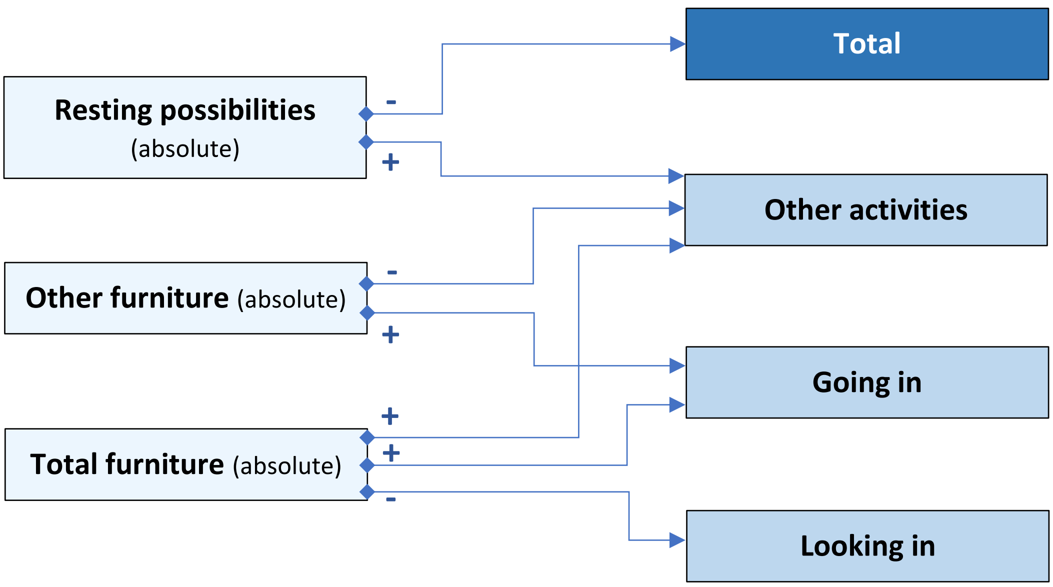

Figure 6: Significant relations between the furnishing elements in absolute numbers and the activity level in seven Dutch shopping streets

elements and the activity of looking is negative, meaning that people look at a unit less often if there are many furnishing elements near a unit. In contrast, the relations with the other two activity types are positive, meaning that the number of the interactions of going in and the other interactions increase when there are many furnishing elements. Moreover, there is also a negative relation between the total number of activities and the overall density of furnishing elements. This means that if a unit has a higher density of furnishing elements, fewer activities take place. A possible explanation for this finding is the previously mentioned idea that too many furnishing elements is not good because it reduces people's room to move (Kim, & Runyan, 2011). However, no clear explanation can be given for the fact that both positive and negative relations were found for this variable in this research.

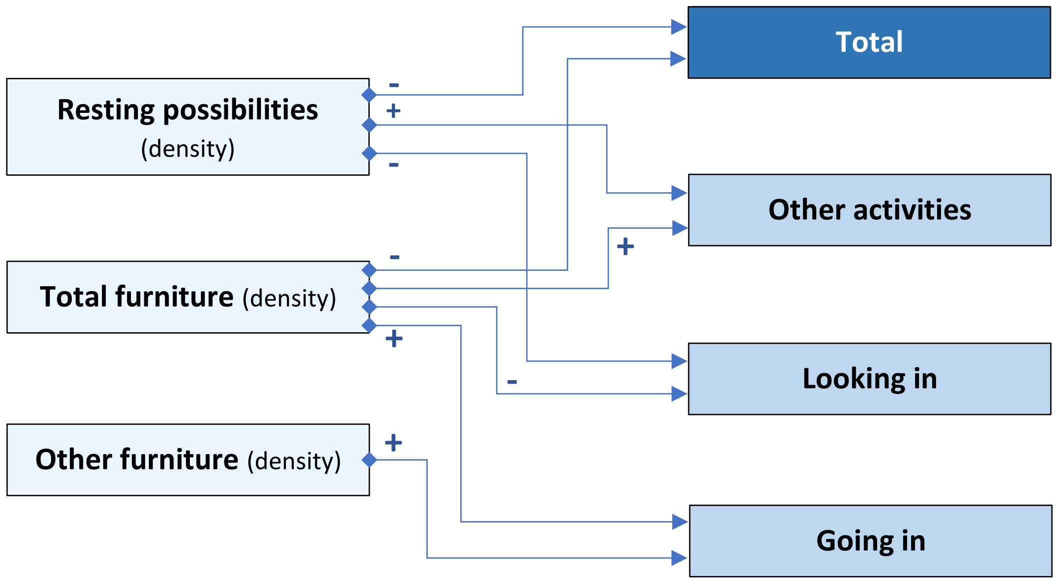

Figure 7: Significant relations between the furnishing elements in density and the activity level in seven Dutch shopping streets

The activity level per unit is thus significantly influenced by both plinth characteristics and furnishing elements. However, this research also shows that other factors, namely visitor characteristics, have an exceptionally large influence. This can be seen in the adjusted R-squared, which is a maximum of 0.199 when only plinth characteristics and furnishing elements are included. This means that 19.9 percent of the variance of the activity level can be explained by the eight variables on these subjects. By also including variables about personal characteristics, the explanatory power increases to 0.461 and thus 46.1 percent of the variance of the activity level can be explained. The model therefore improves significantly when personal characteristics are included. The other group of control variables, meaning those on shop characteristics, appear to have a much weaker influence on the extent to which the variance can be explained. The adjusted R-squared is only 0.237 when plinth characteristics, furnishing elements and shop characteristics are included. Thus, by including the variables on shop characteristics, only 4 percentage points of the variance in the activity level can be explained, while the increase in visitor characteristics is 26 percentage points. Because of the large increase in explanatory power when personal characteristics are included, the relations found with these variables are illustrated below.

There are three personal characteristics that significantly influence activity levels in Models 3 and 4. First, there is a positive relation between duration of stay and total number of activities. This finding is consistent with what was expected based on the existing literature (Gehl, 2010). It shows that the duration of stay has a significant influence on both the activity of going in and the other activities. This finding can be explained from the idea that a shopping visit lasts longer than just passing by and that activities belonging to other, such as sitting, standing still and waiting, also increase the duration of the visit.

Moreover, the activity level per unit appeared to be significantly influenced by the percentage of fun shoppers compared to unknown visitors and by the percentage of run shoppers compared to unknown visitors. Moreover, the visit motive was found to significantly influence both the total number of interactions and all three types of activities (going in, looking in and other). The relation between the activity level and fun shoppers is the strongest, meaning that an increase in the percentage of fun shoppers has the greatest positive influence on the number of activities per unit. Finally, it appears that the distance travelled has no significant influence on the total number of activities, but it does significantly influence the activity of looking.

Based on an analysis of 194 units spread across seven Dutch shopping streets, it can therefore be stated that the activity level per unit in these shopping streets is primarily influenced by plinth characteristics and visitor characteristics, while only some furnishing elements have significant influence. Variables with a major influence are rhythm, transparency, total number of furnishing elements, the number of sitting possibilities and the visiting motive. In addition, it appears that several variables do not have a significant influence on the activity level as a whole but do have a significant influence on a specific activity. This is the case, for example, with the absolute number of total furnishing elements, which has a significant influence on going in, looking in and other activities, but not on the total number of activities. The case study of Steenweg is discussed below.

4.5 Case study of Steenweg

As mentioned earlier (Chapter 4.1), a dataset of 45 units is available for the analysis of Steenweg. In addition, there are data on 147 visitors to Steenweg. The analysis below has been carried out on this dataset.

4.5.1 Expected activity level in Steenweg

From the above analysis, it is expected that the activity level per unit in Steenweg is strongly influenced by plinth characteristics and characteristics of the visitor. In this chapter, the expected behaviour on bases of the above analysis and the descriptive data on Steenweg is described.

Steenweg is characterised by narrow units and has thus a high façade rhythm. Of the eight streets examined, the façade rhythm in Steenweg is the highest, with a unit being on average 5.5 metres long and therefore about 18 units fitting into a segment of 100 metres. The widest unit in Steenweg is 20 metres wide, namely the HEMA building. The narrowest unit is only 3.2 metres wide, namely the Leonidas building. The earlier analysis showed that a higher façade rhythm results in a lower activity level per unit and that the façade rhythm of the plinth characteristics is the variable with the most influence. Based on the significant relation found in the other shopping streets and the fact that Steenweg has a remarkably high façade rhythm, it is expected that the total number of interactions per unit is strongly negatively influenced. This means that the units in Steenweg are expected to interact with only a small percentage of the total number of visitors. With regard to the total number of interactions in the street, a high value is expected, because of the high average of activities per unit.

With regard to transparency, the influence this variable has on the activity level is expected to be low. The earlier analysis showed that there is a positive relation between the number of interactions per unit and transparency. Steenweg, however, has a low transparency, with an average of only 37.7 percent. In comparison, Grotestraat in Ede has an average transparency of 70.6 percent. The low average value for transparency is reinforced by the presence of many vacant units in Steenweg. If these units are not included when calculating the average, the average transparency is 48 percent. Compared to the other streets studied, only Raadhuisstraat in Roosendaal has a lower average transparency in that case. This means that a low influence is also expected if the vacant units are removed from the analysis. The positive relation in the other shopping streets combined with the low transparency in Steenweg means that a weak positive relation between transparency and the total number of activities is expected in Steenweg, where the total activities in the street are minimal influenced.

Finally, based on the previous analysis, it would be expected that visitors in Steenweg have more interactions with units with a lot of horizontal lines than with units with a mixed façade. However, this expectation would not be made on the basis of existing literature (Gehl, 2010). In this research, the analysis shows that this variable has the least influence of the different plinth characteristics, which is why it is expected that if this relation is visible in Steenweg, the strength of the relation is minimal. A weak relation is also expected in Steenweg with regard to detailing and the total number of activities. The analysis shows that a lot of detail has a significant influence, especially in small models. Steenweg, on the other hand, has a relatively large number of units with much detailing, which means that this relation may be stronger here.

Certain relations are also expected with regard to the furnishing elements in Steenweg based on street characteristics of Steenweg and the earlier analysis. These relations differ when looking at the absolute number of furnishing elements and the density of the furnishing elements. With regard to greenery, no significant relation is expected in Steenweg in either measuring method (absolute numbers and density).

In Steenweg, on the other hand, both the absolute number of furnishing elements and the density of these furnishing elements are expected to have a significant relation with the total number of activities. Steenweg is one of the three streets in this research with an average of one seating facility per unit, which means that there are relatively many seating facilities compared to other streets. The earlier analysis showed a negative relation between the seating facilities and the interactions with the units in question. Due to the relatively large number of seating possibilities, it is expected that the seating elements have a reasonably strong negative influence on the level of activity. However, the negative relation from the earlier analysis does not correspond to what was expected based on scientific literature (Gehl, 2010; Hahm, Yoon & Choi, 2019; Mehta, 2009). Therefore, it is also possible that this relation is not found in Steenweg, but if the relation is found in Steenweg, it is expected that the relation is relatively strong.

No significant relation is expected between the density of other furnishing elements and the total number of activities, as this relation is not visible in the previous analysis either. However, a positive relation between the absolute number of other furnishing elements and the total number of activities is possible, but this relation is not expected to be strong because Steenweg has an average amount of other furnishing elements compared to the other streets and the relation was only found in small models in the earlier analysis.

4.5.2 Categorisation of the units in Steenweg

In addition to statements about the expectation of Steenweg in general, it is also possible to look at the plinth characteristics and furnishing elements per unit. Three groups can be made on this basis, with each group differing in the quality of the plinth features and furnishing elements. When making the groups, the direction of the relation was considered, so that, for example, low values are desired for rhythm and seating, but high values for transparency. This is related to findings from the earlier analysis where a negative relation was found with the first two variables and a positive relation was found with the last two variables. For relief, units with many horizontal lines were considered best, as the previous analysis showed that horizontal lines have a stronger influence than vertical lines. The classification was thus made on the basis of the findings from the analysis of the seven shopping streets and not on the basis of scientific literature.

Three groups were distinguished on the basis of the significant characteristics from the first analysis. The first group consists of units in which two variables are far above average and the other variables are around the average, or three variables are above average and a maximum of one variable is below the average. The second group consists of units of which at least one characteristic is far above average and at least one characteristic is far below average. The other characteristics are around the average. The third group has at least two variables far below average. In addition, vacant units are kept separately. The distribution is shown in Table 7.

Looking at the average number of activities per group, it appears that the first group has many more interactions than the other groups. This analysis is not statistically assessed but should be seen as descriptive. The units with the best characteristics have an average of 12.1 interactions per unit. This shows that units with lower quality of characteristics also have fewer interactions. The second and third groups are approximately equal, with 7.2 and 7.5 interactions per unit, respectively. So, on average, units of low quality do have more interactions than units of moderate quality, although this difference is small (0.3 activity). There is no clear explanation for this, but it is visible that the number of activities that takes place in units of average quality differs strongly, namely from 0 activities to 23 activities. It is possible that this difference is influenced by another variable, such as the control variables on shop or visitor characteristics.

High quality		**Moderate quality**		**Low quality**		**Vacant**	
Unit		Unit		Unit		Unit	
Birckenstock	11	Copper Branch	8	Bags World	3	Steenweg 11	2
Catch Up	6	Flash Casino	3	Bakkertje Bol	11	Steenweg 31	2
Dr Martens	6	Forza	6	De geldzaak	4	Steenweg 33	2
Jac Borstelaar	16	Fred dela bret.	17	Hema	15	Steenweg 43	2
JD Sports	12	Hans anders	4	Hip voor de ..	14	Steenweg 26	2
Katia & Bony	0	House of Fred	0	Leonidas	1	Steenweg 38	1
Le Ballon	22	Kilo Store	23	Museum	11	Steenweg 42	2
Omoda	30	Nails by Huong	3	Pearle	9	Steenweg 44	6
Purdey	6	Pichii	3	Potae	2	Steenweg 46	3
Shoe outlet	11	Polette	2	Shoe repair	2	Steenweg 48	2
Sissy Boy	13	Rookwinkel	9	Silly Store	15		
		Sam Friday	8	Timberland	10		
				Zumo	1		
Average	12,1		7,2		7,5		2,4

Table 9: Shops in Steenweg ranked on the quality of the plinths and the furnishing elements

4.5.3 Observed activity level in Steenweg

For the case study of Steenweg, the same models were used as for the analysis of the seven Dutch shopping streets (see Chapter 4.4) but carried out with the units in Steenweg. This means that there are four models, with Model 1 being the smallest and Model 4 the largest. Figure 8 contains a schematical overview of the relations found in Steenweg. These findings are explained further below.

The descriptive statistics showed that Steenweg has an extremely high façade rhythm. Combining this with the fact that in the previous analysis there was a negative relation between the façade rhythm and the activity level, it is expected that in Steenweg there is a strong negative relation. This negative relation is, as expected, visible in Steenweg, where the influence of this variable is indeed greater than in the analysis of the other shopping streets. The analysis of Steenweg shows a standardised B around -0.3 (the average of model 1 to 4), which means that the number of activities per unit decreases by 0.3 if one more unit fits in 100 metres. In the other shopping streets this variable has an average standardised B of -0.07 The absolute difference in the number of interactions is therefore not large, but if one compares the two values it is striking that the B of Steenweg is four times greater than the B of the other shopping streets. It can therefore be said that the façade rhythm has a larger influence on the total number of activities in Steenweg than in the other streets. Although a positive relation between the rhythm of the façade and the total number of activities was expected based on Gehl, the negative relation can be explained by the measurement level in this research, as also mentioned in Chapter 4.3. Smaller units are in fact more easily 'missed' if the visitor has an interaction with another unit. However, if the decrease of activities is limited the total number of interactions in a street increase. This is therefore in line with Gehl (2010). A difference between the earlier analysis and the one for Steenweg, however, is the type of activity that is strongly influenced by the rhythm of the façade. In the other shopping streets this was mainly the activity of looking in, while in Steenweg no significant relation was found between this type of activity and this plinth characteristic. The activity most affected by the rhythm of the façade in Steenweg is the activity of going in. Corresponding to the total number of activities, the relation is negative, which means that the average number of shop visits per unit decreases when there is one more unit in a 100-metre segment. However, again, the total number of shop visits in a street does increase because the decrease per unit is limited.

The second plinth characteristic that has a significant influence on the total number of activities in Steenweg is the transparency level. Consistent with the expectations based on the earlier analysis, there is a positive correlation, and thus higher transparency causes more interactions with a unit. Due to the low average transparency level in Steenweg, it was expected that this variable would have only a limited influence on the number of activities carried out. However, the analysis shows that the standardised B in the analysis of Steenweg is higher (0.34 in Model 3 and 0.8 in Model 4) than in the analysis of the other shopping streets (0.12 in Model 3 and 0.16 in Model 4). This therefore means that a change in the percentage of transparency in Steenweg has a greater influence on the total number of activities than in the other shopping streets. In addition, a significant relation was found several times with the activity of looking in.

It is striking that the differences between the rhythm and transparency in the standardised B are limited and can be compared to the differences from the analysis of the seven other shopping streets. The expectation that the strength of the transparency variable would therefore decrease in relation to the façade rhythm does not correspond to the analysed influence. Moreover, it appears that the type of activity that is strongly influenced by the degree of transparency differs. The analysis of the seven shopping streets shows that transparency has a significant influence on the activity of going in in almost all models. In Steenweg, this relation is less often visible, but going inside is still the activity that is influenced by the level of transparency in most models.

With regard to detailing, no significant relation was found with the total activities in Steenweg. In the other shopping streets, there was a significant relation between units with a lot of detailing and

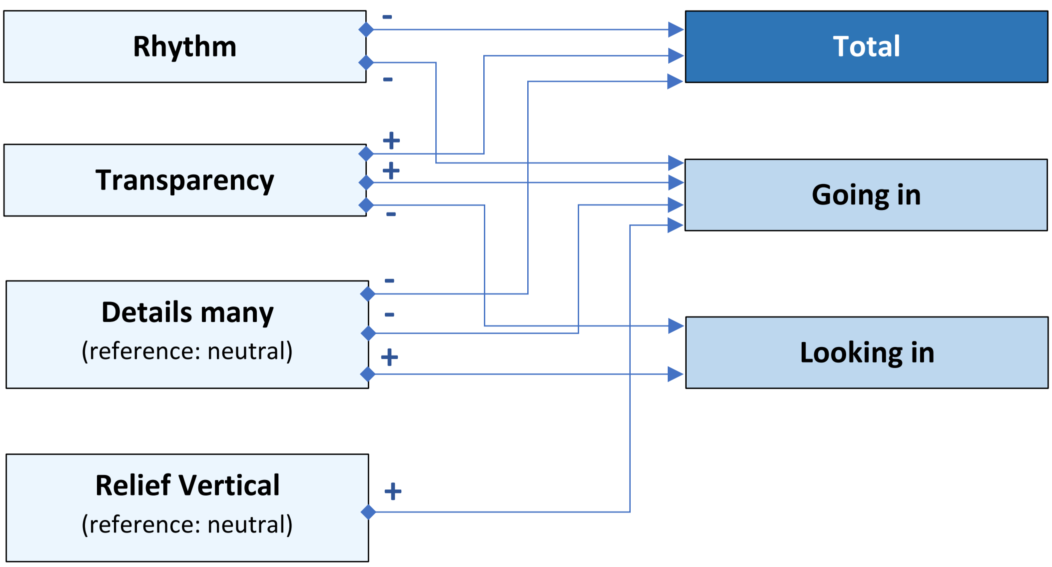

Figure 8: Significant relations between the plinth characteristics and the activity level in Steenweg

the total number of activities. However, there is in Steenweg a significant relation between units with a lot of detailing and the activity of going in. This relation is negative, meaning that a unit with more detailing is visited less often. This finding is not in line with what was expected based on Gehl (2010). In addition, in line with the analysis on the other shopping streets, a significant relation was found between units with a lot of detailing and the activity of looking in. It is striking, however, that this relation is negative in the other shopping streets and positive in Steenweg. The positive relation is more in line with expectations based on existing literature than the negative relation (Gehl, 2010; Hassan, Moustafa & El-Fiki, 2019). Comparing the standardised B's of detailing with those of rhythm and transparency, it appears that detailing has less influence on the behaviour of the visitors than the other two variables. This was also expected based on the earlier analysis and characteristics of Steenweg.

It is striking that in Steenweg especially the activity of going in is often significantly influenced and that this is less the case for the other variables on the activity level. No significant relation was found for the other activities and only a limited one for the total number of activities and the activity of looking in. It is also notable that of the explanatory variables, relief has only a limited influence, with horizontal lines showing no significant relation. This is a major difference with transparency, which has three significant relations.

With regard to the furnishing elements, few significant relations were found in Steenweg. Although this was expected on the basis of the earlier analysis, there are some differences with the variables that were significant in the analysis of the other seven shopping streets. The biggest difference between the analysis in Steenweg and the analysis based on the other seven shopping streets relates to seating facilities. In the other seven shopping streets, this variable was significant several times, affecting the total number of activities and the number of other activities. For Steenweg, the analysis did not show a significant relation with this variable. The various models with the type of activities as dependent variables were examined, as well as the various models with absolute numbers and densities as independent variables. However, a significant relation was expected in Steenweg because this shopping street has many seating areas compared to the other streets, but there is in this research thus no significant relation.

