Prioritizing improvements at a shopping mall using an IPA framework approach

Alexander Andersen
Ludvig Brewitz

BACHELOR THESIS 2014
Industrial Engineering and Management with specialization within Logistics and Management
This bachelor thesis has been performed at Jönköping School of Engineering within the field of Industrial Engineering and Management with specialization within Logistics and Management. The authors are responsible for the stated results, opinions and conclusions.

Examiner: Per Hilletofth

Mentor: Roy Andersson

Scope: 15 hp (Bachelor level)

Datum: 26 August 2014
Abstract

Purpose – The purpose of this thesis work is to develop a model which can aid in prioritizing which customer service that should be the focus of improvement, using the two parameters; customers’ judgment of importance and the current performance as perceived by the customer. The thesis work examines customer services within a shopping mall in Thailand. To fulfill the purpose, three research questions were stated:

1. How important is each of the three customer services: safety & security, cleaning operation and guest service according to the customer in a shopping mall in Thailand.
2. How do Thai customers rank the current performance of the three customer services: safety & security, cleaning operation and guest service in a Thai shopping mall?
3. How can a model be developed to aid in prioritizing where to focus improvements by combining values of customers’ judgment of importance and current perceived performance of the three customer services?

Methodology – The gathering of data was done by interviewing and observing personnel of different customer services. This information was then used in creating surveys for the customers of the shopping mall to answer questions regarding the importance and performance of each service. A model was developed based on theories and the data gathered from the case study was used to illustrate its functions.

Findings – The result of the first two research questions provided data which was used as input in the model created. The model is based on several theories and uses a “percentage of max” value to enable comparison between values. The model limits the “actual improvement” received when suggesting an improvement of a certain percentage by taking different theories into account.

Implications – The model is made solely based on theories regarding customer satisfaction and performance and should therefore be seen as a guideline for practical use. The model focuses on the relation between importance and performance without any consideration to costs or any other parameters which has to be investigated and taken into consideration by the management team.

Research limitations – This thesis work has been based around a single case study of a shopping mall in Thailand which could limit its generalization. However the model is solely based on theory and the data from the case study has only been used to test the model. Thus, the model should be applicable for other similar companies as long as the same input data can be gathered. Further studies could be done regarding how costs can be applied to the model as well as how different measurements. For example, the relation between amount of customers and amount of workers can be used in combination with the model.
# Table of content

1 Introduction ........................................................................................................... 7  
   1.1 BACKGROUND .................................................................................................. 7  
   1.2 PROBLEM DESCRIPTION .................................................................................. 9  
   1.3 PURPOSE AND RESEARCH QUESTIONS .......................................................... 11  
   1.4 SCOPE AND DELIMITATIONS ........................................................................... 12  

2 Method and implementation ................................................................................. 15  
   2.1 LINK BETWEEN RESEARCH QUESTIONS AND METHOD ............................... 15  
   2.2 WORK PROCESS .............................................................................................. 15  
   2.3 RESEARCH APPROACH .................................................................................... 16  
   2.4 CASE STUDY .................................................................................................... 16  
   2.5 DATA COLLECTION ........................................................................................... 17  
   2.6 DATA ANALYSIS .............................................................................................. 20  
   2.7 RELIABILITY & VALIDITY ............................................................................... 21  

3 Theoretical framework ......................................................................................... 23  
   3.1 LINK BETWEEN RESEARCH QUESTIONS AND THEORY ............................... 23  
   3.2 THEORY OF CONSTRAINTS ............................................................................. 24  
   3.3 CUSTOMER SATISFACTION ............................................................................. 25  
      3.3.1 Herzberg’s two-factor theory ..................................................................... 26  
      3.3.2 Kano .......................................................................................................... 27  
   3.4 IPA .................................................................................................................... 28  

4 Empirical data ...................................................................................................... 31  
   4.1 COMPANY DESCRIPTION ............................................................................... 31  
      4.1.1 Safety & Security – G4S .......................................................................... 31  
      4.1.2 Cleaning operation – PCS ......................................................................... 32  
      4.1.3 Guest service – 3P Professional ................................................................. 33  
   4.2 SURVEY RESULT ............................................................................................. 34  

5 Analysis ............................................................................................................... 35  
   5.1 ANALYSIS OF SURVEY RESULTS: RESEARCH QUESTION 1 .......................... 35  
   5.2 ANALYSIS OF SURVEY RESULTS: RESEARCH QUESTION 2 .......................... 37  
   5.3 ANALYSIS OF RESEARCH QUESTION 3 ............................................................ 38  

6 Discussions and conclusion ................................................................................. 47  
   6.1 RESULT AND CONTRIBUTION ........................................................................ 47  
   6.2 IMPLICATIONS ................................................................................................. 51  
   6.3 LIMITATIONS ................................................................................................... 51  
   6.4 CONCLUSION AND FURTHER RESEARCH .................................................... 54  

References .............................................................................................................. 55  
Appendices .............................................................................................................. 63
Table of content

Figures

Figure 1: Connection between mall management and dimensions of mall image .......................... 9
Figure 2: Scope of examined services .................................................................................................. 13
Figure 3: Connection between research questions and methods .................................................. 15
Figure 4: Data analysis ......................................................................................................................... 20
Figure 5: Connection between research questions and theory ...................................................... 23
Figure 7: The original IPA framework (Martilla & James, 1977) ...................................................... 29
Figure 8: Choice model of different possible improvements ............................................................. 43
Figure 9: Choice model of different possible improvements: Case example .................................... 44

Tables

Table 1: Interviews together with observations .................................................................................... 18
Table 2: Distribution of surveys ............................................................................................................. 18
Table 3: Research question 1 .................................................................................................................. 34
Table 4: Research question 1 .................................................................................................................. 35
Table 5: Grading system ........................................................................................................................ 36
Table 6: Importance, general question .................................................................................................. 36
Table 7: Importance specific question .................................................................................................. 36
Table 8: Service performance and importance .................................................................................... 37
Table 9: Service importance .................................................................................................................. 48
Table 10: Service performance .............................................................................................................. 49

Equations

Equation 1: Percentage of max grade .................................................................................................. 35
Equation 2: Mean grade with grading system ...................................................................................... 36


1 Introduction

This chapter gives an introduction of the current research in this field. Initially background will explain key motives of the study. It breaks down to a more detailed problem description. Followed by study’s purpose together with three research questions. Scope and delimitations clarify the study’s area of focus. Finally in disposition the reports structure and layout is described.

1.1 Background

For over half a century, services have dominated the western economies. Looking at a worldwide perspective, services are now the largest economic sector (Maglio et al., 2010). In the current globalized world, a lot of different industries are affected by logistics, industrial management and operations management. Theories based around industrial economics can often together with operations management literature be alternated to fit the selected industry (Heizer & Render, 2011). According to Levitt (1972; 1976), studies have shown that when the same care that was taken in the manufacturing sector regarding planning, controlling, quality, improvement and client reaction is taken, then the service industry could reach a much higher client satisfaction. Later studies have been able to link customer satisfaction, loyalty and profitability to how it impact a service company (Voss et al., 2005). Jones and Sasser (1995) identified in their study the connection between customer satisfaction and loyalty, which influence the competitive environment of the service sector. Nagar and Rajan (2005) as well as Hays and Hill (2006) identified the long-term financial impact customer satisfaction has on the business. Customer loyalty is also contributory factor of the companies’ economic outcomes (Hays & Hill, 2006).

Shopping malls around the world is essentially providing a service by gathering several stores at the same place while providing additional services, in the form of different kinds of maintenance of the shopping mall and its surroundings. Because of this, management of shopping malls can be seen as belonging within the service industry sector. Shopping malls are according to Guy (1994) defined as “a planned retail development comprising at least three shops, under one freehold, managed and marketed as a unit”. Shopping malls usually includes a large number of stores that in many cases differs in quality and variety to complement one another, to provide an appealing one-stop shopping experience (Haytko & Baker, 2004). Shopping mall management is usually controlled by a management company who runs several shopping malls (Green, 1996). The management workforce consists of people handling the day-to-day business running the shopping mall. This includes technical maintenance, safety & security and guest service, cleaning maintenance as well as marketing and administration (Green, 1996).

So far, research has indicated that competition between shopping malls increase due to increased number of new and planned shopping malls (Kirkup & Rafiq, 1994; Raajpoot et al., 2008). One of the key concerns of shopping mall management is to attract shoppers and obtain their loyalty (Babin & Attaway, 2000). The management function of shopping malls has struggled to identify factors that affect shopping mall patronage for a long time (Burns, 1992; Kenney,
Shopping malls that can generate more traffic can usually demand higher lease price from its store tenants. This is caused by the additional traffic that the shopping mall can generate is usually connected to more store traffic and more sales (Chebat et al., 2010).

Ailawadi and Keller (2004) proposed that there are five major dimensions of store image which Chebat et al. (2010) argues are also applicable to shopping malls: access, atmosphere, price and promotion, cross-category assortment, and within-category assortment. Shopping mall access is a measurement of how accessible a shopping mall is to the customer. In the form of location of the shopping mall but also different kind of services related to accessibility within and around the shopping mall such as elevators and escalators and parking spaces. Shopping mall atmosphere is a definition of how the customer’s perception of the aesthetic and ambience of the shopping mall is fulfilled. The shopping mall environment based around music, colour, the amount of people visiting the shopping mall but also cleanliness and the feeling of safety is of high importance in shopper’s perception of a shopping mall (Andreu, et al., 2006; Babin & Attaway, 2000; Grewal, et al., 2003; Keng, et al., 2007; Michon et al., 2005; Michon et al., 2007; 2008). Price and promotion is referred to as the customer’s perception of a shopping mall’s prices as well as promotional events. Cross-category assortment is the customer’s perception of the width of products and services offered within the shopping mall. Within-category assortment is similar to cross-category assortment but refers to the depth of each product or service category (Ailawadi & Keller, 2004). Chebat et al. (2010), however describes this as rather than the amount of different products within a category, it is the customers preference for a shopping mall’s different brands and services that affect the image. (Chebat et al., 2010). By being favourable in the five major dimensions in the minds of the customers, positive attitude and shopping mall patronage will most likely be fulfilled (Chebat et al., 2010).

