Does Transit-Oriented Development (TOD) Attract Private Investment?
Exploring the Investment Strategies of Horeca Businesses in Station Areas

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Image cover           Paris Saint-Lazare Station. Source: AREP, DGLa, Press kit, 2012
SUMMARY

This document presents a research on the extent to which transit-oriented development (TOD) characteristics play a role in the investment strategies of horeca (hotel, restaurant, and café (Eurostat, 2017)) businesses regarding areas surrounding a transportation hub.

The research builds on two strands of literature. The first includes the body of knowledge on locational strategies of businesses. The second is the body of knowledge on the design concept of TOD and its characteristics. The connection of the theory is made to understand which TOD characteristics are relevant for private businesses in making their investments decisions in station areas. The motivation for the study is to assess whether public improvements in station areas, specifically focusing on TOD characteristics of a station area can stimulate horeca businesses to invest in these areas.

The research has an explorative character, using the hubs as the focal point between land use and the transportation system. The methodology consists of interviews with the representatives of selected horeca businesses in order to understand their investment strategies and more specifically, their willingness to invest in areas where TOD characteristics are present in a greater extent. This methodology led to a deeper understanding of the potential local economic benefits, enhancing TOD characteristics in a hub area.

Some TOD characteristics were found in similar businesses divided into two subdivisions: 'hotel' and 'restaurant and café'. For the first one, the lifestyle of the surrounding is playing an essential role in the locational decision-making process. In the second subdivision, the flow of people was highlighted as a crucial feature to perform an attractive factor for investments. Nonetheless, the combination of all presented characteristics incentivizes businesses' strategies to some extent.

Keywords: transit-oriented development (TOD); transportation hub; horeca location; investment strategies.
PREFACE

The difficulties for a non-native English speaker to write an academic paper was a daily reality in my life for this past year. This research would never be possible without the help of a lot of people.

First, I would like to thank my graduation friends. The support from Andy, Arthur Etrusco, Arthur Vilela, Freddy, and Solene, not only with language speaking matters but as well for relaxation moments on the swimming pool, Hoogeveldt, corridors or even on real meetings was fundamental. An especial dankjewel to Frederiek who heard about my thesis for a long time and helped me to keep motivated.

Also, I am thankful to my supervisor Karel Martens which helped me with his direct comments that made my academic writer side flourish. In addition, to professor Erwin van der Krabben that managed provide useful insights to my research. I also want to thank the businesses I have interviewed for their time and comprehension. I appreciated a lot that they spent their time in order to contribute to my research.

I must show my appreciation to Arcadis as a company which gave me the opportunity to develop my research project with them. In special Tim Schellekens who opened the door for an unknown person and listened to my ideas. To my supervisors Robin Rijlaarsdam and Mirza Hotic who dedicate their time, perspective, and great ideas to construct by my side a solid project. Also, Margot van Vliet, Nanet Rutten, Martijn Duits, and Madeleine van Hövell tot Westerflier.

Spend a year 10.000km away from home is not easy. The adaptation time has passed, and the Netherlands made me understand that home can be anywhere you are comfortable to be yourself. Nevertheless, if it wasn't for my parents’ consistent support throughout this whole journey, I couldn't be here today in a celebration mode. I dedicate this paper in the memory of my uncle Célio, my aunt Rosa and Xaxá.

Renata Nogueira Botelho

Nijmegen, August 2019
### LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>BWM</td>
<td>Best Worst Method</td>
</tr>
<tr>
<td>CPTM</td>
<td>Companhia Paulista de Trens Metropolitanos, i.e., Brazilian railway operator from São Paulo</td>
</tr>
<tr>
<td>CBD</td>
<td>Central Business District, common term for business city center in Australia and North America</td>
</tr>
<tr>
<td>Et. Al</td>
<td>And others</td>
</tr>
<tr>
<td>Horeca</td>
<td>Hotel, restaurant, and café, i.e., a common Dutch term for the sector</td>
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<tr>
<td>HSL</td>
<td>High-Speed Rail Line</td>
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<tr>
<td>Ibid</td>
<td>In the same place</td>
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<tr>
<td>NS</td>
<td>Nederlandse Spoorwegen, i.e., Dutch railway operator</td>
</tr>
<tr>
<td>TOD</td>
<td>Transit-Oriented Development</td>
</tr>
<tr>
<td>MaaS</td>
<td>Mobility as a Service</td>
</tr>
<tr>
<td>ProRail</td>
<td>The Dutch railway agency, often also described as Dutch railway infrastructure manager</td>
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Introduction

Transit-oriented development (TOD) is a design concept that has been defined by an extensive number of authors. It remains a trendy concept attempting to control negative patterns of dispersed urban growth. This spatial planning design concept aims at increasing rapid and frequent public mass transport ridership, as well as walking and cycling safely by reducing the use of private cars and by promoting sustainable urban growth. It is a planning and design strategy aimed at creating livable and accessible cities for their inhabitants. It combines measures to promote activities with access to opportunities within a 5-10-minute walking distance of transportation hubs, thus increasing densities around them (ITDP, 2017).

Grand Central Station in New York, Paris Saint-Lazare terminal, and Chatswood Station in Sydney are some of the many examples of large stations which today are not only considered as transport nodes in terms of mobility but have become complete TOD hubs. Trains, metro, and other transportation modes interact with integrated shopping centers, hotels, and retail services at these hubs. All have TOD characteristics as defined by Ollivier et al. such as walkability, compactness, and diverse use (2018). The goal of this research is based on which of these TOD characteristics are influencing private business investment strategies.

Although these previously mentioned transportation hubs are known worldwide for their level of accessibility, other successful examples in medium-sized cities can also be found. In the Dutch context, there are examples of stations, where TOD measures have been applied while remodeling station areas. The Hague, Utrecht, and Rotterdam are the three most significant cities in terms of population after Amsterdam (World Population Review, 2019). All of them have remodeled their central station in the past ten years to become more integrated with their surroundings with services in a walkable distance, bike infrastructure, car restrictions and zoning plan emphasizing a diverse use. Nowadays, other significant transport nodes are also influenced by the idea of making the station more attractive. This attraction is based on the principle that the station area is usually the first introduction to a city or neighborhood according to the developer and landowner Nederlandse Spoorwegen. They intend to provide a livable and accessible area despite the increasing people flow (NS, 2019).

When it comes to a medium and smaller area perspective, it is possible to detect even more clearly that not all the facilities that are available in bigger stations are present in smaller hubs. This disparity of a high transportation offer combined with a medium to high population flow and low availability of services can be seen in stations such as Ede-Wageningen and Amsterdam Lelylaan. In Ede-Wageningen, there are few hotel amenities, also food and beverage outlets near the station. In Amsterdam Lelylaan, the cafe and restaurant sectors are lacking. This sparse presence is interpreted as poor quality service, and these areas had the expectation of being more developed than they currently are, according to their high connectivity level.

As one example of TOD characteristics, to promote a cycle-friendly environment, it is essential to provide bicycle parking around hubs and have decent lighting and signaling for cyclists. As another example, retailers might have the intention to invest more in stores
around hubs when there is an increased pedestrian flow that may have resulted from improvements made in a hub. However, have these TOD characteristics in these areas, consisting of stations and its direct surrounding, influenced the investors to open a new store in the area or was this due to other, unrelated reasons? The purpose of this research revolves around this question.

1.1. Research Problem Statement

Hubs connect many public and private transportation modes, thus creating a flow of people in the surrounding area. This flow has a significant direct and indirect impact on the built environment. This integration between the flow and the built environment allows transportation hubs to create connectivity among people and their destinations, changes the urban environment, influences social readjustments, and can even promote economic development. Especially for the surrounding area, the possible flow of people will strengthen the presence of commercial services in the surrounding of the hub.

Areas around transportation hubs can be compared before and after a (re)development. Usually, these changes are started by public parties; however, urban change in the station area can be initiated by private sector businesses as well. If, on the one hand, people could have access to different services in a closer distance to this area, they would be attracted to this transport hub. On the other hand, the private investors could decide to locate their stores at the hubs, thus providing quality nodes in terms of services as a catalyzing effect, which would consequentially result in various transportation hubs with available and attractive retailers building up a network of services in diverse places.

The presence of TOD characteristics in and around transportation hubs could influence investment decisions by private businesses. If this influence happens, the companies or hub managers who are developing a new station or improving an existent one can focus on what is more relevant to guarantee a more accessible station for the passengers and an attractive place for retailers. As a result of this investment, the population would have more facilities within a closer distance.

Unfortunately, this situation, where private businesses and public bodies are involved in making this connection to be served by quality facilities, does not always happen. These circumstances can be seen in many cities where the central station is surrounded by commercial and mixed-use buildings, with biking or car sharing, bus connections, and many other incentives.

A good example is Grand Central in New York, where the terminal is a retail and dining destination with a choice of 35 restaurants. It is connected by railroad and a subway, thus attracting 750,000 visitors every day. Although the station was developed in 1913, only in the late 1980s did the idea to include amenities inside the hub emerged. This redevelopment combines two ideas of design concepts and the change of perspective from the area managers. Now and in the future, Metro-North Railroad, which is the company who manage the hub, considers Grand Central Terminal as more than a terminal but as a venue (GCT History, 2017). This venue perspective rather than just a terminal can also be achieved in other stations. When the decision is made to add the mindset of questions such as 'how many destinations can be reached with this transportation node, within which time and how easy it is' to 'how diverse are the activities that can be performed in an area?', the transport hub changes its role from a terminal to a venue (Bertolini, 1999).
Unfortunately, there are still many hubs which do not fulfill their potential as critical commercial nodes, a case in point being Luz station in São Paulo. This terminal dates from 1901, and even though it underwent redevelopments in the 1990s and early 2000s to embrace the Museum of Portuguese Language, no retail stores were included. In a walkable area around the station, the situation reflects the inside, with no retailers from the food and hotel sector. Luz connects approximately 420,000 people per day through its railway, subway, and express bus service to the international airport (Metro CPTM, 2018). Even though the mobility concept with its many transportation modes is considered decent, this situation leads to lower accessibility at a local level and underuse of the terminal. As a result, there is a clear view of the underexplored potential present in the transportation hub.

![Railway Luz station, São Paulo (own footage, 2018).](image)

Where a hub lacks good services and does not thus function like a venue, it will become the result of unbalanced nodes. The node-place model is a tool used to assess and categorize characteristics of urban nodes, especially the TOD features. As shown in Figure 2, the ideal situation - where the transportation system and activities are excellent and balanced – lies on a diagonal line. The upper-right part under stress is reached when there is a high flow of people, and the place has a great offer of goods and services. The second situation is seen when there is a balance between offer and demand. The third one is a place where there is a dependence on the other areas.
The top left of the graphic shows the unbalanced node. This place on the graphic is where the transportation system is already developed, but the urban facilities are still lacking. This situation (marked in orange circle) is where this research can be valuable to connect the retailers to a transportation system already developed. In order to attempt balancing the existing services in the area and its surroundings, this research will identify the TOD characteristics which are relevant for investors when choosing a location, especially horeca businesses (hotel, restaurant, and café).

1.2. Research Aim and Questions

As per the introduction and research problem statement, the main goal of this research is to explore the impacts of TOD characteristics on investments by the private sector in the area surrounding a transportation hub. More specifically, how do horeca businesses relate their investment strategies around hubs with TOD characteristics as an attractive feature? In order to reach this goal, the research will answer the following research question and related sub-questions.

To what extent do TOD characteristics affect the willingness of horeca businesses to invest in transport hub areas?

The following sub-questions should help develop an answer to the main research question:

1. What TOD characteristics can be distinguished for transportation hubs?

Each hub has its characteristics, whether at a local or broader level. At the local level, direct connections and modes of transportation, including capacity, must be examined. The context within which the multimodal hub exists is significant to understand the background of the investment decisions. The components (density, diversity, design, destination accessibility, distance to transit, demographics, and demand management) of analysis will
be proposed as a theoretical background for the transportation hub and its immediately surrounding characteristics.

2. What do horeca businesses consider as the formula to invest in an area?

The hypothesis of having a higher TOD level of the transportation hub and its surroundings, leading to a higher willingness of companies to invest is addressed in this question. The willingness to invest can happen in two situations. The first is when a hub area is already settled, and the individual company decides to invest in a new store, restaurant, office, or to extend an existing one. In this situation, the investment is considered as a redevelopment of the retail stores in a settled area. The other situation, considered as development, is in which a significant planning effort for a hub area aims to change the whole area. In this case, the question is whether private companies would be willing to invest more in the hub area if the plan for the hub area contains more TOD characteristics. The first case will be addressed in this research, whereas the latter is ignored in this research due to a preferred deeper understanding of the chosen sector that has already plenty of specific features.

Central location, spatial interaction, bid rent, and minimum differentiation are the four academic theories used to assess a location for businesses. However, the practical use of these is mostly on the background of techniques. Furthermore, they do not present a regular update. This study aims to explore these theories in answer to this sub-question.

3. What are the similarities between the TOD characteristics and the retail sector's investment formulae?

After discovering the features which are present in the transportation hubs and their motivation for investments, the next question is to connect this information to understand if it is possible to enhance the TOD characteristics. This question is a qualitative analysis merging the first two sub-questions, with the two bodies of literature, resulting in similarities on the conceptual framework. By using interviews as a method, the possibilities from the retailers’ perspective will be explored in particular, the importance of the characteristics in order to make a location decision.

4. What are the barriers for horeca business to invest in transportation hubs?

Within this framework, it is important to investigate why retailers do not invest in transportation hubs. If the reasons are identified, it is possible to formulate advice on how to influence them to move their investment toward transportation hubs. By assessing a possible change in investment focus, the final sub-question relies on shifting perspective to a positive recognition of TOD characteristics. This positive perspective could consequently lead to an increase in accessibility with the services provided by these retailers in a possible (re)development of the station area. Moreover, the answer is framed to understand how TOD measures can be used as a tool of influence. With the answer to this sub-question, it is possible to draw a final link to the main research question.

1.3. Scientific Relevance

When potential involvement by the private sector is studied, this highlights the interest for each party, even those who are not directly involved. The improvements that
can be achieved in the accessibility will interest the future or actual users and also the companies who are interested in increasing the demand. Also, the collaboration between different actors can result in higher investment from the leading businesses, consequently providing better accessibility to the population for urban facilities.

Therefore, it is essential to conduct in-depth research with respect to local conditions of the transportation system regarding TOD in order to contribute to the existing literature. The richer the information gathered on this attractiveness of businesses is defined, the closer one can get to better accessibility for the population. Even though TOD as a concept and models for retailers' locational strategies have been extensively researched, the literature merging these concepts is lacking. The lack of research on the merge emphasizes the scientific relevance of this research, which combines the concept and models.

1.4. Societal Relevance

The Arcadis Mobility Oriented Development Benchmarking Index (MODex) mentions four main components that improve quality of life in transit hubs - “Accessibility, Sustainability, Social impact, and Economics” (Arcadis, 2017). The impacts derived from these aspects show how significant transportation hubs have become. Also, this report shows the interest of private companies such as Arcadis to promote quality of life through this mobility-oriented development. The oriented development index has TOD as its foundation, relating theory, and practice situations.

Considering the unbalanced situation in Bertolini’s (1999) node space model, as mentioned before, in section 1.1, the societal relevance from the Dutch perspective is even more evident. The available transportation modes are sufficient and provide mostly a high-quality transport system to its inhabitants. Nevertheless, the situations presented in Amsterdam Lelylaam and Ede-Wageningen are a clear vision that improvements in these nodes remain necessary.

By answering the research questions, this thesis aims to provide recommendations to horeca retailers. The recommendations will allow them to have a better understanding of the factors regarding their location decisions in hubs. For future hubs, it is possible to use these recommendations as a guideline to focus on relevant characteristics if the interest is to attract new investors. Lastly, but most importantly, the contribution to society is to guarantee access to more quality services available in a closer distance to station areas.

1.5. Thesis Outline

This research is structured in seven chapters, as displayed in Figure 3. Each research sub-question is aimed to be answered before the concluding chapter. So lastly, the main question will be addressed in the conclusion section.
Figure 3 - Chapters and research questions

The second chapter provides an overview of the literature about TOD dimensions and retailers' location strategies. First, it explores the body of literature on investment strategies theories. Secondly, it researches TOD and its components, introducing the criteria. Consequently, chapter 2 shows research validity and reliability.

Chapter three underlines research design, the understanding of the philosophical perspective, and the strategy. Also, the methods of data generation are presented, and the criteria and target group are selected. In this chapter, the retailers' strategies are highlighted, presenting the reasons and explanation about the in-depth interviews.

Chapter four presents result from the interviews, exploring the link between TOD and the retailer's investment strategies. Also, these empirical results explore the barriers detected to establish new developments in transportation hubs. This chapter aims to answer the third and fourth sub-question, thus making a comparison with the presented theories.

Lastly, chapter five, the conclusion, reflects the sub and main research questions, connecting the results from the empirical interview results to the referenced theory. After this reflection and conclusion, recommendations are provided for future hub developments.
The Hague Centraal Station (Jannes Linders)
Theory Overview and Concepts

2.1. Introduction

The literature review covers two bodies of literature. The first relates to the location and expansion strategies of horeca businesses and the second to TOD of transportation hubs. Specifically, the overlap between these theories is the focus of this chapter. On the one hand, central location, spatial interaction, bid rent, and minimum differentiation are the four academic theories to be studied in this chapter. On the other hand, TOD characteristics and its components concerning retailers’ strategies are defined as a goal.

When the location theories are explained, it is crucial to focus on horeca businesses since it is the target group to be reached in this research. This emphasis is due to a characteristic of their consumers who might not always look for a specific product to buy or use and purchase the offered and available service that it is on their path without having to deviate from their daily commute as a traveler in the transportation system. The TOD features that are presented should aim at the same goal focusing on improving the quality of life of travelers in transportation hubs.

2.2. Conceptual Framework

Transportation hubs represent a place where land use patterns are more evident because it is a spatial node, facilitating allocation for a flow of people. Hubs can be characterized by a few main functions. Firstly, a hub functions as a transportation node, which has a certain level of attractiveness. Secondly, a hub can be seen as a destination with the presence of retail stores and other activities within a walkable distance. A hub is able to combine these features, making use of its surrounding land.

The concepts of transport and land use are connected in the Wegener & Fuerst (1999) cycle, as can be seen in Figure 4. The highlighted part shows the attraction of new services for a place by analyzing the location decisions of investors. How these services are distributed in the transport system will influence the investment strategies of the businesses owners. In this study, locational theories have been investigated as a tool to understand how it affects investment strategies. The conceptual framework of this research consists of analyzing the land use and transport feedback cycle, focusing on the location decisions of investors.
In this framework, the concept of TOD has been chosen to investigate the attractiveness of a hub as a result of its characteristics and practical approach in the Dutch development context around transit nodes (‘Knooppuntontwikkeling’). It has been investigated to what extent TOD characteristics are present in locational strategies of retail stores, whether it results in better accessibility, and thus leading to more customers for the retail businesses. According to this theory, improving the interaction between transport and land use also improves accessibility, which leads to improving local attractiveness. This attractiveness might change the investment strategies of retail stores if the TOD characteristics are considered when they are choosing their location. The outcomes of the research shows which TOD characteristics are most relevant and other barriers should be considered to overcome this attraction.

Regarding the first research question, the TOD characteristics presented in most literature are similar and relate to hubs specifically. Various theories regarding retail location strategies have been studied and form the literature reference for investment strategies (concerning the second research question). The similarities of the characteristics of TOD as a design concept, with the investments from the retail sector in the hubs, is the focal point that has not been comprehensively studied and is the answer to the third research question. The interaction between the two approaches is the conceptual guideline to be followed, as can be seen in Figure 5.

After assessing the review of theories in the present chapter, Chapter 4 explores the link between TOD characteristics and investment strategies that exists, assessing a practical result for the conceptual framework. As mentioned in the problem statement, there are situations in the Netherlands where hubs offer unbalanced nodes. For example, in the situation where a high-quality transportation system is combined with low quality and quantity of services. The fourth research question explores potential barriers and answers on why horeca businesses investment strategies are not focused on transportation hubs.
When a transportation hub undergoes a possible new development, a whole range of indirect impacts on the built environment is rarely detected at first glance. These effects could encourage private businesses to invest in this area, increasing the attractiveness, considering the local characteristics. In such a hub, mobility is achieved by the arrival and departure of modes of transport. The transportation system is considered a factor which does not change in this research. On the other hand, land use in the surrounding areas may change with the transportation system. This change brings accessibility and improves the quality of life in the neighborhood. For example, this situation can be seen in the implementation of a new bus connection or a focal point for car and bike-sharing or the development of a new housing building or a new retail store attracted to the hub.