In the earlier analysis, several significant relations existed between the activity level and the total number of furnishing elements. However, these relations are again not visible in the analysis of Steenweg. There is also no relation found when one looks at the different types of activities or at the furnishing elements in absolute or density numbers. Based on these findings, it can be concluded that the activity level in Steenweg is not significantly influenced by the amount of furnishing elements in the street.

Although several relations were expected for Steenweg, but are not visible in the analysis of Steenweg, there is also a relation visible in Steenweg that was not expected on the basis of the analysis of seven shopping streets. The analysis of Steenweg shows a relation between greenery (both absolute numbers and density) and the number of other activities. One explanation for this relation may lie in the type of greenery present in Steenweg. Steenweg only has commercial greenery, i.e., greenery that is directly linked to a shop. In the other streets there is a mixture of commercial and public greenery, so the relation may not have been visible. Although a positive relation was found in Steenweg, it can not be stated with certainty that this relation really exists. This is because this relation was only visible in a few models.

In contrast to the above-mentioned variables, there is a similarity between both analyses with regard to other furnishing elements. Both show a positive significant relation with the total number of activities. This means that if there are more furnishing elements, more activities take place per unit. However, it is not possible to say in Steenweg which type of activity is most strongly influenced by the absolute number of furnishing elements. Because when looking at the types of activity, no significant relations are found. Looking at the density of the furnishing elements, however, it can be said that the category other activities is mainly influenced by these variables. However, this relation is not visible in every model, which casts doubt on whether this relation exists in reality.

These differences in the results for Steenweg and the other seven shopping streets with respect to the furnishing elements show that it is difficult to make good predictions about the influence of these characteristics on the behaviour of visitors, in this case the activity level. The results that are most similar between the two analyses are the non-significant relations. This shows, for instance, that in both analyses there is no significant relation with the amount of greenery or the amount of seating and the activities of going in or looking in. The activity of looking in is also not influenced in both analyses by the quantity and density of the other furnishing elements.

Based on this chapter, it can be said that in this research the amount of activity in a shopping street is generally strongly influenced by transparency, rhythm, and characteristics of the visitors. In contrast, there are few significant relations with regard to furnishing elements. However, the strength of the relations differs on the basis of the characteristics of a shopping street, but the influence of different variables in relation to each other remains approximately the same. It also appears that expectations based on plinth characteristics are better than expectations based on furnishing elements. This is related to the fact that relations between furnishing elements and activity level are less often significant than relations between plinth characteristics and activity level. Moreover, this research has found several relations that do not correspond to the expectations based on scientific literature. Therefore, the next chapter discusses what can be concluded based on this research and which choices during this research may have influenced the outcomes of this research.

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	10.243	3.950	.013	9.181	5.165	.084	-13.59	11.912	.263	1.422	6.419	.826	-22.37	12.317	.081
Rhythm	-.385	.154	.016	-.359	.190	.066	-.194	.213	.370	-.386	.191	.052	-.226	.209	.290
Transparency	.085	.041	.042	.093	.045	.044	.219	.131	.105	.108	.048	.031	.244	.138	.088
Details no	.233	2.345	.921	.103	2.423	.966	3.507	2.722	.207	.169	2.457	.946	3.905	2.749	.167
Details many	3.302	2.431	.182	2.850	2.671	.293	6.046	2.804	.039	2.754	2.794	.332	5.126	2.910	.090
Relief hor.	2.234	2.176	.311	2.358	2.287	.309	1.267	2.321	.589	1.493	2.532	.560	2.054	2.448	.409
Relief vert.	-2.969	2.325	.209	-2.367	2.541	.358	-5.181	2.719	.066	-2.677	2.930	.368	-2.590	2.918	.383
Seating abs.				-.090	.775	.908	.276	.887	.758	-.217	.811	.791	.270	.897	.766
Greenery abs.				-.818	1.659	.625	-3.169	2.391	.195	-.939	1.852	.616	-4.770	2.763	.096
Other abs.				.468	.617	.453	2.437	1.163	.045	.324	.667	.630	2.887	1.228	.027
Furniture abs.															
Control variables															
Shop character	No			No			Yes			No			Yes		
Visitor's character	No			No			No			Yes			Yes		
Observations	45			45			45			45			45		
Adjusted R^2	.282			.237			.320			.245			.376		
Sig F-test	.004			.022			.020			.042			.018		

Table 10: Output table of the multiple regression analysis with the absolute number of interactions and the specific furnishing elements in Steenweg

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	6.131	1.244	.000	10.028	4.284	.025	-.289	9.416	.976	2.294	5.811	.695	-5.834	9.825	.557
Rhythm				-.376	.168	.031	-.116	.212	.589	-.405	.170	.023	-.164	.215	.452
Transparency				.085	.041	.048	.098	.117	.406	.097	.043	.032	.098	.122	.428
Details no				.234	2.375	.922	1.889	2.668	.484	.336	2.380	.889	1.773	2.724	.520
Details many				3.241	2.501	.203	6.047	2.828	.040	2.953	2.570	.258	4.794	2.916	.111
Relief hor.				2.253	2.208	.314	2.137	2.353	.370	1.319	2.343	.577	2.276	2.500	.370
Relief vert.				-2.979	2.356	.214	-4.214	2.769	.138	-3.303	2.582	.209	-2.612	3.037	.397
Seating abs.	.555	.744	.460												
Greenery abs.	-1.510	1.542	.333												
Other abs.	.845	.655	.204												
Furniture abs.				.029	.203	.889	.114	.304	.710	-.065	.210	.758	-.005	.312	.988
Control variables															
Shop character	No			No			Yes			No			Yes		
Visitor's character	No			No			No			Yes			Yes		
Observations	45			45			45			45			45		
Adjusted R^2	.018			.263			.272			.277			.289		
Sig F-test	.297			.008			.028			.017			.042		

Table 11: Output table of the multiple regression analysis with the absolute number of interactions and the total number of furnishing elements in Steenweg

5 Conclusion

Based on the above chapters, it is possible to formulate an answer to the main and sub-questions posed in Chapter 1.2. The main question of this research was: *"To what extent is the activity level in Steenweg influenced by the plinths of this street and by the furnishing elements in this street and how does this compare to other Dutch shopping streets?".* This research question is important because increasing internet competition is reducing the vitality of shopping streets, while these streets are important for the liveability of cities since they fulfil a big social function (CBS, 2020 2021; Gehl, 2010; IVBN, & NRW, 2016).

To answer this research question, data was collected by means of observations, with which two datasets were developed. The first dataset contains information on 194 units across seven Dutch shopping streets and consists of data collected for an earlier project. The second dataset only contains information about Steenweg (42 units) and these data were collected specifically for this research. The data for both datasets were collected in the same way using an *in vivo* method, namely by asking the visitor a limited number of questions and then observing the visitor during his/her visit to the shopping street. The different datasets were then analysed by means of a multiple regression analysis.

This research showed that the quality of the plinth in Steenweg varies when looking at different characteristics. With regard to characteristics of the plinths, the quality in Steenweg is predominantly positive, with the façade rhythm in particular being considered of good quality. Steenweg also scores positively compared to other shopping streets with regard to façade relief and detailing. The same does not apply to transparency, as Steenweg has the lowest transparency of the shopping streets studied. When looking at the furnishing elements, Steenweg has the highest overall density of the studied shopping streets. Even though Steenweg has an average score when looking at the specific furnishing elements (seats and greenery) and also with regard to the other furnishing elements, it is not the street with the most elements. However, Steenweg has more other furnishing elements than the average of the other seven shopping streets.

With regard to the relations that are visible between the activity level and the plinth characteristics, it appears that rhythm and transparency in particular have a significant influence, with rhythm being slightly more influential. A lot of detailing on plinths and a lot of horizontal lines can also have a significant influence, but these are not equally convincing in both analyses. Corresponding to scientific literature (Gehl, 2010; Hassan, Moustafa & El-Fiki, 2019; Jain, Takayanagi & Malthouse, 2014), a positive relation is visible between the degree to which a façade is transparent and the behaviour of the visitors, in this research the number of interactions. A higher level of transparency mainly affects the activity of going in. This is visible in the analysis of both the seven shopping streets and Steenweg, whereby it is more apparent in the seven shopping streets. These overall findings of transparency provide opportunities for Steenweg, where interactions of visitors can be stimulated by creating a higher level of transparency.

The relation found between façade rhythm and activity level is negative in this research. At first sight, this does not seem to correspond to scientific literature that states that the total number of interactions is higher in a street with a higher façade rhythm (Gehl, 2010; Hahm, Yoon, & Choi, 2019; Hassan, Moustafa and El-Fiki 2019). However, the negative relation from this research does correspond to the existing literature because this research looked at the research unit of buildings. The average number of interactions per unit decreases when a street has a higher façade rhythm because units compete with each other. The chance that a passer-by 'misses' a unit (or several units) because he or she is interacting with another unit is greater if the units are more narrow. However, the decrease in the number of interactions per unit is so limited, assuming that the new unit also attract an average number of interactions, that the total number of interactions in a street increases if one more unit fits in 100 metres. This means that there are still more interactions at street level, despite the fact that the average number of interactions per unit decreases. These findings therefore do correspond to the scientific literature. Although the relation found can thus be explained on the basis of the above reasoning, there is no existing scientific literature that confirms this finding form the level of buildings.

A follow-up research that examines this relation at the level of the buildings could confirm or invalidate the findings of this research.

For the furnishing elements, the relations are less clear. This is probably due to the fact that relatively many units in the datasets do not have furnishing elements. As a result, the total number of interactions in Steenweg, or in the other shopping streets, is often not significantly influenced by a furniture element. In the analysis of the seven Dutch shopping streets, however, a number of significant relations were found with regard to the total number of interactions. This is the case for the seating possibilities (both absolute and density numbers) and the total number of furnishing elements (density). These relations were all negative, which does not correspond to existing literature (e.g., Mehta, 2009; Raskovic & Decker, 2015). The negative relation between the activity level and the total number of furnishing elements could be explained through the idea of Kim and Runyan (2011), who state that too many elements can reduce the functional use of a space. However, there was still enough space for movement in the shopping streets so it can be questioned whether this idea explains the negative relation. In Steenweg a relation between other furnishing elements and the total activity level was visible. Even though, this research does not give clear insights in which relations exist between the furnishing elements and the activity level, it does give indications that relations exist because several significant relations were found. However, the results of the various analyses vary widely and therefore do not make it possible to make any firm statements. A follow-up study could therefore concentrate more on the various furnishing elements and the various types of interaction. This research namely does show that it is possible that a certain type of activity is significantly influenced by a characteristic, but that this characteristic does not have a significant influence on the total number of activities. The comparison between the analysis on Steenweg and the analysis on the larger dataset shows that the influence of furnishing elements can differ per street.

Based on this research, it can be said that there are mainly similar relations between Steenweg and other Dutch shopping streets with respect to plinth characteristics. The rhythm of the façade has the strongest influence, followed by transparency. In addition, the expected influence of these two variables also corresponds best to the observed influence. In contrast, the expected influence of furnishing elements does not correspond to their observed influence. This does not mean that there are no significant relations between furnishing elements and the level or type of activity. However, it can be stated with greater certainty that the activity level is influenced by the plinth characteristics. Especially the façade rhythm and transparency are influential.

5.1 Practical recommendations

The social relevance of this research lies in the idea that the liveliness of shopping streets should be maintained because of the social function that shopping streets fulfil (Gehl, 2010; IVBN, & NRW, 2016). To achieve this, it is important that the physical condition of the shopping street is good and that it invites visitors to stay and interact (Gehl, 2010). Because every street has different characteristics, it is not possible to give generally applicable advice on which characteristics should be improved in shopping streets. In addition, from a scientific point of view, it is not possible to generalise the results of this research, but similarities with existing scientific literature make it possible to state that certain relations are also likely to be seen in other shopping streets. It is therefore possible to give indications on which characteristics to strive for, based on the knowledge on the influence of different characteristics on the behaviour of visitors. Considering these recommendations and the characteristics of a shopping street, it is possible to gain insight into which characteristics have the most potential for improvement.

In general, the right plinth characteristics have a positive influence on the activity level of visitors. In a shopping street, it is best to aim for a high level of transparency and a high façade rhythm. A high level of transparency enables the connection between inside and outside to be made, so that visitors go inside more often (Gehl, 2010). A higher level of transparency can be achieved by adapting the existing façade or by completely renewing it. A high façade rhythm ensures that there are continuously new things to see, which keeps the focus on the shops close by (Gehl, 2010). Increasing the rhythm of the façade often goes with restructuring retail spaces. This makes it an intensive project and probably the easiest way to achieve it is to divide large vacant units into several small ones. Based on this research, combining several empty units into a larger one is not recommended, unless there is a clear reason that this is an improvement for the shopping street. Should the decision be made to merge units, it is recommended to have several doors to encourage the activity of going in and to mimic a high façade rhythm. In addition, a lot of detailing and a clear (horizontal) dominant line direction, can also have a positive effect on the behaviour of visitors, but these relations are less visible in this research and not as often studied before. Therefore, a positive effect can therefore be less guaranteed.

Based on the above-mentioned advice to strive for a high level of transparency, a high façade rhythm, a lot of detailing and a clear line direction, it can be mapped out per shopping street which current characteristic of a shopping street is the most unwanted. At Steenweg the low level of transparency is striking, as a result of which it is advised to increase the transparency of the façade in order to increase spontaneous visits to the shops. When adapting the plinth to increase the transparency, the façade relief and façade detailing should be kept in mind, so that these characteristics do not deteriorate as a result of the change. With regard to façade rhythm, it is advised to Steenweg not to change anything, because Steenweg already has a high façade rhythm. The recommendation for Steenweg has thus been made on the basis of the street characteristics of Steenweg and the general recommendations mentioned above and can be made in the same way for other streets.

With regard to the furnishing elements, there are less applicable recommendations, because no convincing relations have been found for these characteristics in this research. However, there are indications in this research and existing literature that, among other things, the amount of seating and the amount of commercial greenery have a positive influence. The advice that can be given with the most certainty on the basis of this research with regard to furnishing elements is that efforts should be made to provide seating facilities if there is enough space for this in a shopping street. The seating facilities should not restrict the freedom of movement of visitors too much. In addition, it can be advised to encourage greenery that is directly connected to a unit, because in Steenweg there is a positive link between the greenery, which is all commercial in Steenweg, and the level of activity.

5.2 Reflection on this research

Although an attempt was made to do this research as well as possible, there are also points of improvement which are important to keep in mind when interpreting the results and to avoid them in follow-up research.

Firstly, as mentioned earlier, this research does not involve an a-selection sample, but a selective sample. This choice was made for the feasibility of the research, but it is not the best way from a scientific point of view. This is because not everyone has had an equal chance to be part of this research. In addition, the in-vivo approach has meant that there is no insight into the non-response, so it is not clear whether certain groups are over- or under-represented. The consequence of a selective sample and the in-vivo approach is that the results of the research can not be generalised to statements that apply to areas outside the eight shopping streets studied. This does not mean that the relations found do not exist in other shopping streets, but that a follow-up research is needed to confirm these relations in other streets.

Another point for improvement with regard to the data collection is the number of respondents per street. Although the observations were made on the same day, for the same length of time and with the same number of students in every street, there are large differences in the number of respondents per street. In Roosendaal, the fewest respondents were observed (32) and in Amsterdam the most (89). Steenweg has even more respondents, namely 147, but a conscious choice was made to observe with more students in Steenweg because an individual analysis was carried out on this street. It is not considered likely that the differences in the number of respondents in the other streets is not entirely due to the extent to which visitors from different shopping streets were willing to participate in the survey. It is expected that a part of the differences is caused by the number of visitors a street has. Another part can be caused by the motivation of students, whereby the motivation decreased further if the student was often refused by visitors. Because of the great diversity in the number of respondents, it is doubtful whether there is an equally good insight into the behaviour of the visitors in every street.

During the research it also appeared that improvements were possible with regard to the operationalisation. In this research, the furnishing elements are linked to units by subdividing the street into areas. Although this operationalisation initially seemed very suitable because all furnishing elements could be included, it turned out that it might have been better to include only furnishing elements that were directly linked to a unit (e.g., commercial seating or plants) or to make a distinction between furnishing elements of shops and furnishing elements of the public space. Because of the chosen measuring method in this research furnishing elements of the public space are also linked to a unit, while these often have no relation with the units. A more specific operationalisation would possibly show other significant relations than those visible with the chosen method of measurement. Therefore, although this research shows a number of significant relations between the activity level or the type of activities undertaken and the furnishing elements, it can not be said with certainty that these relations exist in reality. The different findings between the two analyses reinforce the idea that the relations found with regard to furnishing elements may not explain all activities undertaken. A more focused follow-up research is necessary to confirm or possibly invalidate the findings of this research.

In addition to the chosen method of data collection and the operationalisation, improvements can also be made with regard to the analysis, as is also mentioned in Chapter 3.4. This is due to the fact that this research contains two research units, namely buildings and persons. A multilevel theory is therefore scientifically the best research method, but a multiple regression analysis was chosen in this research. The latter method was chosen based on the time available, the wishes of the internship company and because the research unit 'person' only applies to a number of control variables. In order to perform a multiple regression analysis, the data have been modified. Hereby, the characteristics of the visitors were converted to characteristics of a unit. In order to include the control variables on the characteristics of the visitors, the mean (for interval-ratio variables) or the percentages (for nominal-ordinal variables) were calculated for each unit. The result is that the variables on the characteristics of the visitors do not show very varying values, because extreme values are compensated by the other less extreme values. It is possible that in a multilevel approach, other relations are visible with regard to the characteristics of the visitors. However, it is not expected that variables about other characteristics have been affected by this choice, because the research unit of buildings is more closely related to the subject of the other variables.

Finally, the choice of Steenweg in Utrecht as a case study can be criticised. The other streets in the research are mainly the main shopping street of the city, or at least are among the most popular streets, while Steenweg mainly functions as a road between two popular parts of the city. Nevertheless, the choice for Steenweg was made consciously. The internship company wanted to expand the dataset about this street and Steenweg has a large and relevant issue because of its large flow of visitors, but its relatively poor functioning. Although the choice was made very deliberately, the consequence is that the comparison between the dataset of the seven streets and the dataset of Steenweg might be less similar than if another main shopping street had been chosen. However, it can be questioned whether finding similarities between different streets should be seen as the best, or whether it is the differences between analyses that should be the subject of follow-up research. Based on the different findings between the analysis of the seven shopping streets and the analysis of Steenweg, follow-up research can focus on the question to what extent and in what way the activity level in main shopping streets and approaching streets differs and corresponds. This follow-up research may also be able to find explanations for the different relations found in the two analyses of this research.

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Appendix 1: Schematic operationalisation

This Appendix contains the schematic operationalisation of the different variables in the conceptual model. It contains the type of variable, the subject, the name of the variable, the way it has been measured, the measuring level and the data source.