Different services provided by shopping malls can be categorized in different ways including dividing the services between internally provided services and outsourced services. Internally provided services are services which the shopping mall provide using their own personnel, knowledge and equipment, while outsourced services are provided by external companies who are specialized in different fields (Williams 2011). Services within a shopping mall can also be categorized in the different mall dimensions by using the descriptions of image used by Chebat (2010) and Ailawadi and Keller (2004) as well as the research done regarding the different dimensions (e.g. Andreu et al., 2006; Keng et al., 2007). Figure 1 shows how the different shopping mall management functions described by Green (1996) can be categorized into the dimensions of mall image. Guest service and technical maintenance can affect the accessibility of a shopping mall, by providing customers with information (guest service) and make sure the technical parts, such as escalators and elevators are working correctly (technical maintenance). The atmosphere of a shopping mall can be affected by its cleanness which is handled by the cleaning operations department as well as how the customers’ perceive the security of the mall. Since people usually want to feel safe,
the safety and security department can affect the overall mall atmosphere. Price and promotion can be affected by the marketing and financial departments but is mainly affected by the stores within the shopping mall. Cross-category assortment as well as within-category assortment can be affected by the administration and/or top management of a shopping mall who decides what tenants to bring into the shopping mall.

Figure 1: Connection between mall management and dimensions of mall image.

Shopping malls in Thailand differs from shopping malls in North America and Europe. In Thailand, people generally demand more service overall and this applies to shopping malls as well. Because of this, improving different services in shopping malls is complicated. Since care has to be taken for the difference in service level compared to the current research regarding shopping malls, which is mostly based outside of Thailand.

1.2 Problem description
As mentioned in the background, shopping mall management have had a hard time knowing what keeps the customer coming back and which attributes of the shopping mall that is important to the customer (Burns, 1992; Kirkup & Rafiq, 1994; Kenney, 2000; Andreu, et al., 2006). There are many possibilities to improve overall customer service of a shopping mall, depending on what services the shopping mall is currently providing, different services could be improved. Choosing which area that should be the target for improvement is a problem itself. Care has to be taken for how important a specific service is to the customer,
what the customer’s perceived value is (Park et al., 2012). How well the shopping mall performs in the specific area at the moment is also a critical factor. Improving an area that is not very important to a customer or an already well performing area will naturally give less value, than improving an area that the customer feels is important and which is currently underperforming (Martilla & James, 1977). Martilla and James (1977) introduced the IPA technique which is a decision making tool which analyzes both the importance of attributes and the performance of these attributes.

Another problem with improvement of customer services is that you have to balance the level of customer service you want to provide compared to the cost of providing this service (Goodman, 2009). This is according to Martilla and James (1977) one of the reasons both the customers’ judgment of importance as well as performance has to be evaluated. With these problems in mind, Maglio and Spohrer (2008) as well as Kotler (2009), explains this as the concept of value proposing. This approach states that the value of a service is found in a customer’s personal realization of the proposed value. This means that a company cannot produce value; they can only propose it to the customer. If the customer accepts the proposition then co-created value of a service is made together with the customer. In other words, a service only has a certain value if it is perceived that way by the customer. To achieve competitive advantage, a company has to provide more attractive propositions than its competitors (Vargo & Lusch, 2004). This works well with Martilla and James (1977) original framework, which suggests that the customers’ judgment of importance and the customers’ perception of performance should be used in evaluation.

Herzberg (1959) developed a two-factor theory of satisfaction which Kano (1979) later based his model on quality attributes around. The basis of these two theories is that different attributes contribute to satisfaction in different ways. What they have in common is that certain attributes has to be fulfilled to a certain degree for improvements of other factors to have any effect. These attributes are called “hygiene factors” by Herzberg and “must-be factors” by Kano. Applying these theories to customer service of a shopping mall can be done by categorizing each type of customer service in different attributes within the Herzberg and Kano models. This can also be seen with the chain analogy that a chain is not stronger than its weakest link. It can be compared to the bottleneck within theory of constraints where the services which fall within the hygiene factor or must-be factor categories becomes the bottlenecks of the overall customer service. According to Srinivasan (2012), improving any other function or process than the bottleneck will not improve the overall performance of a system.

A lot of research has been made regarding each individual theory mentioned above and each theory is well known within the academic world. However there are little to no research done regarding how to combine these theories when prioritizing improvements within the service sector. In addition to this, most of the current research regarding the different theories have been tested and applied in western companies and cultures which are different from Thailand. This could
make the current research less valuable for Thai companies since the result might differ.

In the context of shopping mall management, customer services falling within the two dimensions; mall access and mall atmosphere mentioned in the background are interesting to observe further. The reasoning behind this is that these two dimensions have attributes which can directly be altered by the shopping mall management alone, without the involvement of store tenants. Different customer services within a shopping mall can be categorized in the different mall image dimensions. Improving the customer services within one mall image dimension would theoretically improve the customers’ perception of that dimension. Theoretically this would in turn improve the overall perception of mall image of a specific shopping mall.

By combining theories from the area of industrial management and operations management, such as theory of constraints, with theories regarding satisfaction such as Herzberg and Kano’s theories. A model based around the original IPA\(^1\) framework for finding and improving the right service in a Thai shopping mall can be created.

### 1.3 Purpose and research questions

As mentioned above, shopping mall management find themselves having more and more competition from new and planned shopping malls. Obtaining and keeping loyal customers is one of the key objectives of the shopping mall management team. Due to the cultural differences of the service demanded of Thai people compared to the service demanded from shopping malls in Europe and North America, the same theories and conclusions might not apply in the same way. In Thailand, outsourcing of services in shopping malls is very common. This study aims to answer which of the three outsourced services: safety & security, cleaning operation and guest service that are the most important for shopping mall management in Thailand to improve. With this in mind, the purpose of this study is the following:

> Develop a model which can aid in prioritizing which of the three customer services: safety & security, cleaning operation and guest service, in a Thailand shopping mall that should be the focus of improvement by combining values of customers’ judgment of importance and current perceived performance of the three customer services.

To achieve the purpose of this study, the first thing that needs to be defined is how important each of the three services is for customer satisfaction in a shopping mall in Thailand. The first research question is therefore:

---

1 IPA – Interpretative phenomenological analysis
2 Anchors are large retail stores that are the main points of interest in shopping malls.
1. How important is each of the three customer services: safety & security, cleaning operation and guest service according to the customer in a shopping mall in Thailand?

The next step to achieve the purpose is to identify the three customer services performance as perceived by the customer. The second research question is therefore:

2. How do Thai customers rank the current performance of the three customer services: safety & security, cleaning operation and guest service in a Thai shopping mall?

When the first two research questions have been answered, finalizing the purpose of the study is possible. Which is to create a model that combines the values of customers’ judgment of importance and customers’ perceived performance of each customer service. The third research question is therefore:

3. How can a model be developed to aid in prioritizing where to focus improvements by combining values of customers’ judgment of importance and current perceived performance of the three customer services.

1.4 Scope and delimitations

In Thailand, the amount of services provided is generally much broader than in western economies. Many shopping malls in Thailand outsource several services and since the limitations of time for this study, only the outsourced services of shopping malls will be investigated. In the background chapter, five dimensions of shopping mall patronage were discussed. These dimensions can be divided into two different areas: dimensions that are easy to trace and which are affected by the shopping mall management team alone and dimensions that are more or less dependent on cooperation with store tenants. In this thesis work, only dimensions that can easily be traced and affected by the shopping mall management team will be observed. This includes the access dimension and the atmosphere dimension. The store tenants do not affect the access dimension because it is strictly about access to the shopping mall itself and not a specific store. Store tenants do not affect the atmosphere dimension because the dimension is referred to as how the customer perceives the shopping mall and not specific stores. However store tenants affect all the three other dimensions. Price and promotion of a shopping mall depends on the prices that the stores set themselves. Cross-category assortment cannot be fulfilled without having a wide array of different store tenants offering products and services. Within-category assortment suffers from the same dependency as cross-category assortment; it has to be fulfilled by the store tenants. This boundary is set to limit the factors of what the management company can directly manage to improve customer satisfaction: safety & security, guest service and cleaning operation. Technical maintenance, which is described in
chapter 1.1, is set outside the delimitations. Customers tend to find it difficult to understand the true extent regarding technical maintenance; therefore it would not reveal the actual performance and importance. Figure 2 shows which areas of customer services are looked upon in this thesis work, to only shopping mall management as well as the outsourcing service companies.

Figure 2: Scope of examined services
Method and implementation

This chapter will describe the approach used to fulfill the purpose of the study. The chapter begins with describing the link between research questions and method and continues describing the main activities through the work process. Followed by the thesis work's approach and methods for collection of data and data analyses. Finally, the quality of the thesis work is evaluated based on the criteria of reliability and validity.

2.1 Link between research questions and method

Different methods have been used to obtained valuable information regarding each research question, such as interviews, observations and literature study. Figure 3 illustrates the connection between both research questions and methods used.

![Diagram of research questions and methods]

Figure 3: Connection between research questions and methods.

How each method is used to obtain information will be further explained in the underlying sections in this chapter. Data collected from methods used in the first and second research question are applied in the last research question, in collaboration with a different literature study.

2.2 Work process

The project timeline started with a pre-study to examine what problems management of shopping malls face today. This was followed by the start of a literature- and case study simultaneously. In the start of the case study, observations and open interviews with the shopping mall staff were held. When enough information was gathered, formation of the first survey was made and the survey was distributed. As soon as the first survey was formed, the process of forming the next one started. In addition to this, as soon as the first survey is done, examination and analysis of the results will start. This will be a repeating cycle until all four surveys are examined and analyzed. When the results from the surveys were compiled, a model was constructed to identify which service that should be prioritized to improve. Several phases of this project were performed simultaneously because the handout and collection of surveys was made during a longer time-period in which the writers continued with other parts of the project,
such as literature study and analysis of the surveys that were completed. The final phase consisted of the creation of the model. This period is shorter than the others but during this period all work focused on this area with little interruption from other phases of the thesis work.