2.3. Location Theories

Location theories are presented in this overview to better understand the retailers’ decision-making process in which the new and relocated stores are established, and the connection with the TOD characteristics is enhanced. The theories are mostly based on spatial and economic definitions. Nevertheless, they are not directly connected to a spatial planning design concept.

It may not be necessary for retailers to be close to a transportation hub because, for instance, their target group could be in a city center not close to a station area; however, the people flow is high in this location, which might lead to an increase in sales. If people are only passing by the stores, it does not mean they will access them. Good access to the stores, together with visibility for the clients, are ways to break the point of just passing in front of the store or deciding to enter and purchasing something. It is at this point that people flow turns into profit for the retailers (Vandell & Carter, 1994).

In the academic literature, several location theories have been developed: central places theory (Christaller, 1933), space interaction theory (Reily 1929, 1931), bid rent theory (Haig, 1927) and the principle of minimum differentiation (Hotelling, 1929), amongst others. These theories have a positivist perspective, i.e., they consider that people
are rational and have decisions on the same spectrum. Even though those concepts are somewhat dated, they are still attracting academic interest and can be considered as a fundamental basis (Brown, 1993).

2.3.1. Central Location Theory

The first theory to be discussed is the central location theory formulated by Christaller in 1933. It postulates that the demand for a product will decrease with the distance from the source of the supply. This theory implies that it is possible to have an urban core with the goods and services agglomerated together (Brown, 1993; Oner, 2014). This relates to transportation aspects not only on the consumer basis but also on the supplier perspective. If consumers are close to the stores, they will consume more. If the stores are close to the suppliers, they will have a better price for delivery. This relationship implies that if the store location is widely connected to a transportation system, it will facilitate products' mobility and reduce costs. However, the theory fails when assuming the same distribution of people spread in cities. Also, it does not consider as a possibility that stores with the same sales concept may be agglomerated.

There are three principles for arrangements comprehended in central place theory: marketing, transport, and administrative. Marketing principle states that there is a minimum number of urban centers in the studied territory, which means that there is a minimum disposition of goods and services provided. Transport principle relates to the transportation network being effective to connect the clients, suppliers, and workers to the store location. The administrative principle understands the social-political system that is in the background of every situation; for example, the zoning and permits possibilities for a particular type of commerce (Rodrique et al., 2017). Figure 6 shows these in three spatial layers.

![Figure 6 - Variations of central place theory (Rodrique et al., 2017)](image)

2.3.2. Spatial Interaction Theory

Spatial interaction theory, also known as retail gravitation, was introduced by Reiley in 1929. It differs from the central location theory as it considers that the consumers do not choose the closest possible service or goods available. If the consumer wants a specific product, they will go further to reach it. It considers the attractiveness of the shopping area, even if it is not the shortest distance. In order to prove this theory, researchers undertook
empirical tests that showed differences between larger and smaller cities. Larger cities have a more excellent range of shopping facilities than smaller cities. With the different population size assumption delimited, it is mandatory to develop a calibration for every situation in order to apply this theory (Brown, 1993).

Another perspective from spatial interaction theory was initiated by correlating the higher amount of floor space to a higher attractiveness of the business. This relation allows other variables to be analyzed, such as several functions of the place, parking capacity, and bicycle parking (O'Kelly, 2009).

2.3.3. Bid-Rent Theory

As a third presented theory, Haig's 1927 bid rent, or also known as land value, is basically exactly that which the name implies. Where the rents are high, there is the most economic-focused area; therefore, the retail should concentrate on this area. This economic view is a good indicator of performance and competitiveness. It also is seen as a possible derivation of central location theory since rents increased due to a “reflection of regular urban growth.” This reflection has the same replication in a close periphery from the higher rent areas (Oner, 2014). This theory justifies businesses center and neighborhoods that attract companies with the same purposes.

A critical aspect of this bid-rent theory is that poor people are pushed further away from this more developed area. This is the case because commerce will be with higher land value, with rents and prices poor people cannot afford, therefore not guarantying a possible diverse land use. Another critical aspect revolves around the higher initial costs for a new retail store, because of the startup cost of equipment and furnishings. The breaking point where the investment turns into profit can be delayed if the rent continues to increase. In addition, the success of the business must be continued over the years to be able to afford the higher rent.

One important example of this theory is Alonso's urban land model for firms and households (1964). The equilibrium land price point showed in the first graphic of Figure 7 is achieved when the land price asked by the landlord is the same as what the business wants to pay, and the equilibrium location when the price of the place fits the closer distance from the central business district (CBD). His conclusions included that the land price is higher according to the shortest distance from the CBD. Also, businesses with a higher added value per unit of land are more likely to pay a higher price than those with less land utilization.
Applying this concept to the target group of horeca can be divided into two positions, one from hotels and another from restaurants and cafes. Hotels are more likely to invest in the long-term due to large scale development. They must consider the possible variation of the rent in this period (which is quite hard to predict in the long-term). On the other hand, restaurants and cafes usually require fewer financial investments at the start, allowing them to have medium-term planning in contrast to the hotel's long-term planning.

2.3.4. Minimum Differentiation

Lastly, the principle of minimum differentiation or multipurpose shopping is presented by Hotellings. This principle relies on clustering closely together with similar services or available goods (Brown, 1993). This analysis follows the same path for a possible CBD by maximizing the number of offices in the same place. It can help when consumers are focused on a specific type of product. It is often seen in outlets of retail for a multipurpose visit by consumers, e.g., a department store far away from city centers or CBDs (Oner, 2014). It is one of the essential foundations for research because the context can be calibrated, resulting in a different spatial location in a different greenfield to be explored. Nevertheless, this theory fails to explain why out-of-town supermarkets perform better than those existing in business districts (Brown, 1993).

As a possible diverse understanding of this location theory, convenience stores, restaurants, and cafes can be placed in various contexts, including outlets out of town or city centers or CBD. The public attending to these types of businesses does not typically search for clustering available centers. Usually, the users of these services can search for their products at random hours and occasions.

2.3.5. Combination and Evolution

According to Brown (1993), many other techniques were developed based on these four theories mentioned above. In practice, these techniques are wrongly considered as theories. Examples of these techniques are the analog method, regression modeling (both derivate from central place theory) and gravity modeling (from spatial interaction theory). These theories are founded on the theories which were previously explained. However, there are other techniques that do not consider any theories to define a location. The check-
list method and financial analysis (which perhaps can be related to the bid rent theory to some extent) are some of the examples of these techniques (Skogster, 2006; Zentes et al., 2007). It is also possible that companies create their tactics to approach new developments according to their experience in the field and variety of the brand in the location.

As can be seen in Figure 8, businesses primarily determine their investment strategies at first sight of the location. It can be inferred that technical expertise plays a prominent part in finding a new location since it shows as high/very high used in three of the five techniques presented. Nevertheless, the four theories mentioned above are underused, even in connection with these techniques. For larger businesses, it is expected that a more digital process, e.g., GIS and data analysis, also plays a role in their investment strategies. For smaller companies (or not franchised), the owner of the businesses has a direct impact on the decision, mainly relying upon their own field expertise.

![Figure 8 - Location planning techniques (Zentes et al., 2007)](image)

The above-mentioned location theories or techniques guide a new development location choice for retailers along with various spatial definitions. However, they do not mention TOD characteristics as a premise or an attractive factor. This underexplored scientific relationship is central to this paper’s thesis. When considering non-work travel as a trend, Nelson and Niles (1999) provide the following key decision factors for choosing a location, as shown in Figure 9.

![Figure 9 - Key retail location decision factors and their related theory (Nelson et al., 2001; adapted by the author)](image)

Regional accessibility, visibility, local access, and parking are a few of the features that are similar for the TOD characteristics. In comparison, these factors are central in TOD characteristics. Chapter 4 will address this link of features to establish the connection.
between these theories and TOD. Figure 10 states a brief conclusion of the characteristics of the presented theories.

**Figure 10 - Summary of locational theories (own elaboration based on Rodrigue et al. 2017; Brown, 1993; Oner, 2014)**

2.4. **Transit-Oriented Development (TOD)**

The integration of transportation network, increasing ridership, and satisfaction among users are the main features of transportation hubs. On the one hand, the process to develop smooth access to stations and transfer between transport modes is the concern of the transportation system. Consequently, this process contributes to traffic and the quality of the living environment. On the other hand, the opportunity for urban development can enhance the community, improving socio-economic development. The improvement of these features develops a station area towards transit-oriented.

TOD is defined as the integration of "mixed-use development near and/or oriented to mass transit facilities" (Thomas et al., 2018). The benefits of TOD are the area development, not only economic when it attracts more people to the provided services and the transport system, but also social and environmental. The social perspective involves the interaction of vibrant activity nodes within the stations with a focus on peoples’ interest. The environmental matters consist of reducing car dependency due to more acceptance of public transportation, consequently leading to a reduction of CO₂ emissions (ibid; Cervero & Kockelman, 1997; TCRP, 2004).

Parker and Arrington (2002) define characteristics of TOD as “moderate to higher-density development, located within an easy walk of a major transit stop, generally with a mix of residential, employment and shopping opportunities designed for pedestrians without excluding the auto.” This point of view stresses that shopping opportunities are one of the main characteristics, which reinforces the importance of the focus of this research (ibid.). Parker and Arrington also mention the improvements in efficiency and effectiveness, increasing transit ridership at transportation hubs (ibid.). This ridership guarantees a continuous flow of people in the area.

In general, the definition of TOD involves attributing its characteristics to a place. That is due to the context of the background settings, which are different for each situation.
TCRP gives the comparative example that a dense, walkable, and transit-supportive development is different in an area such as Manhattan or a lesser-known middle-sized city in the US Midwest. The same approach can be taken, for example, in the comparison of Amsterdam to Assen. Both municipalities have almost the same surface area, but they have different economies, densities, and population (TCRP, 2004; World population review, 2019).

Since many characteristics can be highlighted from this concept, the goal is to explore whether these features are relevant for the investments of horeca businesses in newly built or remodeled transportation hubs.

TOD can be viewed in three scale levels: city region, corridor level, and station area. City region level is the broader view when the city is the focus of the development as a whole. Also, it can be the connection between new towns and urban centers to a mother city, known as corridor-level of planning. The second level integrates a mesh of urban nodes to a bigger one producing the agglomeration effect. Lastly, there is the station area which encompasses a transportation terminal in its essence, and it is the focus of this research.

2.4.1. TOD Components
According to Olivier et al. (2018), the following eight main principles can assure a development for areas based on TOD design concept. They assess whether the TOD ‘level’ of the area is at the transport hub or at a city level.

1. Align human/economic densities, mass transit capacity, and network characteristics for greater accessibility
2. Create compact regions with short commutes
3. Ensure resilience of areas connected by mass transit
4. Plan and zone for mixed-income neighborhoods at the corridor level
5. Create vibrant, people-centric public spaces around stations
6. Develop neighborhoods that foster walking and biking
7. Develop good quality, accessible, and integrated public transit
8. Manage private vehicle demand

These principles are often considered a utopia depending on the built context. Nevertheless, economic and social changes can be related and even measured based on these characteristics. Merging these concepts to general terms by DeCourshey and Athey (2007), TCRP (2004) and Thomas et al. (2008), summarizing and concerning the station areas as the focus, the following characteristics are significant to transportation areas:

- Integrate diverse urban facilities and transport system for greater accessibility
- Build up people-centric activity centers as important compact transport nodes
- Encourage quality walking and cycling space in surrounding areas

These general terms can all be related to the aim of this research. First, the commercial use with a variety of stores around terminals creates diversity and can be integrated with transport planning. Secondly, building up activity centers is related to the hub as a destination. Considering that stores can have consumers that are loyal to their products, these will be their destination point. This position would align the mobility and accessibility concepts because all the categories present in horeca businesses could be a destination place inside of the surroundings of the transport hub. Thirdly, in this surrounding area, the walkability is the most precise term addressed since it shows the
retailers could be located in a walkable distance from the hub (Credit, 2017). A last-mile transfer adding a new transport mode to the route can make the difference in the consumer’s choice. On the same path, compact development is promoted with the commercial use of restaurants and cafes close to short or long stays provided by hotels. In all characteristics, the integration of land use and transport planning is present as a critical factor.

The integration of TOD with retail locations seems obvious when the characteristics are compared; nevertheless, this mix was underexplored because of economic circumstances from the retailers’ perspective. The TOD dimensions will be explained to make a useful link reinforcing the relationship with their investment strategies. When these characteristics are present in transportation hubs, the possibility of attracting the horeca businesses is higher. This association leads to sustaining TOD and retail location theory as per the conceptual framework to be followed.

In order to explain the TOD in practical matters, the widely recognized components of 7D’s will be used. These 7 dimensions are key performance indicators for achieving a high level of TOD. However, it is still based on a perceived notion among experts and travelers. In many situations, the analyzed components will overlap or be highly linked. Examples will be provided to clarify the criteria in the following criteria introduction section.

2.4.2. Criteria Introduction

Even though TOD can be categorized into components, also known as dimensions as in 7D’s (Density, Diversity, Design, Destination, Distance to transit, Demand Management, and Demographics), in this research, only the most significant dimensions for the station area will be addressed (Ewing and Cervero, 2010; Ogra & Ndebele, 2014). According to Cervero and Kockelman, new urbanists, neotraditionalists, and other reform-minded proponents, the three principal dimensions that influence the built environment are density, diversity, and design (1997). Over the years, researchers developed more criteria to be the focus. These criteria will be held as a background category to present the characteristics. For every criterion, it is highlighted, which are the main features that are related to station areas.

Retail stores attract people to the TOD areas. Additionally, retailers follow urban development, and thus if some TOD characteristics can be incentivized, retailers can make this station area more attractive. That virtuous cycle leads to the question of what could improve this land use for commerce and transportation integration. Cervero and Kockelman (1997) state that improving the components of TOD can help in this situation.

2.4.3. Density

The first criterion, density, relates to population, inhabitants’ units, dwellings, building floor area, and all these types of information per specific area. These criteria reinforce the connection between population density with other units making it possible to make comparisons between places. Often the population can be compared to employment rates, thus automatically achieving activity area. Many of these characteristics in a station level are consequences of urban development. In order to better understand this situation, it is important to check which are the area features already existent (Cervero & Kockelman, 1997; Ewing and Cervero, 2010).
2.4.4. Diversity

The criterion of diversity is also proposed to understand the connection between housing, commercial, industrial, and other uses and its intensity in the surrounding area. The mixture of different type of land use will reflect how diverse it is and can be more valuable and attractive (Ewing & Cervero, 2010). One feature often addressed is mixed-use. All the activities placed in the same destination and close to each other is an incentive for walking (Cervero & Sullivan, 2011). The presence of public facilities in a walkable distance for the station is a feature that can influence in commercial intensity due to population flow.

2.4.5. Design

The design criterion includes the use of clear pedestrian and cycling paths connecting to the activities around it (Ollivier et al., 2018). This characteristic is determined at first glance in stations through observing the walking and cycle movement patterns. That is emphasized clearly in Dutch cities using traffic calming and their tendency to adopt a pedestrian-friendly approach (Wegener & Fuerst, 1999). Although this significant criterion seems clear to achieve at a local level with investments in redevelopment, it must also be viewed at a broader level combining easy travel design of the transport system with the physical location of the station. While the diversity criterion focuses on the modes and possible uses, the design criterion covers the development context and the TOD scale of applicability (Ollivier et al., 2018).

This design criterion is one of the crucial points to seek the balance between pedestrians and cyclists with regard to the concept of walkability around the transport hubs (NSW Department of Urban Affairs, 2001). This dimension relates to visibility, local access, and parking factor, which is present in the location decision.

2.4.6. Destination Accessibility

The fourth criterion added to the first three by Cervero and Kockelman (1997) is destination accessibility. At a regional level, it can be defined by reachability of the destination. As such, this can be a business center, a job, a retail store, or a central location within a given travel time. At the local level, it is the distance from the start point (usually the origin is users’ house) to the closest store available (Ewing & Cervero, 2010).

This criterion, especially in isolation, influences travelers when the station area is far from the city center or the business center. If the station is located close to a city center, more interaction can occur between those two points of attraction. Regarding the situation for a business, it is possible that the station is the only connection to other areas throughout the transportation system. In addition, it is possible that there are no urban facilities available in this area. The lack of urban facilities would make this criterion thought-provoking in terms of attractiveness.

2.4.7. Distance to Transit

The last component between the measures of the built environment is the distance to transit. Many factors need to be considered in this criterion, such as land use factors, psycho-social and cultural, habitual and social factors, and minutes to get to the transport.
These factors will change the individual’s perceived distance. Consequently, those factors influence the measured distance to transit. An average of the shortest street routes from origin to access to a transport system is the tool used to quantify this criterion (Ewing & Cervero, 2010).

As an example of existent social context, the bicycle facilities in Dutch cities are so extensive that a five-kilometer distance from the station area can be achieved by bike. This example might not be replicated in hilly cities or cities with extreme weather conditions. Nevertheless, this geographical scale is not relevant to a station level as required for this study. Mainly because the transportation system is already highly developed, as explained in the node-place model in Chapter 1.

2.4.8. Demographics

Even though this component is not part of the built environment, demography is controlled, so they are not an influence on travel studies. The population’s income and lifestyle are demographic measures related to TOD. Also, providing physical access for disabled people can influence travel choice (Ewing & Cervero, 2010). These features can directly influence a hub’s attractiveness.

An important observation of this feature is that the station can be considered a start and/or endpoint of trips, for instance to and from people’s houses. The other possibility is that the station is a transfer between transportation modes or routes which does not suffer any influence of demographic characteristics. In this case, consumer behavior also can be affected depending on the time spent in the station area.

2.4.9. Demand Management

The previous criteria were defined mostly to moderate travel demand by changing the built environment. The last component is travel demand management. It can include parking supply and cost, rideshare programs, and possibly infrastructure such as traffic-calming infrastructure (Ewing & Cervero, 2010). The possibility of using a bike-share system in station areas can go against the attractiveness of retailers since the bicycle entrance can be different, and the consumers would not have the opportunity to see the stores available. On the other hand, the presence of traffic-calming can provide more visibility to clients.

2.4.10. Barriers to implement

Besides all the efforts to improve TOD characteristics in a transportation hub level, there may remain implementational constraints in some areas. TOD concept it is not a one-size-fits-all solution, and its transferability needs to be adapted to each situation. Besides, there are formal, informal institutional, and mutually reinforcing barriers present in applying every concept, including TOD. As can be seen in Figure 11, the learning and innovation process can be determinant to change the vicious cycle between formal and informal institutional barriers towards incentives culminating in a virtuous cycle.
Similar to the barriers existent for implementing TOD characteristics, the barriers that attract investments to these transportation hubs can be formal and informal. As formal barriers, zoning plans might be reformulated to fit a more compact territory. Also, the contracts between retailers and hub managers are still a complex negotiation due to conditions retailers must adapt, but there is no guarantee of people flow turning into profits. On the other hand, as informal barriers, in larger stations, the preference for well-known brands is remarkable, deviating possible local businesses to develop.

Time value, transit developed at an appropriate scale, neighborhood connectivity, and the connections between transit and pedestrian environment are common barriers for implementing a higher level of TOD characteristics in larger cities in the Netherlands. In outskirts of medium or small cities, the network is less available and does not provide a door-to-door approach. First of all, the explanations about barriers encompass the difficulties experienced by urban planners and other stakeholders to adjust new forms of collaboration addressing financial and political conditions (JanssenJansen et al., 2012). In the Netherlands, the discussion about TOD is existent. However, there are still few plans realized. Amersfoort and ’s-Hertogenbosch are examples of successful improvements regarding TOD characteristics and constructive growth in categories as passenger numbers, customers ratings, retail sales, and real estate revenues (Peek, 2006).

