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THE MARKTHAL ILLUMINATED

INTENTIONS AND PERCEPTIONS OF DEVELOPERS, VENDORS AND VISITORS

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ABSTRACT

The Markthal has been an architectural focus point of Rotterdam since 2014. Although millions of people visit each year, reports of dissatisfied vendors reach the news regularly. This research seeks to find whether there are differences between the intentions of the developers of the Markthal and the perceptions of vendors and visitors concerning the indoor food market and the architecture of the building. In doing so, connecting these two aspects of the building to the concepts of food as cultural good, city branding and flagship architecture. As follows, the main research question is: *To what extent has the Markthal as an indoor food market and an architectural icon in Rotterdam fulfilled the intentions developers had when it was established, according to vendors and visitors?*

By interviewing members of the developing side and distributing surveys to vendors and visitors, intentions and perceptions of both sides are uncovered, and analyzed using coding and descriptive statistics. The research shows that, although the architecture of the building has fulfilled its intentions of impacting the image of Rotterdam and giving the newly developed Laurenskwartier a ‘face’, the indoor food market is suffering from the high number of infrequent visitors. Because of the cultural good characteristics of the products for sale in the market hall, personal relationships and trust between vendors and visitors are necessary for the market to flourish. Therefore, the intention of creating a food market for a broad audience of Rotterdammers has failed to be realized in the development of the Markthal. It is up to the managing parties of the Markthal to decide whether the Markthal will be further developed to be of service of infrequent visitors and tourists, or whether the indoor food market will be transformed into a place where Rotterdammers come to purchase their daily groceries.

KEYWORDS: Market halls, Rotterdam, Flagship architecture, Cultural goods, Intentions and perceptions

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1. Introduction

For most of the week, the Binnenrotte comes across as a forlorn part of the city center; an empty square in the center of Rotterdam, connecting the Blaak, Meent and Hoogstraat. But on Tuesday and Saturday the Binnenrotte is completely transformed. The emptiness is filled with vendors selling everything from cheese and bread to clothes and batteries. There is little that cannot be purchased in Rotterdam's Blaak market.

The open air market is a familiar image for anyone who has lived in Rotterdam and has spent a Saturday wandering around, impressed by the wide array of products for sale and also partly deafened by the vendors praising their wares. Having always been the star of the Binnenrotte, the Blaak market got a permanent companion in the form of the Markthal in 2014. Designed by Winy Maas from architects MVDRV (Maas, Van Rijn, De Vries) it has been called an icon since its earliest development (Provast, 2006). Combining apartments, a parking garage, restaurants and retail, the Markthal was meant to revive the Laurenskwartier and make it a part of the downtown area that is worth visiting (Van Duivenbode[1], unknown, Image 1). After only two years of operations it is hard to imagine Rotterdam without it.

Image 1 The Markthal, a horseshoe-shaped building designed by Winy Maas. Under the arch it houses an indoor food market, on the outside 228 apartments are realized. Credits: Ossip van Duivenbode, free use.

Although the Markthal seems at home in Rotterdam, there has also been much in the news about vendors who are unsatisfied with their profits and claim that the concept does not work for them (Potters, May 20, 2016). The presence of both positive and negative reports on the Markthal is what lead to main topics and questions of this research: which intentions lie at the base of the Markthal, and how have they been realized in practice? What is the viewpoint of vendors and visitors? The literature review in chapter 2 sheds light on how the Markthal can be defined from a theoretical point of view, while the empirical research will focus on how the Markthal was intended from the beginning and is perceived now. The first step in this process of research is to understand what the inspirations for the Markthal were.

1.1 Finding inspiration in Europe

At the time of construction the Markthal was a unique development in the Netherlands, but outside our borders market halls can be found near and far. The Markthal's website states that inspiration was taken from market halls in Stockholm, Barcelona, Valencia and Copenhagen (Markthal, 2014[1]). To create a thorough image of the Markthal in Rotterdam it is important to look at the characteristics of these four markets first.

The market hall in Stockholm, Sweden, is called the Östermalms Saluhall, which was opened in 1888. The company that founded the hall, Östermalms Saluhallar Limited, wanted to build and lease food halls and sales offices in Stockholm. To find an architect for the hall an architectural competition was held, which was won by two young men named Isak Gustaf Clason and Kasper Salin, who had been inspired by brick architecture supported by cast-iron structures they had seen in France. Currently, a significant part of the original interior remains, such as the stalls and the designs on the vendors' signs (Östermalms Hallen, unknown[1]). The hall houses 17 vendors in total, many of which run family businesses who have been located in the Östermalms Saluhall for generations. Their mission is stated as follows:

> "What unites us is the passion for really good food, high quality in every aspect of our work and the personal meeting with you as a

> customer. Together we want to give a food-shopping experience that will inspire you" (Östermalms Hallen, unknown[2]).

Between 2016 and 2018 the hall is being renovated and extended. Neighboring buildings will be connected to the historical hall, creating courtyards for the surrounding restaurants.

La Boqueria is the well-known market hall of Barcelona in Spain. Although it only became a covered market in 1840, the market has existed for much longer as a traveling and open air market and the first mention of the market dates from 1217. The metal roof over the market is not original, but was constructed in 1914. For the citizens of Barcelona the market represents family memories, traditions and celebrations. Vendors are mostly the third or fourth generation of their families on the market. The website characterizes them as "innovators, full of projects and renovation ideas for La Boqueria: for the new Barcelona" (La Boqueria, 2016). Housing more than 150 stalls, La Boqueria offers a wide selection of fruit and vegetables, fish, meat, and specialties (La Boqueria, 2016).

Another market hall in Spain served as inspiration for the Markthal: Mercat Central in Valencia. Similarly to La Boqueria, the market in Valencia first existed as an open air market. When this market became too small for the city, the Town Council issued a call for tender in 1910. Architects Alejandro Soler March and Francisco Guardia Vial were selected to design the building. In 1914 the market hall was built using iron, glass and exposed brick. A traders' association established in 1986 has been responsible for running the market on a day-to-day basis, also taking care of funding for new services, maintenance, security, cleaning and decorations (Mercat Central de València, 2012).

The last market hall, and also the youngest, is the Torvehallerne Market in Copenhagen, which opened in 2011. Architect Hans Peter Hagens initiated the project, and already put the original idea forward in 1997 to create a public market like the ones known from Barcelona, London and Stockhom (Pagh, 2015). Hagens had to wait until 2002 when the City Council approved of his plan, and until 2009 when a private investor was found. The original idea saw the Torvehallerne as a place where smaller businesses would have their stalls and sell local products, however now the indoor market houses primarily high-end food stores, franchises of major brands and expensive take-away cafés. This had led to critique on its exclusivity, price level, offerings and design. In addition to this there has been a conflict between the architect and vendors, who complained about inadequate sunlight protection. Despite all, the market hall is popular, and thus a success for vendors and investors (Pagh, 2015). The expected number of visitors for the first year of 2.5 million visitors was exceeded with 2 million more visitors (4.7 million visitors in 2012-2013).

Looking at these inspirations, several characteristics of market halls become clear: tradition, idealism, authenticity, many stalls, or less stalls. Development, architecture and product range also differ per hall. Although the Markthal has only recently been developed, it has its own specific characteristics (M. Stanicic, personal communication, May 11, 2016). None of the previously mentioned market halls houses a function mix like the Markthal: a covered food market, restaurants, a parking garage and apartments, and yet everybody calls it 'the Markthal' ('the market hall'). Could it be said that the Markthal, in combining elements of all previously mentioned halls, is becoming a new archetype (R. van der Stoep, personal communication, April 21, 2016)?

1.2 Changes on the Binnenrotte

The development of the Markthal began long before the foundations of the building were laid. This section focuses on the series of actions that had to be taken before the Markthal could be built.

In 2004 the municipality of Rotterdam issued a contest for developers and architects to come up with a design for an iconic building which would combine several functions, to be realized on the Binnenrotte (M. Stanicic, personal communication, May 11, 2016). Developer Provast and architect Winy Maas worked together to submit a design, which showed the Markthal as a horseshoe-shaped building. This design was executed, the horse-shoe arching over an indoor food market. 228 apartments are imbedded in the border of the building, and underneath a four storey parking garage offers space to 1100 cars (Provast, 2006). The hall houses spaces for restaurants, big retailers, and 96 fixed stalls. The Markthal provides customers with all kinds of fresh food and flowers. The ceiling of the food hall is covered with an artwork by Arno Coenen and Iris Roskam: a gigantic, colourful cornucopia of products that can be found in the Markthal (Van Duivenbode[2], unknown, Image 2). After years of working on the concept and design, laying the foundations for the building and the construction of the parking garage was started on November 19 2009, and the structure above ground was started on October 1 2012. The finished building was opened by queen Máxima on October 1, 2014 (Markthal, 2014[2]).

Image 1 Cornucopia, by Arno Coenen and Iris Roskam (2014). A digital rendering depicting products for sale in the Markthal on a huge scale. Credits: Ossip van Duivenbode (free use).

Since the Binnenrotte also houses the Blaak market, the developments concerning the Markthal had an effect on the functioning of the open air market. The architects initially hoped that stalls from the outside market would be able to move freely to the inside and the other way round (Provast, 2006). The idea of movement between the outside and inside ended when Corio (currently operating as Klépierre), owner of all retail in the Markthal influenced the decision to create fixed stalls (Scagilio and Brakkee, unknown, Image 3). From then on the Markhal could only provide fixed places to vendors. Although this indicates a divide between the vendors in the hall and vendors outside the hall, the Markthal cannot be seen apart from the area and certainly not from the open air market. The municipality finds it important that the two shopping areas provide a good variety of products to the customers (M. Stanicic, personal communication, May 11, 2016).

The current relationship between the Markthal and the Blaak market shows that reality can differ from the aims with which something is established. This may be especially prevalent in developments that take several years to complete and wherein many partners are involved, such as the realization of the Markthal.

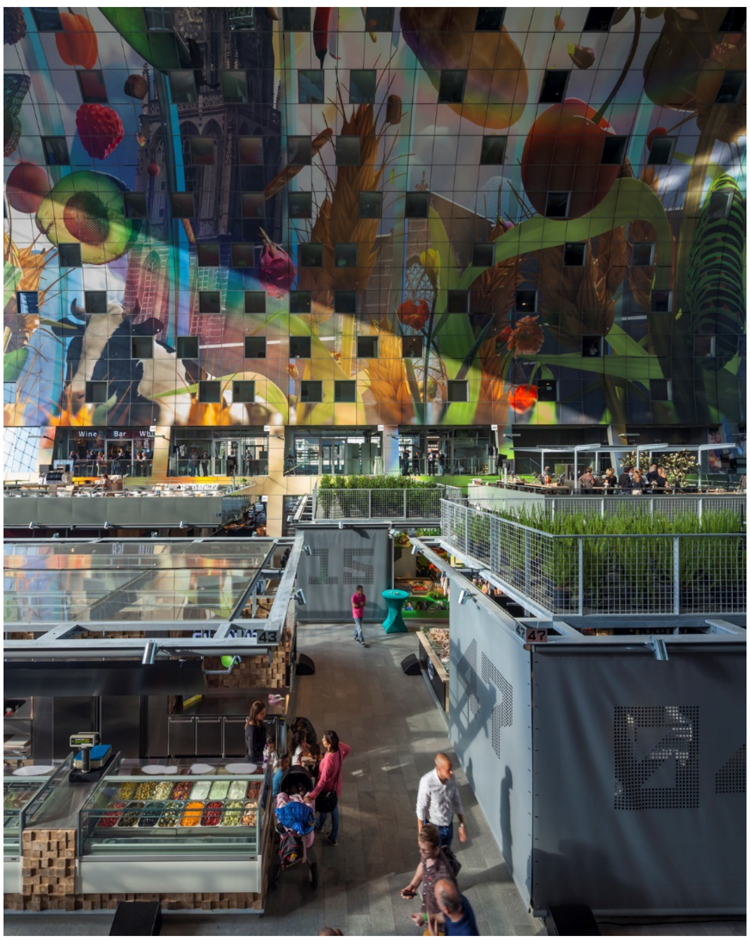

Image 2 Inside the Markthal, fixed stalls are placed from where vendors sell their products, or where visitors can enjoy foods and drinks. Credits: Daria Scagilio and Stijn Brakkee (free use).

1.3 Research question and relevance

High visitor numbers usually indicate a successful concept, and the Markthal has attracted eight million visitors in its first year, but the negative reports on vendors' experiences do not reflect this (Potters, September 18, 2015). The cause of this problem can be found by understanding the intentions of developers concerning the functioning of the Markthal and the perceptions of vendors and visitors. In doing so, possible discrepancies between both will become clear and solutions can be found to match the intentions and perceptions. This is what makes the research relevant for all partners connected to the development of the Markthal: Provast, MVRDV, the municipality of Rotterdam and most importantly, the current management of the Markthal. In general it is important for all parties to avoid any mismatch of intentions and perceptions in future projects, but the Markthal has become known as a new icon of the city, and as the showpiece of Provast, MVRDV and Rotterdam, so failure of the concept would have great impact on all involved.

This research focuses on the cultural economic aspects of the Markthal, namely the indoor food market and the architecture of the building, which will be addressed more extensively in chapter 2. Thus, the research shall answer the following questions:

I. *To what extent has the Markthal as an indoor food market and an architectural icon in Rotterdam fulfilled the intentions developers had when it was established according to vendors and visitors?*

II. *If and why are there any differences in intentions and perceptions?*

In posing these questions, the indoor food market will be linked to the concepts of cultural goods and clustering, thus connecting food to the creative industries; the role of the architectural icon will be linked to city branding and flagship architecture, through which this research will add to the academic discourse on these topics.

Interviews are used as the method to uncover the intentions with which the Markthal was established. The four interviewees are linked to MVRDV (Renske van der Stoep and Rien

Wolfswinkel), Provast (Ronald de Jong) and the municipality (Matija Stanicic), thus representing the three most influential partners in this project. To gather the perceptions on the Markthal of vendors and visitors, two surveys were designed and distributed in person and online. Methods will be discussed more in-depth in chapter 3.

Intentions and perceptions towards the Markthal's indoor food market and architecture will come together in chapter 4, as interviews and surveys are used to create an image of how the Markthal was intended to function versus how it is perceived to be functioning now, showing that the differences in intentions and perceptions concerning the indoor food market are bigger than the differences concerning the role of the architecture of the building. The results are processed to form a conclusion in chapter 5, which will also offer a possible solution for the established difference.

2. Literature review

The Markthal offers an indoor high-quality food market combined with iconic architecture within the urban context of Rotterdam, which raises questions about the functions and aims of these elements. How to they work together to be successful for all the stakeholders?

Food is not generally considered to be a part of the cultural industries, however this research would like to introduce the idea that food products in a market hall have much in common with traditional cultural products using the case of the Markthal. The interactions between vendors and customers can be linked to those between intermediaries and customers in the cultural industries. Perceiving the market hall as a cluster of cultural activity leads to the idea of the Markthal as a culinary cluster.

