

Site selection and its relation to cannibalization of local market share

A case study on the EMS-Gym: COBRA FIT. Located in the city of Groningen, the Netherlands.

Rick Plegt
S3759059

Bachelor thesis
Faculty of spatial sciences
University of Groningen
January 2022

word count: 6408
Supervisor: dr. Michiel Daams

Summary

This study aims to gain a better understanding of the relationship between site selection and cannibalization of local market share, by means of a case study of an EMS-Gym in the city of Groningen, the Netherlands. In this research, quantitative research in the form of a questionnaire, held among current customers of COBRA FIT, is conducted. 35 respondents were given the choice between the current location and a provided test location, in order to test whether or not customers would leave the current location for the new location if one opened. The results of this questionnaire, in combination with existing literature on site selection, site selection for sport facilities and market cannibalization, are used to contribute to filling the research gap of the relationship between market cannibalization and site selection. It is concluded that cannibalization of market share will occur in the case of COBRA FIT, showing that cannibalization is a phenomenon that needs to be taken into consideration in their site selection. A binary logistic regression has been performed in order to test if respondents answered the questions solely based on their distance to a certain location, which turned out to be significant.

Table of contents

Summary	2
Table of contents	3
1. Introduction	4
1.1 Motivation and background	4
1.2 Research problem and questions	5
1.3 Thesis outline/reading guide	5
2. Theoretical framework	6
2.1 Site selection	6
2.2 Site selection for sports facility	9
2.3 Market cannibalization	10
3. Methodology	11
3.1 Case description and choice of research method	11
3.2 Research method	11
3.3 Data Collection & design of questionnaire	12
3.4 Ethical considerations	15
3.5 Processing gathered data	15
4. Results	16
4.1 Descriptive statistics	16
4.2 Binary logistic regression model on market cannibalization	21
5. Conclusion and recommendations	23
5.1 Reflection	25
6. Literature	26

1. Introduction

A risk in terms of site selection is market cannibalization (Drezner, 2011). This is especially true for EMS-gyms, as, in opposition to regular gyms, they have a small and specific target population (Malatesta et. al.,2003, Kayvan, 2011). EMS (Electromyostimulation) is a novel training method, widely applied in sports science, that focuses on involuntary muscle contractions instead of voluntary muscle contractions, which is the case for 'regular' sports. While it slowly becomes available to the general public, for now, it still has a small target population. Literature on site selection for regular gyms is limited (see for example Zhang et al., 2021), literature for site selection for EMS-gyms is non-existent. Using COBRA FIT, the first EMS-studio in Groningen, the Netherlands, as a case study, this research explores the risk of market cannibalization when selecting a new location for EMS-gyms.

1.1 Motivation and background

Deciding where to open a location or 'Site selection' as a practice has been formalized in the 1940's and 1950's as the United States government started selecting locations for projects in a more methodological approach. These projects then spilled over their methodological approach towards different sectors in which each adapted and formed these methods according to their own business activities (Kayacan & Yirmibeşoğlu, 2017).

One of the factors that is rarely specifically mentioned with regards to site selection, but is nonetheless of great importance, is market cannibalization (Drezner, 2011). Market cannibalization, often observed in the case of franchises, occurs when a new franchise is opened in close proximity to an existing franchise and takes away too many customers from the existing franchise. Market cannibalization in terms of retail location is considered to be a relatively unknown topic, leaving a gap in scientific research. Despite its relevance to providing people with access to health- and leisure-related service, there is no literature available on gyms and market cannibalization. Literature in a field that is not yet fully established in the market, such as EMS-gyms, is rare as well.

EMS-gyms fit in with today's rapid technological developments across a variety of industries that continuously change the environments we live in. Electric vehicles are disrupting the traditional car industry, houses being completely voice-controlled, and now EMS-Gyms are making an impact on how we keep our bodies in shape. EMS, or Electromyostimulation, is a methodology widely applied in sports science. Traditional gym training methods such as resistance training or lifting weights revolve around *voluntary* contractions initiated by one's central nervous system. EMS is based on *involuntary* contractions that are initiated by applying electrical current to the muscle. These electrical currents can be delivered through pads applied to muscle groups. The pads are often found inside suits that can be worn. EMS has a history of being used as a supplement or replacement to traditional training in rehabilitation settings. Developments in EMS technology resulted in the tech becoming more and more available to the general public (Malatesta et. al.,2003, Kayvan, 2011).

1.2 Research problem and questions

This research will contribute to researching market cannibalization by means of a case study of an EMS-Gym company that wants to open a second location in Groningen. COBRA FIT opened the first EMS studio in the city of Groningen, the Netherlands, in late 2020. The successful start of this location sparked interest in opening a second facility in or around the city of Groningen. As outlined in the previous paragraph, one of the challenges companies have to keep in mind when selecting a new location is market cannibalization.

In this study, quantitative data is gathered by means of a questionnaire. The questionnaire is distributed among current customers of COBRA FIT. The questionnaire is designed to gain insights on whether or not customers would prefer a new location above the current location, resulting in market cannibalization. These results in combination with existing literature will be used to answer the following main research question:

“How may site selection relate to the cannibalization of local market share?”

In order to answer the main research question, emphasis will be put on explaining what are important factors to take into consideration during site selection. Furthermore, site selection in relation to sports facilities will be analysed, as this is the closest available literature available in regards to EMS-Gym's. What is EMS and how it compares to regular gyms will be touched upon. Market cannibalization at the retail level will be examined and its relation to site selection for gyms will be discussed.

Applying this research question to a case study opens the possibility to generate and test a hypothesis (Flyvbjerg, 2006). On the misunderstanding that one cannot generalize from case studies, Bent Flyvbjerg states:

“One can often generalize on the basis of a single case, and the case study may be central to scientific development via generalization as supplement or alternative to other methods. But formal generalization is overvalued as a source of scientific development, whereas ‘the force of example’ is underestimated”

1.3 Thesis outline/reading guide

The first chapter of this research is the introduction to the topic. The second chapter discusses theory to explain the concepts used. In chapter three the methodology used to obtain data is discussed. It also covers ethical considerations and explains how data is calculated. Chapter four is where the results of the gathered data is discussed. In chapter five conclusions and recommendations are presented, as well as a reflection. The sixth and final chapter contains the used literature.

2. Theoretical framework

This chapter will discuss site selection and how it is related to market cannibalization, by defining important factors, theories and methods and discussing how these apply to the site selection of gyms. By comparing regular gyms to EMS gyms, differences with regards to these factors, theories and methods and their application will be defined.

2.1 Site selection

The formalization of site selection occurred in the 1940s and 1950s in the United States of America. The formalization of a number of U.S. government projects spread to different sectors, to which each sector adapted and created a list of criteria, taking into consideration the business activities that shaped these criteria. (Kayacan & Yirmibeşoğlu, 2017).

By discussing company-specific framework conditions in combination with psychological factors, Theodor Sabathil's 1969 dissertation has earned the status of being one of the first studies in the branch of international site selection. In this regard, Sabathil created a catalog of site selection factors and showed a theoretical approach in the selection of a location. However in his work, legal, natural and cultural site selection factors are absent (Glatte, 2015).

Years later, Thomas Goette's 1994 study makes an attempt at classifying four different site factors to provide structure in the selection of a location: economic factors, political factors, cultural factors and geographical factors. Goette's study signals that attempting to cover all these aspects will result in a loss of quality, due to not being able to take all factors into consideration (Kayacan & Yirmibeşoğlu, 2017). In order to avoid confusion surrounding the concept of site selection, it is necessary to adapt: each different type of organization may differ in business activities and therefore requires a hand-tailored approach to its site selection. Even though site selection factors differ across each sector and its companies, Kayacan & Yirmibeşoğlu (2017) argue that there are four main factors that should be considered for each type of company which can be seen in Table 1.

Table 1: Four types of factors with examples per factor.

Type of factor	Examples per type of factor
Economic factors	Raw materials, labour, energy, transportation, workforce and distance to market
Natural factors	Climate and topography, height, seismic zones, humidity levels, wind conditions
Social factors	Places where workers can socialize after work, companies that have environmental effects
Psychological and political factors	Personal conditions of the entrepreneur, state policies, incitements, facilities that care about human health and psychology

(Modified from source: Kayacan 2017).