Tan (2014) affirms that TOD implementation is not more exploited due to formal barriers and lack of urgency. From the market perspective, she also states that it is seen as a risky investment making improvements in the node. In the PBL convention regarding TOD in the Netherlands in 2014, Donné Slangen, from the Ministry of Infrastructure and Environment affirmed that "the success of TOD depends on good agreements about governance, risk-sharing, and financing." In addition, a member of Nijmegen Municipality declared that "a design competition could make clear what spatial quality yields. A concrete vision of a final image could motivate investors to step in" (PBL, 2014).

If the barriers are divided into two categories, the one can be improved by means of institutional incentives and the other by way of the process of implementing TOD characteristics. The first one is approached with a strategic planning framework with labeling the central areas to understand how to use locational strategies on them. Also, it is possible to make improvements for a better connection in central areas through transport hubs. For this reason, property's regulation and the market need to have a consistent
regulation of land use based on the 7Ds TOD components align to government support of public transport improvements. The second path is concerning the learning process in local, regional and national layers providing the understanding and exchange of information of mobility to all the spheres of society: market (developers, carriers, users), citizens (area residents, public opinion) and experts (education, research, practice) (Bertolini, 2012).
Rotterdam Centraal Station (Jannes Linders)
Methodology

This chapter aims to provide a methodology for the research. The literature review, as presented in Chapter 2, sets the foundation for the methodology. After the explanation of the research design and the philosophical perspective of the methodology, the research question and strategy are checked against the philosophical perspective. Next, the actual methods to generate data and criteria selection are addressed. As part of the operationalization methodology, how the TOD criteria were selected for the location merging the locational theories, the strategies for horeca businesses, target group and area of interest is clarified. Finally, the methodology of in-depth interviews is explained. Figure 12 shows the diagram of chapter 3.

![Diagram of chapter 3]

**Figure 12 - Chapters and third chapter details (own elaboration)**

### 3.1. Research Strategy

This research was conducted in three phases. The first phase consists of desk research, developing a conceptual framework based on the literature review presented in the second chapter. The framework is based on two bodies of literature. On the one hand, the literature on locational and investment strategies of businesses. On the other hand, TOD as a design concept, its characteristics, and components. In this phase, a comparison is made between these two strands of literature in order to find the intersection of characteristics.

For the second phase, the analytical research prepares the questionnaire (available in Appendix A), which will be used in the interviews. Also, the selection of companies in the related sector is further explored in section 3.4.3. After drawing up the questionnaire and scheduling the interviews, the in-depth conversations are conducted. The transcripts are analyzed, rating the pros and cons of the answers.
In the third phase, to answer the research question, the results of the first and second phase are compared, combining theory and analytical research. It was possible to see this interaction already occurring during the interviews. Figure 13 presents a methodological diagram to guide the information path.

To what extent do TOD characteristics affect the willingness of different types of private companies to invest in transport hub areas?

1st phase: Desk research

- Literature study
- Retail location
- TOD
- Comparison

2nd phase: Interviews

- Define questionnaire will be asked on the interviews
- Selection of horeca companies that will be interviewed
- Conduct semi-structured interviews with stakeholders about their investment interest
- Rate characteristics presented in the interview
- Understand how to change stakeholders engagement from a negative investment perspective to a positive investment perspective

3rd phase: Comparison

- Combining theory with empirical research
- Ideas and recommendations to change stakeholders behaviour towards hub improvements
- Expected result

*Figure 13 - Research strategy (own elaboration)*
In this context, each retailer considered for the interviews is a case study as each performs a different role in the context and can provide a different perspective. The research uses multiple-case design in order to discover a comparative approach over the subject, allocating each case inside the same context, i.e., The Netherlands is the context, and the TOD characteristics are the same unit of analysis. Based on the ideas of Yin (2009), the multiple-case design is considering a comparative model, and it will use the same methodological framework as can be seen in Figure 13 (emphasized in orange). Even though the multiple cases are based on the comparison, it is vital to stress that inside the target group of interviewees, there is a subdivision according to the interviewee’s focus: food sector (with restaurants and cafes) and hotels.

![Figure 14 - Basic types of design for case studies (Cosmos corporation, 2009)](image)

3.2. Philosophical Perspective

In order to explain the philosophical perspective of this research, Strauss, and Corbin (1990) state that general qualitative research explores the internal knowledge of the contributors. Regarding that view, the research question “To what extent do TOD characteristics affect the willingness of horeca businesses to invest in transport hub areas?” intends to obtain a deeper understanding of the retailers as private companies willing to contribute to this topic.

Epistemology differentiates what is knowledge from what is a belief. The epistemological approach to be taken in this research is constructivism, which will be used to support the philosophical background. Meanwhile, ontology relates to the existence of facts. The ontological approach taken will be interpretivism because the subjective view of reality is present (Guba & Lincoln, 1994). The research strategy relies on the deductive approach, where the theory is first analyzed, and then findings are observed after the interviews (Bryman, 2016). To be more precise, the theories of TOD and locational strategies are presented prior to data collection (Thornhill et al., 2009). After data
collection, they are revisited to ascertain findings. The data will also be the foundation of the qualitative approach with the semi-structured interviews as the primary method. The practical visualization on each of the sub-questions and the main question is given in Table 1.

**Table 1 - Questions under philosophical perspective (own elaboration based on Guba & Lincoln, 1994; Thornhill et al., 2009; Bryman, 2016)**

<table>
<thead>
<tr>
<th>Question</th>
<th>Epistemology &amp; Ontology</th>
<th>Research strategy</th>
<th>Research design</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent do TOD characteristics affect the willingness of horeca businesses to invest in transport hub areas?</td>
<td>Constructivism &amp; Interpretivism</td>
<td>Qualitative Approach: Deductive Theory</td>
<td>Qualitative approach</td>
<td>Semi-structured interviews</td>
</tr>
<tr>
<td>1. What TOD characteristics can be distinguished for transportation hubs?</td>
<td></td>
<td></td>
<td></td>
<td>Desk research</td>
</tr>
<tr>
<td>2. What are the considerations present in horeca businesses formula to invest in a station area?</td>
<td></td>
<td></td>
<td></td>
<td>Desk research/interviews</td>
</tr>
<tr>
<td>3. What are the similarities between the TOD characteristics and the retail sector’s investment formula?</td>
<td></td>
<td></td>
<td></td>
<td>Semi-structured interviews/questionnaire</td>
</tr>
<tr>
<td>4. What are the barriers for horeca business to invest in transportation hubs?</td>
<td></td>
<td></td>
<td></td>
<td>Semi-structured interviews</td>
</tr>
</tbody>
</table>

The primary method of achieving findings are the semi-structured interviews with open-ended questions, on themes previously chosen. Nevertheless, to assess the importance of each characteristic for the retailers, a questionnaire with the interest of investments expressed in likelihood was developed to complement the primary method. This questionnaire does not fulfill a quantitative approach entirely due to the way it was conducted. The reason for this is that each answer is addressed by means of a qualitative method with open-ended answers. Apart from this, these characteristics are ranked under the perspective of the best-worst method to evaluate their level of influence.

### 3.3. Methods of Data Generation

The explorative part of the research consists of understanding what is motivating retailers' investment formula. This research explores the possible relationship between physical characteristics and locational strategies (Thornhill et al., 2009). The research has the intention to map the characteristics of the development strategy from the relevant businesses. This involvement will be studied, especially from a specific group of private stakeholders’ point of view, i.e., horeca businesses.
Private transportation companies (e.g. taxi companies, private shuttles, alternative app-based taxis and car-sharing companies), real estate developers, non-profit organizations for housing (e.g. SSHN, Talis, Portaal, De Gemeenschap and Standvast Wonen), and business and retailers (e.g. Albert Heijn, Kruidvat, McDonalds, Douglas, Bruna, Mr. Doner, Febo, etc.) are considered private investors. In this last group of businesses and retailers, representatives from the horeca will be questioned about their willingness to invest in transport hub areas depending on the TOD features of these areas.

By answering a semi-structured interview, it is possible to follow the investment designed by private businesses as a formula and which features attract them. The retailer shops are the focal sector that will be interviewed, especially the private parties such as horeca companies (hotel, restaurant, and café – and the combination between these sectors).

3.4. Operationalization

3.4.1. Criteria Selection

After each criterion was defined and the relation with station area were established, Figure 15 shows a summary of TOD components and its criteria. Since not all of these criteria are representative of the present research, a selection of those components which can influence companies’ investment strategies was made. Afterward, the selected criteria were compared to characteristics coming from locational theories as a result of the conceptual framework previously defined.

Bertolini’s unbalanced node-place model definition was used to select the criteria that fit better in the station area and can influence business attractiveness in horeca. The criterion mentioned in Figure 15 can influence the transportation node, or they can be part of the characteristics of the place. As can be seen in Table 2 below, for instance, the criterion land use mixture reflects the place development and not a specific transportation system development. If this land use mixture is promoted directly because of the transportation system is the situation where the TOD characteristics perform a crucial role. However, several other factors might change that criterion.
Table 2 - Relation between TOD criteria and node-place model (own elaboration)

<table>
<thead>
<tr>
<th>Component</th>
<th>Criteria</th>
<th>Node development</th>
<th>Place development</th>
<th>Direct influence TOD -&gt; place</th>
<th>Asked about in the interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>Population</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>Inhabitants unit</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>Employment rate</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>Rent value</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Diversity</td>
<td>Transportation modes</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversity</td>
<td>Commercial intensity</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Diversity</td>
<td>Land use mixture</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>Development context and TOD scale</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>Pedestrian and cycling provisions</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>Visibility</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>People flow</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Destination</td>
<td>Distance to business center</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Destination</td>
<td>Distance to city center</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Destination</td>
<td>Distance to the closest store available (same sector)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Destination</td>
<td>Distance to the closest store available (different sector)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance to transit</td>
<td>Distance from home to the transportation system</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance to transit</td>
<td>Local access</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demographics</td>
<td>Purchase power - higher income</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demographics</td>
<td>Accessibility for disabilities</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demographics</td>
<td>Lifestyle (more urban, suburban or greenfield)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand management</td>
<td>Rideshare programs</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Demand management</td>
<td>Location-efficient development</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand management</td>
<td>Traffic-calming</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Demand management</td>
<td>Access after the entry gate</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

It should be noted that these TOD components can influence the criteria. For example, under the demographic component, the TOD characteristics cannot influence it. That is because population's income is a feature that can be changed due to a vast number of external factors, and, even if the station area is developed on a transit-oriented condition, it will not influence directly on people's income. Nevertheless, indirectly, it is possible to occur, especially if the inhabitants that live around the stations are hired as employees in the retails rising their income. As a secondary perspective, the improvements made in the station can reflect on this factor. For these presented reasons, not all the criteria will be
considered in empirical research. The third column presented in Table 2 indicates whether if this criterion can be influenced by a possible TOD redevelopment. Within this scenario, these are the selected characteristics to be investigated in the interview. This selection was made to check the interviewees’ willingness among them after they already mentioned their characteristics freely, so do not get bias by them.

The direct influence between the criteria and node-place model was established because of the context in the Netherlands. The problem statement for this research regards the place development because, in the Netherlands, the node or transportation systems are already well-developed and of high quality. With that analysis, it is possible to see which characteristics are more relevant to be developed in the station area to attract the attention of horeca businesses.

3.4.2. Retailers’ Strategies

Depending on the retail segment, it is also possible to be a generator of travel, which leads to a need to have a well-located area. According to the policy of NSW Department of Urban Affairs and Planning “retail functions should be ideally located in a network of attractive and vibrant, mixed-use centers of all sizes and functions, and closely aligned with the public transport system” (2001). This definition resembles directly to TOD characteristics as a mix of land use and permitting connections to transport system.

As seen from the market perspective of the analyzed European retailers, in the report Retail 2010 written by Buck Consultants International, the conclusion indicates that the food sector dominated the internationalization process. These companies are spreading over the continent in the same fashion as they possibly have the same investment strategies (2005). Many US brands such as McDonald's, Burger King, and YUM!Brands have expanded in the EU market. This internationalization of the businesses enhances the integration of transport and land use, locating the stores closer to the station to deliver the products.

The same retail report states that most of the restaurants and fast foods are located in a variety of places, such as high streets, shopping centers, motorway locations, football stadium, railway stations, petrol stations, and airport. Although these locations seem to be quite broad to attract food retailers, the areas have in common that they have a minimum “urbanization level, car accessibility, parking space, and extension opportunities” (Buck Consultants International, 2005). As presented in Figure 16 and in parallel with the research focus, the level of pedestrian footfall and property prices are the trends observed in the 2000s.
Nowadays, digitalization for many sectors implies the reinvention of the sales process. For example, to gain an economic and competitive advantage, cafes in station areas could sell their products online, and the delivery process could be at the station. The digital process would create a new service and optimize the activity of the sale. As per the chosen target group of delivering a physical service or hosting a guest, it is impossible to do it all digitally. This reinforces the idea that their location is still a crucial issue.

3.4.3. Selection of Target Group

The main sectors involved in the negotiation for a (re)development are the transportation companies, real estate developers and the various public authorities such as the municipality, local and national governments, depending on the situation. Nevertheless, the stakeholders involved in a multi-modal hub are not only those who will build and manage the hub but also those who are affected indirectly by them. In this broader scenario, it is possible to reach people who live at walking distance to an area with small businesses and retailers.

Figure 17 shows the interaction between retail demand and dwell time according to locations. Travelers spend less time in the railway station and therefore need functional and fast retailers to attend their demand. The clarification of these private businesses relies on horeca since they present a natural functional and fast attendance. The retailers involved in this process will be clarified in Appendix B. Although hotels are not included in fast service, their perspective is unusual in a long-term location decision process. Hotels’ point of view enhances the TOD characteristic of creating a compact area in the surroundings where the traveler can consume, work, and rest.
Figure 17 - WYNE’s High traffic retailing curve (WYNE, 2013)

The considered list of companies is presented by magazine Misset Horeca, which every year ranks retail companies according to their turnover. The list is dated 25th May 2018. 36 Companies were selected out of the list of 100 largest horeca companies in the Netherlands. Of those 36 companies, nine responded positively for an interview. Another company was included as a tenth interview. This company consists of two restaurants within a 5-minute-walking distance from a station area that closed in 2016. This interview was interesting to understand the reason behind this unfortunate case. These are the 10 companies in the horeca sector that formed the focused group of interviewees. When choosing the companies, it was the goal to create a diverse group because the research should be able to approach the location point of view from different perspectives.

The interviewees were asked in advance if they were the person responsible for choosing the existent locations or if they were responsible for the ‘next location strategy.’ The answer to this question could support the businesses’ perspective to TOD characteristics, as the key issue of this research. It is noteworthy to inform that their responses can be connected to their businesses’ perspective since they have different sizes, belong to distinct subdivisions (under the hotel, restaurant, and cafe categories), and have various target sales group, influencing on investment strategies.

In order to evaluate the potential influence of locational strategies in horeca business, all the companies that replied and manifested interest to be part of the research were selected for this study. All the companies are retailers and are present in one of the categories of horeca businesses: hotel, restaurants, café, lunchrooms, fast service, coffee corners, ice cream shops, cafeterias, nightclubs, coffeeshops, congress centers, bed-breakfast, and party catering. The interviewee needed to be aware of the investment locations of the company. The respondents within the organizations will remain anonymous. Overall, most interviewees were operational managers, location specialist, businesses’ owners, or from the new developments department.

In the Dutch transportation hub context, NS is the landowner of the station area. In this position, they have a tremendous decision on future retailers on their site. Nevertheless, the immediate area around the hub is not controlled by them. This area still is within
walking distance to the hub, so it is also part of the target of this research. For this reason, the NS were included in the study as an interviewee and responsible for all the companies they own.

3.4.4. Location of Interest

The criteria are the most measurable and easy way to explain TOD characteristics. In order to understand TOD characteristics in the investment strategies, a stated choice part was included in the semi-structured interview. The characteristics are based on the interviewees' perceived view. It is significant to emphasize that this study considers the station area and the direct surrounding. There is a reference for rail station within 0.25 miles, so it is approximately 400 m (measured in a straight-line distance) from a central position at the hub as Figure 18 shows. This distance is widely considered as an acceptable walking distance to transit in a relatively low density. This fact is due to a substantial passenger walking flow added in this area related to the station. Once the distance goes beyond about a 5-minute walking distance for local transit, the value-added effects from transit mostly vanish (Cervero & Duncan, 2002).

![Figure 18 - Station neighborhood (Google maps, Utrecht Centraal area, 2019)](image)

The companies that were interviewed might or might not have stores in this direct area. Since the idea is to analyze their willingness in a prospective investment, it does not consider only the existent stores but also the possibilities for future investment in the transportation hub and its surroundings.
3.4.5. **In-depth Interviews**

More important than just interviewing the relevant businesses, it is essential to understand the influence of each TOD characteristic on a company's location decision. This relationship is underlined as an analytical study. In this type of study, semi-structured interviews can be helpful to establish a connection (Thornhill et al., 2009). That is the reason why the interview starts with open questions where the question is formulated, and the response is left open, followed by a focused part with the characteristics at the end of the interview. The interview aims to comprehend the level to what extent these criteria can affect their decision making when it comes to an investment strategy. This comprehension is part of the exploratory study, and the interviews can also be used to assess information. This collection of data allows the interviewees to think from a different perspective making the research richer and detailed.

The research method conducts interviews with the horeca companies in person with no stored visual data, only audio files. The interviewees were approached by phone calls, e-mails, or LinkedIn account. Following the interviews, transcripts will be developed related to the content transcriptions tool, which can be integral or summarized versions, depending on the length and relevancy of the questions and answers for the research. Interviews are not seen as a single case but rather as a representative of a group (Flick, 2009). Semi-structured interviews are developed to create “a maximum of self-revelatory comments concerning how the stimulus material was experienced” (Merton & Kendall, 1946). The focus group was interviewed, presenting questions about whether TOD characteristics influence their attraction to the investments and their willingness to make investments.

Since semi-structured interviews allow flexibility and more general topics, two parts consist of open questions. The first part relates to retailers' investment strategies, where they have located their subsequent developments and which features are considered. The second part is regarding the station area investment. If there is any planning for a station area, the question hopes to find the reason why the company selected this area. The flexibility present in these two parts is to produce content of all interest and emerging data from the participants (Flick, 2009). The third part of the interview consists of focused questions about the TOD features that were discussed in section 2.3.2.

The answers will help in current and future strategies for investment from the perspective of the focal group of retailers. Moreover, it will answer the third sub-question, which relates their perceived issues and TOD characteristics analyzed in the first and second questions. In order to comprehend this perspective, interviewing businesses is a method that extracts their point of view.

According to Baker and Edwards (2012), five factors must be considered to determine the suitable number of interviews for a research question: saturation, minimum requirements, style or theoretical underpinnings, heterogeneity of the population, and breadth and scope of the research questions. The interview in this research could approach every available retail business. Unfortunately, this was not possible due to limited time constraint. The saturation point relies on collecting enough data that allows answering the research question. When no new explanations are given as answers in the interviews, the saturation point is close, and the research questions can be answered. Hence, ten interviews sufficed (Bowen, 2008). The breadth of this research considers horeca companies in the
Netherlands. That fact also shows the homogeneity of the interviewees as they are all businesses, horeca, and located in the Netherlands.

The saturation point was reached when inside the homogeneous group, it was possible to grasp the diversity of the businesses. Between the restaurant’s subdivision, it was mixed with a large chain of food fast-service, a large coffee fast-service, a built-in restaurant inside of a known store, a fine dining restaurant, a multipurpose space, two restaurants with a single owner, and a 3-course-menu chain of restaurants. In the hotel branch, it was targeting a chain of hotels, and a chain of vacation parks.

The aim for interviews during the first contact is to briefly explain the research and find the right contact inside the businesses. The interviewees received a sample of possible questions to be answered on the cover letter or e-mail, so it was possible to prepare for the interview. It was asked for a 60 minutes meeting. The interviews duration differs between 30 and 70 minutes, depending on the interaction with the interviewee. Before starting the interview, permission was asked to audio record and used the information for scientific research.

As soon as possible after the interview, the audio recorded was transcribed and sent to the interviewee. The interviewee was asked if they want to adjust or give their final approval. All the interviewees agreed that the transcription was a good representation of the interview. From the ten interviews, all of them were transcribed or summarized, and they are available in Appendix G. These transcriptions are made to keep the information transparent. Some interviewee decided to keep confidential the company's name or place as they are developing new businesses, which was replaced by (*) on the transcripts.