2.3 Research approach
Empirical studies have been performed to answer the first and second research questions, regarding each service's performance and importance according to the customers. In order to accomplish the previous statement, the authors investigated theories about questionnaire surveys. Throughout the whole thesis work, theories regarding customer satisfaction have been studied and compared with empirical findings. This can be termed has an iterative process and therefore described as an adductive approach (Olsson & Sörensen, 2011). To answer the third research question, established theory regarding customer satisfaction and the theory of constraints have been studied. In addition to this, theory regarding the IPA framework and Herzberg's two-factor theory and Kano's model has been used. To see if the theories studied could be applicable in the empirical study, the approach can be seen as a deductive approach (Olsson & Sörensen, 2011).

To provide a deeper understanding regarding the comparison between performance and importance, both qualitative and quantitative methods were conducted. The qualitative method was performed to gain a broader understanding regarding the empirical study. In addition to this, the quantitative method was performed to collect hard data, such as data concerning each service's performance and importance according to the customers. A mixture between these two methods is useful because a qualitative method provides a good basis for further quantitative methods (Holme & Solvang, 1997). These methods can also facilitate the research results and give a better understanding of the connection between theory and empirical findings (Östlund et al., 2011).

2.4 Case study
Case study is an examination strategy to utilize a better understanding about the investigated subject areas. The purpose of this thesis work is to develop a model which can aid in prioritizing which of the three customer services: safety & security, cleaning operation and guest service, in a Thailand shopping mall that should be the focus of improvement, by combining values of customers' judgment of importance and current perceived performance of the three customer services. To achieve the purpose, all three research questions had to be answered in the respective order. Therefore the authors chose to implement a case study to be able to examine the research questions, and ultimately, which service should be prioritized to improve, within real-life context. This is one of the advantages Yin (2009) points out with a case study. Furthermore, theories regarding the third question can be applied in a real case and therefore present a higher support of the result. Applying theories in a real case is one of the advantages by implementing a case study (Benneth, 2003).
This is a single case study conducted at a shopping mall named Megabangna in Bangkok, Thailand. The main reason why Megabangna is used as an object in this case study is due to get a situation analysis. What customers in Thailand think and expects of the services provided by a shopping mall. Findings of customer expectations and thoughts regarding each service performance and importance supported the model that was created.

The single case study at Megabangna included investigation of the three services in detail, which was the basis for creating surveys for use with the model based on empirical findings and theories. Therefore a single case study was conducted to be able to dig deeper in each service rather than doing multiple case studies that support overall case studies. A single case study will also contribute to create an overview of the case studied (Williamson, 2002; Yin, 2009). Yin (2009) describes the difficultness of using a single case for generalization. However in this case the authors believe that the results of this study can be useful for other shopping malls in Thailand since the model is based on generalized theory with only the input to the model coming from the case study, therefore a generalization would be possible.

2.5 Data collection

Using literature regarding the subject, a theoretical framework was created. This is supplemented by a case study where collection of data was conducted through a qualitative- and quantitative research. What was investigated and the information obtained by each data collection method is described in detail below.

2.5.1 Interviews and observations

Interviews were conducted together with observations which according to Creswell (2009) and Jacobsen (2002), can give a better result from the observation by having interviews simultaneously. Qualitative interviews with open questions were performed in collaboration with observations with each manager of the three outsourced services. The foundation for a qualitative interview was due to the observations being made simultaneously and issues could easily arise in the meantime. According to Yin (2009) this type of interview can be described as an interview of open character and Patel and Davidson (2011) argues that it give the respondents a greater freedom to design the answers themselves. It gives the respondents a more free way to describe the work situation studied. This allows the interviewers to understand the participants (Brenner, 2006). Table 1 shows the amount of interviews together with observation performed and the time length with each service. At first the process started with an interview with each manager, which presented basic information regarding the service e.g. staff schedule, staff positioning and products used. After the brief basic information, the interviews were performed simultaneously with observations, regarding the work-process, -tasks.
Table 1: Interviews together with observations

<table>
<thead>
<tr>
<th>Outsources service</th>
<th>Safety &amp; security, manager</th>
<th>Cleaning operation, manager</th>
<th>Guest service, manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews in collaboration with observations performed</td>
<td>1 interview</td>
<td>1 interview</td>
<td>1 interview</td>
</tr>
<tr>
<td>Time length</td>
<td>3 h</td>
<td>2.5 h</td>
<td>2 h</td>
</tr>
</tbody>
</table>

The data collected together with these two methods gained a better understanding of each service at Megabangna which was needed in order to create three useful questionnaire surveys for each service that has been investigated.

2.5.2 Surveys

A quantitative study was performed in the form of questionnaire surveys of customer satisfaction for each service to reveal how each service performs today as well as how important they are to the customers. Distributions of each service survey were made separately; this was a requirement from the case study company, due to reduce customers’ dissatisfaction with not too long surveys. Dependent on Megabangna, approximately 500 surveys were distributed by two workers. Each survey was randomly handed out to respondents during three weekdays and two days of the weekend, see Table 2. To make sure that the distributions were handled correctly, a sample of the distributions were monitored by the authors. The selected number of surveys and days to distribute was affected by the limit of time at the case company in Thailand, such that no more than 500 surveys could be distributed. Before each survey was distributed a controller evaluated the questions, to ensure that each question served its purpose.

Table 2: Distribution of surveys

<table>
<thead>
<tr>
<th>Outsourced service</th>
<th>Safety and Security</th>
<th>Cleaning operation</th>
<th>Guest service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution, time period</td>
<td>5 days - 3 weekdays - 1 weekend</td>
<td>5 days - 3 weekdays - 1 weekend</td>
<td>5 days - 3 weekdays - 1 weekend</td>
</tr>
<tr>
<td>Amount of surveys distributed</td>
<td>503 ~100 each day</td>
<td>500 ~100 each day</td>
<td>500 ~100 each day</td>
</tr>
<tr>
<td>Total respondents</td>
<td>503</td>
<td>498</td>
<td>492</td>
</tr>
</tbody>
</table>

Each survey can be further viewed in the attached files, safety & security 0, cleaning operation 0 and guest service 0. Every service had its own questionnaire survey but one question was the same for all surveys: “How important is each area in a shopping mall?” This question concerns all services in each survey. The authors wanted to make sure to eliminate the risk of getting influenced answers based on the current survey if the question were only asked on one survey. In addition to this, there are much fewer questions regarding importance than importance which, having the same question on all surveys, makes up for. The structure of the questionnaire survey is based on that each question has limited set of response categories and every respondent get the same set of questions, which
according to Fontana and Frey (2005) is the advantage of a survey. Close-ended questions are also used in the survey, which according to Fowler and Cosenza (2009) gives a more accurate data. The majority of the questionnaire is based on a scale of one to six with one question using a one to four scale. The scale one to four were used to further enhance the understanding of the specific question, “How important is each area in a shopping mall”. Even scale numbers eliminates the middle neutral answer, which increases the commitment of respondents to be either positive or negative. Respondents tend to reduce the effort if a neutral answer is included (Coelho & Esteves, 2007) and Saris and Gallhofer (2007) showed improvement in reliability and validity of the data without a neutral answer. Therefore the authors used this method to be able to collect a more useful and accurate data. It was conducted to get a sample of the situation analysis, which could be generalized to a larger population described as statistical generalization, supported by Yin (2009). Based on getting the knowledge which service customers considered most important at a shopping mall in Thailand and a situation analyze of each service performance. Outcome of the statistical analyze were used to create a model to aid which service to prioritize.

2.5.3 Literature review

A literature study has been performed regarding the areas of concern. At first a collection of theories regarding surveys was accomplished, which is the foundation of the thesis work. Afterwards the authors have performed a literature study throughout the whole thesis work regarding the theoretical framework such as theory of constraints, IPA, Hertzberg’s- and Kano’s model. According to the authors the result obtained can differ from existing theories. Therefore additions to the theoretical framework are carried out through the whole thesis work. Collections of the knowledge from these theories were obtained with the help of books, articles and other thesis. By using search engine from the university library in Jönköping, information regarding theories could be obtained by different databases e.g. ABI/INFORM, Science Direct and Emerald. Key words used are: survey, theory of constraints, Hertzberg, Kano and operation management. These key words have been combined with customer satisfaction, shopping mall and service. The literature review can mainly be rediscovered in the theoretical framework and a small part can be rediscovered under method and implementations.
2.6 Data analysis

Collection of data has continuously been analyzed during this thesis work. According to Jacobsen (2002) the connection between data collection and data analysis is difficult to separate, which make the analysis an iterative process.

The empirical data retrieved from each interview together with observation were analyzed directly afterwards to assure that no data has been forgotten. Data collected were structured using software programs such as Microsoft word and excel to create the surveys. Results of the questionnaires were summarized and structured into an excel-document, to clearly understand the data collected and in order to perform statistical calculations of each answer from the surveys. This was done to verify that the results achieved a standard distribution with a certain variance and standard deviation. The purpose of this thesis work was to create a model to aid prioritizing of which service to improve with the connection between performance and importance of a service. Internal data retrieved from above together and compared with external data from literature study such as survey theories, enable to answer the first and second research question. The results of these two research questions were applied on the third research question, together with literature study regarding customer satisfaction theories. Steps back within the data analysis occurred when insufficient internal and external data were not identified. Figure 4 shows the data analysis process, each activity required to be achieved to continue with the next activities. A form of a complementary process, that was ongoing during the thesis work.