As cities notice the increased economic impact from tourism, city branding has become more a necessity to attract this growth from tourism to the own city. For Rotterdam, architecture has always played an important part in the identity of the city because of governmental and historical influences. Flagship stores from fashion brands are intended to give the visitor a complete image of everything the brand represents. Can the architecture of the Markthal fulfill the same role for the brand of Rotterdam?

2.1 Previous research on the Markthal

Despite being an eye catching element of the Rotterdam downtown area, the Markthal has been the subject of only two previous researches. Although neither research addresses the issues concerned in this thesis, their diverse subject matters illustrate the importance of the Markthal for various fields of research.

Even before the completion of construction, the Markthal, or more precisely the ground on which it was built, has been the subject of a research performed by Bureau Oudheidkundig Onderzoek Rotterdam (BOOR) in 2009 and 2010. During this period, many archaeological findings on the building site were uncovered (Carmiggelt, 2014). The Medieval findings from the research are now permanently on display within the Markthal on the so called 'Tijdtrap' (Time

Stairs), which can be visited by visitors of the hall free of charge. BOOR also organizes guided tours with archeologists who explain the meaning of the findings.

From a different field comes the research by market researcher GfK, who performed a research on food concepts that merge food retail, meaning purchases for consumption at home, and food services, consumption at location (GfK, February 2, 2015). The Markthal was one of the research cases, as were the Foodhallen in Amsterdam, the Foodmarkt within supermarket franchise Jumbo Breda, and World of Food within supermarket franchise Deka Beverwijk. The aim of the research was to gain insight into the concepts of 'blurring', prestige and potential. According to GfK 'blurring' occurs when consumers are both purchasing products for use at home and for consumption at the location itself when visiting. According to the research both the Foodhallen and the Markthal are high scorers on the subject of atmosphere. A conclusion regarding the Markthal is the need to continue to surprise and perform to justify the relatively higher prices compared to the Jumbo Foodmarkt and Deka World of Food, which are closer to the supermarket concept in price. The temperature regulation is mentioned as an explicit challenge to improve for the Markthal, since many visitors have raised this as a problem in the GfK research. Another possibility for improvement is in the ratio between seating areas and vendors, because visitors would like to see more of the first and fewer of the second. The two most successful vendors in the Markthal are Wah Nam Hong (13% of visitors make a purchase here) and Bram Ladage (10% of visitors make a purchase), while there are many vendors who only attract 1% of the visitors, but take up an equal amount of space in the hall. GfK advises giving the visitors what they want, more seating space, by reducing the number of vendors in the hall. Despite all this, customers are very enthusiastic about the Markthal and similar retail concepts. According to the research there is a growing potential for 'blurring' within the food services.

Being aware of the archaeological research adds to the overall insight into the development process of the Markthal. The GfK research uncovers already some perceptions of visitors to the Markthal and problems the Markthal was facing at the beginning of 2015, which provides a starting point for this study performed in 2016.

2.2 The indoor food market

As its name indicates, the main purpose of the Markthal is to serve as a market hall. This building type has existed for many centuries and used to fulfill an important function in the urban area. This section will explain the rise of the market hall, the decline during the twentieth century, and its renewed relevance in the last decades caused by an increasing interest in the food we consume. As a result of this development food has become more connected to creativity and cultural capital, which opens the possibility for the Markthal to fulfill the role of a creative cluster in Rotterdam.

2.2.1 The history of the market hall building type

On the homepage of the website of the Markthal images are shown of covered market halls across the world with the caption "inspired by…". The webpage which explains the concept of the Markthal repeats this idea: "Stockholm, Barcelona, Valencia, Copenhagen. Almost every metropolis has one: a covered food market." (Markthal[1], 2014). Apparently the history and presence of covered market halls in other large European cities was important to the developers of the building, and therefore it is important for the completeness of this research to gain an insight into this particular building type.

Market halls, meaning a building which houses a large number of individual shops, can be traced back as far as the Roman Forum of Trajan and the Cotton Market in Jerusalem, dated 1329. In the Middle Ages the function of the market hall was often combined with that of the town hall, for example in Bruges. Here the merchants sold their goods on the ground floor, while the town hall was located in another building close by. In this period many market halls, whether or not combined with the town hall, were constructed in the Netherlands. Many of these halls were specially used to sell one kind of product, like cloth or meat (Pevsner, 1976).

From the 18th century onward more and more people in urban areas became dependent on food supply from outside the city. Therefore, covered market halls became a dominant element in the urban retail environment in the 19th century (Jones, Hillier and

Comfort, 2007). Smiechen and Carls (1999) state that market halls played an important role in the urban revolution: the modern trade environment, replacing dirty streets, made law enforcement and tax collecting easier for the government. ‘The grand age of the market hall’ took place from the 1830s to the 1890s, and in this period many covered market halls were erected across Europe, including the earlier mentioned La Boqueria and Östermalms Saluhall. These covered markets were truly expressions of modernity, icons of trade and urbanism, and so the materials used to build the halls had to be modern too. Glass and iron, also used in train stations, were perfectly suited to create structures that could cover extensive areas.

Market halls continued to be built in the 20th century, but in the first half of this century the decline of the building type set in: many halls became damaged beyond repair during the Wars, and some were even destroyed. Changes in society also influenced the declining need for market halls. Bigger stores became more convenient for customers and many chose to purchase their produce from larger stores, and later supermarkets. This caused a decline in the general use of the market hall (Jones et al., 2007).

Despite this development, even to this day open air markets in cities that are being held on specific weekdays are a common sight. Regulations from the European Union (EU) put pressure on the existence of open air markets, which increases the usability and relevance of market halls again. For example, regulation 852/2004, from April 29 2004, concerns the hygiene of foodstuffs (Regulation 2004/852/EC). In this regulation new rules are laid down for the handling and storing of meat, fish and dairy products, including those sold from market stalls in outdoor markets. Among other requirements, market stall owners need to have access to personal hygiene facilities, clean workspaces, enough water, and equipment to keep the foodstuffs at the right temperature. Open air markets are less well equipped to provide these circumstances than market halls, which can more easily be adapted to comply with the regulations. The Markthal was intended to fulfill this role, however over time it became clear that the EU was not enforcing these regulations and this intended role of the building disappeared (Matija Stanicic, personal communication, May 11, 2016).

2.2.2 Food consumption and culture

Just like changes in society furthered the decline of the market hall in the 20th century, a change in attitude towards food in our current society has made the market hall function relevant once again. This changed attitude can be linked to the search for 'the good life' (Syse and Mueller, 2015). The idea of reaching the good life through living close to nature has been present in literature since the days of the Roman writer Livy. Closer to current times, this idea can be supported by the positive results of researches into the influence of nature on people's well-being (Abraham, Sommerhalder & Abel, 2010). As people are searching for the good life, their perception towards food changes as it is not only a means of nutrition, but also a means to be able to enjoy the good life. This change in perception has given food a cultural goods aspect which is often overlooked.

In Western society, the food we eat and buy has become disconnected from their origins because of long production and distribution chains. As a result Western consumers do not notice the effects of their actions in purchasing certain types of food in their own lives, although they do have an effect on the lives of others and the wellbeing of the planet. In an attempt to reconnect with our food and live a good life, some consumers want to understand where and how their food was produced, preferring foods with shortened chains between production and consumption is shortened (Syse, 2015). Another type of consumer, which Syse describes as the 'Veblen' kind also demands good food, but "many of them have been told why they ought to demand it and what its consumption involves in the comfort of their armchair, through the gospel of celebrity chefs" (Syse, 2015, p. 169). This type takes a less active position towards reaching the good life, and can be seen as followers of the current 'food trend'.

The consumption of food that has been sustainably harvested, produced locally or acquired through fair-trade has become an indicator of class and identity and represents certain values. Accordingly, food in general becomes a manifestation of culture, and thus is

> "one of the most potent media for conveying meanings related to identity, ethnicity, nationhood, gender, class, sexuality, and religion – in

> short, all those aspects of social, political and relational life that convey who and what we are and what matters to us" (Cramer, Greene and Walter, 2011, p. 317).

Choosing a certain kind of food, becomes a part of our identity, shaping us on a social and cultural level. Making the decision for 'good' foods is not only dependent on the financial status of the consumer, but also on the amount of cultural capital they possess (Syse, 2015).

This recently developed attitude towards food has led to a new place for food in the urban context. The act of purchasing foodstuffs is more than just that, it has become a performance of carrying out the values connected to consciously consuming. Urban planners are aware of this development and let it influence their attitude towards the place of food in the city (Pagh, 2015). Jenny Lee (2009) focuses on the role of the market hall in this renewed interest in food. She explains that

> "the renaissance of the market hall can be seen as part of an increased interest in food and gastronomy, which is also evident in the growing market for cook books, as well as the increasing number of cooks hosting their own television shows, gastronomic societies, and food blogs. Food snobbism and being a "foodie" have been fashionable for some time now" (Lee, 2009, p. 29).

Lee defines quality and authenticity as important characteristics of food sold in market halls, as vendors often present themselves as craftsmen who offer high quality products (Lee, 2009).

Another characteristic prominent in the market hall indicates its connection to the cultural industries, namely trust. Within the cultural industries much has been written on information asymmetries between producer and consumer, since the second group is often unable to assess the quality of the product for sale (Velthuis, 2011). Research on the role of intermediaries in the various cultural industries, such as music and fashion, shows that these people are needed to guide consumers to products of quality (Hracs, 2013; Rantisi, 2014). Trust is thus what enables products to be traded between the two parties within the cultural industries. Trust is also what is visible in the interactions between the vendors in a market hall and their customers. Vendors in the market hall take personal responsibility for the quality of their products. The relation with the customer is one of mutual trust and confidence. This kind of personal trust is seen to be of a higher order than the impersonal trust we put in food safety on a national level (Lee, 2009). The importance of trust in market halls strengthens the idea of food as a cultural good, and the vendors as intermediaries. The role of trust also has implications for the functioning of a market hall in a touristic location, such as the Markthal in Rotterdam. Are vendors able to establish relationships of trust with visitors who will most likely only visit once?

The notion of food as a cultural product is supported by Scott (2008), who presents his view on the role of food in an urban environment. Within cities he has identified many kinds of clusters, or as Scott calls them "cultural-products industrial districts". According to Scott certain clusters can be grouped under the title of "eno-gastronomic products", which describes clusters selling wines, spirits and "spécialités du pays" (Scott, 2008). According to this definition the Markthal can be identified as a cultural-products industrial district specializing in eno-gastronomic products, and thus a part of the cultural industries in the city of Rotterdam.

On a more general scale Ferguson (1998) argues that gastronomy in its entirety should be considered a cultural field, an argument which leads to its products inevitably being cultural products. A determining factor in this argument is the existence of texts on gastronomy, since writings on the topic reach a gastronomic public beyond the immediate consumers and producers. She states:

> "as with the performing arts, writing about food presupposes a different order of consumption inasmuch as the cultural product in question is at one remove from the base product- the work performed, seen, or heard and, in this instance, the food prepared and consumed" (p. 600).

Ferguson takes several characteristics of acknowledged cultural fields and shows how these can be applied to the field of gastronomy. First of all, the cause of increased attention for conscious consumption can be found in new social and cultural conditions, as people are becoming more aware of the effect that our consumption has on their bodies and our environment. This development has increased demand for high quality food from people who are no longer willing to buy and eat cheap, mass produced food. This caused the need for specific sites to be dedicated to the production and consumption of these products, the Markthal could be seen as a good example of such a dedicated space, as a museum is for paintings. In many cultural field there are standards and models of authority, in the area of food there are many different quality marks that have been established by the Dutch government and within Europe to indicate among other things whether products have been produced biologically, sustainably or with animal welfare in mind (Milieu centraal, May 25, 2016). Food carrying these hallmarks can be deemed to be of high quality and to have been produced in a sustainable way. Subfield are also visible when food is concerned. Vegan food, gluten-free food, sugar-free food are all different diets that can be followed and that have generated demand for different products. Lastly, as the French writer Balzac connected the field of literature with the field of gastronomy by making food an important topic of his books, so are lifestyle bloggers, food bloggers and celebrity chefs connecting this particular part of the field of gastronomy to the fields of fashion, travel and culture (Ferguson, 1998).

Following these theories, considering food to be a cultural good is a logical consequence. By expanding the concept of cultural goods to include food, other values of food are recognized, besides its nutritional values. Not unimportant, this characterization of food opens a door to expand the economic impact of food from just including the direct revenue, to also including the economic impact of the innovation and knowledge creation that can be the result of clustering in the cultural industries (Potts and Keane, 2011).

2.2.3 The Markthal as a creative cluster in a creative city

The idea of creativity as instigator of economic growth has gained significance over the last decades. Although in itself not an economic good, its application can have great economic impact (Bilton, 2007). Creativity is the instigator of innovation, which in itself is a driver of economic gain (Leadbeater, 1999). This is the reason that Florida's paper on the creative class (2002) attracted so much attention, not in the least from policy makers. There is an eagerness for cities to be a 'creative city', to attract the right people and gain economic growth from their talents. Not every city has the potential to be a creative city, as there are specific characteristics of such places, as explained by Hall (2000): "A creative city will therefore be a place where outsiders can enter and feel a certain state of ambiguity: they must neither be excluded from opportunity, nor must they be so warmly embraced that the creative drive is lost" (p.646). The formation of creative clusters indicates a creative city, and consequently cities with opportunities for economic growth and innovation.

'Cluster' is not a homogenous concept, since there are many forms of clustering, some having a bigger economic impact than others. The most inclusive definition of a cluster comes from Porter (1998); a cluster is "a geographical agglomeration or concentration of interconnected firms in related industries and associated institutions in particular fields that compete but also cooperate". This is indeed the case for the Markthal, since all firms are active in the gastronomy or food field and are located close together.

Potts and Keane (2011) conclude that there is a distinction to be made between cultural clusters and creative clusters. In a cultural cluster most of the economic value comes from the 'transactional' aspect of the cluster. These clusters are active in a certain niche, and have all the labour and technology available to routinely perform their operations, but they do not possess an outward focus or emphasis on innovation. They are 'cultural clusters' because of the products that are sold or the sector wherein the firms within the cluster are active. Creative clusters are the opposite of cultural clusters, because innovation and dynamics are very important. These are the clusters that drive innovation, and are therefore so sought after by policy makers. Firms in these clusters both compete and cooperate by sharing knowledge and challenging each other. It is hard to convert a cultural cluster into a creative cluster, and while cultural clusters generate spillover to the local economy, creative clusters are the ones that provide growth and innovation to the broader economy.

Using Potts and Keane's definition the Markthal can be considered a cultural cluster, based solely on the reasoning that a cultural good is traded by many co-located firms. There are several observations by Potts and Keane (2011) that can shed light on the different facets and characteristics of a creative cluster. Creative clusters are rarely the result of local and regional policy, they are naturally emerging, but policy can be used to assist the growth of these clusters. As they emerge on their own, some clusters may have to fail, as there is a strong winner-takes-all principle. The benefits of a creative cluster are hard to measure quantify. They often consist of improvements in the competitive advantages of not just the cultural and creative sector, but also potentially other industries. These effects have the greatest long-term impact on economic growth. Within the cluster there must be a free, creative space where there is a willingness to experiment and engage in competitive cooperation. In short, "Ergo, if it is not contributing to innovation through competitively incentivized co-location and emergent cooperation and knowledge-sharing then it is not a creative cluster" (Potts and Keane, p. 159). These characteristics show that investments in a cultural cluster will yield different returns from investing in a creative cluster. For the latter the return is more focused on the long term effects of innovation and the impact on the broader economy, while investing in a cultural cluster will yield more traditional returns, as it is a more tradable asset (Potts and Keane, 2011).