Site selection factors can be divided and classified as quantitative and qualitative criteria (Glatte, 2015). In less formal terms, quantitative criteria are often translated into hard criteria, that can be directly measured in how strongly they contribute to a company's success, making them easy to compare between different locations. Examples are wage levels or distance to sources of raw materials. Qualitative criteria translate into soft criteria that are harder to quantify, often being socio-economic or psychological factors. Examples of soft site factors are conditions of life that a site or its surroundings have to offer. Soft criteria are harder to compare. A more detailed overview of examples and visualization can be found in Figure 1 below.

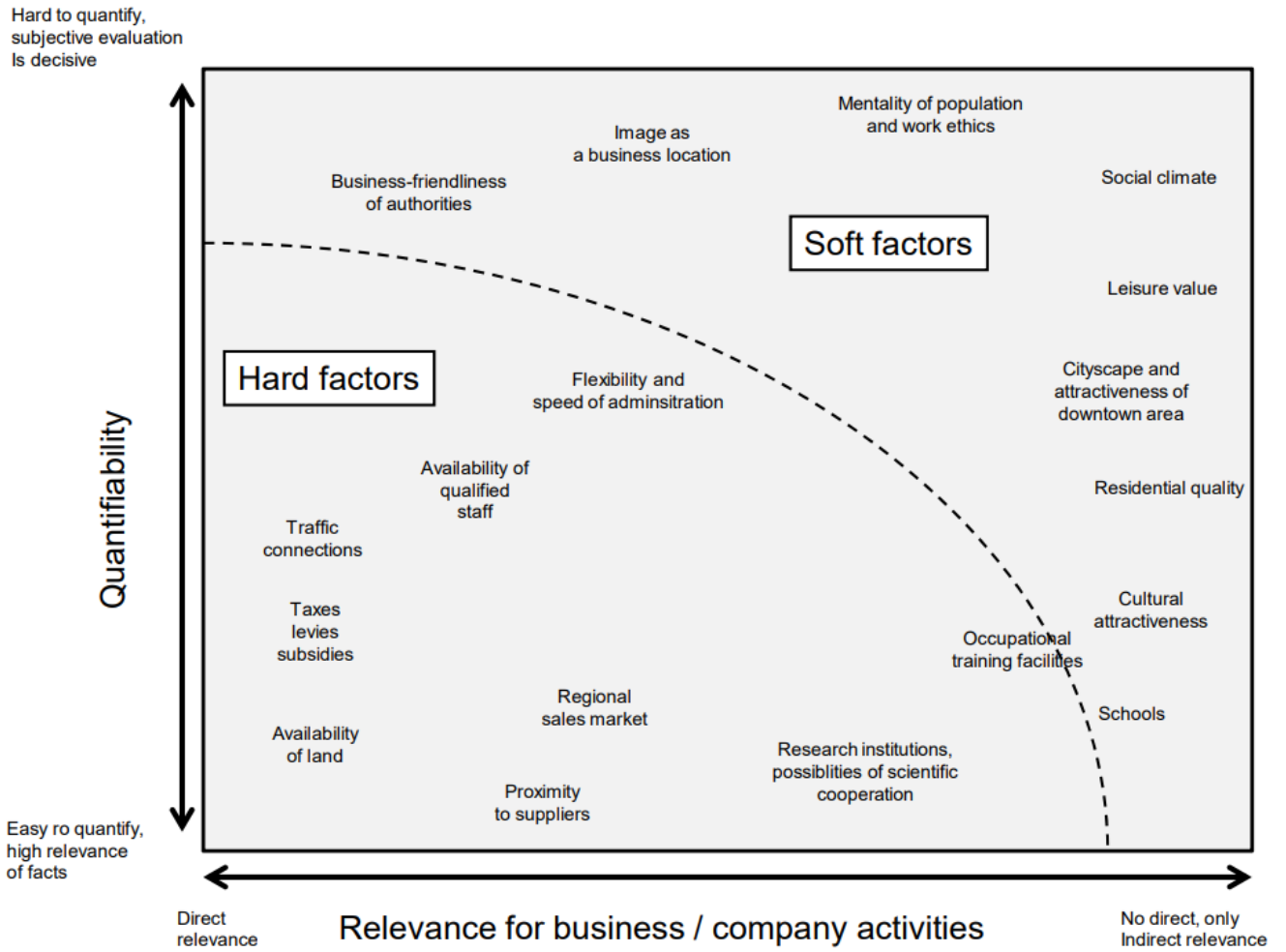


Figure 1: Visualization of hard factors and soft factors (Source: Glatte 2015)

2.2 Site selection for sports facility

Zhang et al. (2021) released an article on the designing process of their Sport facility Visual analysis system, SpoVis. SpoVis was created to function as an interactive visual analysis system for the planning and site selection of sports facilities. For this system, Zhang et al. (2021) have quantified what factors are deemed most important in the site selection process of sports facilities. To use these factors in their software, the factors needed to be usable in mathematical models. They selected or translated their factors to be easily quantifiable, hard factors.

Their system is based on the following factors: city population distribution, construction cost, existing sports facilities, traffic situation, and development potential (Zhang et al., 2021).

How these site selection factors, that are deemed most important to the site selection of sports facilities, relate to the four categorical factors described by Kayacan & Yirmibeşoğlu (2017) can be seen in Table 2. To better understand how development potential is defined by Zhang et al. (2021), it is required to see how their development parameter is defined. The parameter is defined according to the following sub-factors: Distance to a subway station, number of industrial and commercial areas within proximity and the number of government buildings, hospitals, schools and other social infrastructures developed regionally. As can be seen in Table 2, sports facility site selection factors have the largest overlap with the four general factors in the section of Economic factors. Notable also is that natural factors are not touched upon by the sports facility site selection factor.

Table 2: Comparison between factors stated by Kayacan & Yirmibeşoğlu (2017) and Zhang et al. (2021)

Four factors by Kayacan & Yirmibeşoğlu (2017)	Sports facility factors by Zhang et al. (2021)
Economic factors	City population distribution Construction cost Traffic situation Development potential
Natural factors	None
Social factors	City population distribution Existing sports facilities Development potential
Psychological and political factors	Development potential

(Modified from source: Kayacan (2017) and Zhang et al. (2021))

2.3 Market cannibalization

One of the factors that is rarely specifically mentioned with regards to site selection, but is nonetheless of great importance, is market cannibalization (Drezner, 2011). Market cannibalization or corporate cannibalism are terms used by marketers and can refer to several different phenomena of cannibalization. Two definitions of market cannibalization can be identified. The first one is the most commonly used in the field and research of marketing, whereas the second one is the definition that is applied in this research (Drezner, 2011).

The first definition refers to product cannibalization, which occurs when a company introduces a new product to an already existing product line at the expense of an already existing product (Drezner, 2011). The second definition, and the one used in this research, is cannibalization that occurs at the retail level of chain facilities, often observed in the case of franchises. This form of cannibalization occurs when a company opens a new retail facility in close proximity to an already existing one. For example, a city has one McDonald's restaurant, attracting people from all over the city. A franchisee then opens a second location, attracting customers from the first location and taking some of their market share. In contrast to product cannibalization which is well researched, cannibalization at the retail level is still widely overlooked (Drezner, 2011).

There are, however, documented cases of retail cannibalization occurring in the hospitality industry, for example among franchisers such as Holiday Inn and Days Inn. Many owners of such franchises believe that they lost customers due to cannibalization from new franchisees in their proximity. To minimize the impact of cannibalization, the hospitality industry has implemented the requirement that for the opening of a new franchisee a study must be done to determine if a proposed new location cannibalizes from already existing locations. Established units are required to be notified of the opening of a new location, typically being locations within a 15 mile (24,14 kilometers) radius. The locations within the proximity are then able to raise objections (Drezner, 2011).