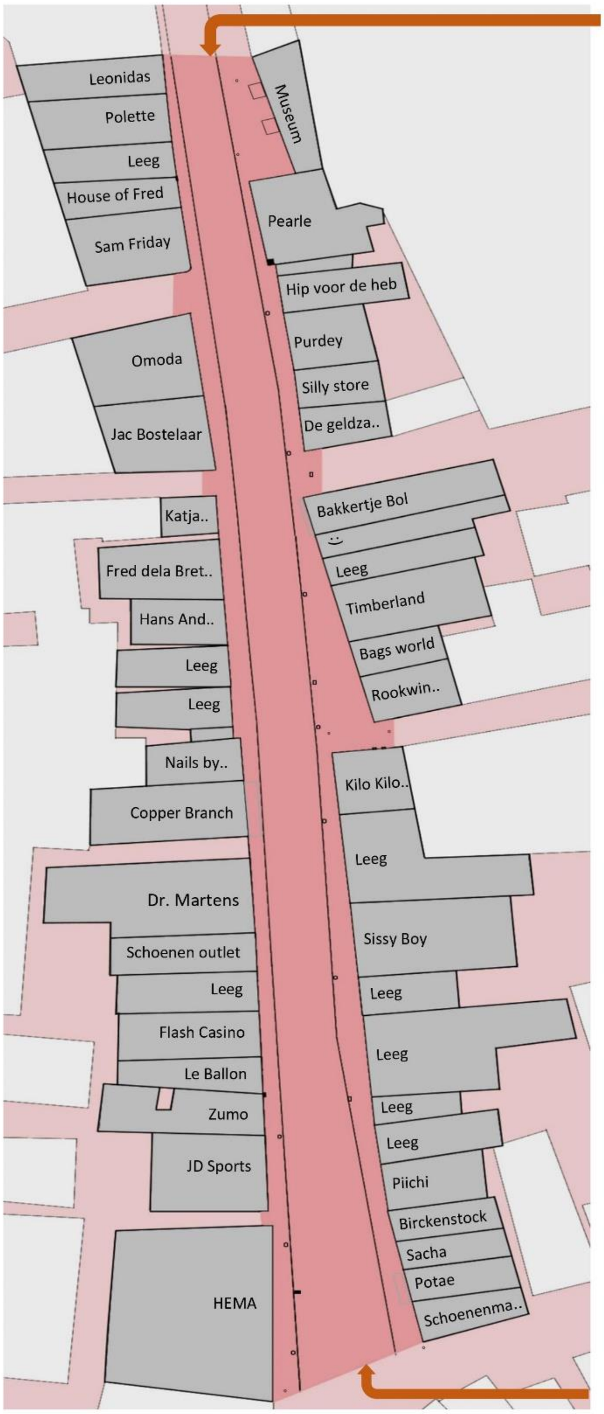
	Subject	Variables	Measuring	Level	Data source
Dependent variable	Activity Level	Number of interactions	Number of interactions per unit	Interval-ratio	Observation/ survey
		Percentage going in	Percentage going in of all interactions (actions: going in)	Interval-Ratio	Observation/ survey
		Percentage looking in	Percentage looking in of all interactions (actions: looking in)	Interval-Ratio	Observation/ survey
		Percentage other activities	Percentage of other interactions of all interactions (actions: standing; stand & look; stand & talk; sitting; sit & talk; waiting)	Interval-Ratio	Observation/ survey
Independent variables	Plinth's characteristics	Façade rhythm	Amounts of units that fit in 100m	Interval-ratio	Calculate/ location scan
		Transparency	Transparent percentage of façade per unit	Interval-ratio	Calculate/ location scan
		Façade details	Classification (1. Active; 2. Mixture; 3. Inactive)	Ordinal	Location scan
		Façade relief	Classification (1. Active; 2. Mixture; 3. Inactive)	Ordinal	Location scan
	Furnishing elements	Resting possibilities	Number of resting possibilities per unit*half street width	Interval-ratio	Calculate/ Location scan
		Greenery	Number of greeneries per unit*half street width	Interval-ratio	Calculate/ Location scan
		Others	Number of other furnishing elements per unit*half street width	Interval-ratio	Calculate/ Location scan
Control variables	Shop characteristics	Retail floor area	Total m^2 per unit	Interval-ratio	Online data
		Chain store	Yes/No	Nominal	Online data
		Function	Dominant function per unit (1. Daily, 2. Fashion; 3. Leisure; 4. Household products; 5. Restaurants; 6. Vacant; 7. Houses; 8. Other)	Nominal	Online data

Personal characteristics	Age	Average age in years of the visitors with interaction	Interval-ratio	Survey question
	Percentage man/woman	Percentages of man and woman	Interval-ratio	Survey question
	Percentage shopping motive	Percentages of fun, run and unknown shoppers	Interval-ratio	Survey question
	Distance	Average distance travelled in kilometres by the visitors with interactions	Interval-ratio	Survey question
	Duration of stay	Average duration of stay in minutes by the visitors with interactions	Interval-ratio	Observation/ survey

Appendix 2: Observation survey

This appendix contains the observation survey for Steenweg. The observation surveys of the various shopping streets are constructed in the same way, with a map of the shopping street on the left. The units and furnishing elements are drawn in and the walking routes and activities of visitors are drawn in by hand. The right side of the survey contains questions about the characteristics of the visitor. In the case of Steenweg, these were about age, gender, postcode, and purpose of visit, and in the other shopping streets only about postcode and purpose of visit.

The observation form is in Dutch. This was chosen because the shopping streets surveyed are in the Netherlands and most respondents are Dutch. In addition, all interviewers spoke Dutch as their native language.



Noteer de tijd!
Begin/eindtijd: ____________________

BEZOEKMOTIEF: **Doel** **Fun**

POSTCODE: ____________________________

Instructie:
Observeer het gedrag van de respondent in het donkerrode onderzoeksgebied. Maak daarbij onderscheid tussen de volgende activiteiten:

Wandelen (LIJN) - Teken de wandeling/route van de respondent in het onderzoeksgebied met een lijn.

Naar binnen gaan (TIJD: aantal min) - Respondent gaat het gebouw in. Houd bij hoeveel minuten de respondent binnen is en noteer dit bij het gebouw (met eventueel een verbindingslijn erbij).

Naar binnen kijken (K) - Respondent kijkt langer dan 3 seconde bij het gebouw/de etalage naar binnen.

Stilstaan (S) - Respondent staat langer dan 3 seconde stil. Noteer een 'S' als er niet specifiek bij het gebouw/de etalage naar binnen wordt gekeken. Als de respondent langer dan 3 seconde naar de tentoongestelde goederen kijkt noteer je **'SW'** (stilstaand winkelen).
Wanneer de respondent zichtbaar een praatje maakt met een ander persoon noteer je **'SP'** (Stilstaand praten). Noteer **'SWP'** als de respondent zowel praat als tentoongestelde goederen bekijkt.

Zitten (Z) - Respondent stopt met lopen en gaat zitten of leunt ergens tegenaan. Geef de locatie van de respondent aan met een 'Z'. Wanneer de respondent zichtbaar een praatje maakt met een ander persoon noteer je **'ZP'** (Zittend praten).

Wachten (W) - Wanneer de respondent plaats neemt in een wachtrij noteer je op die locatie een 'W'. Tevens noteer je het aantal minuten dat de respondent wacht. Voorbeeld: W8 (bij 8 minuten wachttijd).

Bijzonderheden:
____
____
____
____

Noteer hieronder de eindtijd als de respondent het onderzoekgebied op een andere manier verlaat.

Eindtijd andere plek:________________________

Noteer de Tijd!
Begin/Eindtijd:________________________

Appendix 3: Descriptive statistics

This appendix contains tables of descriptive statistics. The first table gives a general overview of the characteristics of the data per variable. A distinction has only been made between Steenweg and the other seven shopping streets. The other table contains information for each street.

Overview of the descriptive statistics on the seven Dutch shopping streets

	N valid	Mean	Minimum	Maximum	Std. deviation
Activity level					
Number of activities	195	3	0	24	4
Percentage going in	195	21	0	100	30
Percentage looking in	195	29	0	100	35
Perc. other activities	195	17	0	100	27
Plinths					
Transparency	195	57	0	100	28
Rhythm	195	15	2	100	11
Details	195	-	-	-	-
Relief	195	-	-	-	-
Furnishing elements					
Seating abs	195	0	0	6	1
Seating dens	195	0.3	0.0	3.8	0.7
Greenery abs	195	0	0	7	1
Greenery dens	195	0.2	0.0	2.5	0.5
Other furniture abs	195	1	0	9	1
Other furniture dens	195	0.6	0.0	8.0	0.9
Total furniture abs	195	2	0	21	3
Total furniture dens	195	1.4	0.0	9.2	1.9
Shop characteristics					
Retail floor area	195	585	0	16470	1638
Function	195	-	-	-	-
Chain store	195	-	-	-	-
Personal characteristics					
Distance	195	15	0	168	24
Duration of stay	195	3	0	23	4
Percentage fun motive	195	30	0	100	36
Percentage run motive	195	29	0	100	35
Perc. unknown motive	195	7	0	100	19

Overview of the descriptive statistics on Steenweg

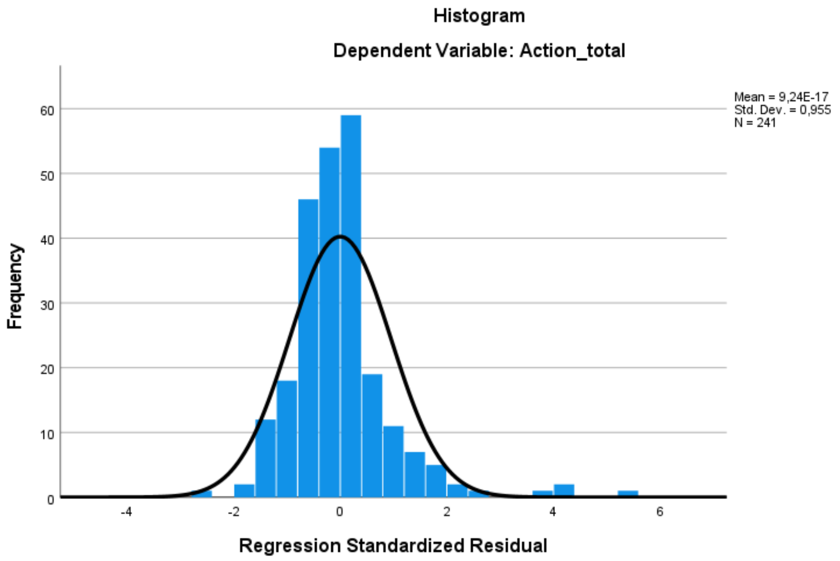
	N valid	Mean	Minimum	Maximum	Std. deviation
Activity Level					
Number of activities	46	7	0	30	7
Percentage going in	46	20	0	100	24
Percentage looking in	46	44	0	100	30
Perc. other activities	46	32	0	100	28
Plinths					
Transparency	46	38	0	70	22
Rhythm	46	18	5	31	6
Details	46	-	-	-	-
Relief	46	-	-	-	-
Furnishing elements					
Seating abs	46	1	0	6	2
Seating dens	46	1.4	0	8.0	2.2
Greenery abs	46	0	0	4	1
Greenery dens	46	0.4	0	8.0	1.4
Other furniture abs	46	1	0	6	2
Other furniture dens	46	1.7	0	10.0	2.5
Total furniture abs	46	4	0	18	5
Total furniture dens	46	5.0	0	33.8	6.8
Shop characteristics					
Retail floor area	46	176.9	0	2174.4	381.7
Function	46	-	-	-	-
Chain store	46	-	-	-	-
Personal characteristics					
Distance	46	35	0	97	22
Duration of stay	46	4	0	49	8
Percentage fun motive	46	50	0	100	33
Percentage run motive	46	46	0	100	33
Perc. unknown motive	46	0	0	0	0
Age	46	41	0	67	13
Percentage man	46	38	0	100	33
Percentage woman	46	57	0	100	34

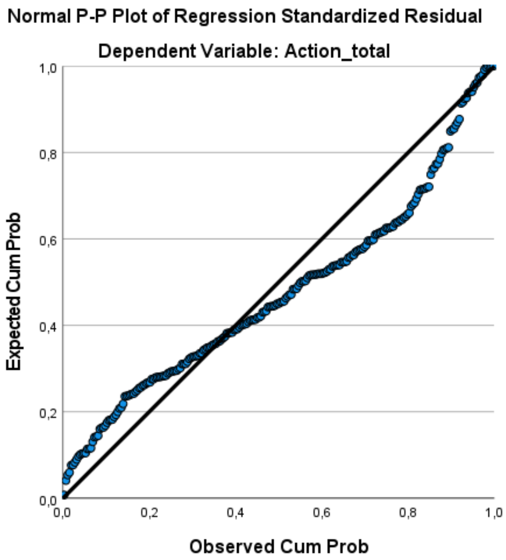
	Burch	Gr. Ma.	Gr. No.	Grotes.	Kalver.	Koopg.	Raadh.	Steen.
Activity level								
Activity total	77	52	152	103	111	103	32	341
Activity/unit mean	3	2	6	4	4	3	0	7
Activity/unit min	0	0	0	0	0	0	0	0
Activity/unit max	9	9	17	15	24	16	6	30
% going in mean	20	28	18	35	24	13	16	20
% going in min	0	0	0	0	0	0	0	0
% going in max	100	100	56	100	100	100	100	100
% looking in mean	32	20	50	23	31	47	3	44
% looking in min	0	0	0	0	0	0	0	0
% looking in max	100	100	100	75	100	100	100	100
% other act mean	21	25	13	15	22	24	0	32
% other act min	0	0	0	0	0	0	0	0
% other act max	100	100	50	100	100	100	0	100
Plinth's characteristics								
Transp mean	55	67	49	71	55	70	39	38
Transp min	0	0	0	33	0	0	0	0
Transp max	85	100	82	91	86	93	79	70
Rhythm mean	15	13	18	13	17	12	18	18
Rhythm min	3	4	5	6	2	3	2	5
Rhythm max	25	33	50	25	37	40	100	31
% many details	17.2	34.6	40.7	11.5	32.0	23.3	56.3	43.5
% few details	62.1	26.9	40.7	57.7	40.0	40.0	37.5	23.9
% no details	20.7	38.5	18.5	30.8	28.0	36.7	6.3	32.6
% horizontal relief	3.4	15.4	11.1	19.2	12.0	6.7	6.3	26.1
% mix relief	65.5	69.2	51.9	57.7	44.0	50.0	62.5	37.0
% vertical relief	31.0	15.4	37.0	23.1	44.0	43.3	31.3	37.0
Furnishing elements								
Seats abs mean	0	1	0	0	0	1	0	1
Seats abs min	0	0	0	0	0	0	0	0
Seats abs max	4	6	0	3	0	6	1	6
Seats dens mean	0	0.6	0	0.3	0	1.0	0.2	1.4
Seats dens min	0	0	0	0	0	0	0	0
Seats dens max	0.5	3.8	0	3.1	0.0	3.7	1.2	8.0
Green abs mean	0	1	0	0	0	0	1	0
Greenery abs min	0	0	0	0	0	0	0	0
Greenery abs max	1	3	2	1	0	3	7	4
Green dens mean	0.1	0.3	0.2	0.2	0	0.4	0.3	0.4
Greenery dens min	0.0	0	0.0	0	0	0	0	0
Greenery dens max	0.9	1.3	2.3	2.2	0	2.0	2.5	8.0
Other abs mean	1	1	0	0	1	1	1	1
Other abs min	0	0	0	0	0	0	0	0
Other abs max	9	5	2	2	4	9	5	6
Other dens mean	0.5	0.5	0.4	0.4	0.7	0.8	0.7	1.7
Other dens min	0	0	0	0	0	0	0	0
Other dens max	2.4	2.3	2.7	2.9	8.0	2.7	4.3	10.0

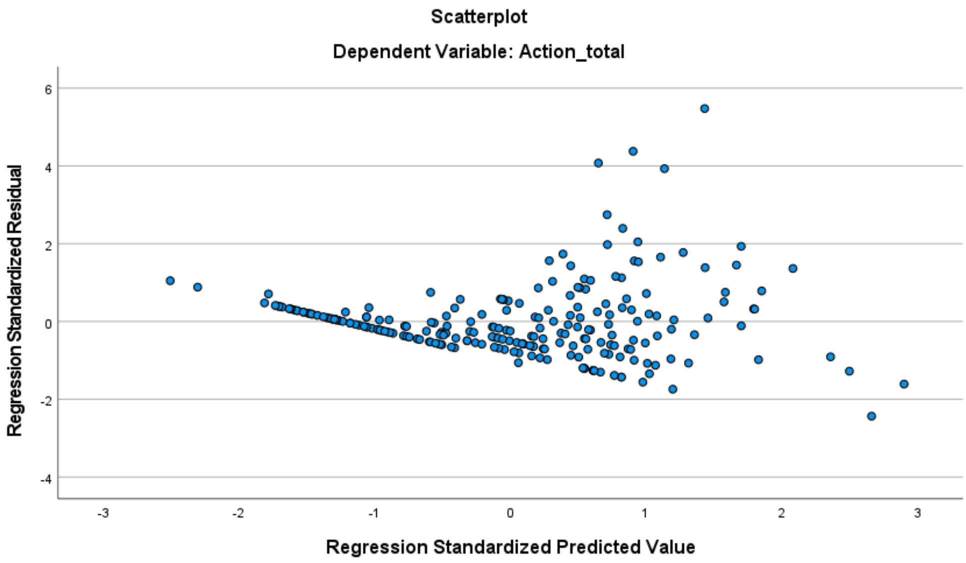
Total abs mean	2	4	1	1	1	4	2	4
Total abs Min	0	0	0	0	0	0	0	0
Total abs Max	17	17	3	6	4	21	11	18
Total dens mean	0,7	1.8	0.7	1.3	0.7	3.1	1.3	5.0
Total dens min	0	0	0	0	0	0	0	0
Total dens max	2.4	9.2	3.3	6.6	8.0	9.2	4.3	33.8
Shop characteristics								
RFA mean	183	1947	185	269	897	644	135	177
RFA min	0	0	0	10	0	0	0	0
RFA max	1427	16470	630	1002	5080	2581	959	2174
% daily	10.3	11.5	14.8	11.5	4.0	13.3	6.3	6.5
% fashion	62.1	46.2	48.1	46.2	40.0	66.7	25.0	50.0
% leisure	6.9	7.7	7.4	11.5	8.0	0.0	0.0	4.3
% household prod.	6.9	0.0	3.7	7.7	0.0	3.3	6.3	0.0
% restaurants	3.4	15.4	0.0	11.5	20.0	0.0	15.6	15.2
% vacant	6.9	3.8	14.8	11.5	20.0	6.7	21.9	21.7
% houses	0.0	0.0	11.1	0.0	4.0	0.0	9.4	0.0
% other	3,4	15.4	0.0	0.0	4.0	10.0	15.6	2.2
% chain store	41.4	23.1	29.6	19.2	40.0	26.7	93.8	50.0
% non-chain store	58.6	76.9	70.4	80.8	60.0	73.3	6.3	50.0
Personal characteristics								
Distance mean	26	13	30	11	9	18	1	35
Distance min	0	0	0	0	0	0	0	0
Distance max	168	52	87	82	45	87	10	97
Duration mean	4	2	4	3	4	2	1	4
Duration min	0	0	0	0	0	0	0	0
Duration max	19	10	23	12	23	11	11	49
% fun motive	31	29	39	39	48	34	1	50
% run motive	38	16	42	28	24	40	15	46
% unknown motive	3	28	0	3	5	9	3	0
Age mean	.	.	.	.	.	.	.	43
Age min	.	.	.	.	.	.	.	26
Age max	.	.	.	.	.	.	.	67
% man	.	.	.	.	.	.	.	36.6
% woman	.	.	.	.	.	.	.	63.4