3.4.6. Stated Choices and Clarification of the Best Worst Method

As a complementary section for the semi-structured interview, TOD characteristics were shown as a stated choice. This provided a practical overview of the characteristics and enabled the interviewee to address other characteristics not mentioned before in the interview. Providing all characteristics makes it possible to understand which one is more important than the other to the interviewee. Since it is tough to give added value to qualitative aspects, the best-worst method was used to help in finding the weights of each characteristic and score them. The best-worst method is a way to find answers to a multi-criterion decision-making problem (Rezaei, 2015). All the BWM results are shown in Appendix D.

During the interviews, TOD characteristics were discussed in order to ascertain whether the retailers are willing to invest in the hubs. The criteria selected in section 3.4.1. was used as a background. These stated choice questions are complementary to the semi-structured interview. They were used as a trigger to extract more information from the retailers while they provided other features that the interviewees might not have remembered at first glance.

As proposed by Thornhill et al. (2009), the rating was scaled to five categories, from very good, good, reasonable, slight/bit, to none/not at all. In order to assess the willingness of each characteristic presented, the ranking was based on likelihood. This numeric rating scale includes both positive and negative statements. Also, it is possible to choose the neutral option, that means that this characteristic has no difference in their choice (ibid.). Below it is possible to see an example of the grading system. As an example, the interviewed company selected the five below characteristics that would have made them 'highly likely'
to invest in a transport hub. This specific interviewee selected five characteristics as their highly likely interest-oriented. However, other companies can choose a different number of characteristics as their main ones.

☐ highly unlikely  ☐ not likely  ☐ no difference  ☐ likely  ☐ highly likely

Between all the characteristics presented, those that the interviewee marked as highly likely were selected to the next phase to have a better understanding. Between only those, the best worst method was applied. First, the features were paired up. Then it was asked which of them performs a more important role in the interviewee's strategy. The selection between the best and the worst is made, as presented in Figure 19.

Highly likely characteristics

<table>
<thead>
<tr>
<th>Criterion 1</th>
<th>Distance to city center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion 2</td>
<td>People flow</td>
</tr>
<tr>
<td>Criterion 3</td>
<td>Local access</td>
</tr>
</tbody>
</table>

Distance to city center ✔️  Distance to city center ☐
People flow ✔️  Local access ☐
People flow ✔️
Local access ☐

Criteria Number = 3

<table>
<thead>
<tr>
<th>Names of Criteria</th>
<th>Criterion 1</th>
<th>Criterion 2</th>
<th>Criterion 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to city center</td>
<td>People flow</td>
<td>Local access</td>
<td></td>
</tr>
</tbody>
</table>

Select the Best  People flow

Select the Worst  Local access

Figure 19 - Paired up highly likely characteristics and best and worst selection (Adapted from Rezaei, 2015)

Secondly, their relationship is checked if it has equal importance, ‘moderately’ more importance, or ‘absolutely’ more importance over the next one. In this comparison, a weight is giving to each as ‘1’ for equal importance, ‘2’ for moderately more important and ‘3’ for absolutely more important than the compared characteristic (Rezaei, 2015). The importance of the characteristics was giving by a perspective from the researcher on the interview. The choice between ‘moderately’ and ‘absolutely’ more important than the other characteristics in the comparison was granted by the interviewer based on the emphasis noticed in the interviewee’s answer. The BWM uses a scale from 1 to 9 in its calculation bases. However, it was simplified in this research to a 1-to-3 correlation to facilitate the interviewer’s decision. This comparison is made for the best to the others and the others to the worst, as can be seen in Figure 20.
Thirdly, the regular application of the BWM was used to assess the correct results. The application is solved using the Solver-plug-in of Microsoft Office Excel for each interview case. Appendix E elaborates by means of figures of steps how these were calculated. The key set identifier (Ksi*) shows to what extent the results are reliable – the closer the Ks to zero, the better. As the literature suggested, if there is a Ksi>0,25, it should be considered. This assures all the results have sufficient backing (Rezaei, 2015). The weights as calculated through the Excel spreadsheet could then be translated into a graphic, as can be seen in Figure 21.

<table>
<thead>
<tr>
<th>Weights</th>
<th>Distance to city center</th>
<th>People flow</th>
<th>Local access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ksi*</td>
<td>0,042</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 20** - Characteristic comparison in importance (Adapted from Rezaei, 2015)

<table>
<thead>
<tr>
<th>Other to the Worst</th>
<th>Local access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to city center</td>
<td>2</td>
</tr>
<tr>
<td>People flow</td>
<td>3</td>
</tr>
<tr>
<td>Local access</td>
<td>1</td>
</tr>
</tbody>
</table>

The meaning of the numbers 1-3:
1: Equal importance
2: Moderately more important than
3: Absolutely more important than

Finally, after all the interviews were conducted, and the BWM was applied, the criteria that influenced the interviewee’s strategy could be identified. The minimum number of characteristics listed as highly likely on the interviews was 3. In order to summarize them and make a correct comparison, the best 3 of each of the characteristics were selected, especially for those who had more than 3 in their highly likely characteristic criteria. As a result, the qualitative analysis can be read in a quantitative parameter. The analysis was made for all the interviews, as can be seen in Appendix D.

**Figure 21** - Characteristics weights, Ksi, and graphic (Adapted from Rezaei, 2015)

3.5. Reliability and Validity of the Research

Reliability consists in establishing confidence in findings (Lincoln & Guba, 1985). Meaning the research is safeguarded, preventing possible errors. In order to achieve that, data analysis is conducted with the software ‘Atlas.Ti’ protecting from arbitrariness. The codes used to analyze the interviews are shown in Appendix F. The software helps the researcher to construct their arguments based on the interviews. This provides one of the
most significant measures to achieve validity of the transcription of all recorded interviews, according to Lincoln and Guba (1985).

Every research requires credibility, transferability, and confirmability. However, it is hard to be objective in qualitative research (Bryman, 2016). The self-criticism and the in-depth conversations with mobility experts from Arcadis during the internship period helped to provide credibility and transferability to this research. The researcher provided a document to all interviewees, in which they give their consent to take part in the research. It ensures their privacy and permission to treat all the data (company's name, interviewee's name, or prospective development's location) provided as confidential. Within a two weeks deadline after the interview, it was possible to remove the information mentioned by the interviewees. These documents are in the researcher's possession, and for confirmability, they are available upon request.
4

Empirical Results

4.1. Introduction

In the following chapter, the general information from the interviews will be described. In total, there are ten horeca businesses who participated in the interviews. The answers to the sub-questions will be provided as empirical results from the selected method, the interviews. The opinions from the interviewees will be quoted to emphasize the relations and pitfalls that lead to the conclusion of the research.

First, the characteristics used as an investment strategy by the companies will be highlighted. The quotations will be presented to explore the characteristics. Secondly, this information will provide a context to build the link of interest of the research between the TOD and the investment strategies. Thirdly, it will be explored the results from extracted from the characteristics and from barriers to invest in station areas. Finally, the conclusions from the interviews are presented, illustrating the empirical results.

4.2. Analyzing Characteristics

On the first part of each interview, it was asked about how they choose their next locations developments. This question was asked intentionally without explaining the concept of transportations hub, so they would not be subject to bias by the researcher’s opinion. In the second part, it was explained what is considered as a location around the station. After this explanation, it was asked if any of those previously mentioned characteristics would change, and if there is a barrier to this particular place. Later, the interview was followed by the stated choice complementary part. The interview questions are open; nevertheless, a questionnaire model was used to guide the interviewer in the right direction. This questionnaire is available in Appendix A.

An extract of each interview is presented below, divided by interviewee, with their answers about the characteristics that are important in choosing their businesses location. While analyzing these characteristics, the empirical results were stated and briefly commented on in each section. The full transcript from these interviews is available in Appendix G, except the eighth interview because it was not possible to record. In this case, a summary was made with the information collected during the interview and with later approval from the interviewee. In order to consider the request from many interviewees, the company’s names are confidential. However, there is a brief explanation of their business in every section title, and an extended clarification of their businesses, the location and environment of the interview in Appendix B.

4.2.1. First interview – an in-built restaurant inside a department store

In the first interview with a large department store with some in-built restaurants, it was possible to see that being a well-known brand (as they are) can attract other businesses to the hub, as can be seen in the following quotation. This recognition can relate to the spatial interaction theory characteristic when a consumer is willing to go further for a specific product or a specific store. Nevertheless, they consider the visibility a crucial characteristic to have a successful investment. They provided an example of a store located in a hub under remodeling, and they didn’t achieve their sales target due to their location in the station, referring to the design TOD component.
"If you are a very strong brand, you could be located in a less visible location, because people
know you. But the hub manager also wants to situate us in a good location because for other
brands. We are not a magnet, but we are a strong brand in the Netherlands so you can tell that
if we are coming there, ... you rent near us. It is a win-win position, because if you have a big
store and then people drop by.” (1st Interview, personal communication, June 18, 2019)

"We had one store ... that was functioning more poorly, less optimum. ...I think the reason was
because it was a station in transformation, and we had a more or less temporary unit. We
hadn’t a lot of choices, and sometimes you don’t have a lot of choices. It’s that unit or not, and
then you have to choose this for the company.” (1st Interview, personal communication, June
18, 2019)

In addition, it was mentioned the zoning and permits present in Dutch laws that
protect the local retailers allowing them to stay in the villages and also attracts larger
companies if the village does not have the services. This relates to the third principle of
central place theory, where the administrative contexts play a role in locational decisions
delineating their location according to the zoning plan, which is a top-down decision made
by the municipalities. The connection with the TOD component of diversity is significant
mixing commerce and residential land use in smaller villages, consequentially protecting
the local economy. This structure, with the availability of useful services that are present in
smaller villages, can be stated in the next quotation.

“In the Netherlands is more or less a unique country where you will find a very dense structure
on big cities. But the smaller village also has its small centers and high streets where you can
shop. Most inhabitants of the Netherlands have supermarkets in their own neighborhood. But
there are countries in Europe where a lot of people have to drive to a mall, and there’s only
one within a few miles (...), and if they are in village there aren’t any shops anymore, but we
have very strict planning that protects the village and also the stores in a village.” (1st
Interview, personal communication, June 18, 2019)

4.2.2. Second interview – hub manager responsible for cafe chains in the station

The second interview was done with two interviewees from the hub manager. They
not only manage all the rail hubs in the country but are also responsible for a number of
brands where four of them are horeca companies such as restaurant, cafe and fast-
convenience service. The hub manager current situation carries the duties to mix and match
their own brands, franchising companies, and local – usually small – businesses that have
an interest in the station area.

It was possible to understand clearly that the amount of travelers in the station is
the essential feature for the interviewees’ decision process. That can be seen in the next
extract from their interview shown below, and also in the results of their BWM applied to
the characteristics that they pointed as a high willingness to attract their investment with
56% related to people flow (it was the highest percentage achieved in all the interviews).
This characteristic is indicated in the TOD design component. Although they mentioned
travelers’ personal characteristics to choose the brands that are going to be inside and in
the surrounding of the hub, where they are landowners, they do not see lifestyle (one of the
demographic components) as a characteristic that would make them highly interested in a
specific hub. This implies that their personal feeling is also applied to the model when it comes to a final decision.

“We look to the amount of travelers in the station and what kind of characteristics they have, age, man or female, are they traveling for work, what is the purpose of traveling and then we decide what kind of brand fits that.” (2nd Interview, personal communication, July 4, 2019)

Figure 22 - BWM for characteristics on 2nd interview (own elaboration)

In connection to the trend of transforming the hub into more than just a transport terminal, the second interviewees agreed that a lot has changed in the past 10 years in the hub’s context. The new concept of hubs is to be considered as a venue. The hub is, not a place with a specific purpose where people go shopping, but a place where there is traffic flow and they also provide a sort of services as can be seen in the next quotation. This happens because people will go to the hub to use as a transportation node, in any case, resulting in an expected flow of people.

“The stations are kind of a placemaking (location), so we’re not like a playing field somewhere outside, and we always have people coming in. If we do not do our job, and we don’t have tenants and all, people are still coming and traveling by train. We are a place where people are coming. They are coming anyway, so it’s different from a shopping mall where you have to go by train or by car and then you have to do the funny thing, so people come. We are using in a whole different setting. ...We’re doing this (treating the hub as a venue) so, in the past 10 years, this is changing.” (2nd interview, personal communication, July 4, 2019)

Another critical characteristic mentioned in the second interview is the availability of locations because if there is a valid contract for some locations, it can be hard to make an improvement in the hub. This feature is not TOD related but can influence in a location strategy. If the position of the store is highlighted in comparison with the ticket services and waiting rooms, this can impact on the design component with the visibility of the store, and it can attract more clients to a business which would raise their willingness to invest in that hub.

The bellow-mentioned quotation applies the administrative principle of central place theory, the same as was stated in the first interview. This principle regards the zoning policies as the context to determine the land purpose for each area they own around the stations.
“Sometimes it is also if there is space available or not. It also about availability. Sometimes we put the services in one important spot for travelers buy the tickets or waiting rooms and things like that. Or you put the brands for more commercial purpose in the most important spots. So that is a different point of view, and it’s a little bit changing through the years what we do. It’s about also politics and what is most important for the traveler, or it is the profit for us most important place? It’s more about politics and focus for the company.” (2nd Interview, personal communication, July 4, 2019)

One more important fragment of the second interview is the seasonal analysis of a person-based lifestyle. People’s behavior reflects on their travel choice, and it changes according to the years, and according to the interviewees, seasonally. It happens the same with their consumption patterns. All of these changes affect businesses location strategies.

“I think we also list all those aspects and there’s another one: transport flow is changing every year or every few years. So almost all small projects we’re doing now, it’s around 400 stations. It is also because things change in transport and we have to adapt the station to that so sometimes the shops are there because it used to be a good spot, but now it isn’t anymore.” (2nd Interview, personal communication. July 4, 2019)

They also emphasized that the trains and stops change every year, and with this fluency, they can plan more in advance possible changes on the flow. However, the behavior is harder to plan. For instance, they mentioned an Asian food restaurant they tried to implement in stations a few years ago. It was not a success for multiple reasons, including consumers patterns for the moment was not fitting their expectation, as can be seen in the next quotation.

“There was also a formula that we started our own... Asian food. I think it's also was a little bit before trends, so it was... too early. We were too fashionable Asian, but so we sometimes try something because we know people want something different to eat, so we thought it was Asian. But it didn’t work out... It didn’t work out because it wasn’t profitable enough. And people don’t like it. We didn’t have enough travelers to visit the shop. It was too expensive to bring all the fresh products. Sometimes we just fight and figure out it doesn’t work.” (2nd Interview, personal communication. July 4, 2019)

4.2.3. Third interview – hotel park chain

In the third interview, the vacation park with hotel and services, such as restaurant, showed a particular point of view that fits their concept of providing a full vacation experience for their guests. The sense of feeling good at the place, it is not mentioned in any locational theory or TOD characteristics. This particular point is clearly personal-based, and it goes in the direction of current trends of providing a more tailor-made solution for the consumers, making them feel unique, as can be seen in the next quotation. In addition, they emphasize that this sense of feeling good approaches the lifestyle, present in the demographic component, when they look for a nature area. They do not consider that their location needs to be close to public transport in general; however, they do not see it as a barrier as well.
"What I do is that I look for this specific location, of course, if it feels good. It’s very soft, but it has to feel nice to come there as a guest on our holiday. And does it have some historical tourist infrastructure? Is there not at the location itself but in the surrounding area, is there a lot of things to do for people to go on holiday? Are there strong neighbors? ...We look at every location what’s the added value you can give on the location for our guests." (3rd Interview, personal communication, July 10, 2019)

“I think if we have a park in a location that’s good for nature, but also nearby public transport, I’m in for it.” (3rd Interview, personal communication, July 10, 2019)

The understatement of having different neighbors is a vital characteristic to select a location for this interviewee. Those developments that attract people to consume together with their hotels - such as amusement parks, indoor playing parks, or other leisure attractions – are considered strong neighbors. If the neighbors are restaurants, they will focus on constructing other facilities and work together with the local entrepreneurs. This can be related to the diversity component when they intend to make it a more diverse land use in the area. Also, it is connecting the ideas existent in the minimum differentiation concept with clustering closely similar services attracting more consumers.

“If there are lots of horeca in the surrounding areas, then it can be in this spot, at this location, we don’t start a restaurant because there is a lot of restaurants in the nearby, so the competition is harsh. Probably they do better than we can do ourselves, so we look at every location what’s the added value you can give on the location for our guests. ...the main goal is also the park as a standalone must work well. So, and if there are strong neighbors, we used them in our benefit... We say let’s work together.” (3rd Interview, personal communication, July 10, 2019)

This hotel chain has one new development located 400m to a station that is under construction at the moment. While asked if they chose this area due to this close position to the public transport, it is was possible to understand that this situation was not previously mandatory since they were more concerned about the port nearby as a strong neighbor and being close to the transportation system is was just a good opportunity.

“There must be an opportunity, of course. It is not so that I can choose some, so it’s an opportunity. The fact that there is a train station nearby is not really the major or big reason to do it there. The main reason, that’s a good location, but the port of Rotterdam seems to be strange, but there are lots of traffic with cargo ships up and down, and people like to see.” (3rd Interview, personal communication, July 10, 2019)

4.2.4. Fourth interview – multipurpose space with a restaurant

The fourth interview was made with a restaurant that does not limit itself to the restaurant concept. They aim to have a concept of a multipurpose space, where events, meetings can happen with catering service, the possibility of being a co-working space or community events. The process of finding the location it happened in a different way since they found the place at first and after developed the concept that would adequately fit the enormous space available.
“There were signs on the windows for renting, we looked inside, we contact the owner, and we had a tour, and then we made up a plan. So, it was the other way around, normally have a concept, and you find the space with it. And, we did the other way around, but we made this, then we made the concept, not only for space but also for the features around it.” (4th interview, personal communication, July 17, 2019)

The concept existent in this business does not facilitate easy copying since it requires space to fit all the features they target, and the owners are interested also in the local atmosphere. They present themselves to different target groups for weekdays and weekends due to the diverse public groups.

“...Our concept was formed by the building because you have all these kinds of rooms... So, we were asked by people to do it, we were thinking about it sometimes, but it really needs to have the same possibilities, and also it has to be at a location which has the same vibe because we have an area quite close a lot of families with children, we have companies around here, we are very close to the railway station, we’re very close to the highway. So, it’s not so easy to find another possibility just by itself. So, that makes it quite hard to just copy this concept. We decided first we are going to become better at this place before we choose to open the second one.” (4th interview, personal communication, July 17, 2019)

The location is particularly singular since it is located within a 5-minute-walk from a transportation hub and combines a diverse land use in its surroundings. It this fact, it can be highlighted the importance of two TOD characteristics, local access, and diverse land use, under the distance to transit and diversity components.

“For us, for instance, public transport is very important, we have already on our website that people come by, please come back train, or come by bike, and leave your car at home. Although we have enough parking spaces in the area, but it’s paid, so people don’t mind.” (4th interview, personal communication, July 17, 2019)

4.2.5. Fifth interview – cafe and restaurant chain

In the fifth interview with a cafe and restaurant chain, a whole different strategy was detected. They all have businesses in central Amsterdam, which shows their interest in staying close to the city center translating to the destination accessibility TOD component, as can be seen in the next quotation. They understand in their strategy that is easier to attract people from outside the city center to the city center than the opposite. It is also emphasized that Amsterdam is well-connected in terms of public transport. Even in possible spots where there could be no apparent connection, the consumers can access by scooter or bike created by their intrinsic cycling culture.

“We never thought about that (being close to a transportation hub) in any location. Also due to the part at basically every location of us is in the center of Amsterdam, so you already know an instant look like a big city, but the center of Amsterdam isn’t that big as well. And we have a good public transport system, and so those are not really things where we think you need to think about it and still a lot of people enhance them. Everybody rides on a bike or scooter or so.” (4th Interview, personal communication, July 18, 2019)
"If you are in the city center, you have the combination, and you have basically the pull factor. If you have a business outside of the center, I think it’s really hard to attract the people who live in the center, and I think it’s not easy to attract people, but it’s easier to attract people from outside the center to the city center then the other way around." (5th Interview, personal communication, July 18, 2019)

The locations of this interviewee’s business were usually chosen by a real estate agent or landowner of Amsterdam area who wants to build a joint business with them as can be seen in the next quotation. This is a different perspective when they find first the place and develop the concept after based in many aspects of the location. This happens because each new development has a unique concept resulting in all different businesses types and target groups.