When looking at the policy of franchise-gyms in the Netherlands, such as Fit20 (120 locations) and Anytime Fitness (100 locations) it becomes clear that they have several guidelines and requirements for new franchisees, to prevent facilities from cannibalizing amongst each other. Whereas the hospitality industry, as discussed by Drezner (2011), applies a 15-mile radius, Fit20 focuses for example on the number of inhabitants of a city or market area. They aim to have a franchisee's location in a city that has at least 25.000 inhabitants. If a larger city already contains a facility, the city will be divided into two or more districts. Then it is ensured that each location has exclusivity within a district.

3. Methodology

The thesis is based on quantitative data. The source of the quantitative data is a questionnaire held among existing customers of COBRA FIT. The on-paper data collection is described. In order to make the data more processable, the data is transformed into digital data.

3.1 Case description and choice of research method

COBRA FIT has been rapidly expanding its customer base since its inception in 2020. The rapid growth sparked confidence in opening a second location. For the selection of a second location, many factors have been taken into account, such as city population distribution, construction cost, existing sports facilities, traffic situation, and development potential (Zhang et al., 2021). To evaluate the option of opening a second location within the city of Groningen, market cannibalization is a phenomenon that has to be taken into consideration. To gain insight on whether or not the company would experience market cannibalization, a survey has been conducted to gain insight on customers behaviour in the case of opening a second location within a certain proximity of the current establishment.

3.2 Research method

Both quantitative and qualitative research have been considered. In the end, quantitative research was deemed more applicable. The benefits of quantitative research in contrast to qualitative research are that quantitative research is considered less subjective than qualitative research (Flyvbjerg, 2006). It has strong reliability by critical analysis. It is also easier applicable to a rather large group of people, which is required in a case where one wants to see and predict behaviour for a customer base of 150. In-depth interviews of 10 of the 150 customers selected at random could result in heavy bias by all respondents not being equally distributed in regards to how far they live away from the current location. A weakness that comes along with quantitative research is that it lacks human perception and no in-depth reasoning in choices (Flyvbjerg, 2006). A foreseen weakness that has been tackled partially by conducting the questionnaire in person. A qualitative approach in the form of a semi-structured or structured interview would not be fitting for this situation.

3.3 Data Collection & design of questionnaire

The questionnaire, which can be found in appendix A, consists of ten questions. The questionnaire starts with a short introduction describing the research and its goals, along with a short explanation of market cannibalization. The first seven questions are inspired by a form of analysis called 'Conjoint Analysis', which is a technique labelled as 'Consumer choice'. In the conjoint analysis, a consumer is provided with sets of options in which they decide which one gains their favour. It is used to gain knowledge of how attractive variations of products are relative to each other (Green & Srinivasan, 1978). In this research, the respondent is asked to decide between two locations, with the first one always being location (A), which is the current location, and the second one is one of the possible new locations. The respondent is asked which location they would prefer to go to while taking into account that the services, parking possibilities, accessibility and connectivity are identical to the current situation. This has been decided in order to make sure that the choice is fully based on location, and any foreknowledge on services, parking possibilities, accessibility and connectivity a respondent might have on the location is excluded. This approach allows determining whether or not market cannibalisation will occur.

Each possible new location has been chosen by the owners of COBRA FIT. All test locations are considered potential locations for various reasons. A short summary of the reasoning behind the locations can be found below in Table 3. See Figure 2 for a visualization of where each location is located. Respondents are provided with printed out maps of each location.

Table 3: Overview motivations provided by COBRA FIT for each test location.

Location	Motivation
A	Current location
B	Accessibility, High potential customer density, new villa district upcoming.
C	Eelderwolde and Haren close. Customers hinted at interest.
D	Excellent appearance for the brand. High potential customer density.
E	South Groningen has a relatively high income. The location has high visibility.
F	Closest accessible location to Schildersbuurt neighbourhood
G	Competitors location
H	Fitting sportly location. Lots of networking possibilities.

Current location (A) and test locations (B, C, D, E, F, G, H)

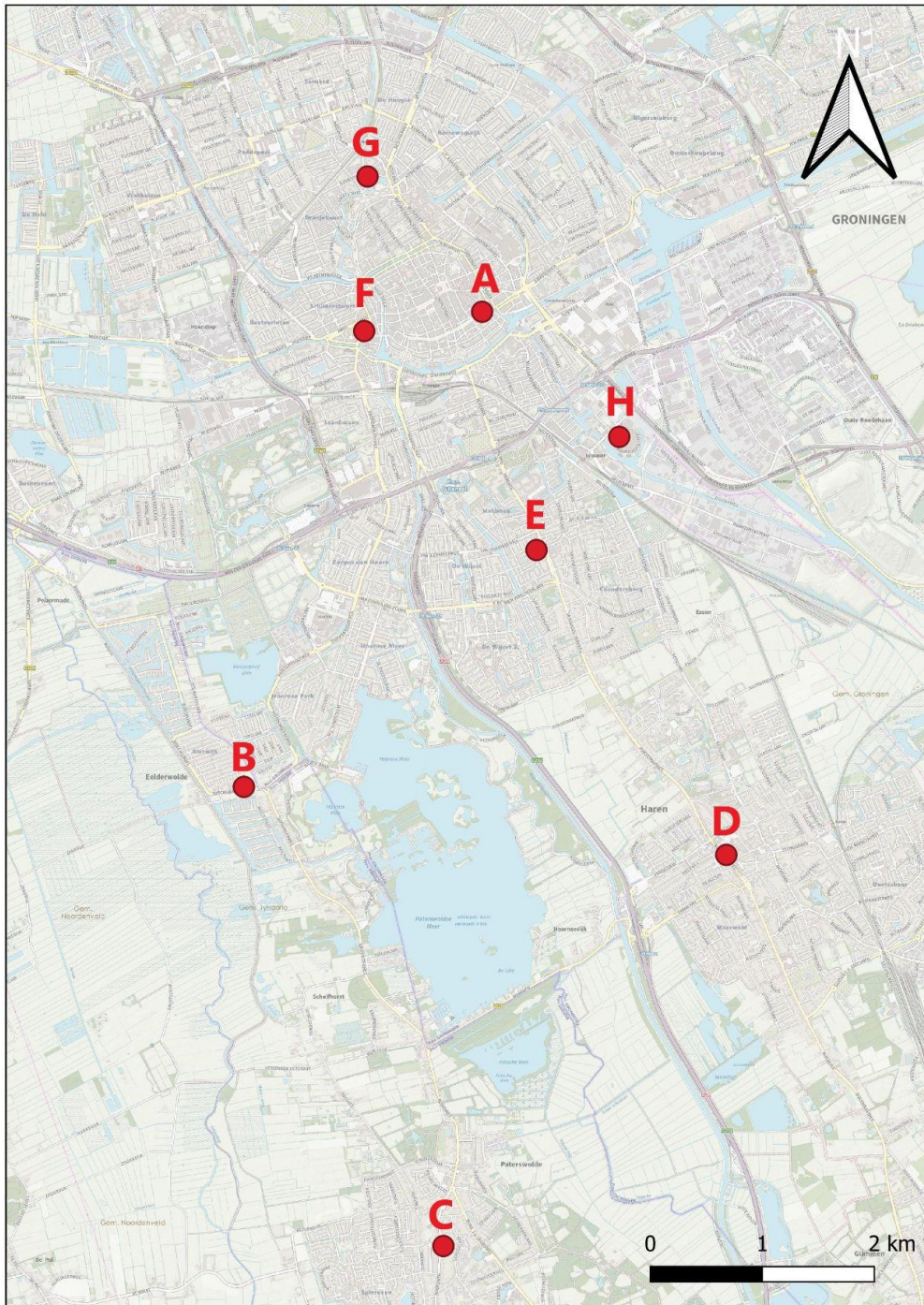


Figure 2: Visualization of current location (A) and test locations (B, C, D, E, F, G, H)

After the first seven questions choosing between two locations, in question eight the respondent is asked a forced choice: "In the case of the closing of current location A, which of the test locations would you prefer going to?" This is to gain information on which location would be most preferred in a situation in which a respondent chose several locations over the current location. Also, it will be compared to the free choice in order to double-check a possible most popular outcome and discover differences when respondents are forced to choose, compared to the free choice. Question nine is what method of transportation is mostly used to visit COBRA FIT. This is asked to estimate rough transportation time and see how distance relates to the choice of transport. Behaviour in choice of transport can be used to make predictions on which mode of transport would have been chosen in the scenario of transporting to a test location. The tenth and last question is 'what is your postal code'. The postal code is used to calculate the distance from their living area to each location.