From these characteristics of a creative cluster it becomes clear that one main characteristic of the Markthal does not comply at all. The Markthal is a complete top-down initiative, while Potts and Keane claim that bottom-up creative clusters are the most successful. Establishing the level of creativeness in the Markthal cluster will show whether the definition of a creative cluster can be applied to top-down initiatives too.

2.3 The architectural icon

The indoor food market cannot be seen apart from the building that it is located in. The Markthal did not only add a new 'food concept' to Rotterdam, it also added an imposing, iconic building to the appearance of the city center. The idea of the Markthal as a “flagship store” to brand Rotterdam as a city of architecture, thus stimulating economic growth, lies at the center of this section. Architecture can be used for successful city branding, but it is important that the architecture should fit into the context of the place and the brand it is representing.

2.3.1 Rotterdam: architectural cluster

While Amsterdam is considered the cultural capital of the Netherlands, Rotterdam is number one when architectural services are concerned. Kloostermans and Stegmeijer (2004) find the reason behind this development in institutional developments and in the fact that the widely acclaimed architect Rem Koolhaas is based in Rotterdam.

Rotterdam houses both the Nederlands Architectuur Instituut (Dutch Architecture Institute) and the Stimuleringsfonds voor Architectuur (Stimulation fund for Architecture), which collectively ensure knowledge reproduction and fundraising for architecture. This co-location in one city is the result of central government policy, which wanted to boost Dutch architecture in the eighties using these institutions. Rotterdam was chosen for their location because of earlier architectural initiatives and a strong focus on the city from the central government, which may have been influenced by the fact that then Prime Minister Lubbers hailed from Rotterdam. Another factor was the local desire for new buildings due to the empty spaces in the city as a result of the World War II bomb damage, combined with a positive attitude toward experimenting with architecture, which can be traced back to the 1920’s. However, looking at architectural trends from 1945 till 1980, this is not a continuous characteristic in the city. Only from the eighties onwards again, and due to the criticism by Rem Koolhaas on the architecture of that time, Rotterdam’s attitude towards architecture became experimental once again.

In the nineties, two bills on the architectural policy of the Netherlands were proposed. The Dutch government published a bill in 1991 'Space for Architecture, policy document on architectural policy' (Ruimte voor Architectuur, nota voor architectuurbeleid) (Ministry of W.V.C and VROM, 1991). The reconstruction period after World War II had come to an end, and instead of focusing on the quantity of architecture, quality became important again. With this first bill the government wanted to create 'space' for high quality architecture by creating favorable conditions for architects. The second bill, 'Architecture of Space' (Architectuur van de Ruimte), continues to build on the bill from 1991, but also focuses on the architecture of public space (Ministry of O.C.W., 1996). It states that architecture should be an integral part of public space, and should fit in the culture of its location. Developing new neighbourhoods or railroads could harm the original character of a place. The bill underlines the importance of architectural policy that remains connected to urban planning.

In addition to these historical and governmental influences, there is also the influence of one man: Rem Koolhaas (Kloosterman and Stegmeijer, 2004). In the eighties he was able to secure assignments abroad, which enabled him to build his own discourse in architecture. Another factor of importance was the decision to organize his firm OMA as a breeding ground for young architects with new ideas, who work for him before finding jobs elsewhere or starting their own firms in Rotterdam. The way Koolhaas's career developed led him to become an important figure within the Dutch architectural scene. By choosing Rotterdam as the home base for his firm, this reputation rubbed off on the city, leading to supportive government policy.

The combination of path dependent processes, policy, and the influence of one superstar architect have led to Rotterdam becoming a city known for its architecture, and a place where many architects have established themselves, forming an architectural cluster, which can be used in branding the city to tourists.

2.3.3 Architecture and city branding

There has been an obvious link between architecture and economic growth ever since the economy of Bilbao had a growth spurt after Gehry's Guggenheim Museum was completed. This Spanish city did not have a lot to offer, until the Guggenheim decided to settle there and hire Frank Gehry to design the now so famous museum building. Since then, Bilbao has experienced a striking increase of economic activity, and has once again become a flourishing place. The perceived connection between the realization of Gehry's building and the increased economic growth has been noticed, among others, by Rybczynski (2002). He describes the 'Bilbao Effect': cities seeking the same economic growth that occurred in Bilbao by commissioning architecture of high standing, be it by Gehry or by another high profile architect. Rybczynski does not agree with this practice of expecting great things from iconic architecture by underlining the importance of having the architecture fit in the context of the city and the values the city represents. He concludes:

> "The "wow factor" may excite the visitor and the journalist, but it is a shaky foundation on which to build lasting value. Great architecture carries many messages, about society and individuals, about our values and our dreams. It should have more to say to us than "Look at me" (p. 142).

Journalist Paul Miles from The Financial Times perceives an explicit parallel between the Guggenheim Bilbao and the Markthal, wondering whether they will become equally successful, as visitors to Rotterdam have surged since the opening of the hall. Although this statement does not originate from an academic paper, there are some aspects that Miles overlooks. Rotterdam had already established itself as a hotspot for interesting architecture, and even if there had been no Markthal, the city has plenty to offer to tourists and residents. Furthermore, continuing the implied parallel between Bilbao and Rotterdam, it is shallow to argue that the location of the Guggenheim (or the Markthal) alone was enough to revive the city. The construction of the Guggenheim was not the only architectural activity that happened in Bilbao in the area of regeneration in the nineties. Other projects completed in this period are: a conference and music center by architects Federico Soriano and Dolores Palacios, a metro system designed by Norman Foster, a new airport and a bridge across the Nervión River by Santiago Calatrava (Klingmann, 2007). One could thus say that the Guggenheim was not the only source of the economic growth of Bilbao, although it did give the entire regeneration project a 'face'. A study by Plaza (2010) on the economic impact of the Guggenheim Museum that uses contingent valuation, supports the notion that much more insight into economic flows within the city is needed to come to such conclusions. Even though this is the case, the idea that architecture can revive a city seems to be stuck in the minds of policymakers. The idea is not inherently wrong, but there are more factors to be taken into account when expecting positive economic effects from one building.

However, economic growth from architecture can be expected when another approach is taken. Tourism is a growing sector in the world economy, which makes increasing it important for policymakers. This has led to competition between countries and between cities to attract the most visitors (Herget, Petrù and Abrhám, 2015). To tourists and foreign investors, but also potential students and local residents, the attractiveness of a place is affected by the perception of that place. This is why branding a city becomes important to policy makers.

Herget, Petrù and Abrhám (2015) compared several methodological approaches to establish a strong city brand. To be successful in branding it is important to capture the enduring essence of the place, since this is what sets it apart. The core values of the place need to be communicated to visitors. The branding process can be used as a vehicle to broadcast the urban identity, but it is also an instrument to increase the competitive capacity. City branding can only be successful if the image of city corresponds with the actual identity of the city. Furthermore, Kavaratzis (2004) provides six key characteristics of a successful city brand. A brand should reflect what the city undoubtedly is, what the city feels it is, what the city says it is, how the city is perceived, whom the city seeks to serve, and what is promised by and expected from the city. From these characteristics it becomes clear that a city brand requires input not only from policymakers, but also from citizens and visitors since their perceptions need to be reflected too. The most successful city brands are thus crafted carefully using input from the different parties who are connected to the city or whom the city wants to attract.

For cities it is important to become more like a corporation, in a sense that they must focus on promoting and developing products and services, creating a market for themselves, and expanding their customer base. However, it is almost just as important to be able to communicate these products and services to potential customers. Recently Rotterdam has been in the news as the next city you have to visit in The New York Times and Lonely Planet, which means it has been successful in branding itself as a tourist destination that offers the visitors an architectural experience (The New York Times, September 5 2014; Lonely Planet, October 27, 2015). Appointing the Markthal as the sole reason for this development would be discounting the influence of other recent architectural developments on the city's image.

2.3.3.1 Flagship architecture

Although it is impossible to consider the Markthal as the one building that gives Rotterdam its architectural identity, it does play a role in the image of the city. As this section shows, it can be seen as the "flagship store" of the Rotterdam brand.

Flagship architecture is a concept that originates from the fashion industry, but its meaning is broad enough to apply elsewhere, even broad enough to consider the city of Rotterdam to be a brand and the Markthal its flagship store. Mores (2006) considers the flagship store to be a physical representation of the marketing strategy of the brand. So, the Markthal would then represent the brand that Rotterdam expresses.

Nobbs (2014) finds six characteristics of the flagship store, namely: size and location, distribution hierarchy, enhanced design and visual merchandising, 'third space', unique management function, and strategic function. The flagship store should be located in prime locations, and offer the full range of products to the consumer. Collaboration between a fashion brand and an architect is increasing as the lines between retail, art and architecture have become blurred, and this has led to flagship stores becoming testing grounds for new visual merchandising concepts. The ‘third space’ is a place between home and work. “Third space is a blend between retail and leisure, where there is an emphasis on socialization and which ultimately functions to enhance dwell time in store” (Nobbs, 2014, p. 59). Examples are: rest/lounge areas, space for art/culture, food and drink and specialists spaces (health beauty, technology). The financial investment in the flagship store means that there must be a strategic purpose for it. The ultimate aim of the flagship store is not entirely clear, but they do play a role in the representation of the brand, and express their values and philosophy internally and externally (Nobbs, 2014). Having these characteristics in mind when discussing the Markthal is enlightening. One part of the Markthal, the enormous artwork on the ceiling, can be explained by the concept of ‘third space’. The artwork creates a different kind of experience among all the trade and retail murmur. When someone looks up an ‘arts-moment’ is created that takes place in the ‘third space’. The strategic function of a flagship store can also easily be applied to Rotterdam, since the architecture of the building refers back to the reputation of Rotterdam as an architectural hotspot. From the department of area development there were several ideas of what the Markthal had to accomplish in the Laurenskwartier. The area had to become an attractive and buzzing part of the downtown area again. The Markthal, located at the birth location of Rotterdam, should serve as the face, or the identity for all the area development in that part of the city that had already taken place (Matija Stanicic, personal communication, May 11, 2016).

The Markthal as a representative of the Rotterdam brand must be connected to symbolic meanings. The meaning of ‘brand’ has changed over the years, as they have shifted from being symbols of production to being of more value than the product itself. In other words, “brand products are no longer bundles of functional characteristics but a means of providing the customer with a certain identity” (Klingmann, 2007, p. 56). By choosing certain brands, customers can show with which values they identify themselves, although they are living in a world in which social, economic and political systems are constantly changing. In a world where religion and nationhood are no longer the main indicators of identity, brands have taken over this task. Buildings have also become connected to a certain narrative and values, be it intentional or not. Klingmann (2007) says:

> "However, for most buildings, these symbolic connotations develop by coincidence. And this is perhaps the main difference between architects and branding specialists. Whereas corporations strategically plan the message they intend to transmit, many architects still rely on the hope that symbolic values emerge on their own- not by design, but by default" (p. 65).

This is often a recipe for failure, since it should be an aim of architecture to link itself to existing values and symbolic meanings to make itself relevant to the public. This is also what Rybczynski (2002) concludes: every place was commissioning the same kind of architecture after Gehry's success story in Bilbao, but when there is no connection to the urban context, the venture will only become an empty architectural feat. In the case of city branding, the values connected to the building should be characteristic for the city and its inhabitants.

2.4 Summary

Previous research has shown that as a new retail concept, the Markthal 'blurs' the lines between food consumption at location and the purchase of food for home use. To compensate for the higher prices in the Markthal there is a need to surprise and perform, and improvement in the eyes of the visitors can be realized by decreasing the number of vendors and increasing the number of seating areas (GfK, 2015).

After the decline of the building type due to changes in society, market halls have gained relevance again because of new EU regulations and people's desire to attain 'the good life'. This means getting closer to nature and the food we eat. In this instance food becomes a manifestation of culture as making such decisions concerning food requires cultural capital (Syse, 2015). The cultural good characteristic of food is reflected in the market hall context through the importance of trust. Customers and vendors enter into personal relations based on the belief that the vendor knows his products and will only sell the best he has on offer (Lee, 2009). Ferguson (1998) considers gastronomy to be a cultural field, since many texts have been published on the topic. Having established food as a cultural good, market halls can be considered to be cultural clusters, following the definitions of Porter (1998) and Potts and Keane (2011). In order to be established as a creative cluster, further research on the Markthal is needed. Vendors will need to express their willingness to experiment and cooperate with other vendors in the hall, using the free and creative space available.

Rotterdam has established itself as an architectural cluster, due to government policy, the city's history, and the influence of Rem Koolhaas. The concept of flagship architecture has become applicable not only to fashion brands, but also to city brands. City branding has gained importance as the economic significance of tourism increases. Architecture, especially flagship architecture, can be used to strengthen the brand of a place, the success of the Guggenheim Museum in Bilbao is a good example. However, the connection between the city brand and architecture can only be successful if the architecture fits in the urban context.

3. Methods

In this research an exploratory case study on the Markthal in Rotterdam will be performed. Its aim is to provide insight into the role of the Markthal as market hall, cultural cluster and into its role as a component of Rotterdam's architecture. This will be accomplished by comparing the intentions of various groups involved in the development of the Markthal with the perceptions of vendors and visitors. Therefore, a mixed methods approach is best suited, since opinions and statements cannot all be quantified. Data was gathered through semi structured interviews and surveys from three target groups. However, not all data can be used as an accurate reflection of the general opinion, since some of the samples were too small to be representative of their populations. As the research is exploratory, the results from the data can still be used as a starting point for further investigation. The three target groups of this research are: the developers of the Markthal, the vendors who have stalls in the Markthal, and the visitors to the Markthal. The developers are part of the 'intentions side' of the research. 'Intentions side' in this research includes all those who have been involved in the development of the Markthal and who had a certain objective in mind when working on the project, regardless of the specific field they were active in. Data from the vendors and the visitors is used to gain insight into the 'perceptions side'. The 'perceptions side' includes those who are involved in how the Markthal was received, either experiencing the building as a visitor or as a place of business.

This chapter explains the methods used to gather data for each of the three target groups to be able to answer the two main research questions. To be able to assess the role of the Markthal as a cultural cluster, where cultural goods are traded, and its role as flagship architecture in Rotterdam, two aspects of the hall will be the focus of the research: intentions and perceptions concerning the indoor food market and intentions and perceptions concerning the architecture of the building. Thus, the research questions are formulated as follows:

I. *To what extent has the Markthal as an indoor food market and an architectural icon in Rotterdam fulfilled the intentions developers had when it was established according to vendors and visitors?*

II. *If and why are there any differences in intentions and perceptions?*

The second research question continues on the first question, trying to formulate a more general theory on why intentions and perceptions do not overlap in the Markthal, if applicable.