"We were approached by somebody, or real estate agent, or somebody who owns a building, or sometimes people already own the building and the business, and they want to work together with us. Basically, those are the ways we find locations. ...It’s not we have a personal counselor for locations to start a business, but then you are going into the locations and have an idea or start a concept and then say: Ok, this is maybe a good location to this idea or concept at the moment. Or this location is not suitable for anything, or we don’t have an idea or concept at the moment.” (5th Interview, personal communication, July 18, 2019)

"The owner of your businesses together with other people basically he has already a brand identity, the marketing there is the key because of a lot of people the owner. ...the owner designs all the places himself, and then he goes in and looks for the opportunities and then making a concept out of it.” (5th Interview, personal communication, July 18, 2019)

Still having the concept as mandatory for new investment, the interviewee was asked if the high rents in Amsterdam play a role in their choice. They said that it happened before in a central place with a lot of foot traffic and visibility, such as one of the main squares in Amsterdam. The opposite of what they wanted happened – attracting tourists rather than their primary target, the local population. As a result, they did not achieve the expected turnover for this business that had excellent visibility, and high traffic flow as the design component proposes. This contradicts the central place location in terms when the consumers do not want to be in the most central location and be overwhelmed with the number of tourists and meet the spatial interaction theory when they would go further to reach their chosen destination.

"More popular places can have a higher rent, but this is not a guarantee at all, for example in the past we had a different kind of a place in the middle of the main square with a sky-high rent (...). But people were not coming to that location because most of our concepts are not really built for the tourist. Of course, they are welcome, and we want to attract them but not really typical tourist places, but locals don’t want to come (...). I think it also depends on the concept you do. You can have a place with no rent and have great traffic and a lot of people inside, and you can have places with a high rent where you think that a lot of people need to come in or a lot of traffic that’s open up necessarily. But especially with the development of housing and housing prices and improve here in Amsterdam, you never know, and everybody wants the higher rent.” (5th Interview, personal communication, July 18, 2019)
4.2.6. Sixth interview – 3-course-menu restaurant chain

The sixth interview was done with a restaurant chain that enhances the concept of 3-course-menu, usually desired for their target group during dinner time. In the past years, they have made changes in their rented location for two restaurants based on characteristics such as distance to the city center and local people flow, present in destination accessibility and design TOD components, respectively. They are also continually looking for A-locations in the cities they have businesses to improve their revenues.

“That’s a good example of why we made that change. Before we were …near the river. But there are not enough traffic people moving around at that location any more like 30 years. Before we started there that was our first restaurant chain, so that was the best location in the city at that time and we saw that the revenue was decreasing in the last few years, so the place to be in the city center …has changed in the past 10 years so, and there’s a lot of competition since also the last 10 years I think. There’re 40% more restaurants and the horeca businesses, so that that was also another thing that we were investigating the move and this location came along. And for our businesses it’s important that we have the whole restaurant at one level, floor level because it’s more efficient, our restaurants are pretty big, a lot of seats like between 200/300 seats.” (6th interview, personal communication, July 23, 2019)

As the above-mentioned quotation shows, they have particular criteria for choosing a location as having an area that covers the number of seats, they expect for the busiest days in one ground floor, diminishing the costs for employees attending two different spaces. This fact acts as a possible barrier to locate them inside a station area or in a very close distance when it is as urbanized and developed as all the main Dutch cities. In Amsterdam, they have two restaurants with a 5-minute walk from each other and a 10-minute walk from the central station. It was mentioned that this small geographic difference reflects their occupancy because of the competition among others from the same sector, as can be seen in the next quote.

“We have two restaurants in Amsterdam, and one is more in the traffic routes of people walking to and from the central station, and that restaurant is better occupied than the other one. It helps us to be on the routes of the central station… And those other 5 minutes you come across so many restaurants that they don’t make it to ours, to our second one.” (6th interview, personal communication, July 23, 2019)

Regarding their decision on investment strategy, they rely on visiting the site multiple times to understand its dynamics, as can be seen in the next quotation. The personal feeling of the owner acts directly on the final decision for the investment.

“We visit the city multiple times, we have a look at what happens during daytime, during the evening, at all the restaurants and it’s just like observation and feeling our director has about the place.” (6th interview, personal communication, July 23, 2019)

In the next two quotes, the necessity of a car parking garage is indicated, especially in medium or small-size cities due to the restaurant service attend to other areas and their clients can possibly come by car. Nevertheless, other different transportation modes are
mentioned needed close to achieve a more significant amount of guests. This relates to the component of the quantity of transportation modes, present in the TOD diversity component.

“We also see that maybe not in Amsterdam but in other cities like Zwolle, it’s important to also be near to parking garage because we have more like a function bigger than the city, so for the whole province that is coming to the city and has a day out and they eat at our restaurant, but they travel by car, and they want to park near restaurant.” (6th interview, personal communication, July 23, 2019)

“We have visitors in every level in the society, so some people travel by car, some by train, we also have a big group of locals that are just in the city, yeah we need to be close to a parking garage near central station and near the city center.” (6th interview, personal communication, July 23, 2019)

When asked what a good location for their business is, they interviewee replied with an example of an unsuccessful case in a particular medium-size city which has an airport close by. People are not passing in front of the restaurant, showing poor visibility and lack of people flow combined with a further distance from the central station. Most of the consumers are local and do not fulfill the turnover necessity for the commercial subsidiary. This lack of turnover redirects them to look for a new location (A-location). This most-desired location often presents a higher rent as a fixed cost, but for them, it comes as a secondary factor when a higher turnover is achieved. This fact links to the bid rent theory when there is a place with higher rent attracting investments due to its development.

“The central station is too far away (from the city center), and people that are shopping ... do not go across our restaurant, so they don’t see the restaurant in, and we tried several things with marketing and still not working in the way it should, in our opinion. We are considering a move there.” (6th interview, personal communication, July 23, 2019)

“Of course we check but we found out that if in the locations that we really want to be, if we really want to be that the rent is much higher than a B location further from the city center or far away from the central station and because it’s a fixed cost, it’s mostly the turnover problem to pay a higher rent because you’re in a bad location, so we have more volume to carry those costs. Of course, you want to pay as little as you can, but it’s not possible in the best location. Most of the times it’s not a deal-breaker the rent.” (6th interview, personal communication, July 23, 2019)

4.2.7. Seventh interview – a fast-food restaurant chain

The seventh interview was with a fast-food restaurant chain, which has two main goals. The first is to deliver their products to people’s houses, or the customers will pass by the store to pick them up. The second one is focused in areas with a high flow of people where the customers will mainly come in for their pizza slices. This second type of store is always located close to the city center. The stores focused on delivery are prioritizing locations on the outskirts of the city center so they will have lower rent and still be in a cycle distance from that postal code area, referring to the local access characteristic, in the distance to transit component.
We don’t want to be in the city center, just outside it because of that the prices for rent are higher in the city center but also still busy with scooters and bicycles to go through for a delivery shop it is not that good. So, on the other side, in the city center, we are just located on the main streets with slice stores. That’s where a lot of tourists can walk by, and people were shopping can walk by. It’s another concept, the slices stores, and they don’t do delivery only slices in the shop so, then it’s another consideration to locate. (7th interview, personal communication, July 26, 2019)

This company has a franchise model where they look for a potential local entrepreneur to develop. The reason for this choice is based on the knowledge of the owner in the area. This will lead to a better understanding of the target group. An interesting point of view was mentioned when they prefer the location to be on a corner so it can raise their local visibility concerning the design TOD component. These two characteristics can be seen in the next quote.

“Mainly, we first want to find franchiser to open the shop and locate within his hometown or close by, so he knows the city, knows the people. This one is one of the main first focuses, and then we have to look for location. We want the location, it’s good to be seen, a side location. Mainly on a high traffic road with cars but also parking places so they can stop and pick up their pizzas or other things. Also, the high traffic location gets more seen. We prefer to be in the corner of the street... For us, it is mainly because you can better see people from two ways crossing.” (7th interview, personal communication, July 26, 2019)

4.2.8. Eighth interview – a fast-food restaurant chain
The eighth interview was done with a fast-food restaurant chain well-known worldwide. They have their own method to search for new locations that consider five categories as per the next quote. The characteristics for each development respect these categories, and it has a minimum standard to find the best location. They match these characteristics with local databases from their other restaurants and the public information from the municipalities. All of the characteristics mentioned as visibility and people flow (from the design component) are important but must follow a minimum requirement for the number of inhabitants (from the density component).

“We have 5 category paths to follow. Close to retail shopping areas, close to residential areas depending on the type of houses, school areas, close to highway areas when the cars are passing by the restaurant and recreational areas where people come for leisure, e.g., close to museums, or to amusement parks. Something that is mandatory is a minimum number of inhabitants for all categories.” (8th Interview, personal communication, July 30, 2019)

Their future plan includes the focused development of the cafe branch on the same brand in transportation hubs precisely. However, they are specifically searching for a location that has a stable factor for a permanent people flow, such as being close to a residential area. This differs from a school area (as it is one of their categories) that has a seasonal consumption pattern because of the vacation period as can be seen in the following quotation.
We have a plan for investing in a transportation hub at the moment, at a railway station close to a residential area. There is also a possibility of new development for a side business from the company in the cafe subdivision. This location has a stable factor because people are traveling from or to their homes, so it is a permanent position. For example, in the school category, we must deal with the fact that the consumers could be on vacation, and there’s a drop in sales.” (8th Interview, personal communication, July 30, 2019)

4.2.9. Ninth interview – hotel park chain

The ninth interview was done with a hotel park chain with a short holiday experience as a primary goal. This chain is considered the first one in implementing the concept of a vacation park in nature but not staying in a completely isolated area since their parks are still within two hours’ drive from big cities. They are concerned if the location has a minimum of nine million inhabitants in a circle, which refers to the quantity of inhabitants from the TOD density component. Their locations in the Netherlands was defined mostly in the 1980s and 1990s. Nowadays, they are expanding to surrounding countries such as Germany and Belgium. The point of interest in this situation is these two countries have similar culture in matters of transportation system related to the Netherlands. One aspect that is similar is the weather. This chain has the intention to overcome the barriers of having a holiday independent of the weather, so they focus on having many activities such as indoor swimming pools.

“Our parks are a non-weather dependent short break holiday experience performance operator. We are a non-destination driver, so if you go in a park in Germany or in Holland or in Belgium or France, it will be completely the same or let’s say for 90% it will be the concept. And the concept is not based on the region where you are. So, we are looking for places nearby a circle of 9 million people... in a circle of 2 hours driving. And then we provide those families ...a holiday for 3-4-days max.” (9th interview, personal communication, August 9, 2019)

The necessity of having a large space for a new development also pushes the area around transportation hubs away. They do not build singular buildings, which forces them to find locations more on the outskirts of cities. They mentioned that they only use land that the government intends to readjust for better use, for example coal mines that need remediation. The company will follow this process, and consequently they can use the land for a more sustainable purpose. Through this process, they intend to create an environment that is described by the lifestyle characteristic in the demographics TOD component.

“One of the points which are important is that our village is quite big, so the resorts are between 100 and ...350 hectares of ground ...and mostly there are concentrated in the woods. You have an environment with a lot of people in regions like Holland and Belgium, ...they like to go for a nature break.” (9th interview, personal communication, August 9, 2019)

Another unusual aspect is that inside the hotels, the car is not allowed to be used. They incentivize people to leave their cars in the parking lot and make use of sustainable transport modes inside. Nonetheless, there is no incentive to attract people to the hotel via public transport in the first instance.
**4.2.10 Tenth interview – two restaurants with a single owner**

The tenth interview showed a different perspective from the previous ones. It was made with an owner of two restaurants that closed in 2016. These two restaurants were in a 3-minutes-walking distance area from a secondary station of Utrecht. The concept behind this was to provide a cozy environment for consumers. In order to meet this goal, they needed a significant space to achieve the desired revenue. To fill this space, they would also need a certain amount of consumers to be captured while having a flow of people in front of the restaurants, with *design* TOD component highlighted, as can be seen in the next quote.

"Square meters was very important for us, the traffic, the option of traffic passing the restaurant was very important, because with more traffic there is more people coming in your restaurant and the square meters like I said, because a small restaurant is tough to start because you will have small revenues, so it could be very hard, so, in my opinion, the restaurants with a little bit more square feet, and a good concept are easier to operate than small restaurants. So, we were looking for a place with traffic and square meters." (10th interview, personal communication, August 21, 2019)

The decision-making process of smaller businesses is based on the owner perspective and previous experience. When asked about the reason for choosing this location close to this specific station area, the owner attributed two characteristics present in TOD components of *design* (as already mentioned) and *density*, people flow and rent analysis combined.

"Not particularly the station because there were 3 options for locations in Utrecht, but there was less traffic, and the lease was too high in the other two options so this location it was great for us, train station, traffic, and the least that we could negotiate with the landlord, the rent was fine for us. The negotiable rent was also part of the decision-making." (10th interview, personal communication, August 21, 2019)

The advertisement for this station is indeed a new gate to Utrecht city center, as announced by NS (2016). However, this new high-quality rail network with the track renewal was only finished in 2016, after the restaurant closed their doors. The renovation was continued until 2018 when they had planned the connection with a fast tram. There is, at present a good bicycle and pedestrian connection under the station, guaranteeing the local access from the *distance to transit* TOD component more incentivized. Nonetheless, the situation in 2019 is that the transportation system was modified, but the retail and services are still in a planning phase. This situation refers to the unbalanced node of quality transportation service and non-existent services provided.
“It’s a nice station, but it’s it... as big as Amstel, there are no shops, no food, no food wall, no food corner, there is nothing to do. When you go to Amsterdam Amstel, there is like a big area, where you can shop, snack, buy something. In this station in Utrecht, there is almost nothing to do. There is like a big difference, I don’t know what happened, but there’s almost nothing.”
(10th interview, personal communication, August 21, 2019)

In July 2019, the report from NS informing the flow of people in stations showed an increase in Utrecht Vaartsche Rijn of 24% in the previous year (NS, 2019). That is an indicative rate if compared to the 2% that is the total amount of passengers for all the stations in the Netherlands. These rates can be highly significant for businesses in the surrounding areas.

“I think we didn’t have that many people from the train station in the final year that we were open. I think that people who have visited your restaurant was because of our concept, because of our price, our product, our services, not because we were in a closed area of a train station. If the train station was open after 2 years, we open the restaurant, that could be a huge difference because then that could be more traffic, that could be more people, but it didn’t work out because the train station opened up a few years later... But let’s turn it the other way around, if NS told us there’s not a train station coming, then we were probably deciding not to open the restaurant at that location.”
(10th interview, personal communication, August 21, 2019)

For the tenth interview, it was decided not to ask the stated choice complementary part because there is no intention of new horeca businesses developments from the owner perspective.

4.3. Results
4.3.1. Exploring the Connection Link Between Theories
The link of interest is the intersection between TOD components and horeca investment strategies. This intersection is supported by the locational theories, as a tool to understand these investments strategies better. In Chapter 2, the desk research was presented covering the two bodies of literature. These bodies are partly related in Figure 23. In the left column are TOD components and in the right one the locational theories or techniques. In the middle, the characteristics are merged between the two research paths showing the connection. This connection link is expressed in characteristics of practical existent in real situations.
The TOD components represented by their criteria are making the link with locational theories. As an example, the *local access* to a business is one of the main characteristics of the design criterion to reach a high TOD level to an area, and also is a feature that plays a role in *central place theory* when the consumers are choosing a store to make a purchase, consequentially influencing their locational strategy. The link between the components and the theories previously mentioned is translated into features that attract the business to make investments in this transportation hub. This link of interest leads the conceptual framework from the desk research to the empirical results path.

The characteristics that were first selected by locational theories and after by TOD frequently overlapped, ensuring the scientific relevance of this gap of knowledge in research. This gap represents the opportunity to develop station areas in order to attract investments based on the characteristics that play a role in businesses decisions. These decisions mostly do not use locational theories as a background; therefore, if transportation hub managers use them, they can assure more reliability to the private investors to collaborate.

**4.3.2. From the Characteristics**

All the statements of the analysis can be considered as applicable to horeca businesses if they are divided into two subdivisions. This subdivision was proposed due to the similarities in the interviewees’ answers between the groups. The main subdivision is regarding hotels (including hostels, bed-breakfast, vacation parks, and congress centers), and restaurant and cafe, in a single subdivision (including lunchrooms, catering service, fast convenience service, coffee corners, ice cream shops, cafeterias, nightclubs and coffee shops), as can be graphically seen in Figure 24.
When it comes to applying this proposed subdivision for results into the interviews made in this present research, Table 3 provides the relation of the businesses' description and the subdivision within which they are inserted.

**Table 3 - Horeca businesses interviewed divided into two groups (own elaboration)**

<table>
<thead>
<tr>
<th>Interview</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>an in-built restaurant inside a department store</td>
</tr>
<tr>
<td>2nd</td>
<td>hub manager responsible for cafe chains in the station</td>
</tr>
<tr>
<td>3rd</td>
<td>hotel park chain</td>
</tr>
<tr>
<td>4th</td>
<td>multipurpose space with a restaurant</td>
</tr>
<tr>
<td>5th</td>
<td>cafe and restaurant chain</td>
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<tr>
<td>6th</td>
<td>3-course-menu restaurant chain</td>
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<tr>
<td>7th</td>
<td>a fast-food restaurant chain</td>
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<tr>
<td>8th</td>
<td>a fast-food restaurant chain</td>
</tr>
<tr>
<td>9th</td>
<td>hotel park chain</td>
</tr>
<tr>
<td>10th</td>
<td>two restaurants with a single owner</td>
</tr>
</tbody>
</table>

When asked about the characteristics that lead to their investment strategies, the interviewees’ responses followed this subdivision. In the hotel category, the so-called lifestyle of the traveler or consumer connected to the existing environment in the hub’s surrounding area features as one that deserves most attention to attract businesses. At first, the idea was to fit the business in an urban, suburban, or greenfield context. However, during the interviews, this was also seen as a travelers’ consumption patterns according to this context. In the Dutch setting, in a short stay at hotels, they chose to be close to the city but very linked to nature. To some extent, this reduces the options for locations. Furthermore, this is explained under the TOD demographic component as a feature that can impact travel studies influencing a hub’s attractiveness. When a location is chosen outside the city center in a non-urban area, the hotel industry is still strongly dependent on accessibility by car.
In the restaurant and cafe subdivision, they are eager to be in the middle of the flow of people. This was mentioned as a central characteristic in six out of eight interviews, and 5 out of six between chains. Visibility, diverse land use, and the distance to the city center appeared as a secondary characteristic as also crucial to define their strategies. Regarding the distance to the center, if the hub is not close to the central business district (CBD) or city center itself, municipalities and businesses are reluctant in accepting retail around railway stations. This happens because it is hard to attract people to isolated areas. Nevertheless, it is easier to attract people from more distant areas to the city center. This fact gets even more emphasis when it comes to medium-sized and small cities. In these cities, the main square has an evident role in the attraction for horeca businesses. Even if the station area has a high level of TOD, they have little influence on the choice of location for new development in those areas.

The locations of stores inside hubs are mainly decided based on the flow of people regarding the design concept. The decision on which store will be placed there it is a task for the hub manager, who decides between their brands, franchises and opens the possibility for smaller businesses when it fits the station. Nevertheless, how retailers are chosen in each station is a secret formula. When it comes to development beyond the borders of the station, the hub manager has less interest in providing improvements.

The long-term projects for the hub manager do not match with short-term goals for smaller retailers which are not guaranteed a people flow, even though the hub manager run contracts with a different time period for each store. The possibility of not achieving a good turnover will keep the market of small stores from participating inside the hub ownership. For larger companies, it is normal to have long-term commitments. For larger and well-known companies, it is normal to be invited to be in station areas due to the attraction to other retailers and consumers.