The questionnaire (Appendix A) is in Dutch since all customers of COBRA FIT are of Dutch origin. The choice to do it in Dutch is to minimize the odds of miscommunication occurring.

The decision to do the questionnaire in person has been made in collaboration with the owners of COBRA FIT. They insisted heavily on doing it in person and their main motivations were that conducting it in person gives a better signal to the customers that is more aligned with their vision and appearance. Since they give semi-personal training to their customers, they are well connected to them. Doing the survey in person would allow the possibility to discuss the subject of site selection with their customers. This would also function as a sort of natural occurring interview, which allowed the owners to gain knowledge that would be of interest in their mission to find a second location, much more than it is for this research. Regarding this beneficial externality, the choice was made to conduct the surveys with the researcher or one of COBRA FIT's trainers present in order to answer questions in case of unclearness. The trainers have received instructions through text and two separate instruction videos explaining the questions and giving background information regarding the topic, in order for them to be able to explain unclarity as well rounded as possible.

As a backup, the survey has been recreated in Google Forms. Current conditions in the ongoing COVID-19 pandemic create an unpredictable work environment in which possibilities to meet people in person change weekly. The backup has been deployed only for several cases in which a person wanted to respond, but was not able to do so in person. The online survey has later been used as a format in which all on paper responses were translated into online results. After several changes, the questionnaire was held in a time period of two weeks. During these two weeks, 35 respondents filled out the questionnaire.

3.4 Ethical considerations

In the introduction of the questionnaire it is explained that all data will only be used for this research and shared with the University of Groningen in an anonymous way, as well as shared with the owners of COBRA FIT. The possibility was to ask for the respondents' names and look up their residential location in the system, but for privacy reasons, this has not been done. Questions often seen in questionnaires such as 'what is your age' and 'what is your gender' are not included. They are not directly of relevance to the research and leaving them out increases anonymity, which according to Faria & Dickinson (1996) is expected to increase the response rate. Gathering unnecessary information is also not considered ethical.

3.5 Processing gathered data

The results of the on-paper surveys have been put in the online Google Forms variant. The output has been analysed and used for calculations in both Excel and SPSS.

Google maps has been used to calculate the travel distance from respondents' residential area to the current and possible new locations of COBRA FIT. Google maps has been chosen to calculate since that is what respondents are most likely to use to find the route as well (Galov, 2021). Besides distance also travel time has been calculated from home address to the current location of Cobra Fit. This is done by using the travel time calculated by Google Maps. In order to eliminate varying travel times, the starting time of the journey has been set to the 15th of December at 00:00 in all calculations in order to assure the same results when calculating at different times of day.

4. Results

This chapter discusses and explains the results of the questionnaire. First descriptive statistics will showcase what the most popular locations were in both the free and forced-choice, and how these overlap and differ. Calculations required for the data generation of the binary logistic regression, that was run for each location to determine if respondents based their preference for a specific location on the distance they need to travel, will be discussed.

4.1 Descriptive statistics

Outcomes of calculations for average travel distance and average travel time for each method of transport and total average can be seen in Figures 3 and 4 below. Average travel distance was calculated in order to gain better insights into what can be considered extreme values.

Average travel distance from postal code to current location (A) in kilometers per type of transport

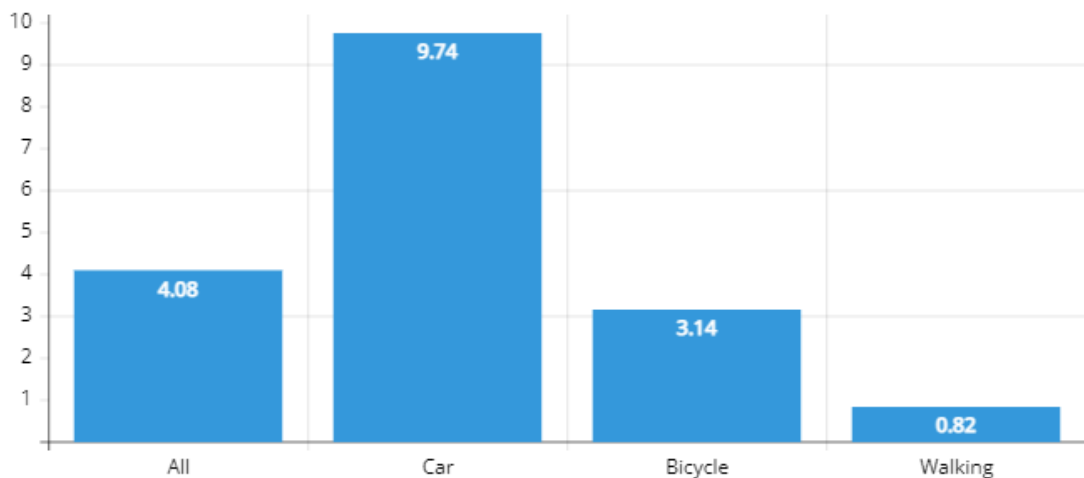


Figure 3: Graph containing average travel distance from postal code to current location of COBRA FIT in kilometers per type or transport.

The maximum distance for respondents travelling by foot is 1,3 kilometers. The two respondents cycling the shortest distance to the current location are travelling 0,9 and 1,4km respectively. To calculate to which location a respondent lives closer, a method of transport needed to be selected in order to gain a realistic result from the distance calculated by Google Maps. For example, for a person living 30 kilometers away from the test location, it is most likely that they would go by car. For a person living 1,0 kilometers away, it is more complicated. The person could go either on foot or by bicycle. However since there is only one case of a respondent walking more than 1,0 kilometers, the cut-off value for walking has been set at 0,9 kilometers. Distances under 0,9 kilometers have been calculated by distance walking, above by distance cycling. The cut of value from bicycle to car has been set at 4,0 kilometers, since only four extreme cases of people cycling more than 4,0 kilometers have been noted. The minimum distance a person chose to go by car was 2,3 kilometers. The average travel times of respondents in each type of transport category are all close to the average travel time. These calculations were required to calculate data used in the binary logistic regression in paragraph 4.2.

Average travel time from postal code to current location (A) in minutes per type of transport

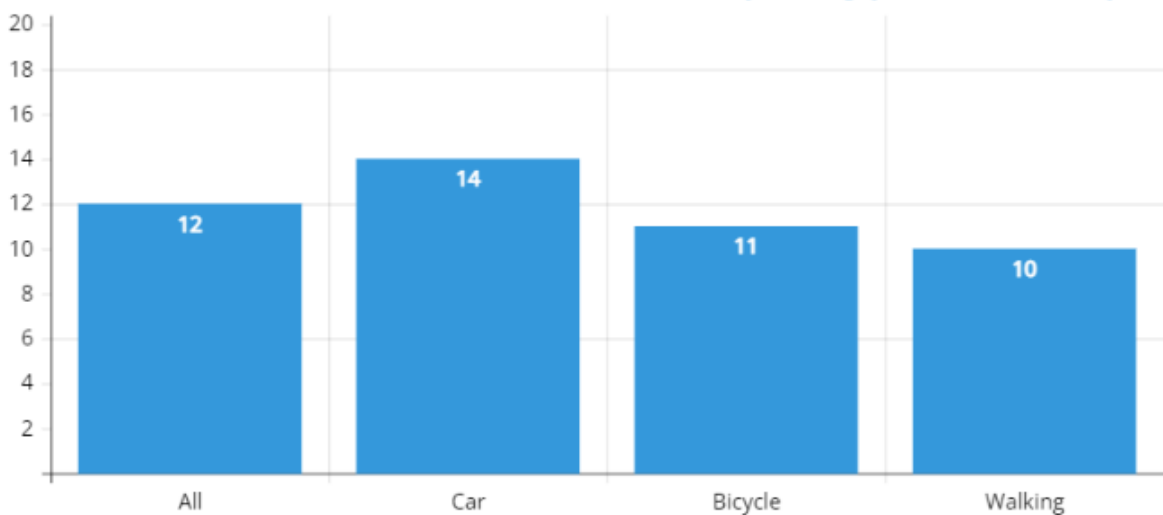


Figure 4: Average travel time from postal code to the current location (A) in minutes per type of transport

For the seven questions in which the respondent was asked which of the two locations would gain their favour, the results can be seen in Table 4. Most notably are location (F) and (G), the two locations that are closest to the current location (A). Location (F) even gained the majority in favour with 51.43 % or 18 out of the 35 respondents choosing (F) over (A). These two locations are if the answers are considered valid by the binary logistic model, the two locations that will cause the most market cannibalization among the test locations. Notable is that each location will cause some degree of cannibalization since each location has received votes for being preferred.