3.1 Intentions

To gain insight into the role of the Markthal, a benchmark is needed to be able to find the differences and similarities between the intentions and perceptions. The intentions that were apparent during the development process are the benchmark that will be used as measure. Doing a content analysis of material published on the Markthal would make some of these intentions clear, however, the development process of the Markthal spanned several years, and so intentions may have changed along the way. To uncover these changing intentions and aims, interviewing contributors to the project is the best method.

3.1.1 Sampling

The population of 'contributors to the development of the Markthal' is extensive and diverse in levels of activity on the project. To be able to uncover all intentions behind the project it is logical to contact the first tier of contributors: the municipality of Rotterdam, Provast and MVRDV (Maas, Van Rijn, De Vries architects). Since Provast and MVRDV expressed no interest in contributing to the research, other developing parties had to be contacted. MVRDV has published a list on their website on which all smaller contributors are named, which was taken as a guide for contacting the second tier of actors in the development (see appendix A).

The final sample consisted of four people who were willing to be interviewed for the research:

- Renske van der Stoep, architect at MVRDV during the development of the Markthal, now working for Ector Hoogstad Architecten. Interviewed on April 21, 2016.
- Rien Wolfswinkel, engineer and employee at Inbo, the co-architect of the Markthal. Interviewed on April 25, 2016.

- Ronald de Jong, engineer and employee at Techniplan, installation advisors for the Markthal. Interviewed on May 11, 2016.
- Matija Stanicic, process manager of area development for the Lijnbaankwartier and the Laurenskwartier for the municipality of Rotterdam during the development and building of the Markthal. Interviewed on May 11, 2016.

The four interviewees are connected to the main partners during the development of the Markthal. Renske van der Stoep was able to talk from the viewpoint of the architects (MVRDV), Matija Stanicic from the viewpoint of the municipality of Rotterdam, as she managed the area development of the Laurenskwartier. Techniplan was hired by Provast, and thus Ronald de Jong could relate much on the role that Provast played in the development of the Markthal. Rien Wolfswinkel, working in the team of co-architects, was able to perceive the process both from the architects' standpoints and a technical point of view.

3.1.2 Method

To gather the information from the 'intentions side' the chosen method was conducting semi-structured interviews. Since the members of this group had different roles during the development process, presenting a standardized questionnaire would not capture their unique points of view. During a semi-structured interview, the interviewer can make sure important points are addressed, while also react to interesting statements by the interviewee and ask for further explanations. Semi-structured interviews are the best method to gain insight into the point of view of the interviewee, however limitations in this method lie within the reproducibility of the interview (Bryman, 2012).

The two main properties of the Markthal (as a covered food market and as an architectural feature of Rotterdam) were selected as a focal points of the interviews: topics included the role of the interviewee in the development of the Markthal, the origins of the project and the degree of involvement of various partners, differences in this project from other projects the interviewee had worked on, and the ideas and aims from which the Markthal originated. The interview guide which was used can be consulted in appendix B.

In order to request interviews, all potential interviewees were contacted through email. Maximum one hour was needed for the interviews to be completed. Finally, four appointments were made with the interviewees previously introduced, of which none wished to remain anonymous. All interviews were face-to-face, except for the interview with Rien Wolfswinkel, which was conducted by telephone. Afterwards, the interviews were transcribed and then coded, using consecutively open and axial coding.[1] The codes are included in appendix C and will be analyzed in the next chapter. Full transcripts of the interviews are in possession of the researcher.

3.2 Vendors' perceptions

Vendors are the people who have located their businesses in the Markthal, thus possessing a unique perception on how the Markthal functions as a food market from a business point of view. Comparing the expectations and perceptions of the vendors with those on the intentions side will show differences and similarities that may or may not have been expected.

3.2.1 Sampling

Vendors in the Markthal can be separated into two groups: those who rent the stalls in the middle of the hall, and those who exploit a restaurant or shop in the basement or on the sides of the hall. The restaurant owners and shops have not been included in this population, since most of those that are located in the Markthal are part of larger chains. This research wishes to focus on the vendors who were themselves responsible for the decision to locate to the Markthal for their own reasons, thus the smaller entrepreneurs, who are mostly located in the

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[1] Babbie (2011) describes the two techniques as follows:

'Open coding: the initial classification and labelling of concepts in qualitative data analysis. In open coding, the codes are suggested by the researchers' examination and questioning of the data' (p.398).

'Axial coding: A reanalysis of the results of open coding in Grounded Theory Method, aimed at identifying the important, general concepts' (p. 399).

stalls in the middle of the hall. The population is therefore all the stalls in the middle of the hall, 96 in total.

3.2.2 Method

A survey is the best method to gather data for this research, since the sample was too large to conduct personal interviews with everyone. A focus group, although fitting to the research, would be hard to arrange because of conflicting schedules of the vendors.

An online survey of twelve questions was developed to gather data from the vendors. The first questions covered general questions about place of residence, location of other possible establishments, and age. To find the intentions with which the vendor decided to locate to the Markthal, his or her main reason for the relocation was asked, and whether the expectation had been fulfilled. Other topics include:

- The perceived influence of the surroundings in the Markthal on sales
- The perceived differences between food from the Markthal and food in a regular supermarket
- The perceived influence of celebrity chefs and bloggers on sales
- Their perception on knowledge sharing and cooperation between stallholders
- The perceived level of innovation and cooperation among entrepreneurs in the Markthal in the area of food

The full survey and responses are included in appendix D.

The five points Likert scale (strongly agree, agree, undecided, disagree, strongly disagree) was used for six of the twelve questions. This enabled the vendors to indicate their level of agreement with several statements clearly and quickly (Babbie, 2011). Unfortunately, the response rate of the survey was very low, namely 9.4 %, since only nine vendors out of 96 responded and it had become too late to try alternative methods of contacting the vendors. Therefore, the survey results can only be used as examples in the analysis part of the research

For a large part, the vendors' survey focused on whether the Markthal could be considered a creative cluster or not, an important part of the theory discussed in chapter 2. The results that were gathered on this topic will be presented here briefly, although no conclusions can be drawn from the data. Four statements were presented concerning the Markthal as a creative cluster: the majority did not perceive that entrepreneurs work together and share knowledge with each other (44.4% undecided and 33.3% disagree), and they were in equal part agreeing, ignorant and disagreeing whether cooperation had led to new ideas and innovations in the field of food. There is also no strong willingness to collaborate with colleague vendors (only 33.3% agreed), but the greater part of vendors does see the potential for the Markthal to become a center for innovation in the field of food (adding strongly agree and agree together gave 55.5%).

3.3 Visitors' perceptions

The group of visitors are all those who are using the Markthal for any reason except as a place to live or work. Inhabitants of the apartments connected to the Markthal are left out of the research, since it focuses on the covered food market and the architecture and not on the role of the Markthal as an apartment complex. The perceptions of the visitors are most important for those who developed the Markthal, since the visitor is an important end-user of the covered food market aspect of the building.

Because of the low response to the first two target groups, the research focuses on the responses of the visitors. Choosing a survey made it possible to collect data without imposing on people's time for too long. In total, 152 people participated in the survey.

3.3.1 Sampling

Considering a 'visitor of the Markthal' to be anyone who has visited the Markthal since its opening in 2014, means that the size of the population has transcended the number of eight million since September 2015. This population includes visitors living in Rotterdam and visitors from national and international locations. The sample that was collected reflects this composition of the population.

Random sampling on the square in front of the Markthal was chosen as sampling method. Visitors who were leaving the Markthal were asked to take part in a survey that would only take a couple of minutes of their time. This method was chosen to increase the chance of including visitors from elsewhere in the Netherlands or from abroad in the sample. A limitation of the chosen method may be that survey takers will be more positive on their perceptions of the Markthal, since they are in its proximity. Also, in selective sampling there is the possibility of a bias in the people selected. To diminish this effect, not all visitors were approached by the same person, but some assistants were involved in gathering responses in the square. However, one prerequisite for visitors to be willing to participate in a street survey is a rainless day. As the last weeks of April 2016 had been reserved for data gathering, and this being the Netherlands, the weather not comply with this condition, which stagnated the data gathering process nearly halfway. As a solution for this problem, the circumstances of sampling in the square were tried to be replicated on the Internet to be able to gather a complete as possible sample for the research. The online survey was explicitly designed for visitors to the hall, so those who had not visited would not be able to fill in all survey questions, which diminished the chance of invalid responses. The link to the survey was tried to make available through the Facebook page of the Markthal and Rotterdam Info, but both parties were not able post the link on their pages. In the end, the Facebook page of the Bethelkerk was selected to distribute the survey through its members. Members of the page live in or close to Rotterdam and are of all ages and backgrounds, which means that distributing the survey via them to their friends and family would include responses from all different kinds of visitors to the Markthal. Thus would be added to the representativeness of the sample in the areas of age, living location, and social background. In total 152 responses were gathered (42.1% through street sampling and 57.9% through online replies).

As a result, the sample reflects the population of 'visitors to the Markthal' as both visitors from within and outside Rotterdam were included, taking into account the differences in age and social background.

3.3.2 Method

The survey consists of fifteen questions, of which the first three concern the gender, place of residence and the age of the visitor. The other questions are multiple choice and concern:

- The reason for the visit to Rotterdam
- Knowledge of the existence of the Markthal before visiting
- The reason for visiting the Markthal
- The frequency of buying products in the Markthal
- Perception towards the characteristics of the products in the Markthal: quality, price level and buying experience.
- Level of influence of celebrity chefs and bloggers on purchase behavior, and the perceived inspirational value of the Markthal.
- The perceived added value of the Markthal to Rotterdam in the areas of architecture, tourism and food.

Nine of the fifteen questions made use of the five points Likert scale (strongly agree, agree, undecided, disagree, strongly disagree). The complete survey and responses are included in appendix E.

3.4 Limitations

There are several limitation that need to be kept in mind when analyzing the gathered data.

The most important limitation are the sizes of the collected samples. The visitors' sample consists of responses of 152 people, which is only a fraction of the total population. The other two samples are even smaller and thus cannot be used to draw general conclusions on their populations. This means that the research on clustering in the Markthal could not be performed as expected, leaving a gap in the results concerning this topic. There is a possibility that including the vendors' perceptions into the research would change the results. The intentions that are drawn from the interviews only provide a starting point for research on the Markthal. As this is an exploratory research the discovered intentions are still useful.

Scheduling is the second limitation to this research. To be able to pursue the best possible intentions and perceptions research, it would be best to schedule the interviews before creating and distributing the survey. Since this was not possible in this particular research, interviews and surveys are less well adapted to each other.

The last limitation has to do with time. Surveys for both vendors and visitors could not be too extensive, as this decreases the chance of people's willingness to respond. Therefore, some issues were not extensively addressed in the surveys, although they were interesting enough to justify spending a couple of minutes of the survey on. For example: perceptions towards the connection between products in the Markthal and reaching the good life, the needs of visitors that are currently unsatisfied, and perceptions towards the Markthal as flagship architecture of Rotterdam.

4. Results

Now the literature review and the collected data combined can shed light on whether the intentions with regard to the Markthal as an indoor food market and architectural icon match with the perceptions of vendors and visitors. First the results concerning the Markthal as an indoor food market are discussed, then those concerning the Markthal as an architectural icon of Rotterdam.

4.1 The Markthal as indoor food market

4.1.1 Price and quality of products

The visitors' perception on the price and quality of products in the Markthal can be used to see how the hall is functioning. High quality products on offer are characteristic for a market hall, while a higher price is often paid for foods that have been harvested locally and sustainably.

The connection between the multicultural character of Rotterdam and the Markthal is made by Matija Stanicic as she links the importance of the port of Rotterdam to the influx of different people with different foods and food cultures. Bringing all these cultures and foods together in one hall should be a goal of the Markthal, nothing would be lost if the stalls that are now rented by owners of bigger chains, like Leonidas, would eventually be taken over by smaller entrepreneurs (R. van der Stoep, personal communication, April 21, 2016).

The price level of the Markthal is much talked about in the interviews. The luxurious look of the building makes people assume that everything inside is expensive, although this is not true in the opinion of Renske van der Stoep. Rien Wolfswinkel initially agrees that Provast intended to realize a cheaper segment in the Markthal, but thinks that the reason for the Markthal now mainly offering products from a higher segment has to do with the financial background of the building (April 25, 2016). Matija Stanicic agrees that the Markthal is expensive, but does not think this is a problem. She feels more strongly about the quality of the products that are delivered both by the Blaak market and the Markthal (Stanicic, May 11, 2016). From the interviews it becomes clear that the prices of products were intended to be a combination of high and low, however products are now more expensive because of the high rents of the fixed stalls. Offering high quality products has remained important throughout the development process of the Markthal, which reflects Lee's (2009) theory that quality is one of the most important characteristics of food sold in market halls. The vendors themselves indicate that the quality of their products is what sets them most clearly apart from supermarket products.

Visitors were asked to state to which extent they thought the products were of a higher price and quality than products bought in a supermarket (table 4.1). The data solely records the *perception* of price and quality in the Markthal, as these concepts have not been benchmarked against the prices and quality of supermarket products.

Table 4.1 Perceptions of visitors on price and quality of products in Markthal in comparison to supermarket products and the convergence of opinions on the topic.

	Strongly agree	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**	**Total % on statement price level**
Strongly agree	7.89%	**14.47%**	7.89%	4.61%		34.87%
Agree	4.61%	**16.45%**	**15.13%**	5.26%	0.66%	42.11%
Undecided	0.66%	7.89%	5.92%	2.63%		17.11%
Disagree		1.97%	0.66%	1.32%		3.95%
Strongly disagree			0.66%	1.32%		1.97%
Total % on statement quality level	13.16%	40.79%	30.26%	15.13%	0.66%	100%

Note: Percentages of the distribution of opinions on quality are displayed in the rows, percentages of the distribution of opinions on price in the columns.

The 'total' column of table 4.1 indicates the distribution of perceptions on the price level. 34.9% strongly agreed with the statement that the price level of products in the Markthal is higher than in supermarkets, and 42.1% agreed. The 'total' row shows the distribution of perceptions on the level of quality in the Markthal. 40.8% of visitors agreed that the quality of products in the Markthal is higher than in supermarkets, while 30.3% could not decide on this issue. The bold percentages in the middle of table 4.1 match the convergence between opinions on these two issues. 16.5% of visitors agreed to both statements on quality and price; they perceived both the price and the quality of the products in the Markthal to be higher (14.5% strongly agrees to the price statement, but agrees to the quality statement). 15.1% of visitors agree with the higher price, but are not sure whether the quality of products is indeed higher than those bought in the supermarket.

These statistic could indicate a lack of trust in general between vendors and visitors to the Markthal, which plays a big role in transactions made in market halls (Lee, 2009). As vendors in a market hall can be seen as craftsman who take personal responsibility for their goods, customers trust their opinion and the quality of the products based on the relationship they have. When this relationship does not form, customers will not place their trust in the vendors, but be more guided by the prices of the products, which seems to be happening in the Markthal.

Table 4.2 Means and standard deviations of visitors' perceptions on price and quality, divided by location of residence, gender, and age group.