For smaller businesses or a single location, the preoccupation about people flow, visibility and distance to the city center are seen as essential but being able to provide a point of difference in the concept, and a special feeling from their consumers, allowing them to find the key to a successful locational strategy. For restaurants, cafes, and the food sector itself, it is less critical when it comes to accessibility by car and the necessity of car parking areas. Nevertheless, when this subdivision is regarding serving dinner menus or has a high-end customer, accessibility by car becomes a necessary issue again.

4.3.3. From the Stated Choices Characteristics

As was proposed in the methodology, the interviewees were asked about characteristics before they were exposed to the characteristics of the stated choices and after they were exposed to characteristics pre-selected over the TOD components. Table 4 shows the difference between these two moments of the interview. In the hotel subdivision, lifestyle remained as the most critical characteristics showing no bias in the stated choice part of the interview. Besides this characteristic, a minimum amount of inhabitants in the surroundings is needed to be able to guarantee a demand. Another influencing factor is the distance to other facilities available in a closer distance to the hub and consequently to the hotel that they would like to attract. Furthermore, depending on the target group of interest, a higher income can play a role in the attractiveness.

In the restaurant and cafe subdivision, the people flow characteristic was preserved for these businesses. The visibility characteristic at the first moment of the interview was
seen of secondary importance. However, in the stated choice, this characteristic was of greater importance. Two characteristics - the quantity of transportation modes and local access providing walkability to the hub - were added in three out of seven businesses. The stated choice part showed that the main characteristics of attractiveness were maintained when others were proposed. Nevertheless, it was essential to show some minor factors that were not initially exposed to the open question. This shows the importance of the method, as well as its validity as complementary.

Table 4 - Characteristics mentioned before the stated choice and after (own elaboration)

<table>
<thead>
<tr>
<th>Before the stated choice</th>
<th>After the stated choice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st (R/C)</strong></td>
<td></td>
</tr>
<tr>
<td>People flow</td>
<td>People flow</td>
</tr>
<tr>
<td>Visibility</td>
<td>Visibility</td>
</tr>
<tr>
<td>Diverse land use</td>
<td>Qty of transport modes</td>
</tr>
<tr>
<td><strong>2nd (R/C)</strong></td>
<td></td>
</tr>
<tr>
<td>People flow</td>
<td>People flow</td>
</tr>
<tr>
<td>Lifestyle</td>
<td>Visibility</td>
</tr>
<tr>
<td>Diverse land use</td>
<td>Local Access</td>
</tr>
<tr>
<td>Population characteristics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3rd (H)</strong></td>
<td></td>
</tr>
<tr>
<td>Lifestyle</td>
<td>Lifestyle</td>
</tr>
<tr>
<td>Diverse land use</td>
<td>Closer to others</td>
</tr>
<tr>
<td>Feeling</td>
<td>Distance to facilities</td>
</tr>
<tr>
<td><strong>4th (R/C)</strong></td>
<td></td>
</tr>
<tr>
<td>Local access</td>
<td>Diverse land use</td>
</tr>
<tr>
<td>Diverse land use</td>
<td>Local access</td>
</tr>
<tr>
<td>Concept</td>
<td>Qty of transport modes</td>
</tr>
<tr>
<td>Feeling</td>
<td></td>
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<tr>
<td><strong>5th (R/C)</strong></td>
<td></td>
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<tr>
<td>Distance to city center</td>
<td>Distance to city center</td>
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<tr>
<td>Concept</td>
<td>Concept</td>
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<tr>
<td>Feeling</td>
<td>Lifestyle</td>
</tr>
<tr>
<td><strong>6th (R/C)</strong></td>
<td></td>
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<tr>
<td>Distance to city center</td>
<td>Distance to city center</td>
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<tr>
<td>People flow</td>
<td>People flow</td>
</tr>
<tr>
<td>Qty of transport modes</td>
<td>Distance to city center</td>
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<tr>
<td></td>
<td>Local access</td>
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<tr>
<td><strong>7th (R/C)</strong></td>
<td></td>
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<tr>
<td>People flow</td>
<td>Qty of inhabitants</td>
</tr>
<tr>
<td>Distance to city center</td>
<td>People flow</td>
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<tr>
<td>Visibility</td>
<td>Visibility</td>
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<tr>
<td>Local access</td>
<td></td>
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<tr>
<td><strong>8th (R/C)</strong></td>
<td></td>
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<tr>
<td>Visibility</td>
<td>Visibility</td>
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<tr>
<td>People flow</td>
<td>People Flow</td>
</tr>
<tr>
<td></td>
<td>Qty of transport modes</td>
</tr>
<tr>
<td><strong>9th (H)</strong></td>
<td></td>
</tr>
<tr>
<td>Lifestyle</td>
<td>Lifestyle</td>
</tr>
<tr>
<td>Distance to city center</td>
<td>Qty of inhabitants</td>
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<tr>
<td>Qty of inhabitants</td>
<td>Higher income</td>
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<tr>
<td><strong>10th (R/C)</strong></td>
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<tr>
<td>People flow</td>
<td></td>
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<tr>
<td>Concept</td>
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<tr>
<td>Area</td>
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</tbody>
</table>

(*) This interview had no stated choice part
The characteristics highlighted in the stated choice part are presented in Figure 25a. People flow, as part of the design TOD component, was chosen as the most important, in a general picture overview, attracting businesses to a transportation hub. Lifestyle in the surroundings appears as secondary, showing that the location of the transportation hub, regarding the demographic component, plays a crucial role in deciding for a location, especially in urban areas. Visibility is the third most important consideration. Appendix C provides all the results of every stated choice separated by interview.

The general overview seen in Figure 25a is separated by the two subdivisions for better analysis: hotel (Figure 25b) and restaurant and cafe (Figure 25c). In the hotel subdivision, the lifestyle of the surroundings is showed as a mandatory characteristic. This outcome is due to the desire of their guests for a vacation in the natural environment. This fact makes it even harder to combine a transportation hub which attracts people to be in nature. In the second subdivision, restaurant and cafe, the opposite point of view, attracting an even higher flow of people and the visibility of the retailer are desired in attracting businesses’ investment strategy. The connection between each presented characteristic and their respective component was established in Table 2.
The characteristics mentioned in the choice of location in new ventures were previously mentioned. Figure 26 shows the relationship between the TOD components. People flow and visibility are the two factors that rank first and second, respectively, for the subdivision of restaurants and cafes. Both characteristics are under the design parameter optics reaching more than half of the percentage where the attractiveness should be focused. Regarding the hotel subdivision, the demographic category that includes the lifestyle comprises 60% of the components.

*Figure 25 - Characteristics from stated choices analyzed with BWM – in total and separated by the subdivisions: ‘hotel’, and ‘restaurant and café’ (own elaboration)*
4.3.4. From the Barriers

Overall, most interviewees affirmed that being close to a public transport system and a transportation hub is generally an easy option, although most of them do not consider the transportation hub as a mandatory factor. For this factor, it is possible to understand that businesses are not usually oriented by one of the layers present in central place theory, the transport principle.

“I think this (having the investment strategies close to a transportation hub) will be an advantage. Where it can be a good way to go on holiday for 1/2 weeks and don’t have luggage with them, public transport can be a good way to go on holiday. Why not and there are lots of people who don’t have cars we want to have them also on our farms if possible, it would be easier if there is a simple way to go.” (3rd Interview - hotel park chain, personal communication, July 10, 2019)
- Mature market

A few interviewees stated that there is a mature market in the Netherlands for horeca businesses, especially after the financial crisis of 2007-08, thus being a barrier to new investments. A few of these agreed that even though it is still possible to have some new developments creating a different point of view between the interviewees regarding new concepts. While hotel chains which focus on nature development are still maintaining their search for new developments, restaurants understand that after the crisis, many new businesses were started but will not remain for many years if they do not reinvent themselves with a strong concept. Even though they are not related to TOD characteristics, this represents no new investment to be made, as can be seen in the next quote.

“I think we are at this moment if we open one more in a station or other hub, I think we are now at the level it should not be healthier because if you had more stores, it would be open in less strong hubs. Those existents are the ones that are relevant for us. If you are going down at a ranking, that is what you do then, at one time it’s not giving you enough turn over because you can confirm that from one visitor, we have X turnover ... That is a threshold.” (1st Interview - a built-in restaurant inside a department store, personal communication, June 18, 2019)

- Last-mile in a walkable distance

In the sphere of transportation, hubs remain the question if there is enough demand for hotels. Regarding vacation parks, it goes in the opposite direction since having the station close to their entrance would only facilitate access. Nevertheless, the core guest is nowadays mainly using a private transportation mode. The situation where this could be reverted is when the hub guarantees a walkable last-mile.

“I prefer that the transfer to form the train station to the part is as easy as possible. Walking is preferable. Otherwise, you have to take a taxi or other public transport, and then the trip is slightly different, and I think people if they have a choice, go by car. So, it’s a train station and station no not really different stops nearby the park then, in my opinion, an alternative, not go by car but if it’s too difficult the last mile.” (3rd Interview – hotel park chain, personal communication, July 10, 2019)

- Necessity of space

The stores who have a concept based on their provided location would have a different way to reestablish in a different place. As an example, the multipurpose space that is located in a 5-minute walk from a transportation hub cannot be established in a different area due to requiring 1000 square meters. Their availability of mixing a restaurant and meeting rooms underlined that the concept of the store is the main characteristic for its success.

“I think, for our concept, it’s a no (opening a restaurant inside of station area), I think that because we need a lot of space like 200 to 300 seats. Then yeah, I don’t think there is a location that it’s large enough to fit. Perhaps at the airport but then the rent is so much higher than I don’t know. It would be a nice case.” (6th interview – 3-course-menu restaurant, personal communication, July 23, 2019)
The thing is if you are looking for a place, the location we are talking about is like 400 square meters, there is not a lot of places in Utrecht that have that squares meters, so if you want to have a concept with big location, there’s only just a few. So, you have to look. There’s not a lot of options.” (10th interview – two restaurants with a single owner, personal communication, August 21, 2019)

- **No guarantee of people flow**

The number of passengers boarding and exiting in every station varies according to the years due to improvements in the station or adjustments in timetables and new possibilities. Once a year, the railway hub manager reports on the figures for the previous year on their website. Nevertheless, there is no research available about the expectation of the people flow in the current year since it can vary greatly from year to year. The possibility of changing the number of passengers directly affects businesses in the surroundings. As an example, the next quote mentions a specific metro line that was expecting a number of passengers and did not achieve.

“It’s the new metro line, … and we open a new shop close by one of the stops, but there wasn’t that much traffic from the new line. So, the owner didn’t have as many clients as we expected so, it was not a success.” (7th interview – a fast-food restaurant chain, personal communication, July 26, 2019)

“If they could guarantee or inform assertively the amount of people flow in the hub, it would be interesting because we have our own data connecting the amount of people passing by our restaurant and the amount of people consuming between these.” (8th Interview – a fast-food restaurant chain, personal communication, July 30, 2019)

“I don’t see any barriers. I only see advantages if there is a station close by. That would work out well. If there is a lot of people who use that station to go to their work, into the city, or to meet friends, or things like that, so if you have a restaurant or a café close to a station, that is an easy thing. It should work out well. In our case, it didn’t. Because the train station was so late. It started too late, instead of 2 years (as planned), it was 4 years. That was the problem. (10th interview – two restaurants with a single owner, personal communication, August 21, 2019)

- **Zoning plan**

Zoning plans play an essential role because, without them, the retailers could not be located in the hubs. However, this in the Dutch situation, it is already mostly focused on diversity around transportation hubs, especially that one in the Randstad area. For large companies, these zoning plans become more comfortable when it is inside the station since it is the hub manager has the land ownership and desire their brand to be present, they will have easier access. Outside of the hub managers range, the municipality can influence how they prefer their retailers to be focused, including sustainability issues.
The zoning plan still can perform a barrier in the choice of our location. We are a fast-food chain if the government wants to believe we fit their sustainability requirements we need to change to adapt.” (8th Interview – a fast-food restaurant chain, personal communication, July 30, 2019)

- **Higher rents**

  The land prices available inside the hubs are regulated by the railway or metro managers. That is one of the characteristics taken into account for retailers to choose their location, especially if they are small and medium-sized. If it is a high traffic pedestrian flow station, the rent will be higher so only larger stores will have the opportunity to develop in it. Inside horeca businesses, there is a clear understanding present in this type of businesses as can be seen in the 4th and 10th interview with single or two restaurant owners. However, the restaurant chain described in the 7th interview also relates this factor as crucial due to the business’s concept permitting them to stay in a more significant distance for the delivers by bike or scooters.

  “Every location has its barriers, either is a very popular location the barrier it would be the rent, it would be too high.” (4th interview – multipurpose space with a restaurant, personal communication, July 17, 2019)

  “The high rent prices (repels), that’s for sure...We don’t want to be in the city center, just outside it because of that the prices for rent are higher city center but also still busy with scooters and bicycles to go through for a delivery shop it is not that good.” (7th interview – a fast-food restaurant chain, personal communication, July 26, 2019)

- **Place under reconstruction**

  Another reason mentioned in the interviews is the period of reconstruction. If the hub manager is interested in developing improvements for the station area, it will demand reconstruction time. During this period, the availability of the spaces is limited, and it might repel the traveler and consecutively the consumer. In this situation, the visibility might be prejudicated as well. The reconstruction situation existent in the 4th interview is not due to the station but to another residential site nearby, which could be a barrier to their location choice.

  “I think the reason was because it was a station in transformation, and we had more or less temporary unit. We hadn’t a lot of choices, and sometimes you don’t have a lot of choices. It’s that unit or not, and then you have to choose this for the company.” (1st Interview - a built-in restaurant inside a department store, personal communication, June 18, 2019)

  “And, on the other side of the street, they are now tearing down houses... which means we are in sort of a construction area, but we were already in this construction area from day one. So, for us, it doesn’t change a lot, but it can only get better that’s all... of course now they’re going to tear down this houses, and we are going to have some rubbish and stuff... when there’s like houses tearing down there doesn’t look very nice, but when something is being built, it has also sort of vibe to it like, there’s something new created.” (4th interview – multipurpose space with a restaurant, personal communication, July 17, 2019)
- **Redesigning a new concept**

As one of the characteristics mentioned in the interviews, the business’s concept is one of the more significant. This could be the difference for the business to be successful. Regarding this point of view, the location chosen to have the investment focus should contain all the mandatory necessity of the business such as the rent price, the surroundings, space enough. On the one hand, many interviewees agreed that being close to a transportation hub can only have advantages. On the other hand, one of the interviewees understands all of those features as barriers to be close to hubs, as can be seen in the next quotation.

>“That can be let's say 100 barriers. That really depends on the street, the building, rent prices, also the surroundings. It can be so many things. There’s no one specific reason. Also, again depending on the concept as well.” (5th Interview – café and restaurant chain, personal communication, July 18, 2019)
's Hertogenbosch Station (Mark Clem)
Conclusion and Recommendations

5.1. Introduction

The thesis started by introducing the services lacking provided with a high-quality transport system available. Two bodies of literature were clarified to extract their inherent characteristics in transportation hubs. Locational theories and possible techniques used by horeca businesses to choose their new developments were presented. In the other part of the literature, seven components for TOD that was elaborated were presented, so that it was possible to see a more practical perspective. In the analysis of the interviews, the empirical results were stated, exploring the link between the literature. Based on the results, it was possible to define the barriers to be overcome to attract new horeca businesses to terminal areas with a high level of TOD.

5.2. Answering the research question

To what extent do TOD characteristics affect the willingness of horeca businesses to invest in transport hub areas?

Several characteristics were stated as the link between theories and TOD. Overall, they were not recognized as in a transport perspective. The knowledge transferred from the retailers is mostly not focusing on transportation matters. Nevertheless, they are a singular decision in the planning position for new developments and play a crucial role for consumers. To what extent any characteristics influence the businesses studied will depend on their concept. If the concept is to make a unique establishment, it will not need to follow the same patterns designed by large chains, which cannot apply a one-size-fits-all decision.

Moreover, some characteristics were mentioned as mandatory to horeca businesses into the subdivision proposed in the results (‘hotel’ and ‘restaurant and cafe’). This demonstrates that these characteristics, which are present and essential to TOD features, affect the willingness of horeca businesses to invest. People flow into the ‘restaurant and cafe’ subdivision influence on a great extent on their location strategy. The lifestyle characteristic acts on the path for the ‘hotel’ subdivision. The other characteristics perform a lesser extent in comparison; nonetheless, the combination of them will be the decisive factor to generate the attractiveness.

1. What TOD characteristics can be distinguished for transportation hubs?

The TOD components are continually becoming more person-based and less local-based as they were considered in the beginning. The personal perspective relates to people’s lifestyle. The first three components (density, diversity, and design) were addressed to the place where the selected area is inserted. The last one studied is demand management, which already considers a broader perspective on the travelers' choice. In a closer future perception, it is possible to insert a new dimension as ‘digital demand’ which connects the transportation choices to services connecting to the concept of Mobility as a Service (MaaS). This dimension can understand area development connected to the transportation system with digital analysis.
Most of the literature sources approach the same definition for TOD. However, in the US and Europe, what is extracted from it can have different meanings mainly because of how the societies were developed in the first point. Nevertheless, the reasons behind TOD characteristics rely on society’s car dependency as a crucial point. This issue should be more emphasized in the retailers’ formula to promote more public transportation collecting joint forces among other stakeholders. Nevertheless, it is hard to break the comfort of the private transport mode to a public one, especially in high-end businesses. This breaking point still demands a cultural change towards sustainability.

Regarding bike parking and cycling infrastructure in the Netherlands, it is something that makes this topic useless because in every station area these structures are provided in high quality and quantity. This is a limitation existent in the scope of this research regarding the country of analysis.

The quantity of public spaces perhaps is attended by the area, but due to possible outdated construction design, the stations might not fit retailers’ interest. The appearance of the public spaces when remodeled would result in attraction for people and also for retailers.

2. What do horeca businesses consider as the formula to invest in an area?

In the literature, research was proposed to understand if there are theories used as a foundation for businesses to choose their investment. It was seen that most of the theories are outdated and not used by businesses. However, it was possible to recognize many similarities between the characteristics present in their location choice and the theories, even though they did not mention them.

The consumers considered are seen as having only one mindset, which, in the present time, do not represent reality. People’s lifestyle reflects directly in their consumption patterns, which should be considered for businesses strategies.

The distribution of the population, according to the theories, are mainly spread equally, which in the Netherlands, shows differentiation between large and medium/small cities. In medium/small Dutch villages, it is possible to have full retail service available in the city center and everything reached by a cycle distance. The cycling culture intrinsic in population does not impulse the need to have excellent services in a walking distance, making the range of stimulating services being in a farther distance.

The theories are not inserted in the digital trends present nowadays. The outdated theories would be a gap to be filled by integrating the already existent digital transportation system platform to the retailers, which could improve sales and promote their businesses to be closer to the station areas.

3. What are the similarities between the TOD characteristics and the retail sector’s investment formulae?

It was possible to see clearly that the characteristics from a TOD station would properly fit characteristics seen as mandatory for a retail establishment. Nevertheless, the only retailer interviewed that is not close to a station area admitted that if they had the opportunity to have their development close to the station area, it would be motivating even if they do not demand visibility or a people flow to its business. Furthermore, they do not
dispose of the funds to invest in the infrastructure of the transportation hub (not even the hotel category).

Clustering of same services plays a different role depending on the subdivision inside horeca business. For example, in vacation parks, it is possible to provide a different kind of services inside their businesses that will not be affected by other horeca businesses in the area. The non-dependent feature can be seen as a cooperation process. In addition, the horeca could be inside the station areas could attract the guests from the parks. On the other hand, agglomeration of different services is more welcome in restaurants subdivision. The large-scale companies who were approached affirmed that their brand is used to attract other smaller brands and mainly clients to the station area.

There is a mindset which is present in Dutch culture to have the city’s main square as a popular area to visit, whether as a tourist or a local. The cultural pattern especially influences restaurants and cafes to have the same location around the square, which is connected to the clustering in minimum differentiation theory.

4. What are the barriers for horeca business to invest in transportation hubs?

At first glance, the interviewed businesses do not present barriers for an investment possibility in or around a transportation hub. Rather than, they affirmed it is significant to guarantee public transport accessibility to their customers. However, restaurants, cafes, and hotels do not consider having that hub as mandatory for their choice. The brands owned by the hub manager are the only ones who have the station as a starting point because of their business concept.