Table 4: Overview of results of choice between current location and test locations

Choice between location (A) and test location	Amount of respondents that chose the test location over (A) (N= 35)	Percentage of respondents that chose the test location over (A) (N= 35)
Test location B	4	11,43%
Test location C	2	5,71%
Test location D	2	5,71%
Test location E	4	11,43%
Test location F	18	51,43%
Test location G	10	28,57%
Test location H	5	14,29%

In Table 5 the amount and percentage of what respondents have chosen in the forced-choice are displayed. Most notably in the forced-choice, compared to the free choice, is that (F) is also the most selected option. The largest difference is that (G) is a lot less frequently chosen compared to the free choice. Notable is also that location (D) gained zero votes, while not being the furthest away from the current location (A).

Table 5: Overview of results of forced-choice between the current location and test locations

Forced choice between current location (A) and the test location	Amount of respondents that chose the test location over the current location (A) (N= 35)	Percentage of respondents that chose the test location over the current location (A) (N= 35)
Test location B	3	8,57%
Test location C	1	2,86%
Test location D	0	0%
Test location E	3	8,57%
Test location F	19	54,29%
Test location G	5	14,29%
Test location H	4	11,43%

Furthermore the distance as the crow flies between the test locations and the current location has been calculated and visualized in a map which can be seen in Figure 5. When looking at the distances of the test location and comparing it to the results in the free choice, displayed in table 4, there is a noticeable difference in the number of respondents that chose (G) and (H), even though both locations are roughly the same distance from the current location (A). (G) gained the favour of ten respondents, while (H) scored half of it.

Distance in kilometers between test locations and current location as the crow flies

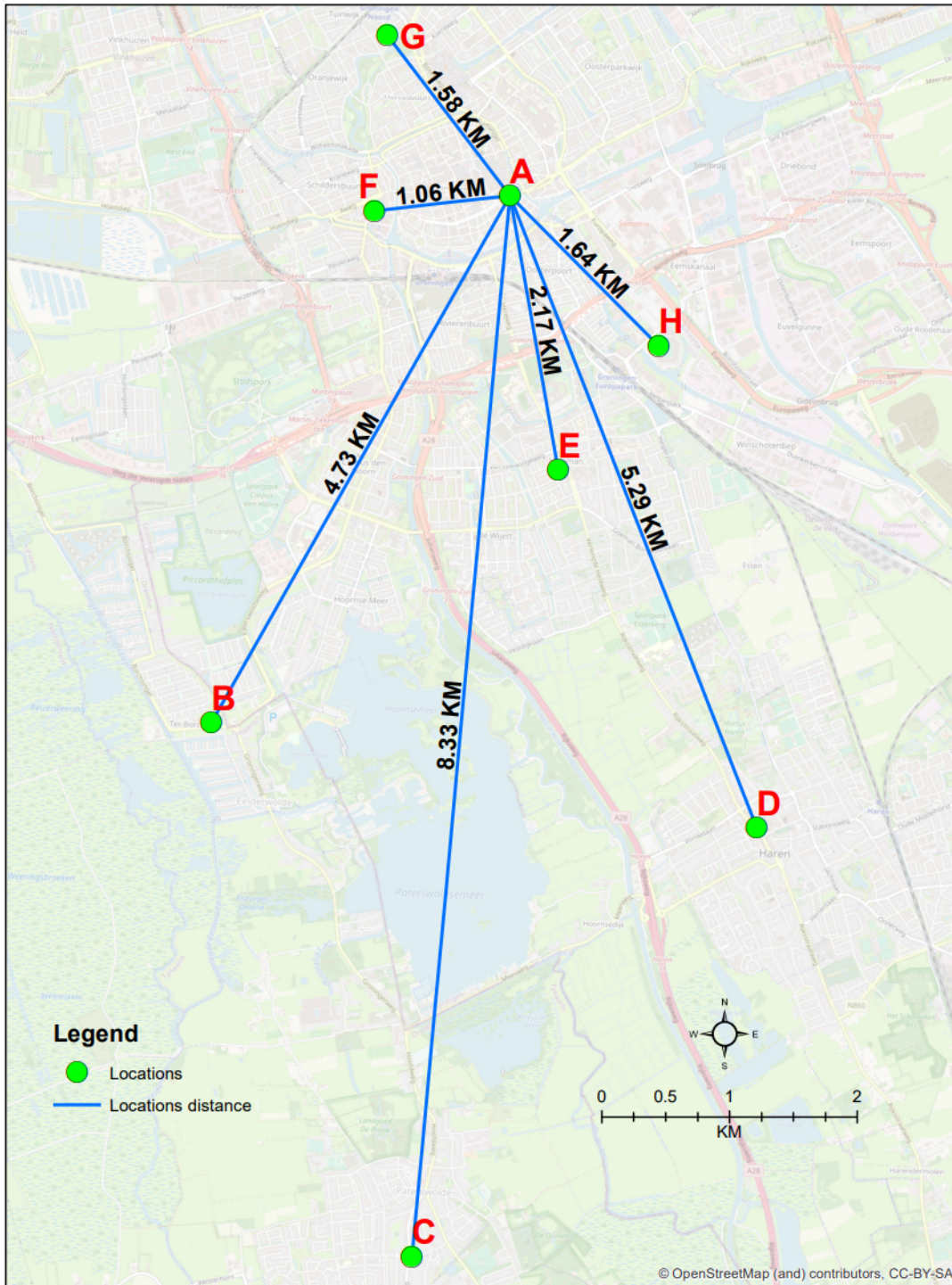


Figure 5: Distance in kilometers between test locations and current location as the crow flies

4.2 Binary logistic regression model on market cannibalization

To see if respondents based their preference for a specific location on the distance they need to travel, a binary logistic regression has been conducted in SPSS for each location. In each regression, the dependent variable consists of whether the respondent lives closer to the current location (A) or the test location (X), as a binary variable. The independent variable consists of the respondent's decision of which location they prefer, (A) or (X). This variable is a binary variable as well.

For the binary logistic regression, the following null hypothesis has been formulated:

H0 = In the population, there is no relationship between preferring an example location (X) over the current location (A) and living closer to that example location.

In the case of rejecting the null hypothesis, the alternative hypothesis will be accepted:

H1 = in the population, there is a relationship between preferring an example location (X) over the current location (A) and living closer to that example location.

The population in this null hypothesis is the whole customer base of COBRA FIT.

A probability value of $\alpha = .05$ is assumed for all tests.

A sample size of $n = 35$ is true for all tests.

The results for each binary logistic regression can be found in Table 6.

Table 6: Overview of results of binary logistic regression model per location.