![Diagram of data analysis]

Figure 4: Data analysis

Identified flaws in some occasions in the theoretical framework, such as the main difference of generally demanded and overall service in Thailand compared to North America and Europe. The actual demanded service from people in Thailand could be retrieved through interviews and observation from the case study. To cover the areas of study intended to examine, an adductive and deductive approach between theories and empirical ensured that the theoretical framework was enough detailed. Furthermore Merriam (1994) argues that this approach is essential to sort out information that is unclear, repeats of what is already known or is too wide to be analyzed. Yin (2009) argues that deductive approach can contribute to establish the importance of the study.
2.7 Reliability & Validity

The goal with measuring and controlling reliability of projects is to minimize mistakes and biased information within a study (Yin, 2003). The definition of reliability is how well a study can be remade with the same or similar results (Merriam, 1994; Patel & Davidson, 2011; Thomas, 2009). To enhance this projects reliability, questions formed for the surveys where thoroughly aligned with theory regarding the creation of surveys. In addition to this one of the questions was the same for all the survey areas that were handed out. The survey for every service was handed out during the same time frames but in different time periods to ensure that as many parameters as possible remained the same for all the surveys. The answers were analyzed and compared with each other. According to Patel and Davidson (2011), comparison and analyze between the results improves reliability.

Each result of the questions was tested by statistical calculations, if the results achieved a standard distribution with a certain variance and standard deviation.

The definition of validity is split into two separate areas, internal validity and external validity. The internal validity is a measurement of how well the result compares to the reality. Internal validity also includes the factor that what was meant to be measured actually was measured (Patel & Davidson, 2011; Merriam, 1994). External validity is described as to what extent you can generalize the result and apply it to different situations (Yin, 2003; Merriam, 1994). The internal validity of this project has been enhanced through two main actions. The first action taken was to make observations and take part of information through different employees at the shopping mall. The information received from the employees was then compared with each other to make sure that the writers have understood the main processes of the shopping mall and the problem that was going to be investigated. The second action that was taken to improve internal validity was to make a control check of the surveys that were formed with experts. This was made to make sure that the questions in the survey were formulated correctly to achieve the information that was intended. To confirm the validity that the distributions were handled correctly, a sample of the distributions were monitored by the authors. External validity of the project has mainly been improved by focusing the project strictly on the specific outsourced services mentioned in the boundaries. This is made to make sure that a similar project can be performed on another shopping mall if it fits within the boundaries. Well know theories and practices have been used to further increase external validity.
3 Theoretical framework

In this chapter, a presentation of the connection between the different theories and the purpose of the thesis work is made. This is followed by the result of the literature studies.

3.1 Link between research questions and theory

The purpose of this study is to examine which of the three services: safety and security, cleaning operation and guest service that are most important to customers of shopping malls in Thailand, as well as how the operation of this service can be improved. As mentioned in the background to this thesis work, a shopping mall is essentially providing services. This means that the general basis of this thesis work will be that everything that a shopping mall management provides to its customers is in the form of different kind of services. However, as mentioned in the scope and delimitations chapter, only the outsourced services will be taken into consideration in this thesis work. Finding which service that is most important will be done using a Theory of Constraints (TOC) point of view of the different outsourced services. The five steps of TOC will be applied throughout the project. Within theory of constraints, a “bottleneck” has to be identified (Srinivasan, 2012). To identify which of the services is the bottleneck, an analysis of the surveys will be made and the answers to the questions will be used in identifying the most important outsourced service for improvement. When the bottleneck service is found, improvement of this service will be done using theory regarding optimization in general and more specific, scheduling theory.

Figure 5: Connection between research questions and theory

Figure 5: Connection between research questions and theory shows how the different theoretical areas are connected with the research questions. Research question one needs data regarding which customer service that is the most important to Thai customers. This information will be achieved through interviews and surveys, which are mentioned in the method and implementation chapter. Research question two will need information regarding how Thailand customers perceive the current performance of the four outsourced services. Research question three will be based around the answers of question one and two as well as using TOC to identify the bottleneck.

IPA theory
Survey theory

1st and 2nd Research question, theory used

Theory of constraints
Herzberg theory
Kano’s model
IPA theory

3rd Research question, theory used
3.2 Theory of Constraints

Theory of constraints revolves around the idea that outputs of a process are limited by a bottleneck. The bottleneck constraints the total output of a process to the same level as the bottleneck (Srinivasan, 2012). TOC is based around a chain analogy, the chain is only as strong as its weakest link and according to Cox (2010) the constraints theory can be divided into three areas, physical, policy and market. The physical aspect revolves around constraints from machines, material, manpower or similar. Constraints regarding policy are limitations in the form of rules and regulations that limits the output of the process or system, for example a company might have a policy limiting production of a specific product to batches of 100 units per batch. The final area is the market and this constraint is mainly focused when the possibility for output is higher than the market demands, turning the market to the weakest link in the chain. The management of an organization’s constraints is within TOC literature based around the following five steps (Goldratt, 1984; Srinivasan, 2012):

1. Identify the system’s constraint.
2. Decide how to exploit the system’s constraints.
3. Subordinate the rest of the system to the decisions made above.
4. Elevate the constraint.
5. If a constraint was broken in a previous step, go back to step 1.

Step 1: Identify the system’s constraints.
Within TOC literature, companies are generalized to have only a few constraints, at most a handful (Srinivasan, 2012). The constraint can be categorized into one of the three different areas mentioned above: physical constraints, market constraints or policy constraints. The goal in step 1 is to identify which constraints that are currently limiting a company’s throughput (Srinivasan, 2012).

Step 2: Decide how to exploit the system’s constraints.
The second step revolves around using the current constraint as profitable as possible. The end goal could be to remove whatever reason is creating the constraint, for example production capacity at a machine could be improved by adding additional machines. But according to TOC, this is a later objective because the company might not have the resources or possibilities to perform such changes right now. Because of this, TOC focuses on using the currently available resources or capacity of the constraint as profitable as possible. Deciding how this should be done is the goal of step 2 (Srinivasan, 2012).

Step 3: Subordinate everything else to that decision.
This step is there to make sure that the focus remains on the bottleneck but that the remaining processes aren’t left alone. The general thought is to plan all processes in a way that makes sure the bottle-neck process is always up and running (Srinivasan, 2012).

Step 4: Elevate the system’s constraints.
As mentioned in step 2, the end goal can be to remove the limiting constraints altogether at some point. This is the goal of step 4, to improve the performance of the constraint in such way that it is no longer the constraining factor. There is however the possibility that step 2 and 3 have made better use of the constraining process to a degree that it is no longer the constraining factor. If this is the case, step 4 could be skipped due to other parts of the process is now constraining the throughput (Srinivasan, 2012).

Step 5: If a constraint was broken in a previous step, go back to step 1. This step might seem obvious if the company is working with continuing improvements of the company processes. But it’s more important than what first meets the eye. According to Srinivasan (2012), Eli Goldratt explains a big warning regarding this step: “Do not allow inertia to cause a system’s constraints”. What Goldratt means is that if you stop at step 4 without searching for a new bottleneck, there might be processes becoming bottlenecks unnecessarily because of changes made to break the first constraint. Srinivasan (2012) exemplifies this with a company that have a policy of relocating workers to a constraint process. When this process have been elevated in step 4 and no longer needs the additional workers, those workers will still be directed to the process because of the policy. This is caused by inertia and makes step 5 important to continue to improve the overall company performance (Srinivasan, 2012).

3.3 Customer satisfaction

Organizations need to understand their operations to improve internal measures such as cost. External measures such as customer satisfaction are equally important to improve, by involvement from organizations to continuously learn about the market (Day, 1994; Lapré, 2011). Organizations cannot survive without customers (Hart et al., 1990), therefore organizations strive to prevent customers dissatisfaction. Since it cost one-five times more to replace costumers than retaining the existing customers (Lapré, 2011). Dissatisfaction occurs when a service is poorly performed, which cause a negative word-of-mouth behavior from the customers (Lapré, 2011). Negative word-of-mouth is a form of communication between customers, sharing their negative consumption experiences (Wetzer et al., 2007). The opposite of negative is positive word-of-mouth and according to Arndt (1967), negative word-of-mouth cause twice as much damaged than positive word-of-mouth, which can be supported by (Kroloff, 1988; Skowronski & Carlston, 1989; Assael, 2004)

Developing new products and services requires information regarding customer requirements. These requirements are often identified through market research and the information is then converted into different quality elements. This process is called “quality function deployment” (Yasuda et. al., 2001). Understanding the different quality elements can provide several benefits, such as enhancing customer satisfaction and loyalty, which in turn can lower customer dissatisfaction (Oh et al., 2012).
Defining these quality elements has been the topic of several researchers and different models have been created throughout the years. Two well known models within this field are the Kano model and the Two-factor theory, also known as Herzberg’s motivation-hygiene theory or dual-factor theory.

3.3.1 Herzberg’s two-factor theory

Herzberg developed his need theory in the 1960’s naming it the “Two-Factor Theory”. The base of the theory is the suggestion that humans have two categories of needs and that different element of a work situation satisfies or dissatisfies those needs (Wright, 1989).

Herzberg’s first set of needs is called hygiene factors and is the basic survival needs of humans (Herzberg, 1971; Herzberg et al., 2005). Hygiene factors are not directly related to the workplace in question but factors that concerns the performance and surroundings of the workplace. The main characteristics of the hygiene factors are that they can create dissatisfaction when they are not fulfilled but they do not provide satisfaction or motivation when they become fulfilled. The hygiene factors can only prevent dissatisfaction (Herzberg, 1971; Herzberg et al., 2005).

The second set of needs explained by Herzberg is called growth needs or motivation factors and is referred to as factors within the job and effects around the job such as achievement, responsibility and advancement. According to Herzberg, these factors can motivate humans to work better or harder and to move towards their maximum level of capability (Herzberg, 1971; Herzberg et al., 2005). Herzberg also means that factors regarding content of work such as, opportunities for responsibility, advancement and recognition of well performed tasks, are the only way to increase satisfaction which in turn, enhances work motivation (Wright, 1989). In contradiction to the hygiene factors, the motivational factors do not create dissatisfaction when they are unfulfilled, they will only create an absence of satisfaction (Herzberg, 1971; Herzberg et al., 2005).