Restaurants and multipurpose spaces need an amount of space more significant to host their events and customers which not always is possible inside a station area, but in a walking distance, the range can become possible. However, for restaurants and cafes, the difference between a 5-minutes’ walk and 10-minutes could represent the client choosing a different one to attend, which affect the added value directly to be closer to a station area.

The high rents inside the station area were informed as a repelling factor from the hubs. In the surroundings, this factor remains critical. Nevertheless, these places are seen as good locations where horeca businesses can achieve their turnover, mostly allowing them to afford this rent as chains.

5.3. Conclusion

After answering the research questions, the relevance of this research has been founded in the transition to a more sustainable future, where it is possible to have less car dependence and make use of the public transportation system available. TOD was the concept chosen to be studied to make the transportation hubs more attractive. The Netherlands already presents a high-quality public transportation system. Regarding this fact, the possible improvement was to balance the nodes providing more services available in a walkable distance. The barriers to implement TOD and also to understand the repelling factor from horeca businesses in station areas were studied to be overcome in future improvements.

The interaction between the literature review based on TOD and locational theories empirical results was evident when the research method was applied. During the interviews, a differentiation based on the subdivision presented in the results chapter
showed that the main characteristics are different due to their particularities and concepts. Another perspective was also noticed in smaller companies searching for a more specific product than in larger chains. Nevertheless, a complete high-level hub, who is interested in attracting investment, it is necessary that all characteristics are analyzed and attended to some extent. The differentiation between the characteristics is a thought-provoking feature that can be used as the mandatory depending on the segment that is desired around the specific hub. Furthermore, it is seen that TOD is partially applicable as a strategy to attract horeca businesses and should be encouraged combined to a stimulation based on known examples worldwide formulating a 'win-win’ situation for all the part involved.

5.4. Further Research and Recommendations

For further research analyzing transportation hubs, there is still a lot of other parties that could be interviewed continuing this research to attract private investors. If considered inside the station area, there are other sectors as fashion and drugstores that plays a role in this market share. Mainly in the surroundings, the housing corporations, real estate agencies, and industries can be interviewed to entail the diversity aspect present in the land use. This interaction could bring an information flow among the participants. In the Dutch perspective, only the railway company was interviewed due to the consideration of the transportation hubs locations. However, the other transport system managers as metro, trams, BRTs could provide an interesting perspective. Also, private companies that provide services like bike-sharing or car-sharing could be approached to understand, for instance, if advertisement campaigns could attract more travelers to these public transport hubs and their private modes.

In order to understand a more focused recommendation, it was divided into categories: for academia, for the hub managers, for horeca businesses, and a possible collaboration among them via consultancy companies, as it follows.

- **Academia**

In the academic reference, the partial outdated status is one of the consequences of the disused of locational theories and techniques of business. Thinking in the long term, the continuous development of the holistic vision in this process, aligned with the techniques with the concept of TOD, helps the preparation of research where the communication between the areas is encouraged. Similarly, the techniques used by business owners to choose locations have guidelines that are subjective to the academy. The interconnection of this process in the market can positively influence the feedback of the theoretical production process. Under the perspective of the TOD characteristic of people flow, as the one most desired by horeca businesses, the development of researches focused on the prediction for medium and smaller stations in the Netherlands are needed.

- **Hub Managers**

Inside the station area, there is a lack of multifunctional areas, and the ones that are present are too monotonous, if it would be a more vibrant area, it could guarantee a high-quality traffic flow for retailers. This analysis is related to a TOD compactness vibrant area. In addition, the possibility of developing (and advertising) to the stakeholders the plan for station areas can attract new possible investments.
- **Horeca Businesses**

As an essential condition to control the revenue of future business is controlling all the aspects in the surrounding area. As a possible recommendation to the horeca businesses is to analyze all TOD components while choosing their location. The possibility of understanding in a basic level the fundamental theory can guarantee insights to achieve a better turnover due to their location. The locational theories here presented show precise characteristics connected to TOD characteristics, and it can be applied in on the subdivision. This can be seen as a tool in understanding the trends of transforming the hubs as venues.

- **Collaboration via consultancy companies**

The existent transport system in the Netherlands, together with the cycling culture allows businesses to be more spread because they are still reachable in a 10-minutes distance from hubs. The time and reliability of the system permit travelers to depend on them to achieve services daily. These conditions were not that established for leisure hotels and high-end businesses, incentivizing a culture of automobile dependence. Even though the transit system meets the needs of the significant population, wealthy people need a behavior change to alternate their transportation mode to a more sustainable one. That is the situation repeats in any country where the more fortunate people have opted for comfortable private mode options, among others. A possible way to approach this situation can be a top-down incentive where, on one side, the private investors through advertisement on the availability of quality public transport to their customers. This can be developed in partnership with hub managers creating a collaboration network. On the other hand, a possible partnership to provide infrastructure to these areas which are not served with transportation hubs also increasing accessibility. This is a position where consultancy companies can be active since they can represent all the stakeholders impartially in achieving one better solution.

5.5. **Limitations**

Some lessons can be learned from the target groups studied. Firstly, companies might not be open to being approached for scientific research. The best way is to be always available, open to explain what this research tackles and might help them and do not impose any pronouncement from them. Furthermore, their knowledge about locations can be reached with experienced professionals that use feelings in their decision-process. The task is to understand if this sentiment has theories as to their foundation, which was confirmed in most of the cases.

As a decision made by interviewing one of the stakeholders (horeca businesses) without the concern of all, it is a unilateral position, a possibility of collaboration between the parties involved could have a positive effect on the investment strategies. A lot could be written about the parties’ interaction, cultural factors, results of improvements influencing retailers, and the effect of the government decisions focused on TOD improvements in the station area.

Qualitative research with semi-structured interviews can be frustrating since it depends on the acceptance, availability, and willingness of other people to collaborate as a data generator. Manipulating this data can also be a challenge since the interpretation of the information relies on the researcher perspective. Also, during the interviews, it was not
attempted to bias the interviewee to a specific answer giving open-end questions expecting the answers to flourish during the interview time and only at the end presenting a possible stated choice option.

Total word count: 26.608 - without cover, Summary, List of Abbreviations, Table of Contents, List of Figures and Tables, References, and Appendix.


Ogra, Aurobindo & Ndebele, Robert. (2014). *The Role of 6Ds: Density, Diversity, Design, Destination, Distance, and Demand Management in Transit Oriented Development (TOD)*.


APPENDIX A – Interview Questionnaire Model

Introduction

1. What section of Horeca your company is included?
   - hotel
   - restaurant
   - catering

2. How many stores do you have in the Netherlands?

3. Do you have any stores located in a walkable distance (400m) from a station area?
   - yes
   - no

1st part: Open questions about investment strategies

4. What might be the future locations of the investment strategies for your retail? Why?

5. What are the considerations for the selection of a new location?

6. Do you use any theory or techniques while defining a possible location?

   Explain the concept of a transportation hub.

2nd part: Open questions about station areas investment

7. Is there any current planning for investment in transportation hubs?

8. Why choosing this station area for developing your business?

9. Did you have any unsuccessful case of stores located in hubs? If yes, can you tell me more about it?

10. What are the current issues from your perspective that serves as a barrier for investing in multimodal transportation hubs?

3rd part: Focused questions about whether these characteristics influence their strategy

11. If this characteristic is present in a station area would make you more likely to invest in it?
    a. Visibility
       - highly unlikely
       - not likely
       - no difference
       - likely
       - highly likely
    b. Local access
       - highly unlikely
       - not likely
       - no difference
       - likely
       - highly likely
    c. Closer distance to other stores (same sector - clustering)
       - highly unlikely
       - not likely
       - no difference
       - likely
       - highly likely
d. Closer distance to other stores (different sector - agglomeration)
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

e. Diversity of land use in surroundings
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

f. Higher rents
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

g. Higher income in surroundings
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

h. Lifestyle in surroundings (more urban, suburban or greenfield)
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

i. Presence of rideshare programs (bike and car)
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

j. Presence of traffic-calming and infrastructures that slower the traffic
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

k. Amount of people flow
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

l. Quantity of transportation modes
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

m. Quality of transportation modes
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

n. Quantity of inhabitants
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

o. Transfer station
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

p. Start or destination station (closer to residential areas)
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

q. Bicycle infrastructure available
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

r. Distance to the city center
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

s. Distance to a business center
   • highly unlikely  • not likely  • no difference  • likely  • highly likely

t. The barrier to achieving the store (access only with card)
Prompts:

- [ ] highly unlikely
- [ ] not likely
- [ ] no difference
- [ ] likely
- [ ] highly likely

12. Between these highly likely chosen characteristics, which is more important?
Characteristics pointed as highly likely are paired up to choose which of them perform an equal, moderately more important or sub role

**Final considerations**

13. Do you think any of these present characteristics could change your investment perspective?

14. What would make you focus your investment in a station area?
APPENDIX B – Clarification of the Target Group

First interview – a built-in restaurant inside a department store
(18.06.2019 – Amsterdam Noord, The Netherlands)
Interviewee: Senior locational analyst

Location: The interview happened in the company headquarters in a quiet room with no interruptions. The interview started at 14:39, and it happened in 42 minutes.

About the company: A Dutch department chain that has restaurants inside the store. It has started as a dime store, and it has expanded over 90 years already in two continents. Their current vision for The Netherlands is that the market is mature. They do not have the intention to develop another store in the upcoming years except there is a new development very interesting. However, they already have stores in transportation hubs, and they would be interested in promoting investments if a significant station area is improved or develop.

Second interview – hub manager responsible for cafe chains in the station
(04.07.2019 – Utrecht Centraal, The Netherlands)
Interviewee 1: Technical developer
Interviewee 2: Branching & portfolio manager

Location: The interview happened in the company office in the lunchroom with a lot of noise around. It happened with two members from the company, one of them has a broader view of the situation, and the other is more focused on the retail sector. The interview started at 13:05, and it happened for 46 minutes.

About the company: It is the major rail company in the Netherlands. They control five retail brands in horeca businesses in station areas. Also, they have a partnership with franchising companies and smaller as tenants. They manage the hubs and select between their brands, franchises, and other stores which one fits better for each situation without prioritizing any of them. They have more than 100 research projects active and currently are promoting improvements in station areas whether they are small, medium, or large-sized.

Third interview – hotel park chain
(10.07.2019 – Zwolle, The Netherlands)
Interviewee: Manager development Benelux

Location: The interview happened in the principal office of the company. This office controls all Benelux (Belgium, Netherlands, and Luxemburg) area. The conversation was in the lunchroom, with no one else present at the moment without any significant noise. The interview started at 15:16 and occurred for 1:05 minutes.

About the company: The company owns more than 90 villages, which 55 are located in The Netherlands and them in the Dutch market for more than 65 years. Their main goal is to
provide a sense of nature among the guests. They have one business in a 3km distance, and a new station is being constructed in a 400m distance from the park at the moment.

**Fourth interview – multipurpose space with a restaurant**

(17.07.2019 – Amsterdam Amstel, The Netherlands)

Interviewee: Co-funder

Location: The interview happened in their own company for 1 hour. It was a quiet meeting room, and after the meeting, a tour was provided to understand who the place actually works, starting at 13:21, lasting 50 minutes

About the company: The company has a unique concept mixing a café, a restaurant, co-working space, meeting rooms, and multifunctional areas. During weekdays, they are more concern in the restaurant and café approach, and during the weekends they provide activities for all ages, including kids. They are located in a mixed-use area, which allows them having contact with different target groups. The main goal is to provide a location that would fit many occasions, such as a company’s meeting to a kid’s theater event.

**Fifth interview – cafe and restaurant chain**

(18.07.2019 – Amsterdam Centraal, The Netherlands)

Interviewee: Operational manager

Location: The interview happened in one of the cafes from the company as a request of the interviewee. It was a busy day during lunchtime, and there was significant noise around. The interview went on for 45 minutes.

About the company: The company is based and have all the businesses in Amsterdam, and mostly in central places. They own cafes, restaurants, and night clubs, and all of them have different concepts and vibes, which makes them unique in every business. The owner is mostly involved with all the businesses and develop together with the team and placed proposed every time a new idea tailor-made for each place.

**Sixth interview – 3-course-menu restaurant chain**

(23.07.2019 – Nijmegen, The Netherlands)

Interviewee: Operation manager

Location: The interview happened in the chain’s head office. It was in a quiet room with no interruptions, and it lasted for 30 minutes, after 11.00.

About the company: It is a restaurant chain with almost 30 years based in the Netherlands. They usually offer a 3-course menu with a fixed price in their 17 restaurants all over the country. The last one was opened in less than one month ago. The discussion addressed many of the restaurant’s chain, which had its location hidden in the transcript due to the strategy’s company reasons. They continue to search for a new development in cities that still do not hold a branch.
Seventh interview – a fast-food restaurant chain

(26.07.2019 – Nuland, The Netherlands)

Interviewee: Operation franchising manager

Location: The interview happened in a hotel restaurant it lasted 30 minutes. The environment was not completely quiet, but the noise was not significant. The interview started at 12:30 and occurred for 28 minutes.

About the company: The company is a restaurant chain with more than 20 years, specialized in delivering and collection locations. It has a franchising model formula. The company intends to expand its franchises in the Netherlands in more than a third of their actual capacity and also to Belgium in 2020. In the past two years, the company had an expansion of 55 locations. Their central concept is based on a fast-food delivery service.

Eighth interview – a fast-food restaurant chain

(30.07.2019 – Utrecht Centraal, The Netherlands)

Interviewee: Real estate manager

Location: The interview happened in one of the company’s restaurants with non-significant noise and no interruptions. The interviewee asked not to be recorded due to confidential information. The interview started at 16:00 and lasted for 46 minutes.

About the company: It is a fast-food company globally known and also in Europe with more than 200 restaurants in the Netherlands. They have restaurants inside transportation hubs, outside, in the city centers, outside the city center and are decided by a franchising model. They are considering expanding in the Netherlands at the moment. Also, they want to spread their cafe concept. Their decisions are made locally, but they have global approval.

Ninth interview – hotel park chain

(09.08.2019 – Rotterdam, The Netherlands)

Interviewee: CSR director

Location: The interview happened in one of the company’s office with no interruptions and in a quiet room. The interview started at 11:02 and lasted 1:10 minutes.

Company: It is a European network of holiday villages for over 60 years. In the 80s and 90s, they had a vast expansion with the Dutch model of comfort camping modified to hotel apartments. This is the reason for their future plans include a broader perspective in eastern Europe. They are focused on the leisure industry they own 26 resorts in the Netherlands, France, Belgium, Germany, and the UK. The parc is mostly equipped with restaurants, swimming pools, spas, saunas, and other sport and entertainment facilities. The land used for building the hotels usually were in the past military bases, coal mines and other enormous fields with at least 100 ha that was recovered and readjusted to fit their facilities.
Tenth interview – two restaurants with a single owner

(22.08.2019 – Phone call)

Interviewee: Owner

Location: The interview was done by phone call and had no interruptions. It lasted 30 minutes.

Company: The business consisted of two restaurants in a 3-minutes-walk distance from a hub in Utrecht. They were closed in 2016 after five years of work. They opened the restaurants after established conversations with hub managers with information that it would have a significant improvement in the station 100 meters from one of the restaurants. However, this improvement was only finalized in 2016 after the restaurant decided to close their doors. The concept of the first restaurant is based on comfort food, having dinner with family and friends in a cozy environment, with medium quality food and high service level. The second one presented high-quality meals, medium service level, and a big available terrace.
### APPENDIX C – Stated Choice Characteristics Results

#### Figure 27 - Stated choice characteristics for interview using the 5-likelihood scale (own elaboration)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>1st interview</th>
<th>2nd interview</th>
<th>3rd interview</th>
<th>4th interview</th>
<th>5th interview</th>
<th>6th interview</th>
<th>7th interview</th>
<th>8th interview</th>
<th>9th interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment subdivision</td>
<td>R/C</td>
<td>R/C</td>
<td>H</td>
<td>R/C</td>
<td>R/C</td>
<td>R/C</td>
<td>R/C</td>
<td>R/C</td>
<td>H</td>
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<td>a. Visibility</td>
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<td>b. Local access</td>
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<td>c. Closer distance to other stores (same sector - clustering)</td>
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<td>d. Closer distance to other stores (different sector - agglomeration)</td>
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<td>e. Diversity of land-use in surroundings</td>
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<td>f. Higher rents</td>
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<td>g. Higher income in surroundings</td>
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<td>h. Lifestyle in surroundings (more urban, suburban or greenfield)</td>
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<td>i. Presence of rideshare programs (bike and car)</td>
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<td>j. Presence of traffic-calming and infrastructures that slower the traffic</td>
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<td>k. Amount of people flow</td>
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<td>l. Quantity of transportation modes</td>
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<td>m. Quality of transportation modes</td>
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<td>n. Quantity of inhabitants</td>
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<td>o. Transfer station</td>
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<tr>
<td>p. Start or destination station (closer to residential areas)</td>
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<td>q. Bicycle infrastructure available</td>
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<tr>
<td>r. Distance to the city center</td>
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<tr>
<td>s. Distance to a business center</td>
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<tr>
<td>t. Barrier to achieve the store (access only with card)</td>
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</tbody>
</table>

*Note: The table above represents the stated choice characteristics for interviews using the 5-likelihood scale.*
**Figure 28 - Stated choice characteristics results (own elaboration)**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment subdivision</td>
<td>H/R/C</td>
</tr>
<tr>
<td>a. Visibility</td>
<td></td>
</tr>
<tr>
<td>b. Local access</td>
<td></td>
</tr>
<tr>
<td>c. Closer distance to other stores (same sector - clustering)</td>
<td></td>
</tr>
<tr>
<td>d. Closer distance to other stores (different sector - agglomeration)</td>
<td></td>
</tr>
<tr>
<td>e. Diversity of land-use in surroundings</td>
<td></td>
</tr>
<tr>
<td>f. Higher rents</td>
<td></td>
</tr>
<tr>
<td>g. Higher income in surroundings</td>
<td></td>
</tr>
<tr>
<td>h. Lifestyle in surroundings (more urban, suburban or greenfield)</td>
<td></td>
</tr>
<tr>
<td>i. Presence of rideshare programs (bike and car)</td>
<td></td>
</tr>
<tr>
<td>j. Presence of traffic-calming and infrastructures that slower the traffic</td>
<td></td>
</tr>
<tr>
<td>k. Amount of people flow</td>
<td></td>
</tr>
<tr>
<td>l. Quantity of transportation modes</td>
<td></td>
</tr>
<tr>
<td>m. Quality of transportation modes</td>
<td></td>
</tr>
<tr>
<td>n. Quantity of inhabitants</td>
<td></td>
</tr>
<tr>
<td>o. Transfer station</td>
<td></td>
</tr>
<tr>
<td>p. Start or destination station (closer to residential areas)</td>
<td></td>
</tr>
<tr>
<td>q. Bicycle infrastructure available</td>
<td></td>
</tr>
<tr>
<td>r. Distance to the city center</td>
<td></td>
</tr>
<tr>
<td>s. Distance to a business center</td>
<td></td>
</tr>
<tr>
<td>t. Barrier to achieve the store (access only with card)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>from to</th>
<th>Highly unlikely</th>
<th>Unlikely</th>
<th>No Difference</th>
<th>Likely</th>
<th>Highly Likely</th>
<th>H/R/C</th>
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<tr>
<td>1</td>
<td>10</td>
<td>19</td>
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<td>36</td>
<td>45</td>
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</tr>
</tbody>
</table>

**Ranking Total H/R/C**

- k. Amount of people flow
- b. Local access
- h. Lifestyle in surroundings (more urban, suburban or greenfield)
- a. Visibility
- l. Quantity of transportation modes
- n. Quantity of inhabitants
- q. Bicycle infrastructure available
- r. Distance to the city center
- m. Quality of transportation modes
- e. Diversity of land-use in surroundings
- o. Transfer station
- s. Distance to a business center
- j. Presence of traffic-calming and infrastructures that slower the traffic
- c. Closer distance to other stores (same sector - clustering)
- t. Barrier to achieve the store (access only with card)
- f. Higher rents
Figure 29 - Stated choice characteristics results for Hotel subdivision (own elaboration)
Figure 30 - Stated choice characteristics results for Restaurant and Cafe subdivision (own elaboration)
APPENDIX D – Best Worst Method Results