Respondent living closer to	Significance	Exp(B)
Current location (A) or test location (B)	0.003	90.000
Current location (A) or test location (C)	1.0	5,331067 x 10 ¹³
Current location (A) or test location (D)	0.085	15.500
Current location (A) or test location (E)	0.031	14.500
Current location (A) or test location (F)	0.014	7.143
Current location (A) or test location (G)	0.009	9.333
Current location (A) or test location (H)	0.009	21.000

Table 6 provides an overview of all seven performed binary logistic regressions. The first column named 'Respondents living closer to' explains which location is showcased in the row. In the first row, the current location (A) and test location (B) are tested. The outcome of this regression turned out to have a significance level of 0.003, which can be seen in the second column 'Significance'. The last column 'Exp(B)' is the odds ratio, touching upon the odds of someone living closer to location B and because of that preferring location (B) above (A). In the example of (A) and (B), it reads that when a respondent lives closer to location (B), he or she is 90 times more likely to prefer location (B) above location (A). It has been decided to not dive deeper into the odds ratios for these regressions since the values do not really hold any true knowledge. Interestingly though, is that the most popular location (F) holds the lowest odds ratio of 7.143.

All results with a probability value under $\alpha = 0.05$ have been marked green in Table 6. For the locations (B), (E), (F), (G) and (H) the null hypothesis is rejected and the alternative hypothesis is accepted. By rejecting the null hypothesis, there is a risk of making a type 1 statistical error, which is rejecting a null hypothesis that is actually true.

In the population, there is a relationship between preferring (B), (E), (F), (G) or (H) over the current location (A), and living closer to that location. The answers to the questions in regards to location (B), (E), (F), (G) and (H) are therefore deemed valid: The respondents answered the questions based on their distance to these locations.

5. Conclusion and recommendations

The goal of this thesis was to identify the relationship between site selection and cannibalization of local market share, done through a case study on the expansion of the EMS-gym COBRA FIT located in Groningen, The Netherlands. This was done by analysing existing literature on site selection and market cannibalization, where the gap on these two phenomena in the academic literature that is present in regards to sports facilities and EMS-gyms became apparent. Market cannibalization at the retail level, in contrast to product cannibalization, is still widely overlooked (Drezner, 2011).

There are four main categories of site selection factors that should be considered for each type of company: Economic, Natural, Social and Psychological & political factors (Kayacan & Yirmibeşoğlu, 2017). These factors can be divided into quantitative or *hard* criteria and qualitative or *soft* criteria. Hard criteria are easily measurable and soft criteria are harder to quantify (Glatte, 2015). While considering the four main categories, each type of organization may differ in business activities and therefore require a hand-tailored approach to its' site selection.

Zhang et al. (2021) describe SpoVis (Sport facility Visual analysis system), an interactive visual analysis system for the planning and site selection of sports facilities. City population distribution, construction cost, existing sports facilities, traffic situation, and development potential are the five main factors for site selection for sports facilities in this system.

Market cannibalization at the retail level has been acknowledged by franchise gyms in The Netherlands, such as Fit20 and Anytime Fitness. Fit20 provides guidelines and requirements for new franchisees to prevent facilities from cannibalizing among each other. (Fit20, 2022)

The results of the questionnaire held among 35 current customers of COBRA FIT suggest that market cannibalization at the retail level is something to take into consideration in the process of site selection for EMS-Gyms in Groningen. In this case of COBRA FIT, cannibalization is most likely to occur when opening a location at or close to the provided potential location (F) which is 1,06 kilometers away from the current location, measured as the crow flies. Location (F) came out to be the most selected location in both the free choice and the forced choice. The second most selected location in the free choice is location (G), located at 1,58 kilometers from the current location, measured as the crow flies.

In order to test if the questionnaire was answered solely based on distance, the following null hypothesis was formulated and tested in a binary logistic regression for each of the example locations.

H0 = In the population, there is no relationship between preferring an example location (X) over the current location (A) and living closer to that example location.

The regression turned out to be significant for the locations (F) and (G), concluding in accepting the following alternative hypothesis.

H1 = In the population, there is a relationship between preferring an example location (X) over the current location (A) and living closer to that example location.

In conclusion, based on the questionnaire, there is a relationship between site selection and cannibalization of local market share in the case of the expansion of COBRA FIT in and around the city of Groningen. Further research needs to be done in order to determine the proximity between the current location and a new location in which COBRA FIT will experience an acceptable level of market cannibalization, as the exclusion of cannibalization is deemed to be impossible according to the results of the questionnaire.

The findings in this study may contribute to the existing gap of academic literature in regards to market cannibalization at the retail level, cannibalization among EMS-gyms and perhaps cannibalization among regular gyms.

It would be interesting to dive deeper into researching site selection and market cannibalization in regards to EMS-Gyms, as they are increasing in popularity. More differences and similarities could become apparent in comparison to site selection and market cannibalization of regular gyms. A similar study could be conducted in a different city and its surrounding, to see how the results play out in a different setting. More independent variables could be identified and tested to see whether and how they influence the strength of occurring cannibalism. More research could eventually lead to better strategies in site selection that make it easier to prevent cannibalism.

5.1 Reflection

Data was gathered in person by myself and the owners and employees of COBRA FIT. In hindsight, this method of data collection was too big of a risk. Even though this was beneficial for the company, its alternatives, such as an online questionnaire may have been a safer bet. The current ongoing COVID-19 pandemic was and is a highly uncertain and unpredictable time period. During the research, the time period in which data could be collected was limited. The start and end dates of data collection have changed multiple times due to the virus. I deem myself lucky that it all worked out in the end, as the safe working environment provided by the team made it possible to continue the research.

There was a challenge of showing multiple maps in a clear way to the respondents, which next time would require more preparations to contribute to the clearness. Doing it on paper also turned out to be contributing to unnecessary waste of paper and ink, which could be replaced next time by a tablet. Better streamlining of the process of data collection could also have contributed to gathering more responses.

Another obstacle that was not foreseen was the use of a binary logistic regression. The results of the questions on the questionnaire turned out to be hard to use in statistical analysis, resulting in the binary logistic regression turning out to be one of the only possibilities. Deeper thinking of the potential results could have opened the possibility of having multiple statistical analyses as options.

Challenging was researching a relatively new breakthrough as EMS in relation to a relatively underresearched topic as market cannibalization at the retail level. Literature was mainly aimed at a general approach to site selection. Contributing to these new fields turned out to feel rewarding.

6. Literature

Drezner, T. (2011) Cannibalization in a Competitive Environment, *International Regional Science Review*, 34(3), pp. 306–322.

Faria, A.J. & Dickinson, J.R. (1996). The effect of reassured anonymity and sponsor on mail survey response rate and speed with a business population, *Journal of Business & Industrial Marketing*, Vol. 11 No. 1, pp. 66-76.

Fit20, 2022. *fit20 franchise starten - waar begin jij een eigen fit20 studio*. [online] Available at: <<https://fit20franchise.nl/waar-begin-jij-jouw-studio>> [Accessed 4 January 2022].

Flyvbjerg, B. (2006) Five Misunderstandings About Case-Study Research, *Qualitative Inquiry*, 12(2), pp. 219–245.

Galov, N., (2021). *17+ Google Maps Statistics to Survey in 2021*. [online] HostingTribunal. Available at: <<https://hostingtribunal.com/blog/google-maps-statistics/#gref>> [Accessed 25 January 2022].

Glatte, T. (2015). Location Strategies: Methods and Their Methodological Limitations. *Journal for Engineering, Design and Technology*, 13, pp. 435-462.

Goette, T. (1994). *Location Policy of International Business*. Wiesbaden: German University Publishers. XXVI.

Green, P. E., & Srinivasan, V. (1978). Conjoint Analysis in Consumer Research: Issues and Outlook. *Journal of Consumer Research*, 5(2), pp. 103–123.

Kayacan, T. and Yirmibeşoğlu, F. (2017) Site Selection Criteria for Sports Retail Sector: Istanbul Case. *Current Urban Studies*, 5. pp. 290-304.

Kayvan, S. & Maffiuletti, N. A. (2011) Effect of Electromyostimulation Training on Muscle Strength and Sports Performance. *Strength and Conditioning Journal*, 33. Pp. 70-75.