Herzberg’s two-factor theory has been adapted in different fields and contexts and an example of this is when DeShields et al. (2005) studied the determinants of business student satisfaction and retention. Herzberg’s growth factors were translated into faculty performance variables such as accessibility, professionalism and helpfulness and classes variables such as real world relevance, amount of projects and cases and course scheduling. Hygiene factors were translated into advising staff with parameters such as accessibility, reliability, helpfulness and responsiveness. The findings of this study supported the principles of Herzberg’s two factor theory. Another context were Herzberg’s theory was applied was in the study made by Balmer and Baum (1993) regarding guest satisfaction within an accommodation environment. In this study, hygiene factors were translated into pricing, facilities and “freebies” (extras for pleasing customers). Motivation factors were sense of belonging, recognition of staff, flexibility by hotel and service orientation. The findings of this study also proved that Herzberg’s model is relevant in different contexts such as in this case, guest motivation in hospitality.
3.3.2 Kano

The Kano model was first developed 1979 by Kano et al. and was based on Herzberg’s two-factor theory of hygiene and motivation attributes (Herzberg et al., 1959). The model was further developed as a two-way model based around the perceived satisfaction and dissatisfaction of customers and if the usage of products and services was satisfactory (Kano et al., 1984). Figure 6 is the illustrated model developed by Kano 1984 where the horizontal axis shows the “amount” of quality element perceived by the customers. The right part in the model, following the horizontal line, illustrates quality level that is sufficient for the customers with the opposite being for the left side. The vertical axis illustrates the level of customer satisfaction; the higher on the vertical axis, the higher level of satisfaction.

![Kano's two-way model on quality](image)

Figure 6: Kano’s two-way model on quality (Kano et al., 1984)

Based on this model, Kano defined quality as a composition of five attributes (Kano, 2001):

1. Attractive quality
   An attractive quality makes a customer satisfied when present but will not make a customer dissatisfied when absent.

2. One-dimensional quality
   When this quality is present, customers are satisfied and when the quality is absent, customers are dissatisfied. This quality scales with satisfaction
meaning a higher level of this quality equals a higher level of satisfaction for the customers.

3. Must-be quality
This quality is necessary for a product or service meaning it’s absent will create dissatisfaction.

4. Indifferent quality
This is a quality of a product that neither creates satisfaction or dissatisfaction if it’s present nor absent.

5. Reverse quality.
A reverse quality creates dissatisfaction when present and vice versa.

The original two-way quality that Kano developed was first used in developing the manufactured product quality in surveys conducted on TV or decorative clocks (Kano et al., 1984). The results of the surveys showed that the users of these products perceived quality differently which implies that quality is not one-dimensional but two-dimensional. This makes one dimensional quality unable to cover all users’ concepts of quality. Kano’s two-way quality model was applied to banks, dry cleaning establishments, restaurants and supermarkets by Schvaneveldt et al. (1991). The major findings in this research showed that the five quality elements mentioned above was different for the four industries. Matzler and Hinterhuber (1998) argues that businesses can understand how different quality features can satisfy customers and locate customers of the different segments according to the quality features by utilizing the Kano model.

### 3.4 IPA
IPA is a technique for basic diagnose decision making, (Johns, 2001; Matzler et al., 2003) which aims to identify improvement prioritization (Sampson & Showalter, 1999). The technique is used for utilizing limited resources where they are needed most and to enhance competitiveness (Levenburg & Magal, 2005; Matzler et al., 2004).

The IPA technique was first introduced by Martilla and James (1977) who based their concept around multi-attribute choice models (Wilkie & Pessemier, 1973). Martilla and James (1977) realized the value of analyzing both the importance of different attributes as well as performances and illustrated it through a study of an automobile service dealer. Martilla and James (1977) first identified fourteen attributes that affected the service department patronage by studying literature and interviewing service, and sales employees. The authors then conducted a questionnaire survey to investigate the attribute’s importance to the customers and the performance of each attribute. This later became the standardized procedure of importance-performance studies.

The utility of the framework created by Martilla and James (1977) is argued by Slack (1994) to come from the frameworks ability to examine customers judgment regarding importance of different attributes as well as simultaneously examine the
perceived performance of the attribute. Measuring importance and importance separately can add value to the management team but the combined measure of importance and performance provides a more effective way to identify competitive drivers which in turn can yield greater marketing and management possibilities (Guadagnolo, 1985; Haahti & Yavas, 2004; Martilla & James, 1977; Tarrant & Smith, 2002; Wade & Eagle, 2003).

Figure 7: The original IPA framework (Martilla & James, 1977) below shows the classification of importance and performance on a scale of low to high developed by Martilla and James (1977) in their original research.

![IPA Framework](image)

**Relative Competitiveness**

Figure 7: The original IPA framework (Martilla & James, 1977)

Martilla and James (1977) description of the quadrant is explained below:

**Quadrant (I): high importance and high performance (keep up the good work)**

Attributes which are located within this quadrant can be seen as successful use of limited resources. These attributes are important to the customer as well as having high performance according to the perception of the customers. Attributes in this quadrant indicate strengths and potential competitive advantages which should be maintained or exploited.

**Quadrant (II): low importance and high performance (possible overkill)**

Attributes falling within this quadrant could possibly be receiving too much attention and resources which leads to over-performance. The attributes are not very important to the customers which lead to the attributes not having as much impact on a company’s competitiveness as attributes of higher performance. Attributes in this quadrant can be seen as inefficient resource allocation and
should fall low on the priority list for improvement. Strategies for lowering costs and reallocate resources could be appropriate for these attributes.

**Quadrant (III): low importance and low performance (low priority)**

Customers perceive these attributes as non-important which in turn makes competitiveness of the attributes within this quadrant low. The attributes can be viewed as minor weaknesses and are likely to be low in the prioritization of limited resources by decision making managers. Improving these attributes gives very little in return which makes effort put into these attributes unnecessary.

**Quadrant (IV): high importance and low performance (concentrate here)**

Attributes falling in this quadrant are viewed as the most critical ones within this categorization. These attributes are high on the scale of importance according to the customers but the company fails to satisfy the customers perceived level of necessary performance. Underperforming on these attributes has to receive the highest priority in terms of resources and effort. These attribute are major weaknesses and threatens the competitiveness of the company. Strategies and policies should be changed to provide additional resources and efforts to the attributes within this quadrant.

The original IPA framework have been adapted and applied within several industries including public administration (Van Ryzin & Immerwahr, 2004; 2007), IT (Levenburg & Magal, 2004; Skok et al., 2001), banking (Joseph et al., 2005; Matzler et al., 2003), education (Alberty & Mihalik, 1989; Ford et al., 1999; Kitcharoen, 2004; O’neil & Palmer, 2004), healthcare (Abalo et al., 2007; Dolinsky, 1991; Yavas & Shemwell, 2001) and food services (Sampson & Showalter, 1999; Tontini & Silveira, 2007).
4 Empirical data

This chapter will present the empirical data collected from the case study. It is structured to first describe the case company followed by how each service is organized. Finally the result of the surveys will be presented.

4.1 Company description

The case study of this thesis work has been made at Megabangna, a large shopping mall located in Bangkok, Thailand. The shopping mall is one of the largest shopping malls in Thailand consisting of 400 000 square meters of building space and 450 shops within the two levels of the building. Because of only having two levels within the shopping mall, Megabangna differs from the typical vertical layout of Thailand shopping malls. Megabangna is divided into 9 zones with different themes: Mega Food, Mega Fashion, Mega Kids, Mega Tech, Mega Home Mega Wellness, Mega Sports, Mega Banking and Mega Lifestyle. The shopping mall has 5 major anchors2: Major Cineplex, Home Pro, Big C, Robinson and IKEA. Megabangna as a company is a joint venture between Siam Future Development PLC (SFD), Ikano and S.P.S Global Trade. All personnel at Megabangna are employed by SFD. A detailed organization chart can be found in appendix 0.

Within the management team is the Vice President of Operations, which is the area that has been investigated in this thesis work. Within the operations department there are several underlying functions, including 8 different outsourced services. In this thesis work the three services: safety & security, cleaning operations and guest services have been investigated. In the organization chart cleaning operations is named “housekeeping”. More information about the company structure can be found in appendix 0. All of the functions are outsourced to external companies, which provide the personnel for the function as well as managing the given function. The personnel that the outsourcing companies use is always the same, meaning that the personnel from the outsourced companies basically works at Megabangna but are employed by the outsourcing company. This is to make sure that the personnel are familiar with the shopping mall, its layout and services.

4.1.1 Safety & Security – G4S

The security function of Megabangna is outsourced to a company called G4S, which is a common security outsourcing company in Thailand and used by several shopping malls as well as other types of businesses. The security is divided into four main areas being: Loading/CCTV3/fireman, L-1 (level one/floor one), L-2 (level two/floor two) and parking & traffic. These areas are also the main responsibilities of the security function.

The loading/CCTV/fireman area is divided into three sub-groups. The security guards responsible for the loading bays consist of regular security guards and are

---

2 Anchors are large retail stores that are the main points of interest in shopping malls.

3 CCTV – Closed-circuit television (surveillance system)
located around the loading bays of the shopping mall. They watch over the loading bays to make sure everything is in order. The guards watching over the CCTV monitors are also regular security guards with the exception that they are trained in Megabangna’s CCTV systems and its functions. The CCTV system consists of 574 cameras covering 90 percent of public areas including all entrances and exits to the shopping mall. The fireman department consists of firemen that stay ready on site in case of fire or emergency anywhere within Megabangna’s properties, including the parking space and all outdoor areas. The firemen are continuously training and practicing different kinds of rescue and evacuation missions including advanced fire fighting, first aid & CPR.

The areas named L-1 and L-2 are named after floor one and floor two of the shopping mall. They are the main shopping areas of the customer and include the outdoor walking areas. The guards of these areas are normal security guards which are stationed on several different posts around the shopping mall. They are all equipped with radios and can contact each other, the CCTV room, the information desks and the Megabangna office. The main duties for each guard are to watch over their specific areas and act accordingly should any suspicious behavior occur but they often assist customers with questions and guidance as well.