Appendix 4: Normal distribution

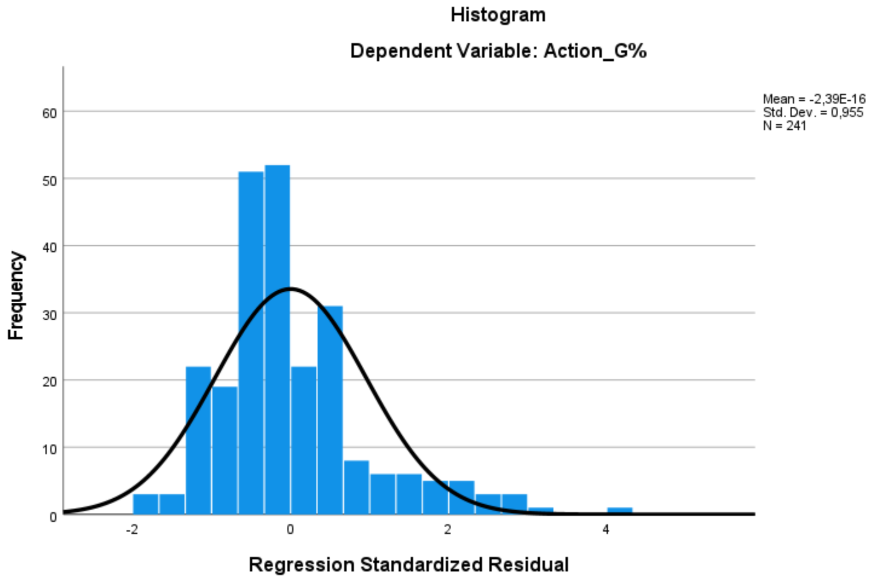
Total activities

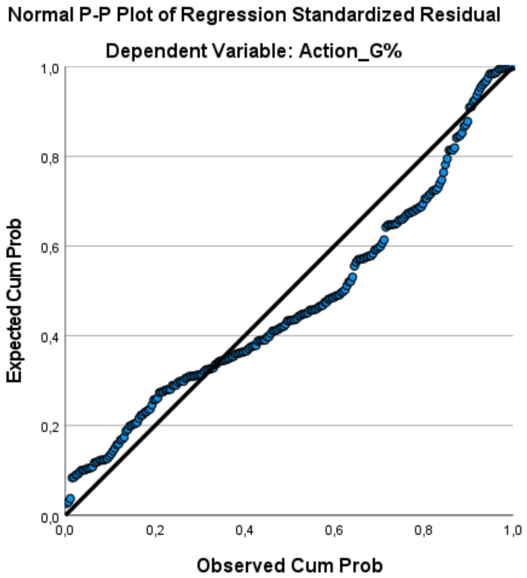


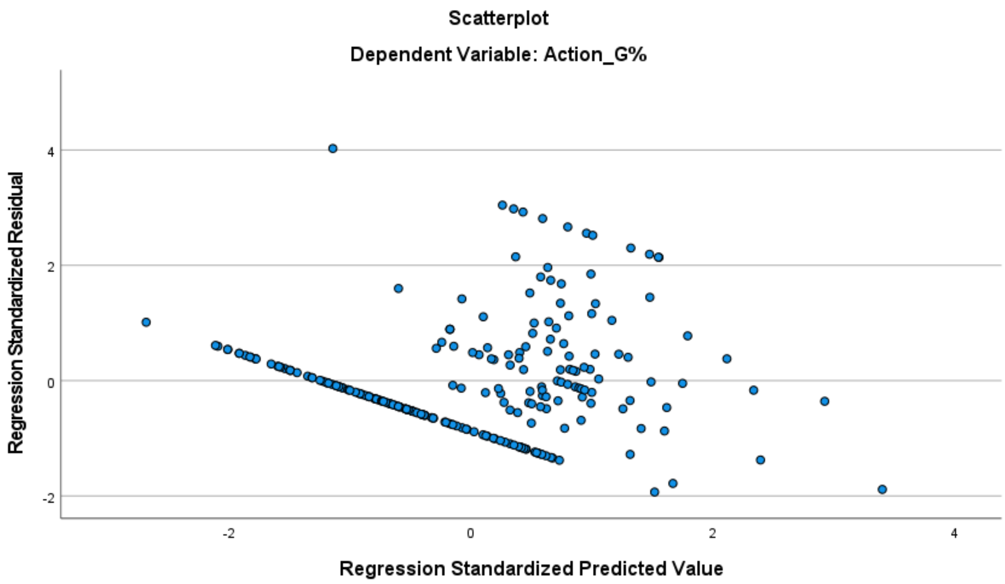




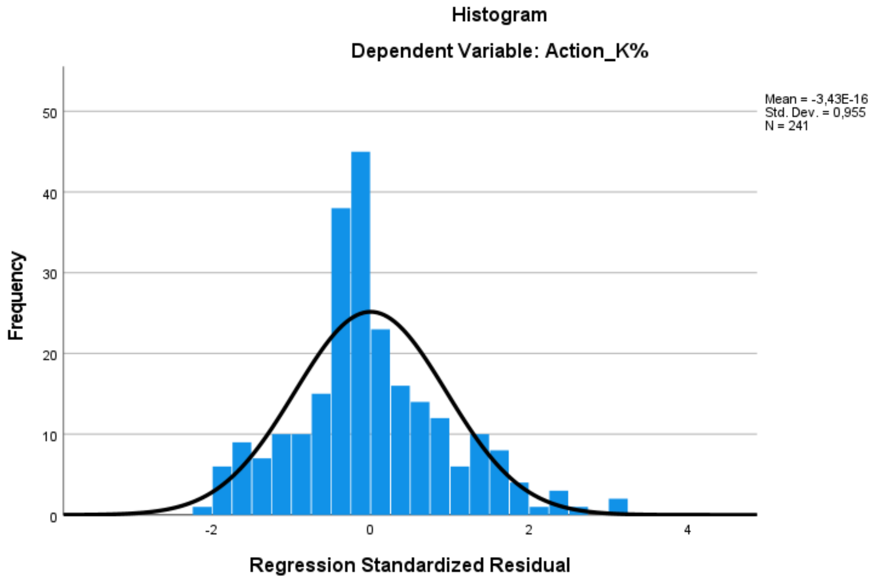
Going in

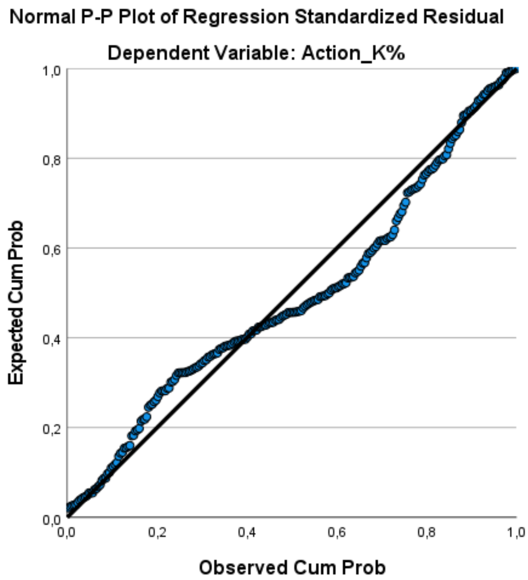

Histogram
Dependent Variable: Action_G%
Mean = -2,39E-16
Std. Dev. = 0,955
N = 241
Frequency
Regression Standardized Residual

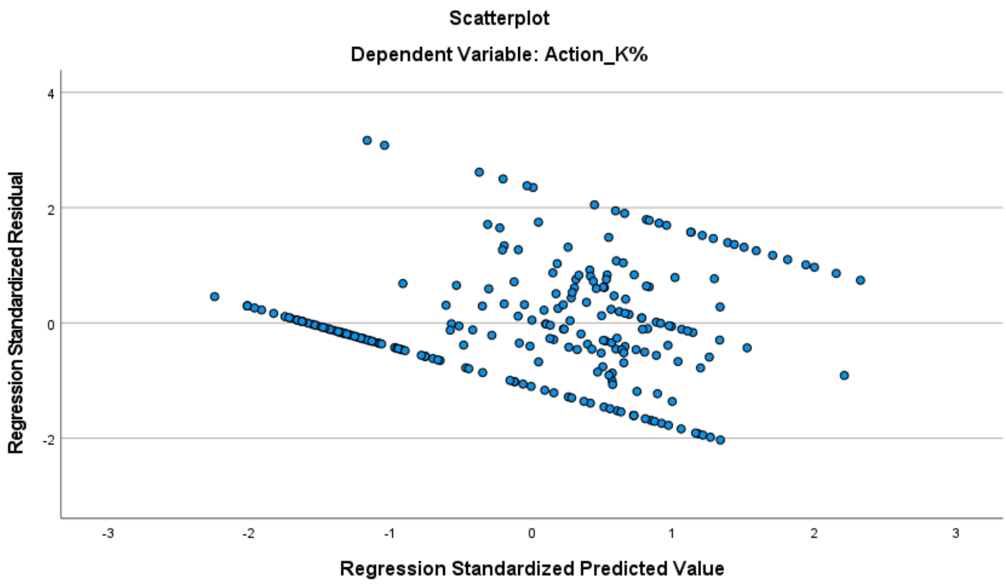

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Action_G%
Expected Cum Prob
Observed Cum Prob


Scatterplot
Dependent Variable: Action_G%
Regression Standardized Residual
Regression Standardized Predicted Value

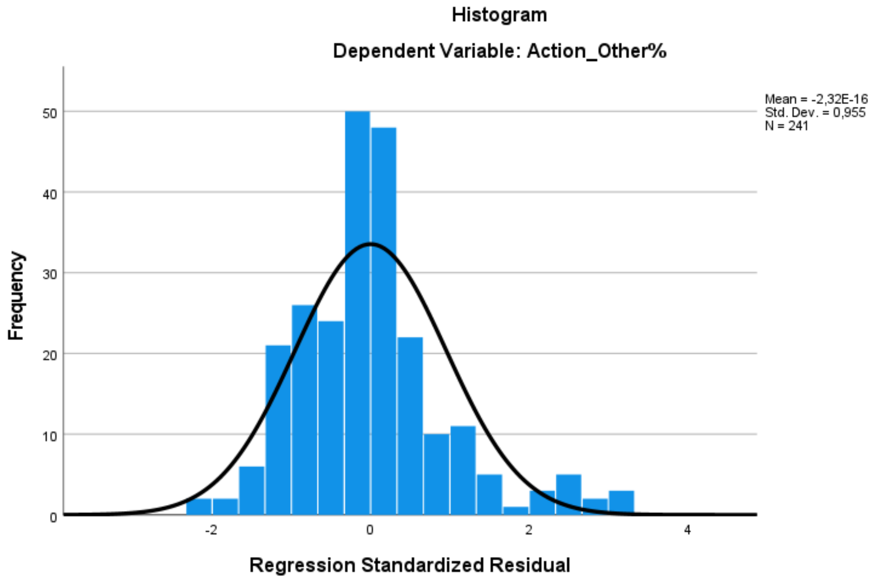
Looking in

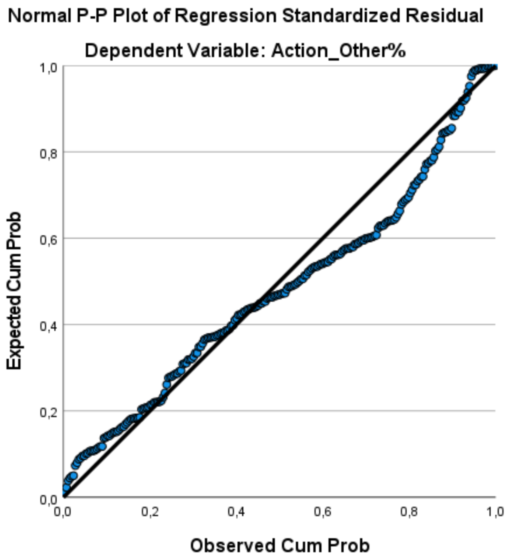

Histogram
Dependent Variable: Action_K%
Mean = -3,43E-16
Std. Dev. = 0,955
N = 241
Frequency
Regression Standardized Residual

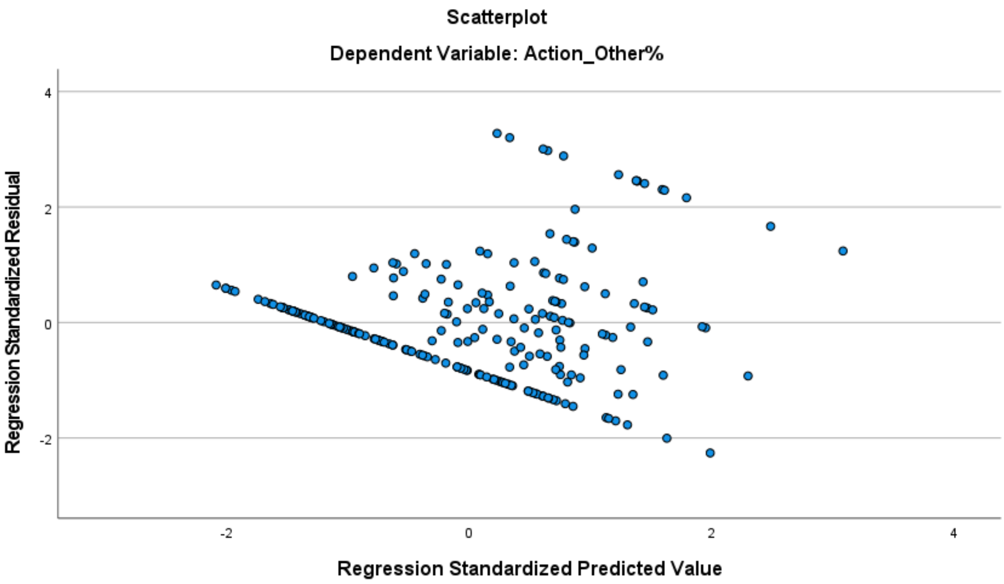

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Action_K%
Expected Cum Prob
Observed Cum Prob


Scatterplot
Dependent Variable: Action_K%
Regression Standardized Residual
Regression Standardized Predicted Value

Other activities







Appendix 5: Multicollinearity

Cramer's V for nominal variables

Symmetric Measures

			Chain store		Function	
			Value	Appr. Significance	Value	Appr. Significance
Rhythm	Nominal by Nominal	Phi	.624	.068	1.665	<.001
		Cramer's V	.624	.068	.629	<.001
	N of Valid Cases		241		241	
Transparency	Nominal by Nominal	Phi	.913	.007	2.116	.485
		Cramer's V	.913	.007	.800	.485
	N of Valid Cases		241		241	
Details	Nominal by Nominal	Phi	.163	.041	.309	.061
		Cramer's V	.163	.041	.218	.061
	N of Valid Cases		241		241	
Relief	Nominal by Nominal	Phi	.122	.165	.272	.212
		Cramer's V	.122	.165	.193	.212
	N of Valid Cases		241		241	
Seats total	Nominal by Nominal	Phi	.247	.022	.507	.024
		Cramer's V	.247	.022	.207	.024
	N of Valid Cases		241		241	
Greenery total	Nominal by Nominal	Phi	.158	.419	.458	.169
		Cramer's V	.158	.419	.187	.169
	N of Valid Cases		241		241	
Other Furniture	Nominal by Nominal	Phi	.294	.022	.689	<.001
		Cramer's V	.294	.022	.261	<.001
	N of Valid Cases		241		241	
Furniture total	Nominal by Nominal	Phi	.277	.551	.771	.408
		Cramer's V	.277	.551	.291	.408
	N of Valid Cases		241		241	
Retail Floor Area	Nominal by Nominal	Phi	.923	.107	2.236	.728
		Cramer's V	.923	.107	.845	.728
	N of Valid Cases		174		174	
Run Perc	Nominal by Nominal	Phi	.414	.476	.936	.999
		Cramer's V	.414	.476	.354	.999
	N of Valid Cases		174		174	
Fun Perc	Nominal by Nominal	Phi	.400	.577	.931	.999
		Cramer's V	.400	.577	.352	.999
	N of Valid Cases		174		174	
Unknown Motive Perc	Nominal by Nominal	Phi	.243	.419	.480	.998
		Cramer's V	.243	.419	.181	.998
	N of Valid Cases		174		174	
Duration of stay	Nominal by Nominal	Phi	.615	.012	1.210	.999
		Cramer's V	.615	.012	.457	.999
	N of Valid Cases		241		241	

Distance	Nominal by Nominal	Phi	.857	.134	1.948	1.000
		Cramer's V	.857	.134	.736	1.000
	N of Valid Cases		223		223	
Age	Nominal by Nominal	Phi	.820	.267	1.908	.029
		Cramer's V	.820	.267	.853	.029
	N of Valid Cases		43		43	
Action total	Nominal by Nominal	Phi	.545	<.001	.849	.131
		Cramer's V	.545	<.001	.321	.131
	N of Valid Cases		241		241	
Action Going in	Nominal by Nominal	Phi	.461	<.001	.763	<.001
		Cramer's V	.461	<.001	.288	<.001
	N of Valid Cases		241		241	
Action Looking	Nominal by Nominal	Phi	.391	<.001	.599	.401
		Cramer's V	.391	<.001	.227	.401
	N of Valid Cases		241		241	
Action other	Nominal by Nominal	Phi	.380	<.001	.558	.144
		Cramer's V	.380	<.001	.211	.144
	N of Valid Cases		241		241	
Action Going in Percentage	Nominal by Nominal	Phi	.518	.128	1.184	.718
		Cramer's V	.518	.128	.448	.718
	N of Valid Cases		175		175	
Action Looking in Percentage	Nominal by Nominal	Phi	.519	.237	1.170	.981
		Cramer's V	.519	.237	.442	.981
	N of Valid Cases		175		175	
Action Other Percentage	Nominal by Nominal	Phi	.520	.040	.928	1.000
		Cramer's V	.520	.040	.351	1.000
	N of Valid Cases		175		175	
Action types total	Nominal by Nominal	Phi	463	<.001	.546	<.001
		Cramer's V	.463	<.001	.244	<.001
	N of Valid Cases		241		241	
Function Specific	Nominal by Nominal	Phi	.627	<.001		
		Cramer's V	.627	<.001		
	N of Valid Cases		241			
Chain store	Nominal by Nominal	Phi			.627	<.001
		Cramer's V			.627	<.001
	N of Valid Cases				241	

Spearman Rho for ordinal variables

Correlations

		Details	Relief
Details	Correlation Coefficient	1.000	.495**
	Sig. (2-tailed)		0.000
	N	241	241
Relief	Correlation Coefficient	.495**	1.000
	Sig. (2-tailed)	0.000	
	N	241	241
Rhythm	Correlation Coefficient	-0.020	0.107
	Sig. (2-tailed)	0.762	0.099
	N	241	241
Transparency	Correlation Coefficient	-0.049	-0.024
	Sig. (2-tailed)	0.445	0.707
	N	241	241
Seats total	Correlation Coefficient	0.058	0.033
	Sig. (2-tailed)	0.368	0.615
	N	241	241
Greenery total	Correlation Coefficient	0.058	0.090
	Sig. (2-tailed)	0.366	0.164
	N	241	241
Other Furniture	Correlation Coefficient	0.097	0.029
	Sig. (2-tailed)	0.135	0.656
	N	241	241
Furniture total	Correlation Coefficient	0.125	0.049
	Sig. (2-tailed)	0.053	0.452
	N	241	241
Retail Floor Area	Correlation Coefficient	0.047	-0.046
	Sig. (2-tailed)	0.539	0.547
	N	174	174
Action total	Correlation Coefficient	0.025	-0.056
	Sig. (2-tailed)	0.702	0.387
	N	241	241
Action Types total	Correlation Coefficient	0.001	-0.052
	Sig. (2-tailed)	0.983	0.420
	N	241	241
Action Going in	Correlation Coefficient	0.034	-0.069
	Sig. (2-tailed)	0.602	0.284
	N	241	241
Action Looking in	Correlation Coefficient	0.035	-0.014
	Sig. (2-tailed)	0.587	0.835
	N	241	241
Action Other	Correlation Coefficient	0.008	-0.104
	Sig. (2-tailed)	0.904	0.109
	N	241	241
Action Going in percentage	Correlation Coefficient	0.083	-0.030
	Sig. (2-tailed)	0.274	0.698

	N	175	175
Action Looking in percentage	Correlation Coefficient	-0.012	0.033
	Sig. (2-tailed)	0.872	0.664
	N	175	175
Action Other percentage	Correlation Coefficient	0.023	-0.069
	Sig. (2-tailed)	0.760	0.362
	N	175	175
Distance	Correlation Coefficient	0.041	0.032
	Sig. (2-tailed)	0.544	0.634
	N	223	223
Duration stay	Correlation Coefficient	0.025	-0.002
	Sig. (2-tailed)	0.697	0.976
	N	241	241
Age	Correlation Coefficient	0.099	-0.069
	Sig. (2-tailed)	0.528	0.660
	N	43	43
Men percentage	Correlation Coefficient	-.422**	0.036
	Sig. (2-tailed)	0.004	0.817
	N	44	44
Women percentage	Correlation Coefficient	.381*	-0.107
	Sig. (2-tailed)	0.011	0.491
	N	44	44
Fun percentage	Correlation Coefficient	0.028	-0.003
	Sig. (2-tailed)	0.712	0.971
	N	174	174
Run percentage	Correlation Coefficient	-0.049	-0.018
	Sig. (2-tailed)	0.517	0.816
	N	174	174
Unknown percentage	Correlation Coefficient	0.094	0.051
	Sig. (2-tailed)	0.219	0.507
	N	174	174

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Pearson Correlation for metric variables

		Rhythm	Transparency	Seats total	Greenery total	Other Furniture	Furniture total	Retail Floor Area	Actions total	Action Types total	Action Going in	Action Looking in	Action Other
Rhythm	Pearson Corr.	1	-.361**	-.187**	-.145*	-.277**	-.270**	-.207**	-.232**	-.244**	-.231**	-.175**	-.133*
	Sig. (2-tailed)		0.000	0.004	0.024	0.000	0.000	0.006	0.000	0.000	0.000	0.006	0.039
	N	241	241	241	241	241	241	174	241	241	241	241	241
Transparency	Pearson Corr.	-.361**	1	0.055	0.079	-0.001	0.048	-0.019	.199**	.220**	.244**	.135*	0.059
	Sig. (2-tailed)	0.000		0.395	0.223	0.985	0.461	0.806	0.002	0.001	0.000	0.037	0.361
	N	241	241	241	241	241	241	174	241	241	241	241	241
Seats total	Pearson Corr.	-.187**	0.055	1	.262**	.452**	.898**	.242**	0.121	.226**	0.040	0.076	.235**
	Sig. (2-tailed)	0.004	0.395		0.000	0.000	0.000	0.001	0.060	0.000	0.534	0.239	0.000
	N	241	241	241	241	241	241	174	241	241	241	241	241
Greenery total	Pearson Corr.	-.145*	0.079	.262**	1	.177**	.445**	0.048	-0.065	-0.009	-0.045	-0.090	-0.002
	Sig. (2-tailed)	0.024	0.223	0.000		0.006	0.000	0.532	0.312	0.885	0.485	0.162	0.980
	N	241	241	241	241	241	241	174	241	241	241	241	241
Other Furniture	Pearson Corr.	-.277**	-0.001	.452**	.177**	1	.751**	.352**	.201**	.197**	.202**	0.104	.193**
	Sig. (2-tailed)	0.000	0.985	0.000	0.006		0.000	0.000	0.002	0.002	0.002	0.109	0.003
	N	241	241	241	241	241	241	174	241	241	241	241	241
Furniture total	Pearson Corr.	-.270**	0.048	.898**	.445**	.751**	1	.322**	.154*	.236**	0.103	0.079	.238**
	Sig. (2-tailed)	0.000	0.461	0.000	0.000	0.000		0.000	0.017	0.000	0.109	0.220	0.000
	N	241	241	241	241	241	241	174	241	241	241	241	241
Retail Floor Area	Pearson Corr.	-.207**	-0.019	.242**	0.048	.352**	.322**	1	0.102	.175*	0.100	0.056	0.096
	Sig. (2-tailed)	0.006	0.806	0.001	0.532	0.000	0.000		0.182	0.021	0.190	0.463	0.208
	N	174	174	174	174	174	174	174	174	174	174	174	174
Action total	Pearson Corr.	-.232**	.199**	0.121	-0.065	.201**	.154*	0.102	1	.770**	.831**	.830**	.727**
	Sig. (2-tailed)	0.000	0.002	0.060	0.312	0.002	0.017	0.182		0.000	0.000	0.000	0.000
	N	241	241	241	241	241	241	174	242	241	241	241	241
Action Types total	Pearson Corr.	-.244**	.220**	.226**	-0.009	.197**	.236**	.175*	.770**	1	.537**	.617**	.780**
	Sig. (2-tailed)	0.000	0.001	0.000	0.885	0.002	0.000	0.021	0.000		0.000	0.000	0.000
	N	241	241	241	241	241	241	174	241	241	241	241	241
	Pearson Corr.	-.231**	.244**	0.040	-0.045	.202**	0.103	0.100	.831**	.537**	1	.459**	.462**