Malatesta, D., F. Cattaneo, S. Dugnani, & N.A. Maffiuletti. (2003) Effects of electromyostimulation training and volleyball practice on jumping ability. *The Journal of Strength and Conditioning Research*, 17.p 573-9

Zhang, K. Chen, H. Dai, H. Liu, H. and Lin, Z. (2021). SpoVis: Decision Support System for Site Selection of Sports Facilities in Digital Twinning Cities. *IEEE Transactions on Industrial Informatics*, vol. 18, no. 2.

Enquête tweede locatie COBRA FIT

Beste COBRA FIT klant!

Aangenaam! Mijn naam is Rick. Trouw klant, fan en vriend van COBRA FIT! Voor mijn afstudeerscriptie van de bachelor 'Human Geography & Planning' doe ik onderzoek naar het fenomeen 'Markt kannibalisatie'* in relatie tot locatie selectie van uitbreidende bedrijven. Hartelijk dank aan iedereen die de moeite neemt om deze enquête in te vullen.

Het doel van deze enquête is om inzicht te krijgen bij welke afstand de huidige klanten van COBRA FIT een nieuwe locatie de voorkeur geven ten opzichte van de huidige locatie. In elk van de onderstaande vragen is het de bedoeling om aan te vinken welke van de twee de voorkeur krijgt: de huidige of de nieuwe locatie.

Bij de voorbeeld locaties draait het om de locatie. Voorzieningen als parkeergelegenheid, bereikbaarheid en grootte van het pand mogen als gelijkwaardig beschouwd worden als dat van de huidige locatie.

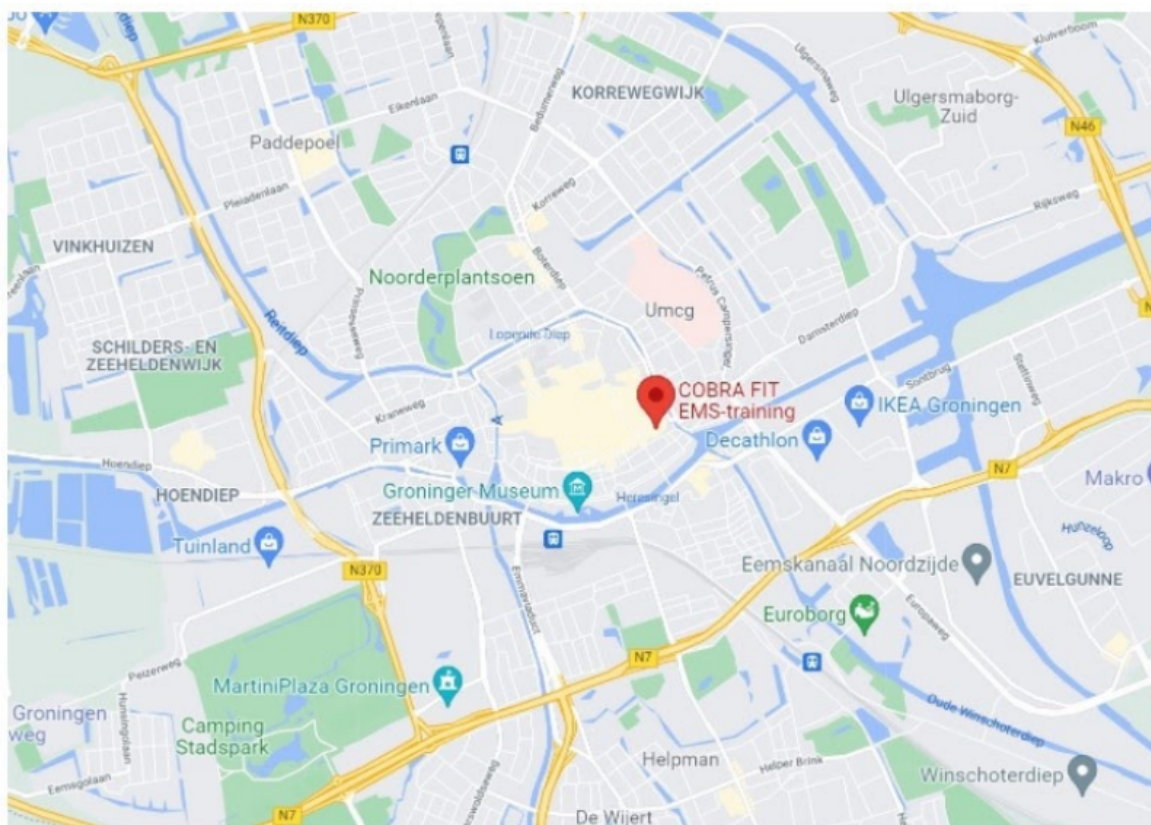
De enquête is volledig anoniem en de verzamelde gegevens worden gebruikt in een afstudeerscriptie en gedeeld met de Rijksuniversiteit Groningen.

* Markt kannibalisatie kan voorkomen wanneer een bedrijf een extra locatie opent binnen een afstand van de originele locatie. Op het moment dat klanten van de eerste locatie overstappen naar de tweede locatie is het bedrijf in concurrentie met zichzelf en spreekt men van kannibalisatie.

7 mogelijke locaties

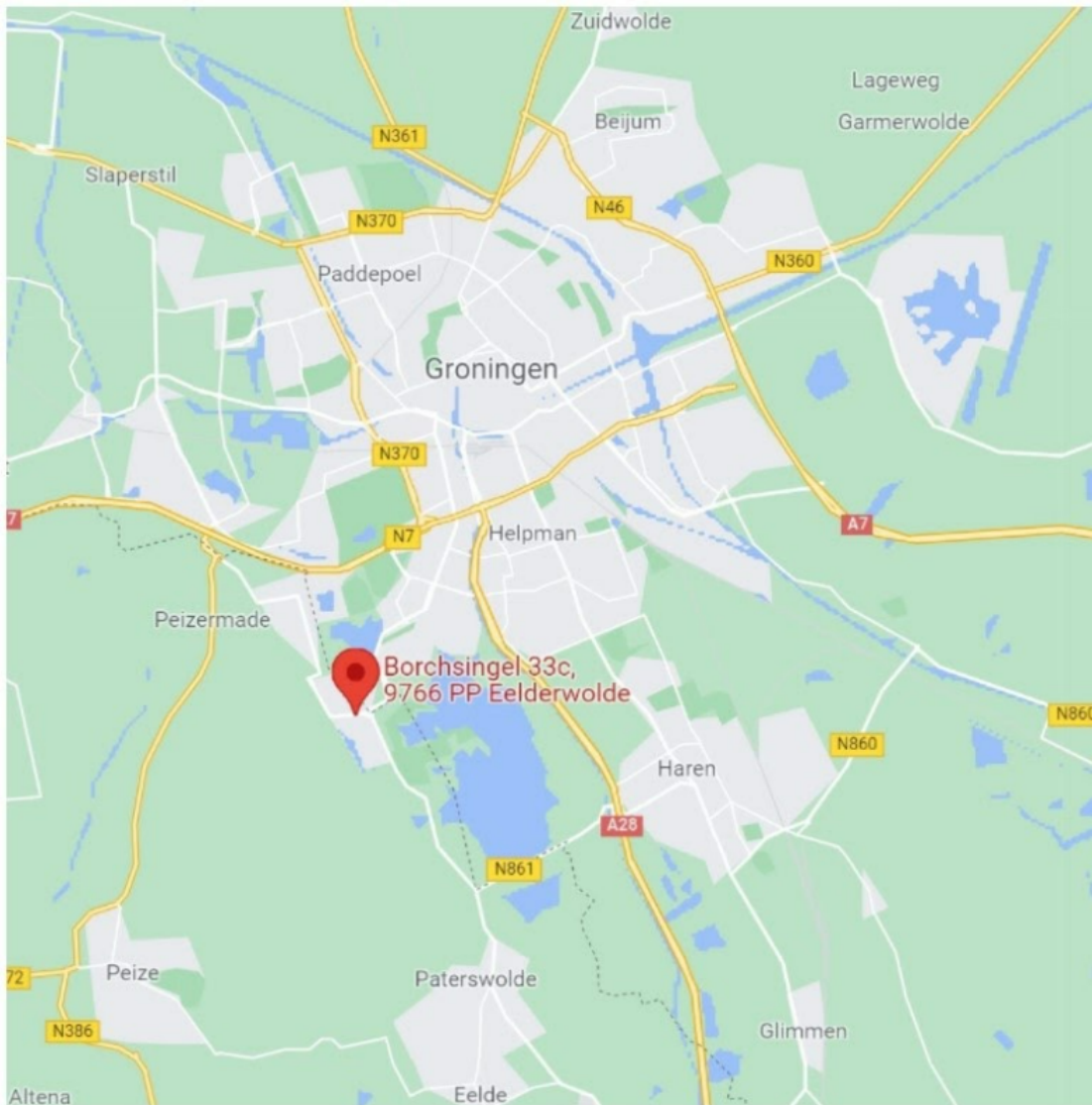
Bij de komende 7 vragen is het de bedoeling te kiezen voor de huidige locatie (A) of een van de voorbeeld locaties (B/C/D/E/F/G/H). Vink de voorkeurslocatie aan. Neem in acht dat het bij de voorbeelden draait om de locatie. Er moet van uitgegaan worden dat parkeergelegenheid, bereikbaarheid en voorzieningen soortgelijk zijn aan dat van de huidige locatie. De locaties zijn te zien op de bijlagen.