The parking & traffic area includes all guards located around the indoor parking space, outdoor parking space and by the roads around Megabangna (within Megabangna’s area). The main duties are to guard these areas against theft of cars and to assist customers with parking. The guards located by the roads also assist with guiding traffic when needed (mostly during weekends). All base personnel of the security function are stationed at Megabangna at all times meaning that the guards working are always the same and not different from day to day. However at weekends Megabangna have a much larger amount of customers, which increases the workload mainly on the parking & traffic. This is caused by a lot of customers arriving by cars filling up the parking spaces and causing traffic jams around the shopping mall roads (Megabangna’s own roads). Because of this increased workload Megabangna is currently hiring additional guards through G4S to assist during the weekends. These are guards who do not normally work during the weekdays and are only hired to assist when needed.

4.1.2 Cleaning operation – PCS

A company called Property Care Services (PCS) runs the cleaning operations of Megabangna. Just as G4S is a common supplier of outsourced security services, PCS are commonly used across Thailand for cleaning services. PCS are responsible for keeping the areas inside and outside of Megabangna clean. This includes public areas such as the common areas inside and outside of the shopping mall and the parking areas but also loading bays and rubbish rooms.

The cleaning operations are divided into different responsibility areas. One of the areas is the bathrooms which consist of a smaller version and a larger version. At each bathroom there are a number of workers assigned, one for the smaller
bathrooms and two for the larger ones. The workers assigned at each bathroom are stationary and remain the same all the time. The responsibility of the worker(s) assigned at each bathroom includes, except from keeping the bathrooms clean, also the corridor leading into the bathroom area. The different tasks include collecting rubbish, cleaning the dustbins, mirrors, sanitary items, pipes, doors, walls and the bathroom partitions. The bathroom personnel are also responsible for refilling tissues and soap as well as mopping the floor.

The next area is the common areas within the shopping mall. The personnel are divided into 1st and 2nd floor but the duties are the same. Responsibilities are basically keeping all the common areas around the shopping mall including lifts, escalators, windows, floor etc. clean. Tasks include cleaning the escalators (handle, stainless parts and windows), cleaning the lift (door, walls and floor), cleaning the main entrance and walkway (walls, floor, windows and collecting rubbish).

The parking and outside areas are cleaned by sweeping the parking area, sweeping outside areas from bus stop to the main road outside the shopping mall, clearing and cleaning the ash trays, collecting rubbish around the parking area and inside the plant pots and the garden. There is also a shrine, a grandpa and grandma shrine to clean that are included in the duties of the personnel stationed at this area.

The final area is the rubbish collection staff that is responsible for the rubbish collected around the shopping mall. The main responsibilities are: To keep the floor around the rubbish rooms and loading bays clean. Sweeping and collecting rubbish in and around the rubbish rooms. Cleaning the drains in front of the rubbish rooms and separating the recycling items between wet rubbish and dry rubbish.

There are also special duties such as cleaning of high located windows or signage and other tasks that require special equipment and that are only performed a few times per year. In addition to this, there are several tasks of cleaning performed during the night such as using larger auto scrubbing machines for the floor. These tasks are performed during the night because of being highly interfering with the customers shopping experience. A lot of the base-cleaning is made with these larger machines during the night, creating a clean environment when the shopping mall opens. This is then maintained during the day by, for example, mopping the floor manually.

4.1.3 Guest service – 3P Professional

3P Professional provides the guest services to Megabangna. The responsibilities of the guest services are basically customer service and are based around an information desk at the main entrance to the shopping mall. At the information desk, the personnel provide customers with guidance to different shops and help with any questions the customer might have. They also provide information regarding current promotions within the shopping mall and its shops. The information desk also provides wheelchairs and child-trolleys for customers to
borrow while they are visiting the shopping mall. In addition to this, a golf cart continuously moves around the 1st floor of the shopping mall, which customers can use to travel to another part of the shopping mall. This golf cart is managed by the guest services however it is only used during the day. During the afternoon, the amount of customers visiting the shopping mall increases a lot and to avoid accidents, Megabangna have decided to not use the golf cart during this time. The guest services also calls out promotional messages via speakers throughout the shopping mall. These can be either for specific stores or for the shopping mall in general. The information desk also has radio contact with the safety & security department for safety reasons but this communication is often used in customer service issues. The reason for this is that customers often don’t want to go to the information desk when they want to ask something; therefore they usually go to a nearby guard to ask their question. Should the guard not be able to answer the question they can use their radio to contact the guest services for assistance.

The information desk also handles any lost & found items, handles promotion where the customer has to provide personal information (for example, promotions limited to foreigners) and perform administrative tasks regarding what kind of information they provide to the customers. This information is then sent to and used by the marketing department. The different tasks of the guest services are much more general than the other investigated departments but the responsibility field is basically general customer service.

4.2 Survey result

To answer research question one and two, surveys were made based on the information gathered regarding each service. To answer the first research question, the same question regarding importance of the specific services to the customers was used in each survey: “How important is each area in a shopping mall?” With a grading from 1 – 4 with 1 being the highest factor of importance (explained in the survey as well). The result of the answer to this question on each survey was summarized and the total result is as follows:

Table 3: Research question 1

<table>
<thead>
<tr>
<th>Grade</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Security</td>
<td>887</td>
<td>248</td>
<td>208</td>
<td>150</td>
</tr>
<tr>
<td>Guest service</td>
<td>503</td>
<td>480</td>
<td>378</td>
<td>131</td>
</tr>
<tr>
<td>Cleaning operation</td>
<td>670</td>
<td>384</td>
<td>272</td>
<td>167</td>
</tr>
</tbody>
</table>

To answer the second research question, several questions regarding how pleased the customer is with a certain service (depending on the survey) were asked in the surveys. The result of these answers is too many to present in this chapter and are left in the appendix for the reader to find. However analysis of the result of these questions, the answer to research question two as well as analysis of the survey question stated above will be found below, in chapter 5. The full summary of the surveys can be found in, appendix 0: survey summary, appendix 0: cleaning operation, appendix 0: guest service as well as appendix 0: safety & security.
5 Analysis

In this chapter, the empirical data will be analyzed in relation to the theoretical framework, which provided the result of this thesis work. To assist the reader, the analysis is structured according to the thesis works three research questions.

5.1 Analysis of survey results: Research question 1

To answer research question 1, the question “How important is each area in a shopping mall?” was used for each survey. In addition to this, each survey included the question: “When you choose where to go shopping, is safety & security/guest service/cleaning operation (only the area which the survey was about was stated) an important deciding factor?” To be able to answer research question 1, a way of grading the customer services has to be used. Since the importance of each customer service is based off the survey answers from customers, the authors have chosen to use a percentage of max grade as the grading scale. This value will be calculated with the following formula:

\[
\text{Equation 1: Percentage of max grade} = \frac{\text{Mean grade of the specific question}}{\text{max grade of the specific question}} = \text{percentage of max grade for the specific question.}
\]

The formula will give a percentage value that shows how close to the maximum possible grade the answers of a specific question are. A 100-percentage value would be given if every respondent answered the “top choice” for that question. A 100-percentage value would therefore be equalized to a customer service being the most important service for 100-percentage of customers. Another benefit of using this grading scale is that values of survey questions that use different number of answering choices can still be compared when they are translated into a percentage of max. The result of the question “How important is each area in a shopping mall?” is shown below:

<table>
<thead>
<tr>
<th>Grade</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Security</td>
<td>887</td>
<td>248</td>
<td>208</td>
<td>150</td>
</tr>
<tr>
<td>Guest service</td>
<td>503</td>
<td>480</td>
<td>378</td>
<td>131</td>
</tr>
<tr>
<td>Cleaning operation</td>
<td>670</td>
<td>384</td>
<td>272</td>
<td>167</td>
</tr>
</tbody>
</table>

To make sure all the votes are taken into consideration a grading system was used to calculate the mean score of each service since all votes has to be taken into consideration. To make calculations easier, the grades were converted giving answer 1 a score of 4, answer 2 a score of 3, answer 3 a score of 2 and answer 4 a score of 1 with higher score being more important. The following table shows the grading system:
With the grades in place a mean grade for each service can be calculated as follows:

**Equation 2: Mean grade with grading system**

\[
\text{Mean grade with grading system} = \frac{((\text{Number of “1” answers} \times 4) + (\text{Number of “2” answers} \times 3) + (\text{Number of “3” answers} \times 2) + (\text{Number of “4” answers} \times 1))}{\text{Total amount of respondents}}
\]

Doing this for each service gives the following values:

- Safety & security: 3,254
- Guest service: 2,908
- Cleaning operations: 3,043

With these calculations, all the answers are taken into consideration and a mean grade of each service is given. The mean grade is then used in the above mentioned formula for calculating percentage of max and gives the following results for each customer service:

- Safety & security: \(3,254/4 = 81,35\%\)
- Guest service: \(2,908/4 = 72,70\%\)
- Cleaning operations: \(3,043/4 = 76,07\%\)

**Table 6: Importance, general question**

<table>
<thead>
<tr>
<th>Outsourced service</th>
<th>Mean grades</th>
<th>Percentage of max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Security</td>
<td>3,254</td>
<td>81,35%</td>
</tr>
<tr>
<td>Guest service</td>
<td>2,908</td>
<td>72,70%</td>
</tr>
<tr>
<td>Cleaning operation</td>
<td>3,043</td>
<td>76,07%</td>
</tr>
</tbody>
</table>

Using the same calculations for the mean values and percentage of max grades for the question: “When you choose where to go shopping, is safety & security/guest service/cleaning operation an important deciding factor?” gives the following values:

**Table 7: Importance specific question**

<table>
<thead>
<tr>
<th>Outsourced service</th>
<th>Mean grades</th>
<th>Percentage of max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Security</td>
<td>5,101</td>
<td>85,02%</td>
</tr>
<tr>
<td>Guest service</td>
<td>4,215</td>
<td>69,82%</td>
</tr>
<tr>
<td>Cleaning operation</td>
<td>4,729</td>
<td>78,82%</td>
</tr>
</tbody>
</table>
Combining the answers of the two questions regarding customer service importance gives the following percentage of max values:

- Safety & security: \((81, 35+85, 02)/2 = 83.18\%\)
- Guest service: \((72, 70 + 69, 82)/2 = 71, 26\%\)
- Cleaning operations: \((76, 07 + 78, 82)/2 = 77, 44\%\)

With these values, all answers regarding the importance of each customer service has been taken into consideration and research question 1 has been answered.