	Total (n=152)	**Outside Rotterdam (n=91)**	**Rotterdam (n=61)**	**Male (n=54)**	**Female (n=98)**	**Under 21 (n=21)**	**21 to 32 (n=48)**	**33 to 42 (n=22)**	**43 to 52 (n=31)**	**53 to 64 (n=18)**	**Over 65 (n=12)**
Perceived higher price level	**1.96** (SD=0.93)	1.99 (SD=0.92)	1.92 (SD=0.94)	2.05 (SD=0.96)	1.91 (SD=0.91)	2.05 (SD=0.97)	1.79 (SD=0.97)	2 (SD=0.76)	1.97 (SD=0.87)	2.33 (SD=1.03)	1.83 (SD=0.94)
Perceived higher quality of products	**2.49** (SD=0.93)	**2.57** (SD=0.9)	**2.38** (SD=0.97)	2.57 (SD=0.96)	2.54 (SD=0.91)	2.33 (SD=0.8)	2.6 (SD=1.05)	2.73 (SD=1.03)	2.23 (SD=0.8)	2.67 (SD=0.77)	2.33 (SD=0.89)

Note: Tables with means, standard deviations and ranges of all nine statements can be found in appendix F.

Table 4.2 shows that the total mean of price (1.96, SD=0.93) is much lower than that of quality (2.46, SD=0.93), which indicates overall more agreement with the statement that prices are perceived as being higher in the Markthal.[2] While almost equally in agreement on the price level, Rotterdammers are more likely to see the products in the Markthal as being of higher quality than visitors from outside the city (2.38, SD=0.97 for Rotterdam and 2.57, SD=0.9 for outside Rotterdam). This adds to idea that relations between vendors and visitors are important in the market hall, visitors from outside the city are less likely to develop relationships than citizens of Rotterdam. However, this table only shows a small difference between the averages. Complete tables with means and standard deviations can be found in appendix F.

Overall, visitors seem to be surer of the higher prices they are paying in the Markthal, but less certain whether they are actually receiving products of higher quality. This is interesting, as both the municipality and the vendors emphasize the importance of quality, which is echoed in the literature. In the case of the Markthal quality may not be perceived to be an important characteristic of the products, while 'price' is.

4.1.3 The good life

Living the good life through giving more attention to the food we consume is a recent trend that can be linked to the products sold in market halls. Syse (2015) explicitly mentions the influence of celebrity chefs in increasing the attention for 'good food'.

The recent food trend was not taken into account when plans for the Markthal were made, it was an opportunity that arose for the Markthal to play a part in (M. Stanicic, May 11, 2016). Thus, the causal connection that could be presumed between the food trend and the development of the Markthal is not there according to the interviewees. The survey among visitors confirms the weak connection between both, as only a small percentage of visitors (7.9%) agrees that they indeed purchase products recommended to them by chefs or bloggers in the Markthal. The vendors too are mostly unaware what motivates their customers to buy their products, only one of the nine sees an influence from celebrity chefs. However, most of

[2] A low mean indicates more agreement, since in the dataset strongly agree is represented by 1, agree by 2, undecided by 3, disagree by 4, strongly disagree by 5 and unknown by 0. Thus follows: the higher the mean, the more general disagreement towards the statement, the lower the mean, the more general agreement towards the statement.

the visitor respondents (55.3% strongly agree and agree) do admit that the Markthal inspires them to try new things in the area of food.

Table 4.3 Means and standard deviations of visitors' perceptions on the influence of celebrity chefs and the Markthal as source of inspiration, divided by location of residence, gender, and age group.

	Total (n=152)	**Outside Rotterdam (n=91)**	**Rotterdam (n=61)**	**Male (n=54)**	**Female (n=98)**	**Under 21 (n=21)**	**21 to 32 (n=48)**	**33 to 42 (n=22)**	**43 to 52 (n=31)**	**53 to 64 (n=18)**	**Over 65 (n=12)**
Markthal inspires to try new things in area of food	**2.55** (SD=1.66)	**2.4** (SD=1.16)	2.79 (SD=1.11)	2.87 (SD=1.1)	**2.38** (SD=1.15)	2.62 (SD=1.36)	2.63 (SD=1.08)	2.55 (SD=1.26)	2.48 (SD=1.26)	**2.39** (SD=0.92)	2.58 (SD=1.08)
Product recommendations by celebrity chefs or bloggers	**4.06** (SD=1.09)	**3.93** (SD=1.09)	4.25 (SD=1.07)	4.3 (SD=1.02)	**3.93** (SD=1.11)	4.29 (SD=1.19)	4.04 (SD=1.11)	**3.95** (SD=1.25)	4.26 (SD=0.86)	4.06 (SD=1.06)	**3.42** (SD=1.08)

To see whether location of residence, gender, or age influences whether visitors are inspired by the Markthal or purchasing recommended products, table 4.3 shows the means and standard deviations per category. A high average means that visitors are on average disagreeing with the statement. Averages concerning the celebrity chef's recommendations are much higher than those concerning the Markthal as inspiration, as predicted by the earlier stated percentages. Visitors from outside Rotterdam are slightly more likely to purchase products recommended by chefs, as are females, and visitors in the ages 33 to 42 and older than 65. Interestingly, visitors from outside Rotterdam, females, are also more inspired by the Markthal to try new things, as are visitors in the ages 53 to 64.

A conclusion from these data could be that visitors to the Markthal are not buying products to reach the good life, as so few are influenced by chefs and an average of 4.06 (SD=1.09) indicates overall disagreement to the statement. Seeing as they do agree that the Markthal inspires them to try new things, the reason for this result does not seem to originate in a total lack of interest in food. However, a total average of 2.55 (SD=1.66) does also not indicate an overwhelming agreement. Syse (2015) explicitly mentions two kinds of consumer:

one “of the Veblen kind” (p.169, paragraph 2.2.2), which describes a consumer who has the financial means to purchase good food, and has been told why to do so by celebrity chefs without putting much effort in doing their own research. The other kind of consumer likes to be more active in connecting to the food they consume, for example by doing their own research. The characteristics of visitors to the Markthal should be further investigated to determine to what extent they fall into the second category of consumer. Determining this can show the true extent of the influence of reaching the good life on consumer behavior in the Markthal.

4.1.4 Experiencing the Markthal

The hall itself plays a role in the functioning of the Markthal as an indoor food market. Not in the least because of the buying experience that is created. 48% of visitors perceives a difference between shopping in the Markthal and shopping in a supermarket, and seven out of nine vendors agree that their product sales are higher because of the environment their stalls are located in.

This does not mean that everybody likes the Markthal. Visitors are confused whether they are inside or outside, and are unsure of how to behave, according to Renske van der Stoep (April 21, 2016). They do not expect the climate of the Markthal to be as it is, as the building is merely a covered outdoor space that reflects the weather outside; if it is hot outside, it will be hot inside too (R. de Jong, personal communication, May 11, 2016). This seems to indicate a conflict of expectations, since visitors are caught by surprise by the fact that the Markthal is essentially a covered outdoor space, with only a glass façade separating the inside from the outside. The indoor climates of other European market halls are also subject to the weather conditions outside, but this is expected by visitors since they know the halls are covered outdoor spaces (Smiechen and Carls, 1999). From this issue, can be concluded that the design and appeal of the Markthal is promising to be more than just a covered outdoor space. GfK’s research indicated this already in 2015, and it has not changed over the last year (GfK, February 2, 2015).

Although this issue of managing expectation deserves further attention, it has not influenced the rising popularity of the market hall concept in the Netherlands. Both Rien Wolfwinkel and Ronald de Jong notice an increase in projects asking for a similar market hall or food court to be incorporated into their buildings (April 25 and May 11, 2016).

Consequently, the operation of the Markthal was designed with traditional market halls in mind, offering a different buying experience from supermarkets, but still remain a 'simple' covered outdoor space. Clients of other projects in the Netherlands seek to incorporate the market hall principle into new developments after the opening of the Markthal, for example the Veemgebouw in Eindhoven and the Oliemolenkwartier in Amersfoort (R. Wolfswinkel, personal communication, April 25, 2016).Visitors to the Markthal find it hard to reconcile the climate in the hall with the expectation the halls gives them, which leads to complaints.

4.1.5 The economic impact

For the city of Rotterdam the increase of tourism due to the Markthal was a turning point. Matija Stanicic says that there had been a hope from the beginning that the Markthal and other facilities would boost the economy of Rotterdam.

The indicator of the economic impact of the Markthal that can be taken from the visitor survey is the purchase frequency of the respondents. The group who uses the Markthal to do their weekly shopping is the smallest (4.6%), and most visitors indicate that they occasionally, and not on a regular base, purchase products in the Markthal (44.1%). As figure 4.1 shows, by dividing the total sample into age groups it becomes clear that visitors in the ages from 21 to 32 are the biggest group of regular shoppers, although the most chosen frequency is monthly. The data shows that most people in the sample do not visit the Markthal for their daily purchases, but buy a product once or occasionally. Looking at the most recurring answer per category (location of residence, gender, and age) shows that every category answered 'occasionally, not regularly' most frequent, except for the categories 'under 21' and '65 and older', who answered 'never' most often.

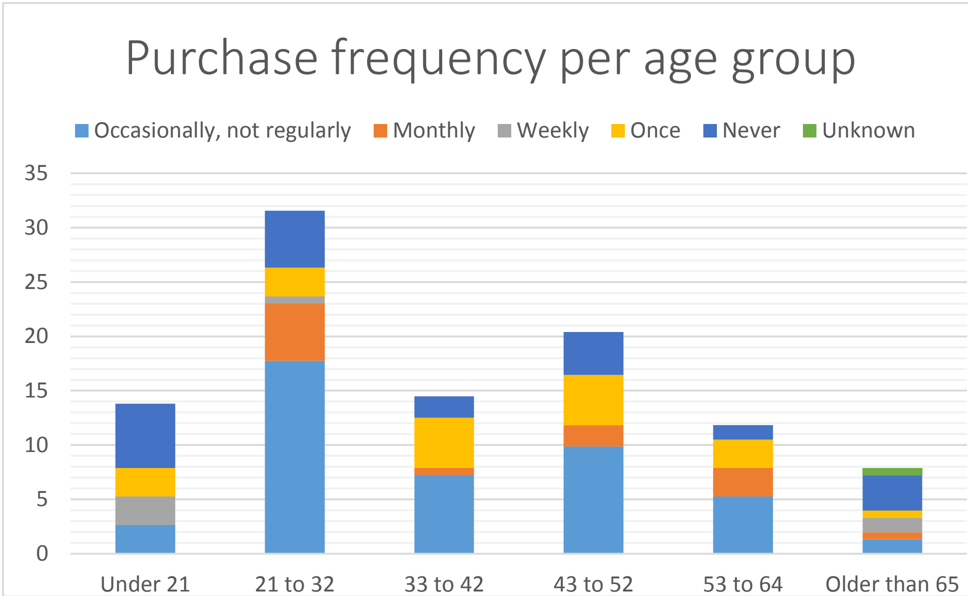

Figure 4.1 Purchase frequency per age group.

The survey shows that 77.6% of all respondents make a purchase, disregarding frequency. The total number of visitors in the first year of operations was eight million, while a market research beforehand estimated that seven million visitors would be maximum (Potters, September 18, 2015). 77.6% of eight million gives an estimate of 6.2 million purchases a year or 17.000 a day, which is possible with a daily visitor count of 24.000 (Van Heel, April 24, 2015). 59.9% of visitors' state that they live outside Rotterdam, which means that 46.7% of all purchases are made by visitors. So an estimated 2.9 million purchases each year are made by visitors from outside the city.

On the whole it can be said that the Markthal has an economic impact on Rotterdam. The data used to make the estimate are not completely reliable, but give a rough indication that 2.9 million purchases are made by visitors from outside Rotterdam each year. To be more accurate, recent visitor numbers are needed as well as more respondents to the survey.

From the data it is only possible to give an estimation of the economic impact of the indoor food market on the economy of Rotterdam by estimating purchases. The analysis on the Guggenheim Museum by Plaza (2010) measured the building as an economic engine by questioning visitors' willingness to pay and in addition focused on economic impact besides revenue streams. Focusing research on these aspects of the Markthal could uncover the less explicit economic impact of the building.

4.2 The Markthal as architecture

4.2.1 The design

Rybczynski (2002) values harmonious collaboration between architecture and the context it is placed in. This notion is underlined by the "Architectuur van de Ruimte" bill from 1996 (Ministry O.C.W.). The pitfall for commissioning architecture because they offer a "wow factor" often results in only adding an empty architectural feat to the city (Rybczynski, 2002). Stanicic, process manager for the Lijnbaankwartier and the Laurenskwartier, relates that the intention of the municipality from the beginning was to commission an iconic building, so it would provide the Binnenrotte with a recognizable 'face' (May 11, 2016).

The design submitted by Provast and MVRDV is regarded by all interviewees as a strong concept, which has remained virtually unchanged throughout the entire development process. The municipality was even "enamored" with it (M. Stanicic, personal communication, May 11, 2016).

Visitors were asked about the reason for their visit to the Markthal: 9.8% of visitors declared they came specifically to see the architecture of the building, and 4.6% came to see the artwork on the ceiling. Most visitors (38.16%) visited the Markthal to experience its overall atmosphere, and 20.4% came to purchase products. The architecture alone is thus not the main attraction for visitors to the hall, who value all elements combined more. Dividing the data into age groups shows that of all those who visited the Markthal especially for its architecture, the 21 to 32 age group was responsible for 53.3% of all these visits. The iconic character of the outside and the inside is attractive for some, but in general visitors are also interested in the other components. However, it is unknown whether people would still be as interested in the overall atmosphere of the Markthal if the architecture of the building was different.

Given these points, the design of the Markthal was intended to have an impact on the visitors and on the surrounding area. The results from the survey show that a small percentage of visitors visits solely because of the architecture. However, the overall experience of the Markthal includes the architecture of the building. To measure more precisely the role of architecture in the overall experience a more in-depth survey should be carried out among the visitors.

4.2.2 Branding Rotterdam

The role of architecture within city branding has been addressed in the literature review. The question is now what the role of the Markthal has been within the branding of Rotterdam.

The image of the city has also changed with the development of the Markthal. There was a huge effect in publicity which gave Rotterdam the image of a city where special architecture is realized (M. Stanicic, personal communication, May 11, 2016). The design of the Markthal was intended to have an effect on the image of the city, otherwise the municipality would have picked a cheaper option. The effect is clear: "Suddenly Rotterdam has become hip" ("Ineens is Rotterdam hip", M. Stanicic, personal communication, May 11, 2016). Adding another element to the architecture of the city was intended to contribute something to the city, such as interest from international companies to establish themselves in Rotterdam, according to Renske van der Stoep. Matija Stanicic mentions the intention of the Markthal to become the 'face' of the development realized in the Laurenskwartier.