Action Going in	Sig. (2-tailed)	0.000	0.000	0.534	0.485	0.002	0.109	0.190	0.000	0.000		0.000	0.000
	N	241	241	241	241	241	241	174	241	241	241	241	241
Action Looking in	Pearson Corr.	-.175**	.135*	0.076	-0.090	0.104	0.079	0.056	.830**	.617**	.459**	1	.472**
	Sig. (2-tailed)	0.006	0.037	0.239	0.162	0.109	0.220	0.463	0.000	0.000	0.000		0.000
	N	241	241	241	241	241	241	174	241	241	241	241	241
Action Other	Pearson Corr.	-.133*	0.059	.235**	-0.002	.193**	.238**	0.096	.727**	.780**	.462**	.472**	1
	Sig. (2-tailed)	0.039	0.361	0.000	0.980	0.003	0.000	0.208	0.000	0.000	0.000	0.000	
	N	241	241	241	241	241	241	174	241	241	241	241	241
Action Going in %	Pearson Corr.	-.183*	.270**	-0.009	0.048	.199**	0.086	-0.009	.214**	0.079	.569**	-0.116	-0.081
	Sig. (2-tailed)	0.016	0.000	0.909	0.530	0.008	0.256	0.924	0.004	0.296	0.000	0.126	0.287
	N	175	175	175	175	175	175	121	175	175	175	175	175
Action Looking in %	Pearson Corr.	0.032	-.190*	-0.143	-0.136	-.164*	-.177*	0.035	-0.069	-.157*	-.308**	.345**	-.272**
	Sig. (2-tailed)	0.675	0.012	0.060	0.073	0.030	0.019	0.703	0.367	0.037	0.000	0.000	0.000
	N	175	175	175	175	175	175	121	175	175	175	175	175
Action Other %	Pearson Corr.	.152*	-0.067	.167*	0.102	-0.022	0.109	-0.031	-0.144	0.093	-.242**	-.265**	.386**
	Sig. (2-tailed)	0.044	0.382	0.027	0.179	0.773	0.153	0.736	0.058	0.218	0.001	0.000	0.000
	N	175	175	175	175	175	175	121	175	175	175	175	175
Distance	Pearson Corr.	-0.094	0.073	.164*	0.032	0.115	.158*	0.009	.297**	.408**	0.130	.313**	.305**
	Sig. (2-tailed)	0.161	0.277	0.014	0.632	0.086	0.018	0.908	0.000	0.000	0.053	0.000	0.000
	N	223	223	223	223	223	223	156	223	223	223	223	223
Duration of stay	Pearson Corr.	-.136*	.157*	0.079	-0.029	.183**	0.126	0.127	.400**	.470**	.377**	.284**	.297**
	Sig. (2-tailed)	0.035	0.015	0.221	0.659	0.004	0.052	0.096	0.000	0.000	0.000	0.000	0.000
	N	241	241	241	241	241	241	174	241	241	241	241	241
Age	Pearson Corr.	-0.055	0.206	0.122	0.250	0.203	0.196	.c	0.105	-0.012	0.127	-0.038	0.224
	Sig. (2-tailed)	0.727	0.185	0.437	0.106	0.192	0.208		0.502	0.942	0.417	0.810	0.148
	N	43	43	43	43	43	43	0	43	43	43	43	43
Men %	Pearson Corr.	0.189	-.407**	-0.074	-0.197	-0.282	-0.186	.c	-.407**	-.409**	-.312*	-.318*	-.340*
	Sig. (2-tailed)	0.218	0.006	0.631	0.200	0.064	0.226		0.006	0.006	0.040	0.035	0.024
	N	44	44	44	44	44	44	0	44	44	44	44	44
Women %	Pearson Corr.	-0.211	.422**	0.107	0.208	0.206	0.182	.c	.448**	.437**	.335*	.366*	.360*
	Sig. (2-tailed)	0.170	0.004	0.489	0.175	0.179	0.238		0.002	0.003	0.026	0.015	0.016
	N	44	44	44	44	44	44	0	44	44	44	44	44
Fun %	Pearson Corr.	0.079	0.081	-0.025	-0.025	0.045	-0.015	-0.060	.183*	.268**	0.067	.162*	.234**
	Sig. (2-tailed)	0.299	0.291	0.748	0.743	0.551	0.848	0.518	0.015	0.000	0.377	0.033	0.002
	N	174	174	174	174	174	174	120	174	174	174	174	174

Run %	Pearson Corr.	0.068	-.157*	-0.017	-0.041	-0.112	-0.053	-.209*	-0.083	-.163*	-0.028	-0.068	-0.119
	Sig. (2-tailed)	0.371	0.039	0.825	0.591	0.141	0.487	0.022	0.275	0.031	0.711	0.372	0.118
	N	174	174	174	174	174	174	120	174	174	174	174	174
Unknown %	Pearson Corr.	-.246**	0.127	0.069	0.110	0.110	0.113	.397**	-.169*	-.177*	-0.066	-.158*	-.193*
	Sig. (2-tailed)	0.001	0.096	0.365	0.148	0.147	0.138	0.000	0.026	0.019	0.390	0.038	0.011
	N	174	174	174	174	174	174	120	174	174	174	174	174

		Action Going in %	Action Looking in %	Action Other %	Distance	Duration of stay	Age	Men %	Women %	Fun %	Run %	Unknown %
Rhythm	Pearson Corr.	-.183*	0.032	.152*	-0.094	-.136*	-0.055	0.189	-0.211	0.079	0.068	-.246**
	Sig. (2-tailed)	0.016	0.675	0.044	0.161	0.035	0.727	0.218	0.170	0.299	0.371	0.001
	N	175	175	175	223	241	43	44	44	174	174	174
Transparency	Pearson Corr.	.270**	-.190*	-0.067	0.073	.157*	0.206	-.407**	.422**	0.081	-.157*	0.127
	Sig. (2-tailed)	0.000	0.012	0.382	0.277	0.015	0.185	0.006	0.004	0.291	0.039	0.096
	N	175	175	175	223	241	43	44	44	174	174	174
Seats total	Pearson Corr.	-0.009	-0.143	.167*	.164*	0.079	0.122	-0.074	0.107	-0.025	-0.017	0.069
	Sig. (2-tailed)	0.909	0.060	0.027	0.014	0.221	0.437	0.631	0.489	0.748	0.825	0.365
	N	175	175	175	223	241	43	44	44	174	174	174
Greenery total	Pearson Corr.	0.048	-0.136	0.102	0.032	-0.029	0.250	-0.197	0.208	-0.025	-0.041	0.110
	Sig. (2-tailed)	0.530	0.073	0.179	0.632	0.659	0.106	0.200	0.175	0.743	0.591	0.148
	N	175	175	175	223	241	43	44	44	174	174	174
Other Furniture	Pearson Corr.	.199**	-.164*	-0.022	0.115	.183**	0.203	-0.282	0.206	0.045	-0.112	0.110
	Sig. (2-tailed)	0.008	0.030	0.773	0.086	0.004	0.192	0.064	0.179	0.551	0.141	0.147
	N	175	175	175	223	241	43	44	44	174	174	174
Furniture total	Pearson Corr.	0.086	-.177*	0.109	.158*	0.126	0.196	-0.186	0.182	-0.015	-0.053	0.113
	Sig. (2-tailed)	0.256	0.019	0.153	0.018	0.052	0.208	0.226	0.238	0.848	0.487	0.138
	N	175	175	175	223	241	43	44	44	174	174	174
Retail Floor Area	Pearson Corr.	-0.009	0.035	-0.031	0.009	0.127	.c	.c	.c	-0.060	-.209*	.397**
	Sig. (2-tailed)	0.924	0.703	0.736	0.908	0.096				0.518	0.022	0.000
	N	121	121	121	156	174	0	0	0	120	120	120
Action total	Pearson Corr.	.214**	-0.069	-0.144	.297**	.400**	0.105	-.407**	.448**	.183*	-0.083	-.169*

	Sig. (2-tailed)	0.004	0.367	0.058	0.000	0.000	0.502	0.006	0.002	0.015	0.275	0.026
	N	175	175	175	223	241	43	44	44	174	174	174
Action Types total	Pearson Corr.	0.079	-.157*	0.093	.408**	.470**	-0.012	-.409**	.437**	.268**	-.163*	-.177*
	Sig. (2-tailed)	0.296	0.037	0.218	0.000	0.000	0.942	0.006	0.003	0.000	0.031	0.019
	N	175	175	175	223	241	43	44	44	174	174	174
Action Going in	Pearson Corr.	.569**	-.308**	-.242**	0.130	.377**	0.127	-.312*	.335*	0.067	-0.028	-0.066
	Sig. (2-tailed)	0.000	0.000	0.001	0.053	0.000	0.417	0.040	0.026	0.377	0.711	0.390
	N	175	175	175	223	241	43	44	44	174	174	174
Action Looking in	Pearson Corr.	-0.116	.345**	-.265**	.313**	.284**	-0.038	-.318*	.366*	.162*	-0.068	-.158*
	Sig. (2-tailed)	0.126	0.000	0.000	0.000	0.000	0.810	0.035	0.015	0.033	0.372	0.038
	N	175	175	175	223	241	43	44	44	174	174	174
Action Other	Pearson Corr.	-0.081	-.272**	.386**	.305**	.297**	0.224	-.340*	.360*	.234**	-0.119	-.193*
	Sig. (2-tailed)	0.287	0.000	0.000	0.000	0.000	0.148	0.024	0.016	0.002	0.118	0.011
	N	175	175	175	223	241	43	44	44	174	174	174
Action Going in %	Pearson Corr.	1	-.566**	-.399**	-.177*	.292**	0.040	-0.219	0.183	-0.073	0.044	0.049
	Sig. (2-tailed)		0.000	0.000	0.026	0.000	0.800	0.152	0.235	0.338	0.562	0.524
	N	175	175	175	157	175	43	44	44	174	174	174
Action Looking in %	Pearson Corr.	-.566**	1	-.531**	-0.023	-0.111	-.355*	.315*	-0.257	-.156*	0.094	0.105
	Sig. (2-tailed)	0.000		0.000	0.775	0.142	0.019	0.037	0.092	0.040	0.217	0.170
	N	175	175	175	157	175	43	44	44	174	174	174
Action Other %	Pearson Corr.	-.399**	-.531**	1	.214**	-.177*	.326*	-0.136	0.108	.247**	-.149*	-.165*
	Sig. (2-tailed)	0.000	0.000		0.007	0.019	0.033	0.379	0.485	0.001	0.049	0.029
	N	175	175	175	157	175	43	44	44	174	174	174
Distance	Pearson Corr.	-.177*	-0.023	.214**	1	0.040	0.250	-.516**	.422**	.448**	-.368**	-.166*
	Sig. (2-tailed)	0.026	0.775	0.007		0.553	0.106	0.000	0.004	0.000	0.000	0.039
	N	157	157	157	223	223	43	44	44	156	156	156
Duration of stay	Pearson Corr.	.292**	-0.111	-.177*	0.040	1	0.064	-.303*	.325*	0.077	0.006	-0.139
	Sig. (2-tailed)	0.000	0.142	0.019	0.553		0.683	0.046	0.031	0.315	0.933	0.067
	N	175	175	175	223	241	43	44	44	174	174	174
Age	Pearson Corr.	0.040	-.355*	.326*	0.250	0.064	1	-0.164	0.182	.399**	-.399**	.[c]
	Sig. (2-tailed)	0.800	0.019	0.033	0.106	0.683		0.292	0.242	0.008	0.008	
	N	43	43	43	43	43	43	43	43	43	43	43
Men %	Pearson Corr.	-0.219	.315*	-0.136	-.516**	-.303*	-0.164	1	-.972**	-.431**	.431**	.[c]
	Sig. (2-tailed)	0.152	0.037	0.379	0.000	0.046	0.292		0.000	0.003	0.003	
	N	44	44	44	44	44	43	44	44	44	44	44

Women %	Pearson Corr.	0.183	-0.257	0.108	.422**	.325*	0.182	-.972**	1	.382*	-.382*	.c
	Sig. (2-tailed)	0.235	0.092	0.485	0.004	0.031	0.242	0.000		0.010	0.010	
	N	44	44	44	44	44	43	44	44	44	44	44
Fun %	Pearson Corr.	-0.073	-.156*	.247**	.448**	0.077	.399**	-.431**	.382*	1	-.821**	-.308**
	Sig. (2-tailed)	0.338	0.040	0.001	0.000	0.315	0.008	0.003	0.010		0.000	0.000
	N	174	174	174	156	174	43	44	44	174	174	174
Run %	Pearson Corr.	0.044	0.094	-.149*	-.368**	0.006	-.399**	.431**	-.382*	-.821**	1	-.291**
	Sig. (2-tailed)	0.562	0.217	0.049	0.000	0.933	0.008	0.003	0.010	0.000		0.000
	N	174	174	174	156	174	43	44	44	174	174	174
Unknown %	Pearson Corr.	0.049	0.105	-.165*	-.166*	-0.139	.c	.c	.c	-.308**	-.291**	1
	Sig. (2-tailed)	0.524	0.170	0.029	0.039	0.067				0.000	0.000	
	N	174	174	174	156	174	43	44	44	174	174	174

Variance inflation Factor (VIF)

	Tolerance	VIF
Rhythm	.583	1.716
Transparency	.669	1.495
Seats total	.362	2.759
Greenery total	.477	2.097
Other furniture	.473	2.114
Retail Floor Area	.372	2.688
Distance	.349	2.868
Duration of stay	.677	1.478
Age	.748	1.337
Men %	.432	2.317
Run %	.438	2.283

Appendix 6: Tables of the multiple regression analysis

Seven Dutch streets – Total number of actions, absolute number of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4.1		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	2.297	.938	.015	1.775	1.003	.078	3.225	1.275	.012	.019	.859	.982	.657	1.143	.566
Rhythm	-.083	.026	.002	-.074	.027	.008	-.095	.031	.003	-.045	.023	.050	-.069	.027	.011
Transparency	.033	.010	.002	.038	.010	.000	.021	.013	.109	.016	.009	.063	.024	.011	.031
Details no	-.901	.729	.218	-.698	.730	.341	-.732	.724	.313	-.327	.606	.590	-.348	.620	.575
Details many	-1.351	.685	.050	-1.267	.680	.064	-1.321	.682	.054	-.093	.573	.871	-.221	.591	.709
Relief hor.	2.404	.974	.014	2.130	.971	.029	1.909	.960	.048	1.742	.808	.032	1.625	.822	.050
Relief vert.	1.858	.657	.005	1.791	.651	.006	1.407	.658	.034	.759	.545	.165	.838	.560	.136
Resting pos. abs.				-.448	.260	.086	-.478	.268	.076	-.406	.215	.061	-.403	.229	.080
Greenery abs.				-.358	.347	.303	-.300	.343	.383	-.158	.285	.580	-.202	.291	.487
Other abs.				.467	.210	.028	.337	.215	.118	.232	.178	.193	.187	.185	.314
Furniture abs.															
Control variables															
Retail Floor Area							.000	.000	.446				.000	.000	.622
Func. fashion							-1.027	.749	.172				-.917	.644	.156
Func. Leisure							.245	1.243	.844				-.558	1.069	.602
Func. Households							-2.756	1.404	.051				-1.398	1.197	.245
Func. Restaurant							-1.167	1.101	.291				-.519	.940	.581
Func. Vacant							-1.851	1.062	.083				-.510	.922	.581
Func.House							1.423	1.829	.438				2.049	1.549	.188
Chain store							1.531	.667	.023				-.215	.600	.720
Distance										-.006	.011	.556	-.004	.011	.714
Duration of stay										.275	.059	.000	.279	.063	.000
Motive Fun										.038	.008	.000	.039	.009	.000
Motive Run										.027	.007	.000	.026	.007	.000
Observations			194			194			194			194			194
Adjusted R^2			.180			.199			.237			.461			.455
Sig F-test			<.001			<.001			<.001			<.001			<.001

Seven Dutch streets – Total number of actions, absolute number of all furniture

	Model 1b			Model 2.3			Model 3a5			Model 3b3			Model 4.5		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	2.854	.346	.000	2.388	.972	.015	3.988	1.220	.001	.422	.825	.609	1.165	1.092	.288
Rhythm				-.086	.027	.002	-.102	.031	.001	-.053	.022	.019	-.074	.027	.006
Transparency				.033	.010	.002	.016	.013	.203	.014	.009	.122	.021	.011	.053
Details no				-.860	.739	.246	-.906	.726	.214	-.388	.609	.525	-.437	.620	.481
Details many				-1.332	.688	.055	-1.371	.685	.047	-.083	.575	.885	-.220	.591	.711
Relief hor.				2.378	.979	.016	2.085	.963	.032	1.809	.810	.027	1.694	.822	.041
Relief vert.				1.864	.659	.005	1.465	.662	.028	.764	.547	.164	.860	.561	.127
Resting pos. abs.	-.301	.282	.287												
Greenery abs.	-.335	.377	.375												
Other abs.	.598	.221	.007												
Furniture abs.				-.031	.083	.712	-.075	.084	.374	-.070	.068	.305	-.085	.071	.235
Control variables															
Retail Floor Area							.000	.000	.306				.000	.000	.537
Func. fashion							-1.225	.747	.102				-1.052	.638	.101
Func. Leisure							.120	1.250	.924				-.671	1.069	.531
Func. Households							-2.871	1.408	.043				-1.435	1.196	.232
Func. Restaurant							-1.764	1.064	.099				-.919	.905	.311
Func. Vacant							-2.276	1.050	.032				-.765	.910	.402
Func.House							1.022	1.832	.578				1.787	1.544	.249
Chain store							1.481	.669	.028				-.278	.599	.643
Distance										-.007	.011	.509	-.005	.011	.645
Duration of stay										.300	.058	.000	.298	.062	.000
Motive Fun										.038	.008	.000	.038	.009	.000
Motive Run										.026	.007	.000	.025	.007	.001
Observations			194			194			194			194			194
Adjusted R^2			.025			.177			.255			.456			.453
Sig F-test			.050			<.001			<.001			<.001			<.001

Seven Dutch streets – Going in, absolute number of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	7.590	7.403	.307	-2.812	7.805	.719	9.533	9.959	.340	-12.57	7.233	.084	-6.769	9.595	.481
Rhythm	-.325	.204	.113	-.070	.213	.743	-.317	.245	.198	.099	.192	.608	-.142	.226	.529
Transparency	.265	.081	.001	.306	.081	.000	.201	.101	.047	.190	.074	.011	.229	.092	.014
Details no	-4.297	5.754	.456	-4.701	5.683	.409	-4.853	5.659	.392	-3.905	5.107	.445	-4.117	5.204	.430
Details many	2.949	5.404	.586	2.381	5.291	.653	2.010	5.328	.706	8.491	4.824	.080	7.842	4.961	.116
Relief hor.	12.706	7.684	.100	12.321	7.551	.104	10.315	7.501	.171	8.477	6.807	.215	7.458	6.902	.281
Relief vert.	7.553	5.185	.147	6.938	5.061	.172	4.523	5.138	.380	.873	4.588	.849	1.225	4.699	.795
Resting pos. abs.				-1.811	2.021	.371	-1.767	2.093	.400	-1.450	1.809	.424	-1.276	1.922	.508
Greenery abs.				1.570	2.697	.561	1.724	2.682	.521	2.684	2.404	.266	2.183	2.439	.372
Other abs.				5.686	1.635	.001	4.995	1.677	.003	4.104	1.498	.007	3.993	1.556	.011
Furniture abs.															
Control variables															
Retail Floor Area							.000	.001	.848				.000	.001	.705
Func. fashion							-5.620	5.854	.338				-2.655	5.403	.624
Func. Leisure							5.061	9.706	.603				3.587	8.972	.690
Func. Households							-24.21	10.966	.029				-16.08	10.050	.111
Func. Restaurant							-7.825	8.601	.364				-3.148	7.886	.690
Func. Vacant							-14.32	8.296	.086				-4.128	7.741	.595
Func.House							16.627	14.290	.246				19.739	12.998	.131
Chain store							7.563	5.211	.148				-2.943	5.033	.560
Distance										-.129	.092	.162	-.128	.094	.174
Duration of stay										1.832	.498	.000	1.772	.525	.001
Motive Fun										.167	.070	.018	.169	.072	.019
Motive Run										.241	.057	.000	.239	.060	.000
Observations			194			194			194			194			194
Adjusted R^2			.096			.141			.175			.322			.320
Sig F-test			<.001			<.001			<.001			<.001			<.001