First interview

Highly likely characteristics

<table>
<thead>
<tr>
<th>Criterion 1</th>
<th>Criterion 2</th>
<th>Criterion 3</th>
<th>Criterion 4</th>
<th>Criterion 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visibility</td>
<td>People flow</td>
<td>Lifestyle</td>
<td>Qty of transport modes</td>
<td>Destination station</td>
</tr>
</tbody>
</table>

Criteria Number = 5

Names of Criteria

<table>
<thead>
<tr>
<th>Visibility</th>
<th>People flow</th>
<th>Lifestyle</th>
<th>Qty of transport modes</th>
<th>Destination station</th>
</tr>
</thead>
</table>

Select the Best

People flow

Select the Worst

Urban lifestyle

Best to Others

<table>
<thead>
<tr>
<th>People flow</th>
<th>Visibility</th>
<th>People flow</th>
<th>Lifestyle</th>
<th>Qty of transport modes</th>
<th>Destination station</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Others to the Worst

<table>
<thead>
<tr>
<th>Urban lifestyle</th>
<th>Visibility</th>
<th>People flow</th>
<th>Lifestyle</th>
<th>Qty of transport modes</th>
<th>Destination station</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

The meaning of the numbers 1-3:

1: Equal importance
2: Moderately more important than
3: Absolutely more important than

Weights

<table>
<thead>
<tr>
<th>Visibility</th>
<th>People flow</th>
<th>Lifestyle</th>
<th>Qty of transport modes</th>
<th>Destination station</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.23</td>
<td>0.4</td>
<td>0.1</td>
<td>0.15</td>
<td>0.15</td>
</tr>
</tbody>
</table>

Ks* 0.075

The pie chart shows the distribution of the selected criteria:

- Visibility: 23%
- People flow: 38%
- Lifestyle: 15%
- Qty of transport modes: 15%
- Destination station: 10%
First interview Best 3 choice simplification

<table>
<thead>
<tr>
<th>Criteria Number = 3</th>
<th>Criterion 1</th>
<th>Criterion 2</th>
<th>Criterion 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Names of Criteria</td>
<td>Visibility</td>
<td>People flow</td>
<td>Qty of transport</td>
</tr>
</tbody>
</table>

Select the Best  People flow

Select the Worst  Qty of transport

<table>
<thead>
<tr>
<th>Best to Others</th>
<th>Visibility</th>
<th>People flow</th>
<th>Qty of transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>People flow</td>
<td>2</td>
<td>1</td>
<td>3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Others to the Worst</th>
<th>Qty of transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visibility</td>
<td>3</td>
</tr>
<tr>
<td>People flow</td>
<td>3</td>
</tr>
<tr>
<td>Qty of transport</td>
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</tr>
</tbody>
</table>

The meaning of the numbers 1-3:
1: Equal importance
2: Moderately more important than
3: Absolutely more important than

<table>
<thead>
<tr>
<th>Weights</th>
<th>Visibility</th>
<th>People flow</th>
<th>Qty of transport</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>0,1</td>
</tr>
</tbody>
</table>

Ksi* 0,107

- Visibility 32%
- People flow 54%
- Qty of transport modes 14%
Second interview

Highly likely characteristics

<table>
<thead>
<tr>
<th>Criterion 1</th>
<th>People flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion 2</td>
<td>Visibility</td>
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<tr>
<td>Criterion 3</td>
<td>Local access</td>
</tr>
</tbody>
</table>

People flow ☑ | People flow ☑ | Local access ☐

Visibility ☑ |

Local access ☐

Criteria Number = 3

<table>
<thead>
<tr>
<th>Names of Criteria</th>
<th>Criterion 1</th>
<th>Criterion 2</th>
<th>Criterion 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>People flow</td>
<td></td>
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<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Local access</td>
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</table>

Select the Best | People flow |

Select the Worst | Local access |

Best to Others

<table>
<thead>
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<th>Local access</th>
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</thead>
<tbody>
<tr>
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</tbody>
</table>

Others to the Worst

<table>
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<th>People flow</th>
<th>Visibility</th>
</tr>
</thead>
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The meaning of the numbers 1-3:

1: Equal importance
2: Moderately more important than
3: Absolutely more important than

Weights

<table>
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<tr>
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Ksi* 0.111
### Third interview

Highly likely characteristics

<table>
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<th>Closer to others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion 2</td>
<td>Lifestyle</td>
</tr>
<tr>
<td>Criterion 3</td>
<td>Distance to facilities</td>
</tr>
</tbody>
</table>

- **Closer to others**
- **Lifestyle**
- **Distance to facilities**

### Names of Criteria

<table>
<thead>
<tr>
<th>Criteria Number = 3</th>
<th>Criterion 1</th>
<th>Criterion 2</th>
<th>Criterion 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Names of Criteria</td>
<td>Closer to others</td>
<td>Lifestyle</td>
<td>Distance to facilities</td>
</tr>
</tbody>
</table>

### Select the Best

- **Lifestyle**

### Select the Worst

- **Distance to facilities**

### The meaning of the numbers 1-3:

- **1**: Equal importance
- **2**: Moderately more important than
- **3**: Absolutely more important than

### Weights

<table>
<thead>
<tr>
<th>Weights</th>
<th>Closer to others</th>
<th>Lifestyle</th>
<th>Distance to facilities</th>
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<td>0.3</td>
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<td>0.2</td>
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</tbody>
</table>

| Ksi*     | 0.042            |

### Pie Chart

- **Closer to others** 17%
- **Lifestyle** 54%
- **Distance to facilities** 29%
Fourth interview

Highly likely characteristics

<table>
<thead>
<tr>
<th>Criterion 1</th>
<th>Local access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion 2</td>
<td>Diverse land-use</td>
</tr>
<tr>
<td>Criterion 3</td>
<td>Lifestyle</td>
</tr>
<tr>
<td>Criterion 4</td>
<td>Qty of transport modes</td>
</tr>
<tr>
<td>Criterion 5</td>
<td>Distance to business</td>
</tr>
</tbody>
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<table>
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<td>Qty of transport modes</td>
<td>Distance to business</td>
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</tr>
<tr>
<td>Diverse land-use</td>
<td>Qty of transport modes</td>
<td>Diverse land-use</td>
<td></td>
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</tr>
<tr>
<td>Distance to business</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Qty of transport modes</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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Criteria Number = 5

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<th>Criterion 4</th>
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<tbody>
<tr>
<td>Local access</td>
<td>Diverse land-use</td>
<td>Lifestyle</td>
<td>Qty of transport modes</td>
<td>Distance to business</td>
</tr>
</tbody>
</table>

Select the Best | Local access |
Select the Worst | Qty of transport modes |

Best to Others | Local access | Diverse land-use | Lifestyle | Qty of transport modes | Distance to business |
| Local access | 1 | 1 | 2 | 3 | 3 |

Others to the Worst | Qty of transport modes |
| Local access | 3 |
| Diverse land-use | 3 |
| Lifestyle | 1 |
| Qty of transport modes | 1 |
| Distance to business | 2 |

The meaning of the numbers 1-3:
1: Equal importance
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3: Absolutely more important than

Weights

<table>
<thead>
<tr>
<th>Local access</th>
<th>Diverse land-use</th>
<th>Lifestyle</th>
<th>Qty of transport modes</th>
<th>Distance to business</th>
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K* = 0.082

Local access 12%  Diverse land-use 29%  Lifestyle 10%  Qty of transport modes 37%  Distance to business 0%
Fourth interview Best 3 choice simplification

<table>
<thead>
<tr>
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<th>Criterion 2</th>
<th>Criterion 3</th>
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<td>Names of Criteria</td>
<td>Local access</td>
<td>Diverse land-use</td>
<td>Qty of transport</td>
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</table>

Select the Best

<table>
<thead>
<tr>
<th>Local access</th>
<th>Qty of transport</th>
</tr>
</thead>
</table>

Select the Worst

<table>
<thead>
<tr>
<th>Local access</th>
<th>Qty of transport</th>
</tr>
</thead>
</table>

Best to Others

<table>
<thead>
<tr>
<th>Local access</th>
<th>Diverse land-use</th>
<th>Qty of transport</th>
</tr>
</thead>
</table>

Others to the Worst

<table>
<thead>
<tr>
<th>Qty of transport</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Local access</th>
<th>Diverse land-use</th>
<th>Qty of transport</th>
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</thead>
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The meaning of the numbers 1-3:
1: Equal importance
2: Moderately more important than
3: Absolutely more important than

<table>
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</tr>
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<table>
<thead>
<tr>
<th>Ksi*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,00</td>
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</tbody>
</table>

![Pie chart showing the distribution of weights across criteria]

- Local access: 43%
- Diverse land-use: 43%
- Qty of transport modes: 14%
Fifth interview

Highly likely characteristics

<table>
<thead>
<tr>
<th>Criterion 1</th>
<th>Distance to city center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion 2</td>
<td>Concept</td>
</tr>
<tr>
<td>Criterion 3</td>
<td>Lifestyle</td>
</tr>
</tbody>
</table>

Distance to city center 1  Concept 2  Lifestyle 0

Concept 1  Lifestyle

Criteria Number = 3

<table>
<thead>
<tr>
<th>Names of Criteria</th>
<th>Criterion 1</th>
<th>Criterion 2</th>
<th>Criterion 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to city center</td>
<td>Concept</td>
<td>Lifestyle</td>
<td></td>
</tr>
</tbody>
</table>

Select the Best: Distance to city center

Select the Worst: Lifestyle

Best to Others

<table>
<thead>
<tr>
<th>Best to Others</th>
<th>Distance to city center</th>
<th>Concept</th>
<th>Lifestyle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to city center</td>
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<td>3</td>
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</table>

Others to the Worst

<table>
<thead>
<tr>
<th>Others to the Worst</th>
<th>Lifestyle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to city center</td>
<td>3</td>
</tr>
<tr>
<td>Concept</td>
<td>2</td>
</tr>
<tr>
<td>Lifestyle</td>
<td>1</td>
</tr>
</tbody>
</table>

The meaning of the numbers 1-3:
1: Equal importance
2: Moderately more important than
3: Absolutely more important than

Weights

<table>
<thead>
<tr>
<th>Weights</th>
<th>Distance to city center</th>
<th>Concept</th>
<th>Lifestyle</th>
</tr>
</thead>
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<td>0.4</td>
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</tbody>
</table>

Ksi* 0.056

![Circle diagram showing the percentage of criteria]

- Distance to city center: 44%
- Concept: 39%
- Lifestyle: 17%
Sixth interview

Highly likely characteristics

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Distance to city center</th>
<th>People flow</th>
<th>Local access</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Criterion 2</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Criterion 3</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Distance to city center | People flow | Local access

Select the Best | People flow

Select the Worst | Local access

<table>
<thead>
<tr>
<th>Best to Others</th>
<th>Distance to city center</th>
<th>People flow</th>
<th>Local access</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3</td>
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<table>
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<tr>
<th>Others to the Worst</th>
<th>Local access</th>
<th>Distance to city center</th>
<th>People flow</th>
<th>Local access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to city center</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People flow</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local access</td>
<td>1</td>
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<td></td>
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</tbody>
</table>

The meaning of the numbers 1-3:
1: Equal importance
2: Moderately more important than
3: Absolutely more important than

<table>
<thead>
<tr>
<th>Weights</th>
<th>Distance to city center</th>
<th>People flow</th>
<th>Local access</th>
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<tbody>
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<td>ksi*</td>
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0.042
Seventh interview

Highly likely characteristics

<table>
<thead>
<tr>
<th>Criteria Number</th>
<th>Visibility</th>
<th>Closer to other</th>
<th>Diverse land-use</th>
<th>People flow</th>
<th>Qty of inhabitants</th>
</tr>
</thead>
</table>

- **Visibility**: 1
- **Closer to other**: 0
- **Diverse land-use**: 1
- **People flow**: 0
- **Qty of inhabitants**: 2

### Criteria Weights

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Visibility</th>
<th>Closer to other</th>
<th>Diverse land-use</th>
<th>People flow</th>
<th>Qty of inhabitants</th>
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<td>0.1</td>
<td>0.2</td>
<td>0.3</td>
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</tbody>
</table>

**Ksi***: 0.097

### Criteria Importance

- **Visibility**: 22%
- **Closer to other**: 8%
- **Diverse land-use**: 14%
- **People flow**: 22%
- **Qty of inhabitants**: 34%

The meaning of the numbers 1-3:

1: Equal importance
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3: Absolutely more important than
Seventh interview Best 3 choice simplification

<table>
<thead>
<tr>
<th>Criteria Number = 3</th>
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<tr>
<td>Names of Criteria</td>
<td>Visibility</td>
<td>People flow</td>
<td>Qty of inhabitants</td>
</tr>
</tbody>
</table>

Select the Best  
Qty of inhabitants

Select the Worst  
Visibility

Best to Others  
Visibility  
People flow  
Qty of inhabitants

| Qty of inhabitants | 2 | 2 | 1 |

Others to the Worst  
Visibility  
People flow  
Qty of inhabitants

<table>
<thead>
<tr>
<th>Visibility</th>
<th>People flow</th>
<th>Qty of inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>1</td>
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</tbody>
</table>

Weights  
Visibility  
People flow  
Qty of inhabitants

<table>
<thead>
<tr>
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<th>People flow</th>
<th>Qty of inhabitants</th>
</tr>
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Ksi*  
0,250

The meaning of the numbers 1-3:
1: Equal importance
2: Moderately more important than
3: Absolutely more important than
### Eighth interview

**Highly likely characteristics**

<table>
<thead>
<tr>
<th>Criterion 1</th>
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<tbody>
<tr>
<td>Criterion 2</td>
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<tr>
<td>Criterion 3</td>
<td>People Flow</td>
</tr>
<tr>
<td>Criterion 4</td>
<td>Qty of transport modes</td>
</tr>
<tr>
<td>Criterion 5</td>
<td>Qty of inhabitants</td>
</tr>
<tr>
<td>Criterion 6</td>
<td>Transfer station</td>
</tr>
<tr>
<td>Criterion 7</td>
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#### Criteria Number = 8

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<th>Criterion 4</th>
<th>Criterion 5</th>
<th>Criterion 6</th>
<th>Criterion 7</th>
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<td>Qty of inhabitants</td>
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#### Select the Best

<table>
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<tr>
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<th>People Flow</th>
<th>Qty of transport</th>
<th>Qty of inhabitants</th>
<th>Transfer station</th>
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<th>Distance to business</th>
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<td>Others to the Worst</td>
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</tbody>
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#### Best to Others

<table>
<thead>
<tr>
<th>Visibility</th>
<th>Lifestyle</th>
<th>People Flow</th>
<th>Qty of transport</th>
<th>Qty of inhabitants</th>
<th>Transfer station</th>
<th>Distance to city center</th>
<th>Distance to business</th>
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<tr>
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<td></td>
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#### Others to the Worst

<table>
<thead>
<tr>
<th>Visibility</th>
<th>Lifestyle</th>
<th>People Flow</th>
<th>Qty of transport</th>
<th>Qty of inhabitants</th>
<th>Transfer station</th>
<th>Distance to city center</th>
<th>Distance to business</th>
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<tr>
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</tbody>
</table>

#### Weights

- Visibility 20%
- Lifestyle 20%
- People Flow 20%
- Qty of transport modes 9%
- Qty of inhabitants 9%
- Transfer station 8%
- Distance to city center 20%
- Distance to business 20%
Eighth interview Best 3 choice simplification

<table>
<thead>
<tr>
<th>Criteria Number = 3</th>
<th>Criterion 1</th>
<th>Criterion 2</th>
<th>Criterion 3</th>
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<tr>
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<td>People flow</td>
<td>Qty of transport</td>
</tr>
</tbody>
</table>

Select the Best: Visibility

Select the Worst: Qty of transport

Best to Others

<table>
<thead>
<tr>
<th>Visibility</th>
<th>People flow</th>
<th>Qty of transport</th>
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<tbody>
<tr>
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<td>1</td>
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</table>

Others to the Worst

<table>
<thead>
<tr>
<th>Qty of transport</th>
<th>Visibility</th>
<th>People flow</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1</td>
<td>1</td>
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The meaning of the numbers 1-3:
1: Equal importance
2: Moderately more important than
3: Absolutely more important than

Weights

<table>
<thead>
<tr>
<th>Qty of transport</th>
<th>Visibility</th>
<th>People flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,3</td>
<td>0,3</td>
<td>0,3</td>
</tr>
</tbody>
</table>

\( \text{Ks}^* \) 0,000
Ninth interview

Highly likely characteristics

<table>
<thead>
<tr>
<th>Criterion 1</th>
<th>Higher income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion 2</td>
<td>Lifestyle</td>
</tr>
<tr>
<td>Criterion 3</td>
<td>Qty of inhabitants</td>
</tr>
</tbody>
</table>

Higher income 1
Lifestyle 2
Qty of inhabitants 3

Criteria Number = 3

Select the Best  Lifestyle
Select the Worst  Higher income

Best to Others  Higher income  Lifestyle  Qty of inhabitants
Lifestyle  3  1  1

Others to the Worst  Higher income
Higher income  1
Lifestyle  3
Qty of inhabitants  1

Weights  Higher income  Lifestyle  Qty of inhabitants
0,2  0,5  0,3

Ksi*  0,133

The meaning of the numbers 1-3:
1: Equal importance
2: Moderately more important than
3: Absolutely more important than

Higher income 33%
Lifestyle 47%
Qty of inhabitants 20%
APPENDIX E – Best Worst Method Calculation Images

The following figures represent the calculation in Microsoft Office Excel to solve the BWM method in their own application.

Step 1:

Step 2:

Step 3:
## APPENDIX F – Atlas.Ti codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Code Group 1</th>
<th>Code Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement</td>
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<td></td>
</tr>
<tr>
<td>Barriers</td>
<td>Open-ended</td>
<td></td>
</tr>
<tr>
<td>Beginning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Best worst method</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bike infra</td>
<td></td>
<td>Stated choice</td>
</tr>
<tr>
<td>Changing characteristics</td>
<td>Open-ended</td>
<td></td>
</tr>
<tr>
<td>Characteristics in hubs</td>
<td>Open-ended</td>
<td></td>
</tr>
<tr>
<td>Closer distance</td>
<td>Stated choice</td>
<td></td>
</tr>
<tr>
<td>Considerations for locations</td>
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<td></td>
</tr>
<tr>
<td>Distance to a business center</td>
<td>Stated choice</td>
<td></td>
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<tr>
<td>Distance to the city center</td>
<td>Stated choice</td>
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<tr>
<td>Diversity</td>
<td>Stated choice</td>
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<tr>
<td>End</td>
<td></td>
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<tr>
<td>Future investments</td>
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<tr>
<td>How many</td>
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<tr>
<td>Income</td>
<td></td>
<td>Stated choice</td>
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<tr>
<td>Inhabitants</td>
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<tr>
<td>Lifestyle</td>
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<td>Stated choice</td>
</tr>
<tr>
<td>Local access</td>
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<td>Location technique</td>
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<tr>
<td>People flow</td>
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<td>Stated choice</td>
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<tr>
<td>Quantity and quality</td>
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<td>Stated choice</td>
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<tr>
<td>Rent</td>
<td>Stated choice</td>
<td></td>
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<tr>
<td>Rideshare</td>
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<td>Stated choice</td>
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<tr>
<td>Traffic-calming</td>
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<td>Stated choice</td>
</tr>
<tr>
<td>Transfer station</td>
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<td>Stated choice</td>
</tr>
<tr>
<td>Unsuccessful cases in hubs</td>
<td>Open-ended</td>
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</tr>
<tr>
<td>Visibility</td>
<td></td>
<td>Stated choice</td>
</tr>
<tr>
<td>Where are the stores</td>
<td>Open-ended</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX G – Interviews Transcripts and Summaries

First interview – a built-in restaurant inside a department store

Second interview – hub manager responsible for cafe chains in the station

Third interview – hotel park chain

Fourth interview – multipurpose space with a restaurant

Fifth interview – cafe and restaurant chain

Sixth interview – 3-course-menu restaurant chain

Seventh interview – a fast-food restaurant chain

Eighth interview – a fast-food restaurant chain

Ninth interview – hotel park chain

Tenth interview – two restaurants with a single owner