The survey did not explicitly mention the 'face'-aspect of the Markthal, but it did ask whether people were aware of the existence of the Markthal before they visited Rotterdam. 66.5% of the visitors had been aware of the existence of the Markthal before visiting. A 'not applicable' answering option was available to inhabitants of Rotterdam who had lived in the city since before the development of the Markthal, or for those who had worked in the city for a longer time. 27% of visitors made use of this option. Of all Rotterdammers, 59% stated that the question did not apply to them, which meant they had lived in the city since before 2014. 37.7% did know about the Markthal before starting to live in the city, and only 3.3% was unaware of its existence. These percentages show that the Markthal is already a well-known building among Rotterdammers and tourists, it is definitely not to be missed in the Laurenskwartier.

Although it had not been the intention from the start, it seems that the Markthal did become important for branding Rotterdam along the way. In the survey visitors were asked to state their level of agreement to four statements connected to the image of Rotterdam.

The 'total' column of table 4.4 indicates the distribution of agreement with the statement: 'the presence of the Markthal has made Rotterdam a more attractive city for me in the area of architecture', and the 'total' row shows the distribution of agreement with the statement: 'the presence of the Markthal has made Rotterdam a more attractive city for me in the area of tourism'. The percentages of this column and row for tourism and architecture have equal increases, which indicates a connection between the two concepts. The 18.4% (answering strongly agree to both statements) and 20.4% (answering agree to both statements) of visitors who found that the Markthal had made Rotterdam more attractive in the area of architecture, also believed that it had made the city more attractive to tourism.

Table 4.4 Perceptions of visitors on the increased attractiveness of Rotterdam in the areas of tourism and architecture and the convergence of opinions on the topic.

	Strongly agree	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**	**Total % on statement architecture**
Strongly agree	**18.42%**	7.89%	1.32%	1.97%	0.66%	30.26%
Agree	9.87%%	**20.39%**	9.21%	1.32%		40.79%
Undecided	1.97%	5.92%	3.29%	1.32%	0.66%	13.16%
Disagree	0.66%	1.32%	2.63%	4.61%	1.32%	**10.53%**
Strongly disagree	0.66%	0.66%	1.32%	0.66%	1.97%	5.26%

Total % on statement tourism	31.58%	36.18%	17.76%	**9.87%**	4.61%	100%

Note: Percentages of the distribution of opinions on tourism are displayed in the rows, percentages of the distribution of opinions on architecture in the columns.

Table 4.5 Perceptions of visitors on the increased attractiveness of Rotterdam in the areas of food and architecture and the convergence of opinions on the topic.

	Strongly agree	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**	**Total % on statement architecture**
Strongly agree	9.87%	9.21%	5.92%	3.29%	1.97%	30.26%
Agree	3.95%	**17.11%**	11.84%	7.89%		40.79%
Undecided	0.66%	1.97%	3.95%	5.26%	1.32%	13.16%
Disagree	1.97%	1.32%	1.32%	5.26%	0.66%	**10.53%**
Strongly disagree	1.32%		0.66%	1.32%	1.97%	5.26%
Total % on statement food	17.76%	29.61%	23.68%	**23.03%**	5.92%	100%

Note: Percentages of the distribution of opinions on food are displayed in the rows, percentages of the distribution of opinions on architecture in the columns.

Table 4.5 shows that 17.1% of visitors who noticed the increased attractiveness of Rotterdam in the area of architecture, also noticed that the city of Rotterdam had become more attractive in the area of food, though the connection is not as strong as the one between architecture and tourism. Comparing the totals of the increased attractiveness of architecture, tourism and food, it becomes clear that visitors are not seeing an increased attractiveness in the area of food (23% choose disagree for food, compared to 9.9% for tourism and 10.5% for architecture). The fact that the Markthal is perceived to not have made Rotterdam more attractive in the area of food, could have to with the earlier discussed perceptions towards the indoor food market and the low purchase frequencies. Rybczynski (2002) stated that architecture only has value if it has a connection to the urban context and therefore it is important also for the architecture of the Markthal to house a flourishing market, to avoid it becoming an empty feat.

Lastly, visitors were asked about the importance of architecture in Rotterdam as a place to live or work in or to visit. Figure 4.2 shows that almost the same amount of visitors agreed as disagreed with the statement that architecture was important.

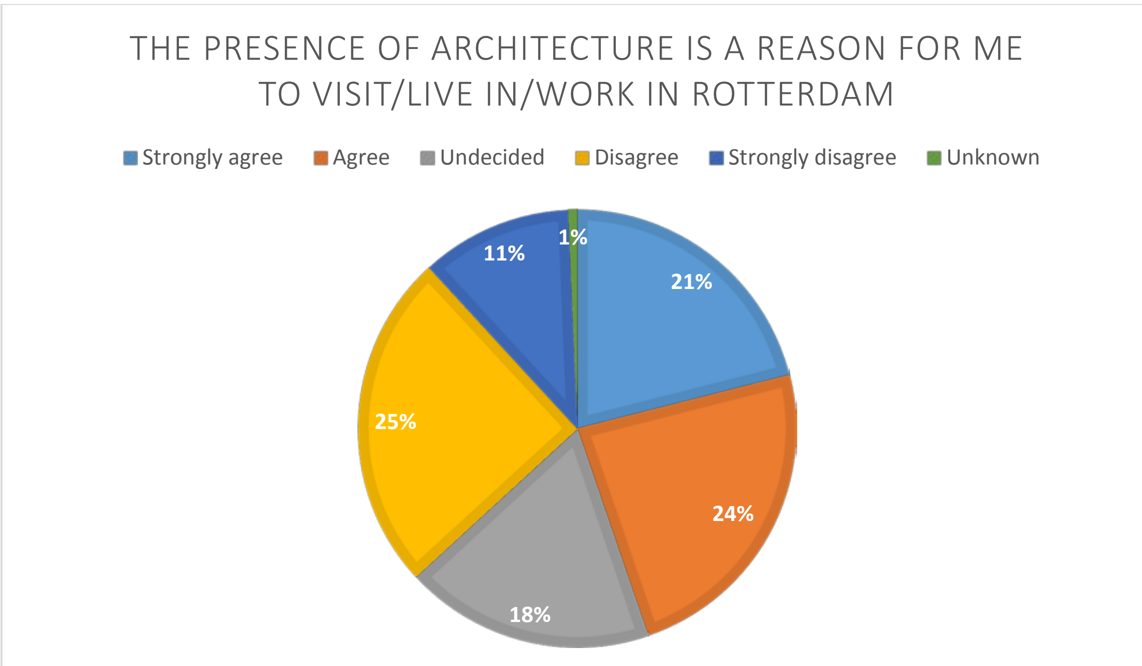

Figure 4.2 Distribution of opinions on the statement 'the presence of architecture is a reason for me to visit/live in/work in Rotterdam.

The role of the Markthal in branding Rotterdam comes to the fore not only in the interviews, but also in the visitors' survey. Visitors perceive the Markthal to have strongly influences the increased attractiveness of the city in the areas of architecture and tourism, but do not see an increased attractiveness for food. Although Rotterdam is deemed more attractive architecturally since the development of the Markthal, this is not a big reason for visitors to live in, work in, or visit the city, which indicates that the brand of Rotterdam is not only connected to architecture.

4.2.3 The balance between tourists and inhabitants

Inhabitants, as well as visitors to a place are important to keep in mind when branding a city, as the brand should be clear on whom the city seeks to serve (Kavaratzis, 2004).

So who were the intended visitors to the Markthal? From all interviews it becomes clear that the Markthal should primarily attract a wide spectrum of Rotterdam's society. The unexpected stream of tourists are also important, but they should only have a supporting role when the Markthal is concerned. The aim was to create an icon that would be attractive to all visitors to the downtown area, particularly Rotterdammers (M. Stanicic, personal communications, May 11, 2016). Renske van der Stoep notices that the visiting Rotterdammer who used to be so negative is becoming quite proud of the Markthal now (April 21, 2016). The interviews made clear that, although it is an attraction for tourists too, the Markthal should mainly be attractive to Rotterdammers to visit.

Of the visitors in the sample 47.4% visited Rotterdam for a day trip, 40.1% was an inhabitant of the city, 9.2% visited because of work, and 3.3% visited the city for a longer stay. Therefore, in this sample the number of tourists exceeds the number of inhabitants as stated earlier in paragraph 4.1.5.

Because the Rotterdammer is the most important visitor according to the interviews, their behavior is important to look into. 45.9% of them only buys occasionally from the Markthal, 4.9% uses it to purchase the weekly groceries. The three main reasons why Rotterdammers are visiting the Markthal is to experience the overall atmosphere (34.4%), to visit a restaurant and to purchase products (both 19.7%). The data does not point toward the idea that Rotterdammers are using the Markthal intensively as a market hall, but rather as a touristic feature in their own city, to occasionally visit and enjoy.

4.3 Issues springing from the interviews

From analyzing the interviews it becomes clear that 'the intentions for the Markthal' have not always been the same during the development process, and that it is possible to talk about two concepts of the Markthal, both featuring different key characteristics, as this paragraph will show. There are also some intentions that have never changed during the process: the building had to become an iconic architectural feature of Rotterdam, so that it would be face of the whole development completed in the Laurenskwartier (M. Stanicic, personal communication, May 11, 2016). The market hall simply had to be a covered outdoor space, where high quality products are sold to a wide variety of people who reflect the society of Rotterdam (R. de Jong, personal communication, May 11, 2016). Because of all this, the Markthal should stimulate the economy of Rotterdam (M. Stanicic, personal communication, May 11, 2016).

In addition to these continuous characteristics the interviews indicate that in the beginning stages of the project (the first concept), the Markthal was intended to have a strong connection to the open air market on the Blaak. Stalls would be able to transfer from the inside to the outside, and the hall would offer vendors of meat, fish and dairy a possibility to continue their practices without violating EU regulation 2004/852/EC (M. Stanicic, personal communication, May 11, 2016). As vendors from outside were allowed to sell their products in the Markthal, it would offer a combination of high-end and low-end products to the consumer. The design for the building did not change during the development process, except that in earlier versions the ceiling was not covered with the mural we know but with a sea of LED lights (R. Wolfswinkel, personal communication, April 25, 2016).

This description differs from the Markthal that was created in the end (the second concept). The current hall houses vendors with fixed stalls, who do not have any apparent connection with the stalls and vendors outside. However, the flow of visitors between both areas should still be encouraged (R. van der Stoep, personal communication, April 21, 2016). As the vendors need to be able to pay the high rent of the fixed stalls, the products on offer have become more high-end and of a higher price level. (R. Wolfswinkel, personal communication, April 25, 2016). Chain stores like Leonidas and Bram Ladage can more easily afford the rents, which is why they are also present in the hall.

These differences in intentions show a shift from a Markthal that was designed to be an extension of the Blaakmarkt hosting the same kind of vendors and price level, to a high-end Markthal with vendors who sell more luxurious products for a higher price. Although both concepts are intended for the same people, one can imagine that both concepts would attract different customers in reality.

4.4 Summary of results

The indoor food market was intended to be connected to the Blaak market, having vendors from outside renting stalls inside. Vendors and their products would represent all cultures that live in Rotterdam, offering both low-end and high-end products, with an emphasis on high quality, to visitors that reflects the society of Rotterdam, which would give the economy of Rotterdam a boost. Visitors are more aware of the expensiveness of the products on offer in the Markthal, than of their higher quality. Also, it seems that the low-end products are not well represented in the hall. Although purchase frequencies are low, high annual visitor numbers ensure that revenue from the indoor food market does boost the economy. A cause for this discrepancy can be found when considering the products that are sold in the Markthal to be cultural goods. The connection between food and culture has become stronger in recent years as the trend for reaching the good life through nutrition has gained attention among consumers, although not among those visiting the Markthal. Considering food a cultural good creates a connection between the concepts of trust and quality: customers need to trust vendors, because they are unable to assess the quality of the products themselves (Lee, 2009). Since the Markthal attracts a low number of frequent visitors from Rotterdam it is unlikely that many personal relations between vendors and visitors have been formed. Investing in increasing purchase frequency would also retain the economic impact of the market if visitor numbers drop. Although a lack in data prevented an extensive look into the Markthal as a creative cluster, it is known that there must be space for experimentation and creativity within the cluster to succeed (Potts and Keane, 2011). The image that has formed of the indoor market as a place where vendors have to entertain a constant stream of visitors does not match with this condition. A preliminary conclusion is that the Markthal as it is functioning now cannot be considered to be a creative cluster, however further research on the topic needs to be done among vendors to truly understand the possibilities for a creative cluster to exist here.

The role of the outside of the Markthal was clear from the start: add to the iconic architecture in Rotterdam, and give the newly developed Laurenskwartier a 'face'. The building combines the functions of apartment complex, food market and hospitality, and parking garage, making it a unique building in the Netherlands. In addition to this, it should have an effect on the image of Rotterdam. Visitors perceive the Markthal almost exactly as it was intended. They enjoy the architecture as an aspect of the overall experience. Before visiting they know about the existence of the Markthal, and see its contribution to the city in the areas of architecture and tourism. Data shows that the Markthal has not increased the attractiveness of Rotterdam in the area of food, which can have implications for the value of the architecture for the city. In general, the presence of architecture is not for everyone a reason to visit, live in, or work in Rotterdam.

5. Conclusion

This research aims to gain further insight into the workings of the Markthal as an indoor food market and an object of architecture in the city of Rotterdam, taking the intentions of developers and the perceptions of vendors and visitors as sources of data. During the analysis many aspects of the Markthal have been considered, and they all contribute to answering the main question of this work: *To what extent has the Markthal as an indoor food market and an architectural icon in Rotterdam fulfilled the intentions developers had when it was established according to vendors and visitors?*

Table 5.1 Intentions and perceptions of the Markthal as indoor food market and as architectural icon.

	Markthal as indoor food market	***Markthal as architectural icon***
Intentions of developers	• There must be a connection between Blaak market and Markthal • Must offer a wide array of products, representing different cultures in Rotterdam • Should combine an offer of high-end and low-end products • Should attract a broad audience that reflects the society of Rotterdam • Should give economy of Rotterdam a boost	• Iconic architecture • Must house a unique combination of functions in the Netherlands • Will be the ’face’ of the Laurenskwartier • Have an impact on the image of the city
Perceptions of vendors	• Vendors offer higher quality products than supermarket • Do not see the influence of celebrity chefs on product sales	• Notice a positive effect of surroundings on product sales
Perceptions of visitors	• Perceive a higher price for the products • Do not perceive the higher quality of products	• More interested to experience all aspects of Markthal, not just the architecture • Are aware of the existence of the Markthal before visiting Rotterdam

	• Purchase frequency combined with visitor numbers indicates that the Markthal does boost the economy of Rotterdam • Is not used for weekly groceries, but to purchase products on occasion • More visitors from outside Rotterdam than inside Rotterdam • Not influenced by celebrity chefs, but are inspired by Markthal to try new things • Confused about the indoor climate	• Markthal has increased the attractiveness of Rotterdam in areas of architecture and tourism, not of food • For some, the presence of architecture influences visitors' decisions to visit or live in Rotterdam • Rotterdammers are using the Markthal as a touristic feature of their city, not as a market hall

Table 5.1 above shows little overlap and substantial discrepancies between the developers' intentions with regard to the view of how the indoor food market in the Markthal would function and the perception of the average visitor. As an architectural icon, visitors' perceptions reflect the intentions with which it was established more. On average the intended function of the Markthal has materialized.