Seven Dutch streets – Going in, absolute number of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	16.365	2.563	.000	3.428	7.582	.652	17.250	9.563	.073	-7.662	6.986	.274	-.609	9.208	.947
Rhythm				-.191	.211	.367	-.394	.246	.111	.005	.189	.978	-.207	.225	.358
Transparency				.264	.081	.001	.165	.101	.103	.159	.074	.032	.204	.092	.027
Details no				-6.150	5.764	.287	-6.636	5.692	.245	-4.582	5.154	.375	-5.195	5.225	.321
Details many				2.074	5.368	.700	1.812	5.373	.736	8.718	4.867	.075	8.057	4.985	.108
Relief hor.				13.927	7.632	.070	11.505	7.550	.129	8.776	6.854	.202	7.805	6.932	.262
Relief vert.				7.279	5.137	.158	4.943	5.192	.342	.748	4.630	.872	1.363	4.730	.774
Resting pos. abs.	-.889	2.083	.670												
Greenery abs.	1.468	2.787	.599												
Other abs.	5.687	1.635	.001												
Furniture abs.				1.393	.647	.032	1.228	.660	.064	1.102	.574	.056	1.109	.599	.066
Control variables															
Retail Floor Area							.000	.001	.988				.000	.001	.739
Func. fashion							-7.826	5.855	.183				-4.472	5.379	.407
Func. Leisure							3.967	9.804	.686				2.385	9.011	.792
Func. Households							-26.080	11.042	.019				-17.29	10.084	.088
Func. Restaurant							-13.705	8.344	.102				-7.635	7.633	.319
Func. Vacant							-17.641	8.236	.034				-6.372	7.673	.407
Func.House							12.638	14.366	.380				16.762	13.014	.199
Chain store							6.816	5.250	.196				-3.789	5.048	.454
Distance										-.136	.093	.146	-.137	.094	.147
Duration of stay										2.046	.490	.000	1.963	.519	.000
Motive Fun										.161	.071	.025	.167	.072	.022
Motive Run										.230	.058	.000	.227	.060	.000
Observations			194			194			194			194			194
Adjusted R^2			.055			.113			.156			.310			311
Sig F-test			.003			<.001			<.001			<.001			<.001

Seven Dutch streets – Looking in, absolute number of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	39.101	8.677	.000	43.878	9.396	.000	45.462	12.040	.000	25.430	8.629	.004	19.460	11.257	.086
Rhythm	-.583	.239	.016	-.718	.256	.006	-.512	.296	.086	-.428	.229	.063	-.217	.265	.414
Transparency	.049	.095	.609	.042	.097	.667	-.108	.122	.377	-.086	.089	.331	-.089	.108	.411
Details no	-1.248	6.745	.853	.063	6.841	.993	-.117	6.841	.986	-.620	6.092	.919	-1.161	6.106	.849
Details many	-18.19	6.334	.005	-17.37	6.369	.007	-17.42	6.441	.007	-12.73	5.755	.028	-13.56	5.820	.021
Relief hor.	-11.74	9.007	.194	-12.85	9.090	.159	-11.89	9.068	.192	-9.664	8.120	.236	-7.961	8.098	.327
Relief vert.	9.555	6.078	.118	9.660	6.093	.115	7.544	6.212	.226	5.169	5.473	.346	5.668	5.512	.305
Resting pos. abs.				-.986	2.433	.686	-1.370	2.530	.589	-2.313	2.158	.285	-3.012	2.255	.183
Greenery abs.				-2.893	3.247	.374	-1.374	3.242	.672	-2.336	2.868	.416	-1.548	2.861	.589
Other abs.				-1.699	1.968	.389	-2.976	2.028	.144	-.960	1.787	.592	-1.796	1.825	.326
Furniture abs.															
Control variables															
Retail Floor Area							.003	.002	.039				.004	.001	.003
Func. fashion							-3.856	7.077	.586				-.929	6.339	.884
Func. Leisure							-2.379	11.735	.840				-1.112	10.527	.916
Func. Households							16.118	13.257	.226				19.736	11.791	.096
Func. Restaurant							-7.975	10.399	.444				-1.451	9.251	.876
Func. Vacant							-9.846	10.029	.328				1.232	9.082	.892
Func.House							-15.70	17.276	.365				-10.45	15.250	.494
Chain store							12.263	6.300	.053				2.141	5.904	.717
Distance										.185	.110	.093	.194	.110	.080
Duration of stay										-.837	.594	.160	-.961	.616	.120
Motive Fun										.296	.084	.001	.292	.084	.001
Motive Run										.394	.068	.000	.409	.071	.000
Observations			194			194			194			194			194
Adjusted R^2			.063			.061			.090			.273			.294
Sig F-test			.005			.013			.008			<.001			<.001

Seven Dutch streets – Looking in, absolute number of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	30.162	3.054	.000	42.242	8.951	.000	42.306	11.398	.000	25.215	8.225	.003	18.963	10.685	.078
Rhythm				-.684	.250	.007	-.477	.293	.105	-.423	.223	.060	-.207	.261	.428
Transparency				.049	.095	.604	-.093	.120	.438	-.089	.087	.308	-.087	.106	.412
Details no				.151	6.805	.982	.556	6.784	.935	-.738	6.069	.903	-1.115	6.063	.854
Details many				-17.53	6.337	.006	-17.25	6.404	.008	-12.82	5.731	.026	-13.49	5.785	.021
Relief hor.				-12.66	9.010	.162	-12.33	8.998	.172	-9.37	8.071	.247	-7.938	8.044	.325
Relief vert.				9.762	6.065	.109	7.418	6.188	.232	5.257	5.452	.336	5.731	5.488	.298
Resting pos. abs.	-.311	2.482	.901												
Greenery abs.	-1.926	3.321	.563												
Other abs.	-.498	1.947	.798												
Furniture abs.				-1.052	.763	.170	-1.418	.786	.073	-1.159	.675	.088	-1.556	.695	.027
Control variables															
Retail Floor Area							.003	.002	.045				.004	.001	.003
Func. fashion							-2.974	6.978	.670				-.734	6.242	.907
Func. Leisure							-1.864	11.684	.873				-.887	10.456	.932
Func. Households							16.855	13.160	.202				19.867	11.701	.091
Func. Restaurant							-6.062	9.945	.543				-1.672	8.858	.850
Func. Vacant							-8.454	9.816	.390				1.420	8.903	.873
Func.House							-14.32	17.122	.404				-10.49	15.102	.488
Chain store							12.433	6.257	.048				2.075	5.858	.724
Distance										.183	.109	.096	.192	.109	.080
Duration of stay										-.803	.577	.166	-.969	.602	.109
Motive Fun										.295	.083	.001	.290	.084	.001
Motive Run										.394	.068	.000	.411	.070	.000
Observations			194			194			194			194			194
Adjusted R^2			-.013			.068			.096			.278			.300
Sig F-test			.900			.005			.004			<.001			<.001

Seven Dutch streets – Other actions, absolute number of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	9.883	7.006	.160	13.119	7.369	.077	16.046	9.484	.092	-.619	6.762	.927	-.888	8.946	.921
Rhythm	-.110	.193	.569	-.136	.201	.500	-.114	.234	.626	.065	.179	.716	.073	.210	.728
Transparency	.161	.077	.038	.117	.076	.125	-.030	.096	.757	-.001	.069	.987	-.041	.086	.632
Details no	4.563	5.446	.403	2.066	5.366	.701	2.802	5.389	.604	2.590	4.774	.588	2.851	4.852	.558
Details many	2.097	5.114	.682	1.492	4.995	.765	1.205	5.074	.813	6.390	4.510	.158	5.122	4.625	.270
Relief hor.	-8.935	7.273	.221	-6.945	7.130	.331	-8.764	7.143	.221	-3.013	6.363	.636	-4.360	6.436	.499
Relief vert.	-4.989	4.908	.311	-4.954	4.779	.301	-8.289	4.893	.092	-8.628	4.289	.046	-9.756	4.381	.027
Resting pos. abs.				7.044	1.908	.000	5.857	1.993	.004	6.192	1.691	.000	4.938	1.792	.006
Greenery abs.				-1.348	2.547	.597	-1.025	2.554	.689	-.666	2.247	.767	-.877	2.274	.700
Other abs.				-2.804	1.544	.071	-2.726	1.597	.090	-2.232	1.401	.113	-1.837	1.451	.207
Furniture abs.															
Control variables															
Retail Floor Area							.000	.001	.780				.001	.001	.484
Func. fashion							.503	5.574	.928				1.401	5.038	.781
Func. Leisure							2.129	9.244	.818				1.372	8.366	.870
Func. Households							-16.89	10.443	.108				-13.99	9.371	.137
Func. Restaurant							9.731	8.191	.236				12.415	7.352	.093
Func. Vacant							-3.693	7.900	.641				1.886	7.218	.794
Func.House							-7.032	13.609	.606				-3.841	12.119	.752
Chain store							11.164	4.962	.026				3.715	4.692	.430
Distance										.017	.086	.847	.032	.087	.711
Duration of stay										-.941	.465	.044	-1.080	.489	.029
Motive Fun										.380	.066	.000	.361	.067	.000
Motive Run										.240	.053	.000	.246	.056	.000
Observations			194			194			194			194			194
Adjusted R^2			.014			.068			.089			.279			.281
Sig F-test			.192			.008			.008			<.001			<.001

Seven Dutch streets – Other actions, absolute number of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	15.934	2.307	.000	6.704	7.207	.353	8.578	9.147	.350	-6.161	6.596	.352	-6.713	8.615	.437
Rhythm				-.008	.201	.969	-.038	.235	.871	.174	.179	.332	.136	.210	.518
Transparency				.160	.077	.037	.003	.096	.977	.035	.070	.616	-.020	.086	.820
Details no				3.147	5.479	.566	4.388	5.444	.421	3.200	4.867	.512	3.772	4.889	.441
Details many				1.428	5.102	.780	1.073	5.139	.835	6.066	4.596	.188	4.737	4.665	.311
Relief hor.				-8.003	7.254	.271	-9.706	7.221	.181	-3.283	6.472	.613	-4.564	6.486	.483
Relief vert.				-5.198	4.883	.288	-8.746	4.966	.080	-8.585	4.372	.051	-9.961	4.425	.026
Resting pos. abs.	7.650	1.875	.000												
Greenery abs.	-.793	2.509	.752												
Other abs.	-2.711	1.471	.067												
Furniture abs.				1.064	.615	.085	.732	.631	.248	1.106	.542	.043	.781	.561	.166
Control variables															
Retail Floor Area							.000	.001	.872				.001	.001	.500
Func. fashion							2.624	5.600	.640				3.022	5.033	.549
Func. Leisure							2.972	9.377	.752				2.272	8.431	.788
Func. Households							-14.82	10.561	.162				-12.73	9.434	.179
Func. Restaurant							16.063	7.980	.046				17.136	7.142	.017
Func. Vacant							-.888	7.878	.910				3.780	7.179	.599
Func.House							-3.023	13.740	.826				-.913	12.177	.940
Chain store							12.170	5.021	.016				4.669	4.723	.324
Distance										.025	.088	.774	.043	.088	.629
Duration of stay										-1.198	.462	.010	-1.259	.485	.010
Motive Fun										.390	.067	.000	.365	.067	.000
Motive Run										.251	.054	.000	.256	.057	.000
Observations			194			194			194			194			194
Adjusted R^2			.067			.025			.060			.250			.266
Sig F-test			<.001			.112			.034			<.001			<.001

Steenweg – Total number of actions, absolute number of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	10.243	3.950	.013	9.181	5.165	.084	-13.591	11.912	.263	1.422	6.419	.826	-22.371	12.317	.081
Rhythm	-.385	.154	.016	-.359	.190	.066	-.194	.213	.370	-.386	.191	.052	-.226	.209	.290
Transparency	.085	.041	.042	.093	.045	.044	.219	.131	.105	.108	.048	.031	.244	.138	.088
Details no	.233	2.345	.921	.103	2.423	.966	3.507	2.722	.207	.169	2.457	.946	3.905	2.749	.167
Details many	3.302	2.431	.182	2.850	2.671	.293	6.046	2.804	.039	2.754	2.794	.332	5.126	2.910	.090
Relief hor.	2.234	2.176	.311	2.358	2.287	.309	1.267	2.321	.589	1.493	2.532	.560	2.054	2.448	.409
Relief vert.	-2.969	2.325	.209	-2.367	2.541	.358	-5.181	2.719	.066	-2.677	2.930	.368	-2.590	2.918	.383
Resting pos. abs.				-.090	.775	.908	.276	.887	.758	-.217	.811	.791	.270	.897	.766
Greenery abs.				-.818	1.659	.625	-3.169	2.391	.195	-.939	1.852	.616	-4.770	2.763	.096
Other abs.				.468	.617	.453	2.437	1.163	.045	.324	.667	.630	2.887	1.228	.027
Furniture abs.															
Control variables															
Retail Floor Area							-.002	.005	.670				-.003	.004	.507
Func. fashion							8.723	5.392	.116				11.771	5.546	.043
Func. Leisure							1.029	6.357	.872				-4.946	6.981	.485
Func. Restaurant							5.931	6.417	.363				9.478	6.635	.165
Func. Vacant							19.144	10.707	.084				22.689	11.335	.056
Chain store							5.029	2.660	.068				3.157	2.920	.290
Distance										-.020	.070	.775	-.012	.069	.860
Duration of stay										-.040	.129	.757	.285	.161	.089
Motive Fun										.110	.062	.088	.080	.064	.225
Motive Run										.082	.054	.134	.026	.057	.648
Observations			45			45			45			45			45
Adjusted R^2			.282			.237			.320			.245			.376
Sig F-test			.004			.022			.020			.042			.018

Steenweg – Total number of actions, absolute number of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	6.131	1.244	.000	10.028	4.284	.025	-.289	9.416	.976	2.294	5.811	.695	-5.834	9.825	.557
Rhythm				-.376	.168	.031	-.116	.212	.589	-.405	.170	.023	-.164	.215	.452
Transparency				.085	.041	.048	.098	.117	.406	.097	.043	.032	.098	.122	.428
Details no				.234	2.375	.922	1.889	2.668	.484	.336	2.380	.889	1.773	2.724	.520
Details many				3.241	2.501	.203	6.047	2.828	.040	2.953	2.570	.258	4.794	2.916	.111
Relief hor.				2.253	2.208	.314	2.137	2.353	.370	1.319	2.343	.577	2.276	2.500	.370
Relief vert.				-2.979	2.356	.214	-4.214	2.769	.138	-3.303	2.582	.209	-2.612	3.037	.397
Resting pos. abs.	.555	.744	.460												
Greenery abs.	-1.510	1.542	.333												
Other abs.	.845	.655	.204												
Furniture abs.				.029	.203	.889	.114	.304	.710	-.065	.210	.758	-.005	.312	.988
Control variables															
Retail Floor Area							.003	.004	.413				.003	.004	.383
Func. fashion							1.572	4.160	.708				2.364	4.142	.573
Func. Leisure							-3.008	6.084	.624				-7.818	7.140	.283
Func. Restaurant							-3.464	4.253	.421				-2.578	4.236	.548
Func. Vacant							3.704	7.463	.623				3.410	7.815	.666
Chain store							3.960	2.692	.151				2.055	3.054	.507
Distance										-.004	.065	.954	.024	.070	.731
Duration of stay										-.036	.126	.778	.171	.165	.307
Motive Fun										.103	.060	.096	.076	.068	.278
Motive Run										.081	.051	.116	.047	.057	.414
Observations			45			45			45			45			45
Adjusted R^2			.018			.263			.272			.277			.289
Sig F-test			.297			.008			.028			.017			.042

Steenweg – Going in, absolute number of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	31.811	14.210	.031	16.517	17.530	.352	1.558	42.321	.971	-.343	18.466	.985	5.497	39.380	.890
Rhythm	-1.311	.552	.023	-.910	.644	.166	-.670	.757	.383	-.844	.549	.134	-.765	.669	.263
Transparency	.471	.146	.003	.571	.151	.001	.322	.464	.494	.421	.138	.005	-.091	.440	.837
Details no	-13.99	8.437	.105	-14.81	8.226	.080	-10.02	9.671	.309	-12.84	7.068	.079	-11.29	8.788	.210
Details many	-21.29	8.746	.020	-22.96	9.066	.016	-24.46	9.963	.020	-31.66	8.037	.000	-34.88	9.302	.001
Relief hor.	10.339	7.830	.194	12.468	7.764	.117	14.336	8.247	.092	10.535	7.283	.158	9.527	7.827	.234
Relief vert.	14.670	8.364	.087	21.113	8.626	.019	21.427	9.659	.034	20.268	8.428	.022	21.528	9.330	.029
Resting pos. abs.				.727	2.629	.784	3.835	3.152	.233	-.151	2.332	.949	1.250	2.868	.667
Greenery abs.				-10.82	5.630	.063	-9.940	8.495	.251	-6.457	5.327	.234	-3.096	8.833	.729
Other abs.				3.117	2.093	.145	4.107	4.131	.328	2.154	1.920	.270	3.854	3.926	.335
Furniture abs.															
Control variables															
Retail Floor Area							-.007	.016	.673				-.008	.014	.575
Func. fashion							21.861	19.158	.263				20.693	17.731	.254
Func. Leisure							42.669	22.587	.069				5.553	22.319	.805
Func. Restaurant							7.228	22.798	.753				2.205	21.212	.918
Func. Vacant							6.242	38.039	.871				-16.14	36.238	.660
Chain store							-.585	9.451	.951				-7.155	9.336	.450
Distance										.552	.203	.010	.486	.219	.035
Duration of stay										1.200	.371	.003	1.214	.515	.026
Motive Fun										-.087	.180	.632	-.016	.206	.938
Motive Run										.142	.154	.364	.249	.181	.182
Observations			45			45			45			45			45
Adjusted R^2			.254			.296			.312			.499			.489
Sig F-test			.007			.007			.022			<.001			.003

Steenweg – Going in, absolute number of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	17.332	4.452	.000	31.032	15.413	.051	34.631	32.128	.289	6.562	17.252	.706	20.155	28.749	.489
Rhythm				-1.278	.605	.041	-.722	.722	.324	-1.015	.504	.052	-.664	.629	.301
Transparency				.469	.149	.003	.049	.399	.902	.346	.129	.011	-.216	.357	.551
Details no				-13.99	8.545	.110	-13.61	9.102	.145	-11.98	7.067	.099	-13.22	7.971	.108
Details many				-21.51	8.998	.022	-26.63	9.650	.009	-31.04	7.630	.000	-34.55	8.531	.000
Relief hor.				10.407	7.945	.198	14.851	8.028	.074	8.912	6.956	.209	10.251	7.314	.172
Relief vert.				14.635	8.475	.092	22.380	9.448	.024	15.706	7.665	.048	21.947	8.887	.020
Resting pos. abs.	2.102	2.662	.434												
Greenery abs.	-7.659	5.518	.172												
Other abs.	1.533	2.344	.517												
Furniture abs.				.103	.732	.888	.734	1.037	.484	-.034	.623	.956	.705	.913	.446
Control variables															
Retail Floor Area							.004	.013	.732				-.002	.011	.879
Func. fashion							8.553	14.195	.551				11.152	12.119	.365
Func. Leisure							32.111	20.759	.132				3.571	20.890	.866
Func. Restaurant							-12.43	14.510	.398				-9.449	12.396	.452
Func. Vacant							-24.27	25.464	.348				-34.50	22.865	.143
Chain store							-2.793	9.184	.763				-8.088	8.935	.373
Distance										.663	.192	.001	.516	.205	.018
Duration of stay										1.222	.373	.002	1.093	.482	.031
Motive Fun										-.135	.179	.455	-.017	.200	.931
Motive Run										.145	.150	.340	.259	.166	.130
Observations			45			45			45			45			45
Adjusted R^2			-.008			.235			.320			.489			.512
Sig F-test			.458			.014			.013			<.001			<.001

Steenweg – Looking in, absolute number of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	38.877	19.354	.052	23.443	23.597	.327	68.415	57.344	.242	-5.374	25.847	.837	94.604	53.237	.087
Rhythm	.411	.752	.588	.839	.867	.340	.395	1.026	.703	.640	.768	.411	-.163	.904	.859
Transparency	-.439	.199	.033	-.340	.204	.104	-.572	.629	.371	-.183	.193	.350	-1.147	.595	.065
Details no	11.226	11.491	.335	12.728	11.072	.258	10.592	13.104	.425	6.148	9.894	.539	-1.470	11.881	.902
Details many	26.275	11.912	.033	36.444	12.204	.005	37.793	13.500	.009	33.168	11.250	.006	24.430	12.575	.063
Relief hor.	6.159	10.664	.567	9.246	10.450	.382	5.568	11.174	.622	-1.582	10.194	.878	-6.382	10.581	.552
Relief vert.	-6.431	11.391	.576	-3.825	11.611	.744	-5.359	13.088	.685	-16.11	11.797	.182	-12.81	12.614	.319
Resting pos. abs.				4.859	3.539	.178	1.507	4.271	.727	1.935	3.264	.557	-.784	3.877	.841
Greenery abs.				-11.05	7.578	.153	-14.02	11.511	.233	-7.859	7.456	.300	-2.139	11.941	.859
Other abs.				-5.147	2.817	.076	-7.540	5.598	.188	-1.810	2.687	.505	-6.060	5.308	.264
Furniture abs.															
Control variables															
Retail Floor Area							-.004	.022	.869				-.012	.019	.533
Func. fashion							-27.55	25.958	.297				-26.85	23.971	.273
Func. Leisure							-33.93	30.604	.276				-39.99	30.172	.197
Func. Restaurant							3.099	30.891	.921				-9.612	28.676	.740
Func. Vacant							-33.38	51.542	.522				-86.04	48.990	.091
Chain store							6.322	12.806	.625				-11.62	12.622	.366
Distance										-.529	.283	.071	-.447	.296	.143
Duration of stay										-.584	.519	.269	-.559	.697	.430
Motive Fun										.524	.251	.045	.518	.278	.074
Motive Run										.677	.216	.004	.778	.245	.004
Observations			45			45			45			45			45
Adjusted R^2			.093			.163			.171			.356			.387
Sig F-test			.132			.072			.127			.007			.016