Dus stel locatie A en B zijn beide geopend, naar welke locatie zou u toegaan?



Huidige
locatie

A



Locatie B

Vraag 1: Naar welke van de twee locaties gaat uw voorkeur uit? (A of B) *

- Locatie A
- Locatie B

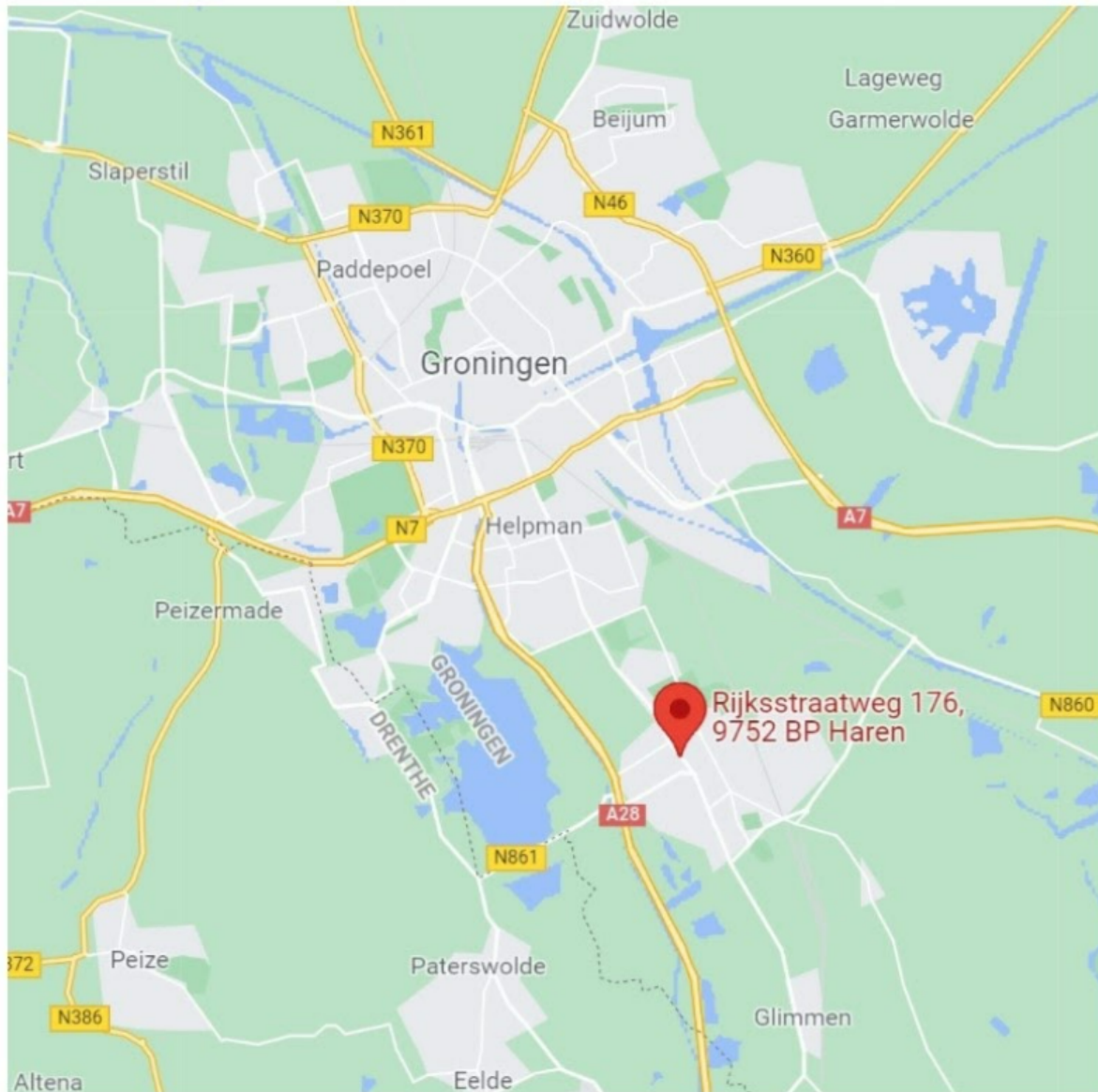


Locatie C

Vraag 2: Naar welke van de twee locaties gaat uw voorkeur uit? (A of C) *

Locatie A

Locatie C



Locatie D

Vraag 3: Naar welke van de twee locaties gaat uw voorkeur uit? (A of D) *

Locatie A

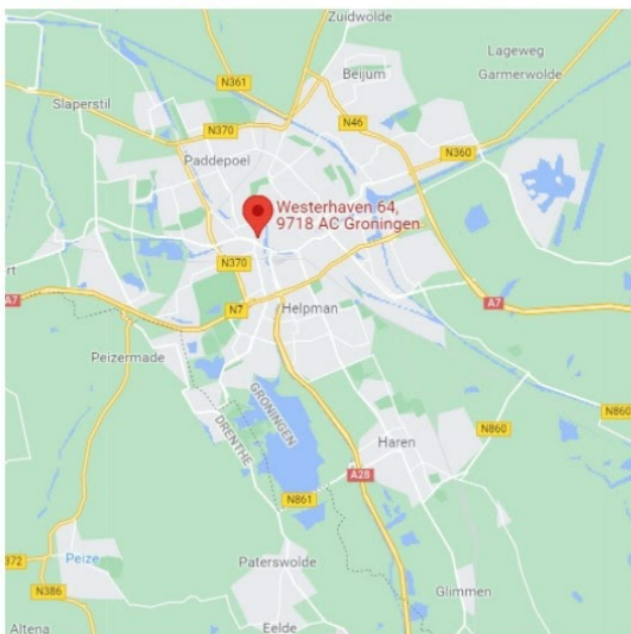
Locatie D



Locatie E

Vraag 4: Naar welke van de twee locaties gaat uw voorkeur uit? (A of E) *

- Locatie A
- Locatie E



F

Vraag 5: Naar welke van de twee locaties gaat uw voorkeur uit? (A of F) *

- Locatie A
- Locatie F



G

Vraag 6: Naar welke van de twee locaties gaat uw voorkeur uit? (A of G) *

- Locatie A
- Locatie G



H

Vraag 7: Naar welke van de twee locaties gaat uw voorkeur uit? (A of H) *

- Locatie A
- Locatie H

Vraag 8: Stel de huidige locatie (A) moet sluiten. Welke van de nieuwe locaties zou dan uw voorkeur krijgen? (Vink één antwoord aan) *

- Locatie A
- Locatie B
- Locatie C
- Locatie D
- Locatie E
- Locatie F
- Locatie G
- Locatie H

Vraag 9: Welk vervoermiddel gebruikt u het vaakst bij het bezoeken van COBRA FIT? *

- Auto
- Fiets
- Lopend
- Openbaar vervoer

Vraag 10: Wat is uw postcode? *

Jouw antwoord _____