5.1 Limitations and further research

The limitation of this research is mainly the generalizability of the results, as the samples were relatively small compared to their populations. For further research it is advisable to increase sample sizes and include some new topics. First of all, many of the problems concerning the Markthal seem similar to those of the in 2011 opened Torvehallerne in Copenhagen, which was mentioned as an inspiration for the Markthal in the introduction (Pagh, 2015). Could it be that introducing an age old building and retail type into the 21st century will never quite fit? More research is also needed on the cultural goods characteristics of certain types of food and the relationships between customers and vendors, as the similarities with trade in the cultural sector have become clear in this research. Another interesting topic is that of the relationship between municipality and developer during building developments. Which intentions are more important: those of the municipality or those of the developer? These are all new questions that have arisen from this exploratory research, that could enrich and improve knowledge on architecture and food.

5.2 Discussion

From all this follows an indication that the Markthal is dealing with a split personality. The outside has been designed to be a tourist attraction, branding Rotterdam as a city of architecture, where exciting new things are possible. And this has worked, as the numbers of visitors from near and far pass by the number of people who live in Rotterdam and visit the hall. However, the concept of a market hall is less suited for such a clientele. In a market hall trust and personal relationships between vendors and customers are important for the craftsmanship and knowledge of the vendors and the quality of their products to be appreciated. From the research it seems that it is exactly what is lacking: the culinary experience of the food market is overrun by the touristic aspect of the Markthal.

A solution to this problem lies in the answer to the question: Who is the preferred visitor to the Markthal? The first answer is to decide to focus on the audience the Markthal currently attracts, namely tourists or Rotterdammers who occasionally purchase products or visit a restaurant. This would mean that vendors who rely on regular shoppers, like greengrocers, butchers or fishmongers have to leave the hall and be replaced by eateries and vendors offering regional specialties and niche products. This is also echoed in the recommendation of GfK's research to reduce the number of vendors in the hall (GfK, February 2, 2015). Another answer is to transform the indoor food market into a market that meets the average Rotterdammer's needs. This includes changing the composition of vendors and taking the price level into account that Rotterdammers are willing and able to pay. Citizens may already have relationships with vendors on the open air market and it would be a good idea to convince those to take a spot in the Markthal. However, this could mean that the concept as it is now (with fixed stalls) has to be changed into something more flexible. If this option is chosen, performing an extensive market research on the wishes and characteristics of customers and vendors is necessary. However, it must be understood that something needs to be done. The value of the architecture of the building, which is currently successful for Rotterdam, depends on its ability to fit in the context of the urban area and connect to the brand and values the city represents. Keeping the food market in the Markthal in the 'in between' position it is now is not can lead to the architecture of the building becoming merely an empty feat in the city center that does not reflect the image of Rotterdam and does not contribute to it, thereby losing its function of flagship architecture.

Thus, this research, as an exploratory case study on the operations of the Markthal according to different parties, has shown that there is a discrepancy between the architecture of the building, which is functioning as expected, and the indoor food market, which needs different circumstances to function optimally. The research has also shown that the food sold in a market hall can be seen as a part of the cultural industries, because of the importance of personal relationships based on trust and quality. There are opportunities for further research on the existence of a creative cluster among vendors in the Markthal, and on establishing the whether the Markthal is perceived to be instrumental for visitors in reaching the good life. Taking all this into consideration, it must be kept in mind that the Markthal is currently in its second year of operations and there are many possibilities for change and improvement in the next years, hopefully taking these conclusions as a starting point.

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Appendices

A. List with possible interviewees

The following list was used to approach possible interviewees for the intentions-side. The list can be consulted on **https://www.mvrdv.nl/en/projects/markethall**.

Design Team:

Winy Maas, Jacob van Rijs and Nathalie de Vries with Renske van der Stoep, Anton Wubben, Marc Joubert, Sven Thorissen, Monica Freundt, Laura Grillo, Joeri Horstink, Tadas Jonauskis, Diana Lopez, Gijs Rikken, Elsbeth Ronner, Yvo Thijssen, Johnny Tsang, Anet Schurink, Jeroen Zuidgeest, Michele Olcese, Laura Grillo, Ivo van Capelleveen

Partners:

Co-architect: INBO, Woudenberg, Netherlands

Structure: Royal Haskoning DHV, The Hague, Netherlands

Services / Acoustics: Peutz & Associes, Zoetermeer, Netherlands

Installations: Techniplan, Netherlands

Glass Façade: Octatube, Rotterdam, Netherlands

Above Ground Contractor: J. P. van Eesteren

Below Ground Contractor: Mobilis and Martens en Van Oord, Netherlands

Artwork: Arno Coenen and Iris Roskam

B. Interview guide

Since the main goal was to find out how the interviewee thought the Markthal was intended, the interview guide consists of four main questions and some notes to guarantee that certain issues are addressed during the interview. Before the interview the interviewee was asked whether it was allowed to record the conversation and whether the interviewee preferred to remain anonymous.

Notes beforehand:

This research is not commissioned by the Erasmus University, but serves as a Master's degree assignment.

Am I allowed to record this interview in order to transcribe it?

Would you like to remain anonymous as a source?

Questions:

1. How did you get involved in the development of the Markthal, and what was your role in the process?
2. Could you, as far as you know, elaborate on how the project was created and which partners were involved?
3. Did the development process of the Markthal differ from other projects in which you was involved?
4. From which ideas and goals did the design of the Markthal arise? What was the origin of the project as a whole?

C. Interviewees and interview codes

Full transcripts of the interviews in Dutch are made available online and are in possession of the researcher.

Interviewees:

- Renske van der Stoep (RvdS), architect at MVRDV during the development of the Markthal, now working for Ector Hoogstad Architecten. Interviewed on April 21, 2016.
- Rien Wolfswinkel (RW), engineer and employee at Inbo, the co-architect of the Markthal. Interviewed on April 25, 2016.
- Ronald de Jong (RdJ), engineer and employee at Techniplan, installation advisors for the Markthal. Interviewed on May 11, 2016.
- Matija Stanicic (MS), process manager for the Lijnbaankwartier and the Laurenskwartier for the municipality of Rotterdam during the development and building of the Markthal. Interviewed on May 11, 2016.

Table C1 Axial codes, open codes and quotes used to analyze the interviews.

Axial codes	Open codes	Quote from interview
Visitors of the Markthal	Markthal attracts a broad audience	• RvdS: "In Rotterdam you see everyone walking around, and that's what I like, that it attracts a broad audience." RdJ: "Provast has always said they wanted to realize a cheaper segment in the Markthal, to retain an audience as broad as possible." • RdJ: "Provast has always said they wanted to realize a cheaper segment in the Markthal, to retain an audience as broad as possible." • MS: "Nobody had expected that the Markthal would play such an important role for tourism, but the Markthal shouldn't become a thing for tourists." • MS: "… and in addition it should be attractive for tourists. Because if it only attracts tourists it loses quality." • MS: "You can see that many Rotterdammers are visiting the Markthal and that it is a reflection of the Rotterdam society." • MS: "Most of all, you hope such a facility is approachable to everyone."

		• MS: "Everybody should have a place in the Markthal for different reasons, even if it is just to complain." • MS: "The goal was to make an icon what would be attractive for all visitors of the downtown are, particularly Rotterdammers."
	Complaints from visitors	• RvdS: "But now there is mostly confusion: are we inside or outside? They don't know how to behave." • RdJ: "Much has been in the news about the climate in the Markthal, there have been many complaints." […] "It was intended as a covered outside space, so if it's 30 degrees outside, it will be almost 30 degrees inside too."
	Effect on visitors	• RvdS: "That sober Rotterdammer, who has always said: 'I don't care', they start to get proud now." • MS: "What it's about, if you go to the Blaak market, that you are seduced to go in or the other way around."
Products in the Markthal	Multiculturalism in Rotterdam	• RvdS: "Rotterdam has so many nationalities, and how cool would it be to bring all those products together in one hall." • MS: "The fact that Rotterdam is a very important port, has led to different people with different foods and foodcultures. The Markthal fits in this."
	Composition of stalls	• RvdS: "The bonbonniere, Leonidas, could leave if it was up to me. Those commercial chains have also come in the Markthal for security reasons."
	Price level in Markthal	• RvdS: "People can hardly imagine that there are some cheaper products to be found in the Markthal, because it looks so chic." • RW: "I think the Markthal is in a higher segment, but that has to do with the financial background of the building." • RW: "Provast has always said they also wanted to realize the cheaper segment in the Markthal." • RdJ: "In the end the idea came to make the Markthal more high-end." • MS: "The fact that the Markthal is more expensive is not a problem."
	Quality of products	• MS: "The quality of the Markthal and the Blaak market is especially important."
Market halls in the Netherlands		• RW: "I noticed that the Markthal principle comes forward in more places." • RdJ: "You notice now in other projects that people say: 'here we would like a mini-Markthal, a food court'."

The Markthal	Uniqueness	• RvdS: "It is very interesting, it is a unique building. How many market halls are there in the Netherlands? So that's very special." • RdJ: "It is nice to think: 'what are we doing with a Markthal?' Because it has never been built in the Netherlands in this way." • RdJ: "And I do think that wooden stalls wouldn't have worked and that it is good that they choose to […] create a new kind of market."
	Functions	• RvdS: "Essentially it is a world on its own that you are allowed to build next to the Laurenskerk." • RW: "The complexity of the building is special." • RdJ: [enumeration of all the functions of the Markthal] "And that makes such a project special, also makes the process special."
	Icon	• RvdS: "In the end, everybody calls it 'the Markthal'. It has also become an archetype in a sense, an entire generation is growing up with this image as a market hall." • MS: "Through the building of the Markthal, all efforts have been placed in a framework and been given an identity." • MS: "It is not possible to transport a market hall from a Mediterranean land to here."
The municipality of Rotterdam	The initial instructions	• RvdS: "And the question was: a market hall with some apartments at that location." • RvdS: "There had been a longstanding wish with the municipality to create a covered market hall." • RW: "That was the idea, to get the Blaak market to the inside, into a covered hall." • RdJ: "According to me, the municipality issued a contest to do something with a market and apartments on the square." • MS: "It had to become an iconic building, which would combine several functions."
	Choice for this design	• RvdS: "If they didn't want something iconic, they might have chosen a more modest design. And they didn't." • RW: "The idea came to them, they had a certain vision, to make an investment that was truly unique." • RdJ: "The municipality has, I think, tried to give everyone the Markthal mindset: 'we are going to make it happen together'." • MS: "In 2004 the then city board has said: 'we are going to make this development possible'."

		• RdJ: "I can imagine that Rotterdam picked this design, because the municipality wants to be a city of architecture and this fitted well." • MS: "The municipality has had courage to execute this design."
	Possible economic effects	• RvdS: "Especially an alderman that makes sure, in whatever time of crisis we are, that such a project is realized, and who has confidence that it will trigger the economy."
Design by MVRDV	The concept	• RvdS: "The strength was in the fact that Provast and MVRDV have shown very strong concept from the start." • RvdS: "The strength of the building is also that it has stayed very close to the initial idea." • RvdS: "From the beginning was to let the entire building emit food, but in the end the contrast between living and the market hall was shown." • RdJ: "The funny thing is, if you look at the first sketch by Winy Maas that is what is built." • MS: "And then Provast and MVRDV came with a very special design. And that has been executed, as they presented it then." • MS: "Most of them came with a traditional design. […] And this was very spectacular, we were very enamored with it."
	The ceiling	• RW: "In the beginning there was an idea to put LED in the ceiling. In the end it didn't work out because of costs." • RdJ: "I think the artwork really adds to the iconic character of the building." • RdJ: "The panels have been white for a long time, under the guise of: we need to do something with them. And then Provast decided to create a contest, which Arno Coenen won."
	The properties	• RdJ: "The Markthal was originally a covered outdoor space, but because of the allure the project received the expectations became different from the agreements." • RdJ: "It really is a covered outdoor space, in which it is only a bit less windy, not windy, or not rainy."
Rotterdam	Effect from the Markthal	• RvdS: "Yes, I really believe that the Markthal has increased tourism." • RdJ: "And then it lives. Then a piece of the city has been given back to the city, a new piece has been made." • MS: "The moment that the Markthal neared its completion was a turning point."

		• MS: "You hope that the through the Markthal and other facilities will boost the economy of Rotterdam."
	Effect from architecture	• RvdS: "You can criticize on specific part, but if you keep in mind what it has brought, I think it has been a good decision." • RvdS: "On the other hand, there is interest from international companies to establish themselves in Rotterdam."
	The image of the city	• RvdS: "And it is special what is happening now. Because someone has said: 'we are going to do great thing', an entire image changes." • MS: "It has had huge effect in publicity, also for the image of the city of Rotterdam. Indeed, as a city where special architecture is realized." • MS: "Suddenly Rotterdam has become hip."
Relationship Markthal and Blaak market	Flexible stalls	• RvdS: "There was always a hope that people from outside would come inside." • RdJ: "First the stalls were extremely flexible, stalls that could move from the outside to the inside."
	Fixed stalls	• RdJ: "Corio influenced the decision to create fixed stalls." • RdJ: "They have taken five years to develop this idea."
	Competition	• RvdS: "There was much resistance from people who had stalls outside and who thought it would collapse their businesses." • RvdS: "The funny thing is that their revenues are higher since the Markthal has been build."
	Mix	• RvdS: "From the beginning there has been a wish to connect the two qua lay-out, that there is a flow between the two." • MS: "The Markthal cannot be seen apart from the area, especially because there is a market next to it." • MS: "You have to remain alert: is everything functioning well, […] is the supply good."
Food trend		• MS: "It is not like you think of everything in advance: this is how it will be done. It is searching for chances and making sure they are used."
Policy	EU policy	• RvdS: "And then regulations in Europe changed and that caused some limitations on selling on the market." • MS: "There was also changing EU regulations, which made actions on the street, handling food forbidden. A facility had to be created where those actions could be done."

		• MS: "Those regulations have not been pushed in the end, so vendors could not be forced to relocate to the Markthal."
	Safety regulations	• RdJ: "Everything went very smoothly, even with the fire department, to make sure that a covered hall […] for which there are no requirements was safe.
	Area development	• MS: "Laurenskwartier had to become an attractive […] part of the downtown area." • MS: "The plans mention an icon on the Binnenrotte, as a face for that area development." • MS: "Rotterdam wants to be an attractive city, where you like to go out, to stay, to live."

D. Vendors' questionnaire and responses

Responses vendor survey, n=9, N=96.

Table D1 Table showing the vendor's questionnaire and responses.