Steenweg – Looking in, absolute number of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	46.123	5.534	.000	46.245	20.730	.032	82.998	46.330	.083	5.241	23.671	.826	88.193	39.470	.034
Rhythm				.104	.814	.899	-.277	1.041	.792	.278	.692	.691	-.454	.864	.604
Transparency				-.418	.201	.044	-.623	.576	.287	-.240	.177	.184	-1.118	.491	.031
Details no				11.198	11.493	.336	10.127	13.126	.446	5.086	9.696	.603	-.378	10.944	.973
Details many				28.382	12.101	.024	31.127	13.916	.032	29.164	10.469	.009	20.961	11.713	.084
Relief hor.				5.510	10.685	.609	1.465	11.576	.900	-5.358	9.544	.578	-9.535	10.041	.350
Relief vert.				-6.092	11.398	.596	-8.754	13.624	.525	-21.09	10.518	.053	-15.36	12.202	.218
Resting pos. abs.	1.880	3.309	.573												
Greenery abs.	-6.971	6.860	.315												
Other abs.	-2.298	2.913	.435												
Furniture abs.				-.977	.984	.327	-2.719	1.496	.078	-.544	.854	.529	-1.525	1.253	.234
Control variables															
Retail Floor Area							-.002	.018	.911				-.019	.015	.221
Func. fashion							-21.67	20.469	.298				-16.19	16.638	.339
Func. Leisure							-39.95	29.935	.191				-42.15	28.680	.153
Func. Restaurant							4.132	20.924	.845				.694	17.018	.968
Func. Vacant							-26.15	36.720	.481				-71.17	31.392	.031
Chain store							6.534	13.243	.625				-11.45	12.267	.359
Distance										-.465	.263	.086	-.449	.281	.121
Duration of stay										-.618	.512	.236	-.398	.661	.552
Motive Fun										.490	.245	.053	.505	.275	.077
Motive Run										.742	.206	.001	.818	.228	.001
Observations			45			45			45			45			45
Adjusted R^2			-.022			.092			.073			.369			.397
Sig F-test			.570			.150			.280			.003			.009

Steenweg – Other actions, absolute number of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	22.531	19.901	.264	41.164	23.695	.091	-49.091	58.832	.411	5.717	26.112	.828	-100.102	52.738	.069
Rhythm	.763	.774	.330	.352	.870	.689	1.091	1.052	.308	.204	.776	.794	.927	.896	.310
Transparency	-.141	.205	.495	-.321	.205	.126	.605	.646	.356	-.238	.195	.231	1.238	.589	.045
Details no	3.492	11.815	.769	2.943	11.118	.793	10.663	13.444	.434	6.694	9.995	.508	12.754	11.770	.288
Details many	2.051	12.249	.868	-6.680	12.254	.589	4.553	13.850	.745	-1.513	11.365	.895	10.448	12.457	.409
Relief hor.	-5.059	10.965	.647	-8.737	10.494	.411	-10.57	11.464	.364	-8.953	10.299	.391	-3.145	10.481	.767
Relief vert.	-.713	11.713	.952	-8.297	11.660	.481	-18.77	13.428	.172	-4.158	11.918	.729	-8.714	12.495	.492
Resting pos. abs.				-2.892	3.554	.421	-2.154	4.382	.627	-1.784	3.297	.592	-.466	3.841	.904
Greenery abs.				18.522	7.610	.020	12.977	11.809	.281	14.315	7.533	.066	5.235	11.829	.662
Other abs.				2.519	2.829	.379	6.768	5.743	.248	-.343	2.714	.900	2.206	5.258	.678
Furniture abs.															
Control variables															
Retail Floor Area							.007	.022	.756				.020	.019	.298
Func. fashion							9.994	26.632	.710				6.160	23.746	.797
Func. Leisure							15.297	31.398	.630				34.433	29.890	.260
Func. Restaurant							1.646	31.693	.959				7.407	28.408	.796
Func. Vacant							76.558	52.880	.158				102.182	48.531	.045
Chain store							20.876	13.138	.123				18.772	12.504	.145
Distance										-.023	.286	.937	-.039	.293	.895
Duration of stay										-.615	.524	.249	-.656	.690	.351
Motive Fun										.563	.254	.034	.498	.276	.082
Motive Run										.181	.218	.413	-.026	.243	.914
Observations			45			45			45			45			45
Adjusted R^2			-.095			.036			.004			.249			.313
Sig F-test			.907			.333			.470			.039			.042

Steenweg – Other actions, absolute number of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	29.669	4.920	.000	10.918	20.939	.605	-63.07	46.967	.189	-11.80	24.651	.635	-108.35	38.458	.009
Rhythm				1.247	.822	.138	1.728	1.055	.111	.737	.720	.314	1.117	.842	.195
Transparency				-.176	.203	.392	.655	.584	.270	-.106	.185	.570	1.334	.478	.009
Details no				3.536	11.608	.762	11.122	13.306	.409	6.891	10.097	.500	13.598	10.663	.213
Details many				-1.270	12.223	.918	10.878	14.107	.446	1.871	10.902	.865	13.593	11.413	.244
Relief hor.				-4.036	10.793	.711	-6.686	11.735	.573	-3.554	9.939	.723	-.716	9.784	.942
Relief vert.				-1.246	11.513	.914	-15.56	13.811	.268	5.379	10.953	.627	-6.587	11.889	.584
Resting pos. abs.	-2.677	2.942	.368												
Greenery abs.	14.255	6.099	.024												
Other abs.	1.792	2.590	.493												
Furniture abs.				1.541	.994	.129	2.218	1.516	.153	.578	.890	.520	.820	1.221	.507
Control variables															
Retail Floor Area							.005	.019	.771				.021	.015	.172
Func. fashion							4.498	20.750	.830				5.045	16.212	.758
Func. Leisure							21.050	30.346	.493				38.579	27.945	.178
Func. Restaurant							.767	21.211	.971				8.755	16.582	.602
Func. Vacant							69.864	37.224	.070				105.667	30.587	.002
Chain store							20.686	13.425	.133				19.536	11.953	.113
Distance										-.198	.274	.475	-.067	.274	.809
Duration of stay										-.604	.533	.265	-.696	.644	.290
Motive Fun										.644	.255	.016	.512	.268	.066
Motive Run										.113	.214	.603	-.077	.222	.731
Observations			45			45			45			45			45
Adjusted R^2			.078			-.057			.088			.218			.346
Sig F-test			.095			.710			.731			.044			.019

Seven Dutch streets – Total number of actions, density of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4.1		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	.907	.843	.283	.746	.843	.377	1.955	1.082	.072	-1.082	.699	.123	-.637	.935	.497
Rhythm	-.017	.023	.455	-.018	.023	.428	-.021	.027	.431	.012	.019	.537	.006	.022	.780
Transparency	.032	.009	.001	.038	.009	.000	.018	.012	.122	.017	.008	.032	.019	.010	.046
Details no	-.803	.655	.222	-.491	.658	.457	-.489	.655	.457	-.216	.526	.682	-.198	.537	.714
Details many	-1.096	.615	.077	-.973	.608	.111	-.985	.612	.110	.134	.494	.787	.092	.510	.856
Relief hor.	1.171	.875	.182	.879	.870	.314	.577	.868	.507	.751	.700	.285	.524	.714	.463
Relief vert.	1.872	.590	.002	1.847	.587	.002	1.617	.598	.008	.969	.474	.042	1.143	.488	.020
Resting pos. dens.				-.722	.327	.028	-.796	.333	.018	-.691	.261	.009	-.691	.272	.012
Greenery dens.				-.631	.487	.197	-.579	.489	.238	-.364	.391	.353	-.521	.402	.196
Other dens.				.263	.250	.293	.108	.254	.672	.008	.201	.968	-.058	.208	.779
Furniture dens.															
Control variables															
Retail Floor Area							.000	.000	.863				.000	.000	.525
Func. fashion							-.858	.679	.208				-.720	.558	.198
Func. Leisure							1.107	1.125	.326				.604	.927	.515
Func. Households							-2.113	1.265	.097				-.891	1.036	.391
Func. Restaurant							-.191	.979	.846				.301	.800	.707
Func. Vacant							-1.457	.939	.122				-.169	.784	.830
Func.House							-1.101	1.647	.505				-.624	1.338	.641
Chain store							1.426	.603	.019				-.213	.520	.682
Distance										-.018	.009	.054	-.017	.010	.085
Duration of stay										.155	.050	.002	.168	.054	.002
Motive Fun										.051	.007	.000	.051	.007	.000
Motive Run										.030	.006	.000	.030	.006	.000
Observations			194			194			194			194			194
Adjusted R^2			.119			.144			.176			.463			.459
Sig F-test			<.001			<.001			<.001			<.001			<.001

Seven Dutch streets – Total number of actions, density of all furniture

	Model 1b			Model 2.3			Model 3a5			Model 3b3			Model 4.5		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	2.669	.316	.000	1.413	.862	.103	2.570	1.088	.019	-.513	.702	.466	-.147	.934	.875
Rhythm				-.034	.024	.163	-.033	.028	.236	-.003	.019	.883	-.006	.023	.808
Transparency				.033	.009	.000	.013	.011	.269	.012	.007	.101	.015	.009	.111
Details no				-.577	.655	.379	-.607	.648	.350	-.202	.518	.697	-.253	.530	.634
Details many				-.989	.610	.107	-.993	.611	.106	.192	.489	.695	.112	.506	.824
Relief hor.				1.023	.867	.240	.727	.859	.398	.748	.689	.279	.595	.703	.399
Relief vert.				1.906	.584	.001	1.601	.591	.007	.916	.465	.051	1.059	.480	.029
Resting pos. dens.	-.502	.345	.147												
Greenery dens.	-.387	.514	.452												
Other dens.	.425	.264	.108												
Furniture dens.				-.169	.073	.022	-.199	.075	.009	-.195	.058	.001	-.199	.061	.001
Control variables															
Retail Floor Area							.000	.000	.598				.000	.000	.908
Func. fashion							-.916	.666	.171				-.726	.546	.185
Func. Leisure							1.102	1.116	.324				.475	.914	.604
Func. Households							-2.164	1.257	.087				-.887	1.023	.387
Func. Restaurant							-.546	.950	.566				.100	.775	.897
Func. Vacant							-1.572	.937	.095				-.234	.779	.764
Func.House							-1.130	1.635	.490				-.498	1.321	.706
Chain store							1.472	.597	.015				-.216	.512	.674
Distance										-.017	.009	.062	-.016	.010	.099
Duration of stay										.186	.049	.000	.191	.053	.000
Motive Fun										.050	.007	.000	.050	.007	.000
Motive Run										.029	.006	.000	.029	.006	.000
Observations			194			194			194			194			194
Adjusted R^2			.012			.139			.178			.475			.466
Sig F-test			.148			<.001			<.001			<.001			<.001

Seven Dutch streets – Going in, density of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	7.590	7.403	.307	3.659	7.386	.621	16.488	9.416	.082	-7.007	6.871	.309	-.656	9.137	.943
Rhythm	-.325	.204	.113	-.258	.202	.204	-.500	.237	.036	-.054	.183	.767	-.299	.218	.173
Transparency	.265	.081	.001	.266	.082	.001	.166	.102	.105	.160	.075	.035	.207	.094	.028
Details no	-4.297	5.754	.456	-4.746	5.767	.412	-5.026	5.703	.379	-3.706	5.175	.475	-3.997	5.250	.447
Details many	2.949	5.404	.586	3.073	5.325	.565	2.082	5.331	.697	9.193	4.858	.060	8.007	4.978	.110
Relief hor.	12.706	7.684	.100	12.759	7.622	.096	10.551	7.554	.164	8.219	6.883	.234	7.108	6.970	.309
Relief vert.	7.553	5.185	.147	5.589	5.143	.279	2.856	5.207	.584	-.247	4.658	.958	-.139	4.767	.977
Resting pos. dens.				-2.251	2.863	.433	-2.579	2.899	.375	-1.351	2.564	.599	-1.349	2.659	.613
Greenery dens.				1.186	4.264	.781	1.777	4.256	.677	1.482	3.841	.700	.720	3.922	.855
Other dens.				6.724	2.185	.002	6.285	2.207	.005	4.700	1.972	.018	4.949	2.028	.016
Furniture dens.															
Control variables															
Retail Floor Area							.000	.001	.734				.000	.001	.955
Func. fashion							-5.282	5.907	.372				-2.729	5.447	.617
Func. Leisure							1.044	9.790	.915				.043	9.050	.996
Func. Households							-25.86	11.015	.020				-17.836	10.124	.080
Func. Restaurant							-8.558	8.522	.317				-3.879	7.817	.620
Func. Vacant							-17.35	8.170	.035				-6.327	7.663	.410
Func.House							19.198	14.338	.182				21.811	13.065	.097
Chain store							6.416	5.251	.223				-3.952	5.079	.438
Distance										-.112	.093	.230	-.107	.094	.258
Duration of stay										1.982	.494	.000	1.886	.523	.000
Motive Fun										.149	.071	.038	.152	.072	.037
Motive Run										.228	.058	.000	.228	.061	.000
Observations			194			194			194			194			194
Adjusted R^2			.096			.127			.170			.310			.313
Sig F-test			<.001			<.001			<.001			<.001			<.001

Seven Dutch streets –Going in, density of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	16.480	2.692	.000	3.428	7.582	.652	17.250	9.563	.073	-7.662	6.986	.274	-.609	9.208	.947
Rhythm				-.191	.211	.367	-.394	.246	.111	.005	.189	.978	-.207	.225	.358
Transparency				.264	.081	.001	.165	.101	.103	.159	.074	.032	.204	.092	.027
Details no				-6.150	5.764	.287	-6.636	5.692	.245	-4.582	5.154	.375	-5.195	5.225	.321
Details many				2.074	5.368	.700	1.812	5.373	.736	8.718	4.867	.075	8.057	4.985	.108
Relief hor.				13.927	7.632	.070	11.505	7.550	.129	8.776	6.854	.202	7.805	6.932	.262
Relief vert.				7.279	5.137	.158	4.943	5.192	.342	.748	4.630	.872	1.363	4.730	.774
Resting pos. dens.	-.604	2.936	.837												
Greenery dens.	2.687	4.380	.540												
Other dens.	7.791	2.246	.001												
Furniture dens.				1.393	.647	.032	1.228	.660	.064	1.102	.574	.056	1.109	.599	.066
Control variables															
Retail Floor Area							.000	.001	.988				.000	.001	.739
Func. fashion							-7.826	5.855	.183				-4.472	5.379	.407
Func. Leisure							3.967	9.804	.686				2.385	9.011	.792
Func. Households							-26.080	11.042	.019				-17.29	10.084	.088
Func. Restaurant							-13.705	8.344	.102				-7.635	7.633	.319
Func. Vacant							-17.641	8.236	.034				-6.372	7.673	.407
Func.House							12.638	14.366	.380				16.762	13.014	.199
Chain store							6.816	5.250	.196				-3.789	5.048	.454
Distance										-.136	.093	.146	-.137	.094	.147
Duration of stay										2.046	.490	.000	1.963	.519	.000
Motive Fun										.161	.071	.025	.167	.072	.022
Motive Run										.230	.058	.000	.227	.060	.000
Observations			194			194			194			194			194
Adjusted R^2			.046			.113			.156			.310			.311
Sig F-test			.007			<.001			<.001			<.001			<.001

Seven Dutch streets – Looking in, density of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	39.101	8.677	.000	39.711	8.804	.000	39.555	11.366	.001	22.380	8.056	.006	15.820	10.633	.139
Rhythm	-.583	.239	.016	-.623	.241	.011	-.402	.286	.161	-.362	.215	.094	-.133	.254	.601
Transparency	.049	.095	.609	.082	.097	.400	-.076	.123	.534	-.047	.088	.599	-.060	.109	.582
Details no	-1.248	6.745	.853	1.004	6.874	.884	.813	6.884	.906	.302	6.067	.960	-.432	6.109	.944
Details many	-18.19	6.334	.005	-17.41	6.347	.007	-17.33	6.435	.008	-12.79	5.695	.026	-13.56	5.794	.020
Relief hor.	-11.74	9.007	.194	-13.58	9.086	.137	-12.56	9.118	.170	-10.26	8.070	.205	-8.476	8.111	.298
Relief vert.	9.555	6.078	.118	10.297	6.130	.095	8.352	6.285	.186	6.120	5.461	.264	6.760	5.547	.225
Resting pos. dens.				-5.121	3.413	.135	-5.475	3.500	.119	-6.477	3.006	.033	-6.713	3.094	.031
Greenery dens.				-2.723	5.082	.593	.073	5.138	.989	-3.747	4.504	.407	-2.245	4.564	.623
Other dens.				-1.115	2.605	.669	-2.198	2.664	.410	-1.130	2.312	.626	-1.693	2.360	.474
Furniture dens.															
Control variables															
Retail Floor Area							.003	.002	.093				.004	.001	.010
Func. fashion							-3.033	7.130	.671				-.737	6.339	.908
Func. Leisure							.007	11.817	1.000				.987	10.532	.925
Func. Households							18.052	13.295	.176				20.273	11.781	.087
Func. Restaurant							-4.662	10.287	.651				.338	9.097	.970
Func. Vacant							-8.050	9.862	.415				1.733	8.917	.846
Func.House							-15.62	17.307	.368				-11.59	15.204	.447
Chain store							13.092	6.338	.040				2.656	5.911	.654
Distance										.175	.109	.110	.178	.110	.108
Duration of stay										-1.015	.579	.081	-1.153	.608	.060
Motive Fun										.306	.084	.000	.306	.084	.000
Motive Run										.408	.068	.000	.419	.071	.000
Observations			194			194			194			194			194
Adjusted R^2			.063			.064			.087			.285			.298
Sig F-test			.005			.011			.009			<.001			<.001

Seven Dutch streets – Looking in, density of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	30.225	3.187	.000	42.242	8.951	.000	42.306	11.398	.000	25.215	8.225	.003	18.963	10.685	.078
Rhythm				-.684	.250	.007	-.477	.293	.105	-.423	.223	.060	-.207	.261	.428
Transparency				.049	.095	.604	-.093	.120	.438	-.089	.087	.308	-.087	.106	.412
Details no				.151	6.805	.982	.556	6.784	.935	-.738	6.069	.903	-1.115	6.063	.854
Details many				-17.53	6.337	.006	-17.25	6.404	.008	-12.82	5.731	.026	-13.49	5.785	.021
Relief hor.				-12.66	9.010	.162	-12.33	8.998	.172	-9.371	8.071	.247	-7.938	8.044	.325
Relief vert.				9.762	6.065	.109	7.418	6.188	.232	5.257	5.452	.336	5.731	5.488	.298
Resting pos. dens.	-3.659	3.477	.294												
Greenery dens.	-.872	5.186	.867												
Other dens.	.063	2.660	.981												
Furniture dens.				-1.052	.763	.170	-1.418	.786	.073	-1.159	.675	.088	-1.556	.695	.027
Control variables															
Retail Floor Area							.003	.002	.045				.004	.001	.003
Func. fashion							-2.974	6.978	.670				-.734	6.242	.907
Func. Leisure							-1.864	11.684	.873				-.887	10.456	.932
Func. Households							16.855	13.160	.202				19.867	11.701	.091
Func. Restaurant							-6.062	9.945	.543				-1.672	8.858	.850
Func. Vacant							-8.454	9.816	.390				1.420	8.903	.873
Func.House							-14.32	17.122	.404				-10.49	15.102	.488
Chain store							12.433	6.257	.048				2.075	5.858	.724
Distance										.183	.109	.096	.192	.109	.080
Duration of stay										-.803	.577	.166	-.969	.602	.109
Motive Fun										.295	.083	.001	.290	.084	.001
Motive Run										.394	.068	.000	.411	.070	.000
Observations			194			194			194			194			194
Adjusted R^2			-.009			.068			.096			.278			.300
Sig F-test			.732			.005			.004			<.001			<.001