5.2 Analysis of survey results: research question 2

To examine the current performances of each service, several questions were asked in the surveys to determine what the customer thinks of each service current performance. The authors used the same grading scale, percentage of max grade as mentioned in the analysis of research question 1. The reasons for this were that the answers and calculations are all based around the customers answers to the surveys and that the result of research question 1 and research question 2 has to be graded in a way which makes them easy to compare and combine for research question 3.

In the same way that a 100 percentage value of the “percentage of max” in research question 1 would indicate that a customer service is the top important service for 100 percentage of all respondents, a value of 100 percentage regarding performance would indicate that the specific customer service provides 100 percentage customer satisfaction. Mean grades and percentage of max grades were calculated for each area of customer service, by summarizing the values of all the questions regarding performance for a certain customer service and dividing this by the number of questions to receive an overall percentage of max grade of current performance. This gave a total percentage score of each service current performance:

- Safety & Security: 81,19\%
- Guest service: 72,10\%
- Cleaning operations: 76,55\%

This shows the current level of performance of each customer service, as perceived by the customer and research question 2 has been answered. Table 8 shows the combined percentage of max results regarding both importance and performance as perceived by the customer.

Table 8: Service performance and importance

<table>
<thead>
<tr>
<th>Outsourced service</th>
<th>Combined percentage of max results regarding importance</th>
<th>Combined percentage of max results regarding performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Security</td>
<td>83,18%</td>
<td>81,19%</td>
</tr>
<tr>
<td>Guest service</td>
<td>71,26%</td>
<td>72,10%</td>
</tr>
<tr>
<td>Cleaning operation</td>
<td>77,44%</td>
<td>76,55%</td>
</tr>
</tbody>
</table>
When both research question 1 and research question 2 has been answered as shown in Table 8, analysis, creation of a model and answering research question 3 can be performed.

5.3 Analysis of research question 3

With research question 1 and 2 being answered, research question 3 can be investigated as well. Referring to theory of constraints, improving anything but the bottleneck of a supply chain will not improve the performance since the bottleneck is still limiting the total performance. The authors argue that this is the case for the customer service of a shopping mall as well and because of that, the bottleneck customer service has to be improved first.

The authors’ belief comes from studying two models, Kano’s two factors on quality as well as Herzberg’s model on job satisfaction mentioned in the theoretical framework, chapter 3. The two models consist of different “drivers” of satisfaction and while Kano uses more drivers than Herzberg, the two drivers; “Must be” and “Attractive” are similar to Herzberg’s two drivers, “Hygiene” and “Motivator”. Herzberg’s work is based around job satisfaction and not customer satisfaction like Kano’s model. However Kano’s model is based around the work of Herzberg which can be seen when comparing the two models. The two drivers of job satisfaction and customer satisfaction basically means the same thing, “Must be” and “Hygiene” implies factors that are demanded by the worker or customer to reach a level of acceptance of a workplace, product or service but exceeding this level does not increase the satisfaction of the worker or customer. The two drivers “Attractive” and “Motivator” is the next level of drivers which implies factors that increase the level of satisfaction if they are increased. However the “Must be” or “Hygiene” drivers has to be fulfilled for the “Attractive or “Motivator” drivers to have any effect. This is because without the basic needs of a workplace, product or service fulfilled, the worker or customer will not become more satisfied by any other qualities since the basic function is not fulfilled.

Assuming customers of a shopping mall have a required level of service performance needed for each customer service investigated in this thesis work in order to accept the service level of a shopping mall a combination of several theories can be applied to this scenario. The main theories applied in this case are the combination of Herzberg’s and Kano’s theories as well as theory of constraints and the IPA framework. Comparing theory of constraints with the two above mentioned models of satisfaction drivers can be done by equalizing the bottleneck with the “Must be” or “Hygiene” drivers. With this in mind, improvement of any other part than the bottleneck within TOC or the specified drivers within Herzberg’s and Kano’s models, will not improve the total performance of the supply chain or in this case, customer service, until the bottleneck or “Must be” or “Hygiene” drivers are fulfilled. Although theory of constraints is a continuous improvement cycle where you search for new bottlenecks when one is improved, similar strategy can be used when improving
different drivers. First the “Must be” or “Hygiene” which we have equalized to the bottlenecks of TOC has to be improved. However when all these satisfaction drivers are improved, the new bottleneck could become factors that are based in the other two categories “Attractive” and “Motivator” since these factors now can improve the overall customer service, due to the “Must be” or “Hygiene” factors being fulfilled.

Applying this way of thinking to the thesis work case study, reaching a certain level of service performance can be seen as the “Must be” or “Hygiene” driver while exceeding this level becomes an “Attractive” or “Motivator” type driver. This would be a combination of Kano’s “One-dimensional” factor and his “Must be” factor. The authors argue that when looking at customer services, reaching a certain level of performance within customer service is mandatory for the customers to consider using the service, in this case a shopping mall. However improving this service further can according to the authors also increase satisfaction further if all other “Must be” factors are fulfilled.

Exemplifying this with the case study’s shopping mall and looking at the cleaning department, assume customers demand a necessary performance level of 50 percentage (for example calculated as a percentage of max of graded survey questions) to even consider visiting the mall. This factor would then be considered a “must be” factor until it’s fulfilled. Referring back to TOC, this service would be a bottleneck of the overall customer service until the 50 percentage level is reached. The authors argue that all services that fall below this necessary performance level are considered as “must be” factors and bottlenecks until they reach the specified level. This means that improvement of any other service will not increase overall customer satisfaction until all the bottleneck services has reached their threshold levels. However, in contradiction to the “must be” factors of Kano’s model, the authors mean that when the necessary levels are reached for all services, meaning all services are performing above the necessary level perceived by customers, the services can be improved further and by doing so increase the total level of customer satisfaction.

The conclusion of this way of thinking can be seen as services being bottlenecks, limits the actual effect of improvement of non-bottleneck services until all bottleneck services have reached their necessary level. When these levels have been reached for all services, improvement of any service will increase the total level of customer satisfaction.

From the case study’s surveys, there is a clear difference in how important different customer services are for the customers. Certain services are more important than others when the customer goes to a shopping mall. This is exemplified by the surveys of the thesis work where all of the three customer services received different results regarding importance. Improving a service which is perceived by customers as an important service could in theory yield more satisfaction than a service which is less important to the customers. This was first introduced with Martilla and James (1977) IPA technique which is a tool for
analyzing the combined effect of importance and performance. Using the IPA framework as explained by Martilla and James (1977) would basically mean that services which are regarded as being high importance to customers but which are also currently performing subpar should be the focus of improvement. Using Martilla and James (1977) original framework, with the combination of Kano’s and Herzberg’s models as well as TOC, a model which considers the limitations of these theories can be created.

Within Martilla and James (1977) IPA technique, no consideration of the mentioned “must be” / “hygiene” or bottleneck factors mentioned above is taken. Therefore the authors suggest that these limitations should be included in a model based on importance and performance to further strengthen the choice of improvement areas. This is because of the conclusion that improving a service that is not within the “must be” or bottleneck level will not yield any performance improvement as long as there are services within these categories. If, for example a company would only use the IPA framework without any further limitations, they would improve services within the high importance/low performance quadrant of the framework. However, there might be services within the low importance/low performance that still have not reached high enough level to satisfy the “must be” requirements. If this is the case, any improvement of other services that exceeds the “must be” levels will according to theory not yield any additional satisfaction.

With the authors suggestion of using a percentage of max grading for the different categories, importance and improvement, these can simply be multiplied with each other to get a weighted indicator which combines the two values. The authors have developed a model that can be used for companies to identify which service they should focus on improving first with the limitations and way of thinking described above. The model requires three values regarding each service examined, that the company has to identify in order to use the model as intended which are the following:

- The level of importance of each service according to the customer.
- The current performance of each service according to the customer.
- The necessary level of performance of each service, to be counted as considerable, according to the customer.

The third value regarding the necessary level of performance of each service can be hard for companies to identify because of the nature of the value. Obtaining information regarding the lowest possible service level for a customer to consider using the company’s services can be challenging and the customer might not even know where that level is. However the model is designed in a way that instead of using the necessary level, a goal level of customer service, set by the management team of the company can be used instead with the same results.

Below in figure 8: choice model of different improvements is illustrated where the percentage values in the shaded cells have been replaced by numbers to make it
Analysis

easier to follow the explanation of the model. The four values and the calculations of the model will be explained step-by-step:

1. First, the level of importance of each service examined, according to the customers, has to be entered. This value should be entered in a percentage of max grade since this type of value can be used in the following cells. It is also a good value to use since it should be the customers perceived level of importance and answers with different grading scales can be compared using this method.

2. The second value is the current performance perceived by customers regarding each service. The same goes for this value; a percentage of max grade is the suggested value form.

3. The third information that has to be entered is the necessary level of performance according to the customers. As mentioned above, this can be replaced by a goal level of customer service that the management team of the company can choose themselves, if no information regarding the customers’ necessary level exists.

When these three values are entered, several calculations follow throughout the model. The first calculation, which is mentioned above is the “weighted performance with importance” cell in the model. This value is a combination of the perceived level of importance of a specific service to the customer and the perceived level of performance according to the customer and is used for comparison with the goal level in the next step. The cell named “necessary level of performance (weighted)” is the value of the necessary level of performance multiplied with the importance of any specific service. This creates a weighted performance goal that should differ as much from the “weighted performance with importance” cell as the “current performance according to customers” cell differs from the “necessary level of performance according to customers”. The reason for using a combination of the importance and the performance is to get a value that shows the value of the performance level of a service with care taken for how important the service is. The next cell in the model shows how much of the real performance, without consideration to any weight being taken, has to improve to reach the weighted goal.