Questions	***Responses***
Gender	• Male **(100%)**
Location of residence? ***(open question)***	• Drenthe • Oegstgeest • Piershil • Rotterdam (55.56%) • Waddinxveen
Where are other establishments of this store located? ***(open question)***	• Amstelveen, Hoofddorp • Amsterdam, Delft, Volendam, Zaandam, Edam • Gouda • Maassluis, H.I. Ambacht, Piershil, Ridderkerk • Oegstgeest • Rotterdam • Rotterdam, Barendrecht • Westland
What was the main objective for establishing yourself in the Markthal? ***(open question)***	• Green • The location • Many (touristic) visitors • New location in a big city • Rotterdam is emerging • The appearance • Try out • Visibility

The previously mentioned objective has been fulfilled.	● Strongly agree **(44.44%)** ● Agree **(11.11%)** ● Undecided ● Disagree **(22.22%)** ● Strongly disagree **(11.11%)** ● Unknown **(11.11%)**
Would you again decide to establish yourself in the Markthal?	● Yes, because of the previously mentioned objective. (**77.78%)** ● Yes, because of other benefits: namely… ● No **(11.11%)** ● Unknown **(11.11%)**
The architecture of the Markthal and the ceiling art have an effect on my product sales.	● Strongly agree **(33.33%)** ● Agree **(44.44%)** ● Undecided ● Disagree **(11.11%)** ● Strongly disagree **(11.11%)**
Can you select what most differentiates your products from those bought in a 'normal' supermarket?	● The quality of the product **(55.56%)** ● The purchasing experience **(44.44%)** ● The price of the product ● Other, namely:
I notice the influence of celebrity chefs and bloggers in my product sales.	● Strongly agree ● Agree **(11.11%)** ● Undecided **(66.67%)** ● Disagree **(22.22%)** ● Strongly disagree
Entrepreneurs in the Markthal work together and share knowledge with each other.	● Strongly agree ● Agree **(22.22%)** ● Undecided **(44.44%)** ● Disagree **(22.22%)** ● Strongly disagree **(33.33%)**

Cooperation between entrepreneurs in the Markthal has led to the emergence of new ideas, innovations and initiatives in the field of food.	• Strongly agree **(44.44%)** • Agree **(11.11%)** • Undecided • Disagree **(22.22%)** • Strongly disagree **(11.11%)** • Unknown **(11.11%)**
I would like to cooperate with other entrepreneurs to create new ideas in the field of food.	• Strongly agree • Agree **(33.33%)** • Undecided **(33.33%)** • Disagree **(22.22%)** • Strongly disagree **(11.11%)**
The Markthal has the potential to become a center for innovation in the field of food.	• Strongly agree **(22.22%)** • Agree **(33.33%)** • Undecided **(11.11%)** • Disagree **(22.22%)** • Strongly disagree **(11.11%)**

E. Visitors’ questionnaire and responses

Responses vendor survey, n=152, N= >8 million.

Table E1 Table showing the visitors’ questionnaire and responses.

Questions	***Responses***
Gender	• Male **(35.53%)** • Female **(63.82%)** • Unknown **(0.66%)**
Age groups	• Under 21 (**13.82)** • 21 to 32 **(31.58%)** • 33 to 42 **(14.47%)** • 43 to 52 **(20.39%)** • 53 to64 **(11.84%)** • 65 and older **(7.89%)**
What is/was your reason for visiting Rotterdam?	• Inhabitant of city **(40.13%)** • Tourist for a day **(47.37%)** • Tourist for a longer stay in Rotterdam **(3.29%)** • Work **(9.21%)**
Did you know of the existence of the Markthal before visiting Rotterdam or deciding to live/work/visit here?	• Yes **(66.45%)** • No **(6.58%)** • Not applicable **(26.97%)**
What is/was the reason for your visit to the Markthal?	• To purchase products **(20.39%)** • To see the architecture **(9.87%)** • To see the artwork on the ceiling **(4.61%)** • As a part of a touristic visit to Rotterdam **(11.84%)** • To experience the overall atmosphere **(38.16%)**

	• To make use of the parking garage or ATM **(1.32%)** • To visit a restaurant **(13.82%)**
How often have you purchased a product in the Markthal?	• Never **(21.71%)** • Once **(17.76%)** • Weekly **(4.61%)** • Monthly **(11.18%)** • Occasionally, not regularly **(44.08%)** • Unknown **(0.66%)**
Buying a product from a stall in the Markthal is different than buying the same product in a supermarket.	• Strongly agree **(25.66%)** • Agree **(48.03%)** • Undecided **(13.82%)** • Disagree **(10.53%)** • Strongly disagree **(1.97%)**
The products for sale in the Markthal are of higher quality than those from the supermarket.	• Strongly agree **(13.16%)** • Agree **(40.79%)** • Undecided **(30.26%)** • Disagree **(15.13%)** • Strongly disagree **(0.66%)**
I buy products in the Markthal that have been recommended to me by a celebrity chef, a magazine or blogger.	• Strongly agree **(3.29%)** • Agree **(4.61%)** • Undecided **(16.45%)** • Disagree **(30.92%)** • Strongly disagree **(44.08%)** • Unknown **(0.66%)**
The price level of the Markthal is higher than that of an ordinary supermarket.	• Strongly agree **(34.87%)** • Agree **(42.11%)** • Undecided **(17.11%)** • Disagree **(3.95%)** • Strongly disagree **(1.97%)**

The Markthal inspires me to try new things in the area of food.	● Strongly agree **(19.08%)** ● Agree **(36.18%)** ● Undecided **(20.39%)** ● Disagree **(19.08%)** ● Strongly disagree **(5.26%)**
The presence of the Markthal has made Rotterdam a more attractive city for me in the area of architecture.	● Strongly agree **(30.26%)** ● Agree **(40.79%)** ● Undecided **(13.16%)** ● Disagree **(10.53%)** ● Strongly disagree **(5.26%)**
The presence of the Markthal has made Rotterdam a more attractive city for me in the area of tourism.	● Strongly agree **(31.58%)** ● Agree **(36.18%)** ● Undecided **(17.76%)** ● Disagree **(9.87%)** ● Strongly disagree **(4.61%)**
The presence of the Markthal has made Rotterdam more attractive for me in the area of food.	● Strongly agree **(17.76%)** ● Agree **(29.61%)** ● Undecided **(23.68%)** ● Disagree **(23.03%)** ● Strongly disagree **(5.92%)**
The presence of architecture is a reason for me to live in/work in/ visit Rotterdam.	● Strongly agree **(21.05%)** ● Agree **(23.68%)** ● Undecided **(18.42%)** ● Disagree **(25%)** ● Strongly disagree **(11.18%)** ● Unknown **(0.66%)**

F. Means and ranges visitors' survey

The tables in this appendix show the means, standard deviations and ranges of the responses given by visitors to the nine statements in the survey. Visitors have been divided by location of residence, gender and age group. Strongly agree is represented by 1, agree by 2, undecided by 3, disagree by 4, strongly disagree by 5 and unknown by 0. Thus follows: the higher the mean, the more general disagreement towards the statement, the lower the mean, the more general agreement towards the statement.

Ranges show the spread of answers. If all responses have been given at least once the range is 4, namely 5-1. When this is not the case, the range is stated; for example 3 (1-4) means that the answer 'strongly disagree' (answer 5) has not been answered to this statement. When the range is 5, it means that someone could not or refused to answer this question (unknown=0).

Table F1 Means and standard deviations of the responses to the nine statements of visitors living outside Rotterdam and inside Rotterdam compared to the means and standard deviations of the total number of visitors.

	Total (n=152)	**Outside Rotterdam (n=91)**	**Rotterdam (n=61)**
Buying experience in Markthal is different	2.15 (SD=0.99)	2.14 (SD=0.97)	2.16 (SD=1.02)
Perceived higher quality of products in Markthal	2.49 (SD=0.93)	2.57 (SD=0.9)	2.38 (SD=0.97)
Product recommendations by celebrity chefs or bloggers	4.06 (SD=1.09)	3.93 (SD=1.09)	4.25 (SD=1.07)
Perceived higher price level in Markthal	1.96 (SD=0.93)	1.99 (SD=0.92)	1.92 (SD=0.94)
Markthal inspires to try new things in area of food	2.55 (SD=1.66)	2.4 (SD=1.16)	2.79 (SD=1.11)
Rotterdam more attractive architecturally	2.2 (SD=1.14)	2.32 (SD=1.26)	2.02 (SD=0.90)
Rotterdam more attractive in area of food	2.7 (SD=1.18)	2.68 (SD=1.19)	2.72 (SD=1.17)

Rotterdam more attractive in area of tourism	2.2 (SD=1.13)	2.18 (SD=1.17)	2.23 (SD=1.07)
Presence of architecture is reason to visit/ reside in/ work in Rotterdam	2.8 (SD=1.34)	2.7 (SD=1.38)	2.93 (SD=1.29)

Table F2 Ranges of the responses to the nine statements of visitors living outside Rotterdam and inside Rotterdam compared to the ranges of the total number of visitors.

	Total (n=152)	**Outside Rotterdam (n=91)**	**Rotterdam (n=61)**
Buying experience in Markthal is different	4	4	3 (1-4)
Perceived higher quality of products in Markthal	4	4	3 (1-4)
Product recommendations by celebrity chefs or bloggers	5	5	4
Perceived higher price level in Markthal	4	4	4
Markthal inspires to try new things in area of food	4	4	4
Rotterdam more attractive architecturally	4	4	4
Rotterdam more attractive in area of food	4	4	4
Rotterdam more attractive in area of tourism	4	4	4
Presence of architecture is reason to visit/ reside in/ work in Rotterdam	5	5	4

Table F3 Means and standard deviations of the responses to the nine statements of male and female visitors compared to the means and standard deviations of the total number of visitors.

	Total (n=152)	Male (n=54)	Female (n=98)
Buying experience in Markthal is different	2.15 (SD=0.99)	2.26 (SD=1.05)	2.09 (SD=0.95)
Perceived higher quality of products in Markthal	2.49 (SD=0.93)	2.57 (SD=0.96)	2.54 (SD=0.91)
Product recommendations by celebrity chefs or bloggers	4.06 (SD=1.09)	4.3 (SD=1.02)	3.93 (SD=1.11)
Perceived higher price level in Markthal	1.96 (SD=0.93)	2.05 (SD=0.96)	1.91 (SD=0.91)
Markthal inspires to try new things in area of food	2.55 (SD=1.66)	2.87 (SD=1.1)	2.38 (SD=1.15)
Rotterdam more attractive architecturally	2.2 (SD=1.14)	1.98 (SD=0.98)	2.32 (SD=1.21)
Rotterdam more attractive in area of food	2.7 (SD=1.18)	2.83 (SD=1.16)	2.62 (SD=1.19)
Rotterdam more attractive in area of tourism	2.2 (SD=1.13)	2.07 (SD=0.97)	2.27 (SD=1.21)
Presence of architecture is reason to visit/ reside in/ work in Rotterdam	2.8 (SD=1.34)	2.77 (SD=1.36)	2.81 (SD=1.34)

Table F4 Ranges of the responses to the nine statements of male and female visitors compared to the ranges of the total number of visitors.

	Total (n=152)	Male (n=54)	Female (n=98)
Buying experience in Markthal is different	4	4	4
Perceived higher quality of products in Markthal	4	4	3 (1-4)
Product recommendations by celebrity chefs or bloggers	5	4	5
Perceived higher price level in Markthal	4	4	4
Markthal inspires to try new things in area of food	4	4	4
Rotterdam more attractive architecturally	4	4	4
Rotterdam more attractive in area of food	4	4	4
Rotterdam more attractive in area of tourism	4	4	4
Presence of architecture is reason to visit/ reside in/ work in Rotterdam	5	4	5

Table F5 Means and standard deviations of the responses to the nine statements of visitors divided by age group compared to the means and standard deviations of the total number of visitors.

	Total (n=152)	Under 21 (n=21)	21 to 32 (n=48)	33 to 42 (n=22)	43 to 52 (n=31)	53 to 64 (n=18)	Over 65 (n=12)
Buying experience in Markthal is different	2.15 (SD=0.99)	2.05 (SD=0.8)	2.13 (SD=1)	2.14 (SD=0.99)	2 (SD=0.93)	2.39 (SD=1.04)	2.5 (SD=0.9)
Perceived higher quality of products in Markthal	2.49 (SD=0.93)	2.33 (SD=0.8)	2.6 (SD=1.05)	2.73 (SD=1.03)	2.23 (SD=0.8)	2.67 (SD=0.77)	2.33 (SD=0.89)
Product recommendations by celebrity chefs or bloggers	4.06 (SD=1.09)	4.29 (SD=1.19)	4.04 (SD=1.11)	3.95 (SD=1.25)	4.26 (SD=0.86)	4.06 (SD=1.06)	3.42 (SD=1.08)
Perceived higher price level in Markthal	1.96 (SD=0.93)	2.05 (SD=0.97)	1.79 (SD=0.97)	2 (SD=0.76)	1.97 (SD=0.87)	2.33 (SD=1.03)	1.83 (SD=0.94)
Markthal inspires to try new things in area of food	2.55 (SD=1.66)	2.62 (SD=1.36)	2.63 (SD=1.08)	2.55 (SD=1.26)	2.48 (SD=1.26)	2.39 (SD=0.92)	2.58 (SD=1.08)
Rotterdam more attractive architecturally	2.2 (SD=1.14)	2.24 (SD=1.26)	2.33 (SD=1.06)	2.14 (SD=1.13)	2.42 (SD=1.34)	1.72 (SD=0.96)	1.83 (SD=0.83)
Rotterdam more attractive in area of food	2.7 (SD=1.18)	2.52 (SD=1.21)	2.81 (SD=1.12)	2.86 (SD=1.32)	2.52 (SD=1.36)	2.72 (SD=1.02)	2.67 (SD=0.89)
Rotterdam more attractive in area of tourism	2.2 (SD=1.13)	2.76 (SD=1.48)	2.17 (SD=0.9)	1.91 (SD=1.19)	2.32 (SD=1.22)	2.17 (SD=0.99)	1.58 (SD=0.67)
Presence of architecture is reason to visit/ reside in/ work in Rotterdam	2.8 (SD=1.34)	3.05 (SD=1.43)	2.73 (SD=1.36)	2.82 (SD=1.44)	3 (SD=1.26)	2.44 (SD=1.25)	2.58 (SD=1.38)

Table F6 Ranges of the responses to the nine statements of visitors divided by age group compared to the ranges of the total number of visitors.

	Total (n=152)	Under 21 (n=21)	21 to 32 (n=48)	33 to 42 (n=22)	43 to 52 (n=31)	53 to 64 (n=18)	Over 65 (n=12)
Buying experience in Markthal is different	4	3 (1-4)	4	3 (1-4)	4	4	2 (2-4)
Perceived higher quality of products in Markthal	4	3 (1-4)	3 (1-4)	4	3 (1-4)	2 (2-4)	3 (1-4)
Product recommendations by celebrity chefs or bloggers	5	4	5	4	2 (3-5)	4	3 (2-5)
Perceived higher price level in Markthal	4	3 (1-4)	4	2 (1-3)	3 (1-4)	4	3 (1-4)
Markthal inspires to try new things in area of food	4	4	4	4	4	3 (1-4)	3 (1-4)
Rotterdam more attractive architecturally	4	4	4	4	4	4	3 (1-4)
Rotterdam more attractive in area of food	4	4	4	4	4	3 (1-4)	2 (2-4)
Rotterdam more attractive in area of tourism	4	4	3 (1-4)	4	4	4	2 (1-3)
Presence of architecture is reason to visit/ reside in/ work in Rotterdam	5	4	5	4	4	4	4