Seven Dutch streets – Other actions, density of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	9.883	7.006	.160	11.256	6.871	.103	12.708	8.865	.153	-1.517	6.299	.810	-3.023	8.364	.718
Rhythm	-.110	.193	.569	-.085	.188	.653	-.041	.223	.855	.093	.168	.579	.125	.200	.534
Transparency	.161	.077	.038	.119	.076	.118	-.021	.096	.828	-.005	.069	.943	-.035	.086	.683
Details no	4.563	5.446	.403	2.043	5.365	.704	2.601	5.369	.629	2.648	4.744	.577	2.661	4.806	.580
Details many	2.097	5.114	.682	1.027	4.954	.836	.914	5.019	.856	6.156	4.453	.169	4.984	4.557	.276
Relief hor.	-8.935	7.273	.221	-6.997	7.091	.325	-8.499	7.111	.234	-3.215	6.310	.611	-4.283	6.381	.503
Relief vert.	-4.989	4.908	.311	-5.019	4.785	.296	-8.130	4.902	.099	-8.685	4.270	.043	-9.600	4.364	.029
Resting pos. dens.				10.638	2.664	.000	9.175	2.729	.001	9.582	2.351	.000	8.281	2.434	.001
Greenery dens.				-2.015	3.967	.612	-1.266	4.007	.752	-1.040	3.522	.768	-1.473	3.590	.682
Other dens.				-2.265	2.033	.267	-2.683	2.077	.198	-2.566	1.808	.158	-2.503	1.856	.179
Furniture dens.															
Control variables															
Retail Floor Area							.001	.001	.647				.001	.001	.332
Func. fashion							.536	5.561	.923				1.132	4.987	.821
Func. Leisure							3.181	9.216	.730				2.078	8.285	.802
Func. Households							-16.42	10.369	.115				-13.77	9.268	.139
Func. Restaurant							9.812	8.023	.223				12.016	7.156	.095
Func. Vacant							-1.658	7.691	.830				3.540	7.015	.614
Func.House							-7.044	13.498	.602				-4.180	11.960	.727
Chain store							11.721	4.943	.019				3.882	4.650	.405
Distance										.025	.085	.768	.039	.086	.653
Duration of stay										-.853	.453	.061	-.998	.478	.038
Motive Fun										.375	.065	.000	.357	.066	.000
Motive Run										.241	.053	.000	.252	.056	.000
Observations			194			194			194			194			194
Adjusted R^2			.014			.080			.104			.294			.299
Sig F-test			.192			.003			.003			<.001			<.001

Seven Dutch streets – Other actions, density of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	14.783	2.393	.000	6.704	7.207	.353	8.578	9.147	.350	-6.161	6.596	.352	-6.713	8.615	.437
Rhythm				-.008	.201	.969	-.038	.235	.871	.174	.179	.332	.136	.210	.518
Transparency				.160	.077	.037	.003	.096	.977	.035	.070	.616	-.020	.086	.820
Details no				3.147	5.479	.566	4.388	5.444	.421	3.200	4.867	.512	3.772	4.889	.441
Details many				1.428	5.102	.780	1.073	5.139	.835	6.066	4.596	.188	4.737	4.665	.311
Relief hor.				-8.003	7.254	.271	-9.706	7.221	.181	-3.283	6.472	.613	-4.564	6.486	.483
Relief vert.				-5.198	4.883	.288	-8.746	4.966	.080	-8.585	4.372	.051	-9.961	4.425	.026
Resting pos. dens.	11.478	2.611	.000												
Greenery dens.	-.761	3.894	.845												
Other dens.	-2.241	1.997	.263												
Furniture dens.				1.064	.615	.085	.732	.631	.248	1.106	.542	.043	.781	.561	.166
Control variables															
Retail Floor Area							.000	.001	.872				.001	.001	.500
Func. fashion							2.624	5.600	.640				3.022	5.033	.549
Func. Leisure							2.972	9.377	.752				2.272	8.431	.788
Func. Households							-14.82	10.561	.162				-12.73	9.434	.179
Func. Restaurant							16.063	7.980	.046				17.136	7.142	.017
Func. Vacant							-.888	7.878	.910				3.780	7.179	.599
Func.House							-3.023	13.740	.826				-.913	12.177	.940
Chain store							12.170	5.021	.016				4.669	4.723	.324
Distance										.025	.088	.774	.043	.088	.629
Duration of stay										-1.198	.462	.010	-1.259	.485	.010
Motive Fun										.390	.067	.000	.365	.067	.000
Motive Run										.251	.054	.000	.256	.057	.000
Observations			194			194			194			194			194
Adjusted R^2			.082			.025			.060			.250			.266
Sig F-test			<.001			.112			.034			<.001			<.001

Steenweg – Total number of actions, density of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	.560	6.076	.927	.346	7.004	.961	-26.34	17.121	.134	-11.59	9.408	.227	-36.078	16.417	.037
Rhythm	.185	.236	.439	.164	.260	.532	.295	.320	.365	.154	.264	.563	.242	.299	.425
Transparency	.144	.063	.026	.149	.068	.034	.288	.199	.158	.165	.073	.030	.233	.191	.235
Details no	-.605	3.608	.868	-.541	3.719	.885	4.246	4.126	.312	-.694	3.778	.855	4.548	3.978	.263
Details many	5.728	3.740	.134	4.810	4.068	.245	9.058	4.237	.041	4.125	4.277	.342	5.938	4.143	.164
Relief hor.	3.422	3.348	.313	3.320	3.465	.344	1.455	3.494	.680	1.635	3.816	.671	1.329	3.465	.705
Relief vert.	-4.443	3.576	.222	-3.862	3.829	.320	-7.409	4.132	.083	-5.186	4.381	.245	-4.644	4.140	.272
Resting pos. dens.				-.167	.865	.848	.368	.884	.680	-.428	.894	.635	.279	.839	.742
Greenery dens.				-.541	1.524	.725	-2.477	1.966	.217	-.132	1.636	.936	-3.066	2.063	.149
Other dens.				.617	.692	.378	2.494	1.051	.024	.447	.792	.577	3.202	1.090	.007
Furniture dens.															
Control variables															
Retail Floor Area							.002	.005	.744				.000	.005	.993
Func. fashion							11.712	6.718	.092				16.473	6.509	.018
Func. Leisure							-4.454	9.078	.627				-18.596	9.552	.062
Func. Restaurant							4.538	8.189	.584				8.212	7.833	.304
Func. Vacant							22.591	15.000	.142				22.964	14.792	.133
Chain store							5.351	4.076	.199				1.599	4.280	.712
Distance										.012	.108	.914	.026	.096	.790
Duration of stay										-.042	.201	.835	.573	.235	.022
Motive Fun										.135	.096	.169	.095	.093	.313
Motive Run										.138	.083	.106	.088	.082	.292
Observations			45			45			45			45			45
Adjusted R^2			.165			.116			.235			.113			.370
Sig F-test			.039			.136			.062			.195			.020

Steenweg – Total number of actions, density of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	9.525	1.964	.000	.645	6.592	.923	-8.998	14.437	.538	-11.39	8.964	.212	-17.546	14.682	.242
Rhythm				.181	.259	.488	.495	.324	.137	.156	.262	.556	.430	.321	.192
Transparency				.145	.064	.029	.082	.179	.651	.158	.067	.024	.045	.183	.806
Details no				-.605	3.655	.869	1.670	4.090	.686	-.451	3.672	.903	1.261	4.071	.759
Details many				5.752	3.848	.143	9.151	4.336	.043	4.956	3.964	.220	6.516	4.357	.146
Relief hor.				3.414	3.398	.321	2.880	3.607	.431	1.836	3.614	.615	2.586	3.735	.494
Relief vert.				-4.439	3.625	.228	-5.640	4.245	.193	-5.176	3.983	.202	-3.346	4.539	.467
Resting pos. dens.	-.191	.868	.827												
Greenery dens.	-.266	1.477	.858												
Other dens.	1.037	.689	.140												
Furniture dens.				-.011	.313	.971	.376	.466	.426	-.136	.324	.676	.232	.466	.622
Control variables															
Retail Floor Area							.000	.006	.935				.000	.006	.996
Func. fashion							4.717	6.378	.465				6.209	6.189	.324
Func. Leisure							-6.607	9.328	.484				-16.216	10.669	.140
Func. Restaurant							-5.365	6.520	.417				-4.033	6.331	.529
Func. Vacant							1.775	11.442	.878				-.767	11.678	.948
Chain store							3.102	4.127	.458				-.532	4.563	.908
Distance										.028	.100	.780	.056	.105	.596
Duration of stay										-.020	.194	.917	.339	.246	.179
Motive Fun										.135	.093	.156	.120	.102	.252
Motive Run										.127	.078	.114	.104	.085	.231
Observations			45			45			45			45			45
Adjusted R^2			-.009			.143			.159			.155			.221
Sig F-test			.468			.071			.121			.104			.092

Steenweg – Going in, density of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	31.811	14.210	.031	23.121	15.431	.143	16.607	40.928	.688	3.187	17.470	.856	10.957	36.560	.767
Rhythm	-1.311	.552	.023	-1.205	.574	.043	-.784	.766	.314	-.981	.491	.054	-.830	.666	.224
Transparency	.471	.146	.003	.536	.149	.001	.263	.475	.585	.398	.135	.006	-.103	.426	.811
Details no	-13.99	8.437	.105	-13.39	8.193	.111	-11.41	9.863	.256	-12.16	7.015	.093	-11.342	8.860	.212
Details many	-21.29	8.746	.020	-23.79	8.961	.012	-25.01	10.129	.019	-32.45	7.942	.000	-35.287	9.227	.001
Relief hor.	10.339	7.830	.194	10.602	7.634	.173	14.094	8.351	.102	8.942	7.086	.216	9.163	7.716	.246
Relief vert.	14.670	8.364	.087	19.433	8.435	.027	21.422	9.877	.038	18.167	8.135	.033	21.021	9.219	.031
Resting pos. dens.				.565	1.906	.769	1.672	2.113	.435	.206	1.661	.902	.715	1.868	.705
Greenery dens.				-6.283	3.358	.070	-3.963	4.699	.406	-3.654	3.037	.238	-1.520	4.594	.743
Other dens.				2.881	1.524	.067	1.749	2.513	.492	2.060	1.470	.171	2.341	2.428	.344
Furniture dens.															
Control variables															
Retail Floor Area							.007	.012	.541				.001	.010	.929
Func. fashion							12.139	16.060	.456				16.164	14.496	.275
Func. Leisure							34.965	21.701	.118				.041	21.273	.998
Func. Restaurant							-3.753	19.575	.849				-3.191	17.444	.856
Func. Vacant							-7.311	35.856	.840				-21.048	32.941	.528
Chain store							.190	9.743	.985				-6.453	9.531	.504
Distance										.556	.201	.009	.507	.213	.025
Duration of stay										1.172	.372	.004	1.276	.524	.022
Motive Fun										-.106	.179	.556	-.040	.206	.849
Motive Run										.158	.154	.313	.249	.182	.183
Observations			45			45			45			45			45
Adjusted R^2			.254			.300			.286			.501			.490
Sig F-test			.007			.007			.032			<.001			.003

Steenweg –Going in, density of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	16.102	4.844	.002	31.032	15.413	.051	34.631	32.128	.289	6.562	17.252	.706	20.155	28.749	.489
Rhythm				-1.278	.605	.041	-.722	.722	.324	-1.015	.504	.052	-.664	.629	.301
Transparency				.469	.149	.003	.049	.399	.902	.346	.129	.011	-.216	.357	.551
Details no				-13.99	8.545	.110	-13.61	9.102	.145	-11.98	7.067	.099	-13.220	7.971	.108
Details many				-21.51	8.998	.022	-26.63	9.650	.009	-31.04	7.630	.000	-34.554	8.531	.000
Relief hor.				10.407	7.945	.198	14.851	8.028	.074	8.912	6.956	.209	10.251	7.314	.172
Relief vert.				14.635	8.475	.092	22.380	9.448	.024	15.706	7.665	.048	21.947	8.887	.020
Resting pos. dens.	2.009	2.140	.353												
Greenery dens.	-5.959	3.644	.109												
Other dens.	1.844	1.700	.284												
Furniture dens.				.103	.732	.888	.734	1.037	.484	-.034	.623	.956	.705	.913	.446
Control variables															
Retail Floor Area							.004	.013	.732				-.002	.011	.879
Func. fashion							8.553	14.195	.551				11.152	12.119	.365
Func. Leisure							32.111	20.759	.132				3.571	20.890	.866
Func. Restaurant							-12.44	14.510	.398				-9.449	12.396	.452
Func. Vacant							-24.27	25.464	.348				-34.501	22.865	.143
Chain store							-2.793	9.184	.763				-8.088	8.935	.373
Distance										.663	.192	.001	.516	.205	.018
Duration of stay										1.222	.373	.002	1.093	.482	.031
Motive Fun										-.135	.179	.455	-.017	.200	.931
Motive Run										.145	.150	.340	.259	.166	.130
Observations			45			45			45			45			45
Adjusted R^2			-.003			.235			.320			.489			.512
Sig F-test			.420			.014			.013			<.001			<.001

Steenweg – Looking in, density of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	38.877	19.354	.052	23.840	20.635	.256	64.460	54.569	.247	-5.710	24.512	.817	88.642	49.870	.087
Rhythm	.411	.752	.588	.937	.767	.230	.647	1.021	.531	.699	.689	.318	-.048	.909	.958
Transparency	-.439	.199	.033	-.352	.199	.086	-.714	.634	.269	-.195	.189	.311	-1.191	.581	.051
Details no	11.226	11.491	.335	11.356	10.956	.307	11.027	13.150	.408	5.895	9.843	.553	-1.302	12.086	.915
Details many	26.275	11.912	.033	36.009	11.983	.005	37.400	13.505	.010	32.295	11.144	.007	24.218	12.586	.065
Relief hor.	6.159	10.664	.567	8.672	10.209	.401	5.134	11.135	.648	-2.079	9.942	.836	-6.686	10.525	.531
Relief vert.	-6.431	11.391	.576	-4.532	11.279	.690	-6.258	13.169	.638	-16.55	11.415	.157	-13.327	12.576	.299
Resting pos. dens.				3.269	2.549	.208	1.682	2.817	.555	1.645	2.330	.485	-.311	2.548	.904
Greenery dens.				-5.317	4.491	.244	-6.490	6.266	.309	-4.481	4.262	.301	-.519	6.267	.935
Other dens.				-3.643	2.038	.082	-4.615	3.350	.179	-.837	2.063	.687	-3.514	3.313	.299
Furniture dens.															
Control variables															
Retail Floor Area							-.015	.016	.352				-.025	.014	.093
Func. fashion							-19.11	21.412	.379				-19.381	19.774	.336
Func. Leisure							-26.00	28.934	.376				-31.617	29.018	.286
Func. Restaurant							7.859	26.100	.765				-3.119	23.794	.897
Func. Vacant							-31.86	47.807	.510				-80.867	44.934	.084
Chain store							5.729	12.990	.662				-12.615	13.000	.341
Distance										-.518	.282	.076	-.458	.290	.126
Duration of stay										-.580	.522	.275	-.656	.715	.367
Motive Fun										.513	.251	.049	.538	.282	.067
Motive Run										.674	.216	.004	.789	.248	.004
Observations			45			45			45			45			45
Adjusted R^2			.093			.179			.168			.355			.377
Sig F-test			.132			.057			.132			.007			.018

Steenweg –Looking in, Density of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	45.375	6.014	.000	46.245	20.730	.032	82.998	46.330	.083	5.241	23.671	.826	88.193	39.470	.034
Rhythm				.104	.814	.899	-.277	1.041	.792	.278	.692	.691	-.454	.864	.604
Transparency				-.418	.201	.044	-.623	.576	.287	-.240	.177	.184	-1.118	.491	.031
Details no				11.198	11.493	.336	10.127	13.126	.446	5.086	9.696	.603	-.378	10.944	.973
Details many				28.382	12.101	.024	31.127	13.916	.032	29.164	10.469	.009	20.961	11.713	.084
Relief hor.				5.510	10.685	.609	1.465	11.576	.900	-5.358	9.544	.578	-9.535	10.041	.350
Relief vert.				-6.092	11.398	.596	-8.754	13.624	.525	-21.09	10.518	.053	-15.361	12.202	.218
Resting pos. dens.	2.046	2.657	.445												
Greenery dens.	-4.086	4.524	.372												
Other dens.	-1.537	2.110	.470												
Furniture dens.				-.977	.984	.327	-2.719	1.496	.078	-.544	.854	.529	-1.525	1.253	.234
Control variables															
Retail Floor Area							-.002	.018	.911				-.019	.015	.221
Func. fashion							-21.67	20.469	.298				-16.197	16.638	.339
Func. Leisure							-39.95	29.935	.191				-42.150	28.680	.153
Func. Restaurant							4.132	20.924	.845				.694	17.018	.968
Func. Vacant							-26.15	36.720	.481				-71.166	31.392	.031
Chain store							6.534	13.243	.625				-11.448	12.267	.359
Distance										-.465	.263	.086	-.449	.281	.121
Duration of stay										-.618	.512	.236	-.398	.661	.552
Motive Fun										.490	.245	.053	.505	.275	.077
Motive Run										.742	.206	.001	.818	.228	.001
Observations			45			45			45			45			45
Adjusted R^2			-.014			.092			.073			.369			.397
Sig F-test			.503			.150			280			.003			.009

Steenweg – Other actions, density of specific furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	22.531	19.901	.264	40.259	21.067	.064	-61.43	55.618	.278	2.523	24.785	.920	-99.599	49.334	.054
Rhythm	.763	.774	.330	.296	.783	.708	.883	1.041	.403	.282	.696	.688	.878	.899	.338
Transparency	-.141	.205	.495	-.295	.203	.155	.850	.646	.198	-.203	.191	.297	1.294	.575	.033
Details no	3.492	11.815	.769	3.355	11.186	.766	12.451	13.403	.360	6.261	9.952	.534	12.644	11.956	.300
Details many	2.051	12.249	.868	-6.223	12.234	.614	5.581	13.765	.688	.157	11.267	.989	11.069	12.451	.382
Relief hor.	-5.059	10.965	.647	-8.092	10.422	.443	-10.62	11.349	.357	-6.863	10.053	.500	-2.477	10.412	.814
Relief vert.	-.713	11.713	.952	-6.893	11.515	.553	-19.03	13.422	.167	-1.615	11.542	.890	-7.694	12.441	.542
Resting pos. dens.				-2.026	2.602	.441	-1.063	2.871	.714	-1.852	2.356	.438	-.405	2.521	.874
Greenery dens.				9.069	4.585	.056	3.634	6.386	.574	8.135	4.309	.068	2.039	6.200	.745
Other dens.				1.659	2.081	.431	5.367	3.415	.126	-1.223	2.086	.562	1.173	3.277	.723
Furniture dens.															
Control variables															
Retail Floor Area							.016	.016	.342				.024	.014	.101
Func. fashion							8.864	21.824	.687				3.216	19.561	.871
Func. Leisure							12.656	29.490	.671				31.575	28.706	.281
Func. Restaurant							4.814	26.602	.858				6.310	23.538	.791
Func. Vacant							89.427	48.727	.076				101.915	44.451	.030
Chain store							22.534	13.240	.099				19.067	12.861	.150
Distance										-.038	.285	.894	-.049	.287	.867
Duration of stay										-.593	.528	.270	-.620	.707	.388
Motive Fun										.594	.254	.026	.502	.279	.083
Motive Run										.169	.218	.446	-.038	.246	.877
Observations			45			45			45			45			45
Adjusted R^2			-.095			.023			.013			.247			.304
Sig F-test			.907			.377			.446			.040			.046

Steenweg – Other actions, density of all furniture

	Model 1a			Model 2			Model 3a			Model 3b			Model 4		
	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig	B	Std. Er	Sig.
Core variables															
Constant	30.338	5.364	.000	10.918	20.939	.605	-63.07	46.967	.189	-11.80	24.651	.635	-108.35	38.458	.009
Rhythm				1.247	.822	.138	1.728	1.055	.111	.737	.720	.314	1.117	.842	.195
Transparency				-.176	.203	.392	.655	.584	.270	-.106	.185	.570	1.334	.478	.009
Details no				3.536	11.608	.762	11.122	13.306	.409	6.891	10.097	.500	13.598	10.663	.213
Details many				-1.270	12.223	.918	10.878	14.107	.446	1.871	10.902	.865	13.593	11.413	.244
Relief hor.				-4.036	10.793	.711	-6.686	11.735	.573	-3.554	9.939	.723	-.716	9.784	.942
Relief vert.				-1.246	11.513	.914	-15.56	13.811	.268	5.379	10.953	.627	-6.587	11.889	.584
Resting pos. dens.	-2.399	2.369	.317												
Greenery dens.	8.003	4.035	.054												
Other dens.	1.001	1.882	.598												
Furniture dens.				1.541	.994	.129	2.218	1.516	.153	.578	.890	.520	.820	1.221	.507
Control variables															
Retail Floor Area							.005	.019	.771				.021	.015	.172
Func. fashion							4.498	20.750	.830				5.045	16.212	.758
Func. Leisure							21.050	30.346	.493				38.579	27.945	.178
Func. Restaurant							.767	21.211	.971				8.755	16.582	.602
Func. Vacant							69.864	37.224	.070				105.667	30.587	.002
Chain store							20.686	13.425	.133				19.536	11.953	.113
Distance										-.198	.274	.475	-.067	.274	.809
Duration of stay										-.604	.533	.265	-.696	.644	.290
Motive Fun										.644	.255	.016	.512	.268	.066
Motive Run										.113	.214	.603	-.077	.222	.731
Observations			45			45			45			45			45
Adjusted R^2			.079			-.057			-.088			.218			.346
Sig F-test			.092			.710			.731			.044			.019