4. The fourth information that has to be entered is the percentage values of improvement that the company wants to examine to find which service they should improve first. Assume a company can spend a certain amount of money on improving their customer service and assume that this amount of money will improve one specific service by 10 percentages but the same amount of money will only improve the remaining services by 5 percentages. A simplified case could be where a company can improve a customer service by hiring more workers. Assume that hiring a certain percentage of additional workers will improve the service performance by the same percentage. The cost of hiring additional workers might differ
between different customer service areas which in turn can make the performance improvement received by spending a certain amount of money, differ between customer service areas. What the company can do is to enter different percentages for different services. The model will then calculate how much each improvement will yield considering the importance of the different services just like the weighted performance was calculated after step 3.

When the final values are entered the cell named “is any service still within necessary?” will yield either a TRUE or FALSE value were TRUE means there are still at least one customer service which have not reached the necessary level of performance. If this cell shows FALSE, all the services have reached their respective necessary levels of performance. This cell is mainly used for the next step in the model which the cell is named “actual improvement”. The function of this cell is that it checks if the previous cell is either valued TRUE or FALSE, and acts accordingly. A TRUE value in the previous cell means that “actual improvement” will be zero for all customer services that have already reached their necessary level. This is based around the way of thinking previously described regarding improvement of non-bottlenecks and non- “must be” factors. However if the previous cell shows FALSE, this implies that all customer services has reached their thresholds which makes it possible to improve any service and receive increased overall customer service. The “actual improvement” cell also checks how far each customer service is from reaching the necessary level. The model then compares which of the “weighted performance improvement” cell and the “required real improvement to reach necessary level” cell is the largest. If the “weighted performance improvement” value is higher than the requirement for reaching the necessary level, actual improvement will be limited to the amount required to reach the necessary level. This is because when comparing bottlenecks which this model is mainly created for, improving a service beyond the required level will not yield additional improvement of overall customer service if there are still customer services that have not reached the necessary level.

The next cell, “improve the service?” checks which of the different services that has the highest “actual improvement” and returns the value TRUE for this service and FALSE for the rest, indicating that this service should be improved. The final cell “new performance level after improvement” shows the new weighted performance levels that will be reached, should the company decide to carry through with an improvement operation.

The model is suggested to be a tool for managers to weight the importance as perceived by the customer of different customer services with the customers’ perceived performance of each service. The company manager can then enter different values of “real” improvement of performance in the fourth step and receive information about how much this improvement will actually yield with consideration to the way of thinking regarding “must be” factors and bottlenecks discussed earlier in the thesis work.
To further enhance the understanding of the model, values from the case study will be used and an example goal level of 80 percentages will be used for step 3. In addition to this, for further understanding of the different parts of the model, example values of 5 percentages and 10 percentages will be used in step 4. This is done to illustrate the fact that a certain amount of money can provide different levels of performance improvement within different areas of customer service because of differences in costs.

<table>
<thead>
<tr>
<th>Customer Service</th>
<th>Level of importance to customers</th>
<th>Current performance according to customers</th>
<th>Necessary level of performance according to customers (example)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Guest service</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Cleaning</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Additional service</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer Service</th>
<th>Weighted performance with importance</th>
<th>Necessary level of performance (weighted)</th>
<th>Required real improvement to reach necessary level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>0,00%</td>
<td>0,00%</td>
<td>0,00%</td>
</tr>
<tr>
<td>Guest service</td>
<td>0,00%</td>
<td>0,00%</td>
<td>0,00%</td>
</tr>
<tr>
<td>Cleaning</td>
<td>0,00%</td>
<td>0,00%</td>
<td>0,00%</td>
</tr>
<tr>
<td>Additional service</td>
<td>0,00%</td>
<td>0,00%</td>
<td>0,00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer Service</th>
<th>Improvement of performance</th>
<th>Weighted performance improvement</th>
<th>Is any service still within &quot;necessary&quot;?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>4</td>
<td>0,00%</td>
<td>FALSE</td>
</tr>
<tr>
<td>Guest service</td>
<td>4</td>
<td>0,00%</td>
<td>FALSE</td>
</tr>
<tr>
<td>Cleaning</td>
<td>4</td>
<td>0,00%</td>
<td>FALSE</td>
</tr>
<tr>
<td>Additional service</td>
<td>4</td>
<td>0,00%</td>
<td>FALSE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer Service</th>
<th>Actual improvement</th>
<th>Improve the service?</th>
<th>New performance level after improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>0,00%</td>
<td>FALSE</td>
<td>0,00%</td>
</tr>
<tr>
<td>Guest service</td>
<td>0,00%</td>
<td>FALSE</td>
<td>0,00%</td>
</tr>
<tr>
<td>Cleaning</td>
<td>0,00%</td>
<td>FALSE</td>
<td>0,00%</td>
</tr>
<tr>
<td>Additional service</td>
<td>0,00%</td>
<td>FALSE</td>
<td>0,00%</td>
</tr>
</tbody>
</table>

Figure 8: Choice model of different possible improvements

Figure 9: Choice model of different possible improvements: case example shows how the model works with numbers from the case study entered. Different levels of importance to customers and performance are entered and goal level of 80 percentages for all services has been used to exemplify. In this case, the model shows that guest service and cleaning operation and have not reached their respective threshold levels with guest service being the furthest from the target. To illustrate the usage of the model, different percentages were used for step 4,
“improvement of performance” to illustrate how it affects the remaining parts of the model.

<table>
<thead>
<tr>
<th>Customer Service</th>
<th>Level of importance to customers</th>
<th>Current performance according to customers</th>
<th>Necessary level of performance according to customers (example)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>83,18%</td>
<td>81,19%</td>
<td>80,00%</td>
</tr>
<tr>
<td>Guest service</td>
<td>71,26%</td>
<td>72,10%</td>
<td>80,00%</td>
</tr>
<tr>
<td>Cleaning</td>
<td>77,44%</td>
<td>76,55%</td>
<td>80,00%</td>
</tr>
<tr>
<td>Additional services</td>
<td>0,00%</td>
<td>0,00%</td>
<td>0,00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer Service</th>
<th>Weighted performance with importance</th>
<th>Necessary level of performance (weighted)</th>
<th>Required real improvement to reach necessary level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>67,53%</td>
<td>66,54%</td>
<td>-1,19%</td>
</tr>
<tr>
<td>Guest service</td>
<td>51,38%</td>
<td>57,01%</td>
<td>7,90%</td>
</tr>
<tr>
<td>Cleaning</td>
<td>59,28%</td>
<td>61,95%</td>
<td>3,45%</td>
</tr>
<tr>
<td>Additional services</td>
<td>0,00%</td>
<td>0,00%</td>
<td>0,00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer Service</th>
<th>Improvement of performance</th>
<th>Weighted performance improvement</th>
<th>Is any service still within &quot;necessary&quot;?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>5,00%</td>
<td>4,16%</td>
<td>TRUE</td>
</tr>
<tr>
<td>Guest service</td>
<td>10,00%</td>
<td>7,13%</td>
<td>TRUE</td>
</tr>
<tr>
<td>Cleaning</td>
<td>10,00%</td>
<td>7,74%</td>
<td>TRUE</td>
</tr>
<tr>
<td>Additional services</td>
<td>5,00%</td>
<td>0,00%</td>
<td>TRUE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer Service</th>
<th>Actual improvement</th>
<th>Improve the service?</th>
<th>New performance level after improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>0,00%</td>
<td>FALSE</td>
<td>67,53%</td>
</tr>
<tr>
<td>Guest service</td>
<td>7,13%</td>
<td>TRUE</td>
<td>58,50%</td>
</tr>
<tr>
<td>Cleaning</td>
<td>3,45%</td>
<td>FALSE</td>
<td>62,73%</td>
</tr>
<tr>
<td>Additional services</td>
<td>0,00%</td>
<td>FALSE</td>
<td>0,00%</td>
</tr>
</tbody>
</table>

Figure 9: Choice model of different possible improvements: case example

As seen in the cell “weighted performance improvement”, safety & security has a improvement percentage of 4,16, but this is adjusted to 0 percentage in the “actual improvement” cell. This is caused by services which not yet have reached their threshold levels. If you compare the “improvement of performance” cell with the “weighted performance improvement” cell you can see a clear difference between how much a certain percentage improvement yields when consideration for importance is taken. For example, in this case the “improvement of performance” percentage of the guest service and cleaning departments are the same but when
care is taken to the importance of the service, illustrated in the “weighted performance improvement” cell, cleaning receives a higher value because the service being more important to the customers. However, since cleaning only have 3.45 percentages left to its required level, illustrated in the “required real improvement to reach necessary level, the actual improvement will in this case only be 3.45 percentages which in this case is lower than the actual improvement of the guest service being 7.13 percentages. This results in guest service being the service that should be focused with these parameters.
6 Discussions and conclusion

Initially, this chapter will discuss the results of the empirical data. This is followed by the discussion of practical and theoretical implications of the study. Continuously the thesis work’s approach as strategy- and method choices used will be discussed. Finally, discussion regarding future studies will be presented.

6.1 Result and contribution

The purpose of this thesis work is to investigate which out of three customer services that should be prioritized for improvement and how a model for finding this service can be created. To fulfill the purpose, three research questions were stated and the result discussion will follow each research question separately.

6.1.1 Research question 1

To find which customer service that should be prioritized for improvements with a basis in the IPA framework, the level of importance of each service according to the customer had to be found. The framework and the model which the information should be used in require the importance level to be given in the form of the customers’ view of the importance of a service. Because of this, surveys were used to find the customers’ perceived importance level.

In the analysis of research question 1, the calculation for a percentage of max grade was used to grade each service. The authors believe that this provides a good overview of the importance of each service since a 100 percentage value can be seen as the service being extremely important to every customer, this would require that every single survey respondent choose the “most important”, 1 option. This would also mean that an 80-percentage value would show that the importance of the service is still very high but that the “mean” customer believes that the importance level of a service is around 80 of 100 on a scale with 100 being the maximum score. The purpose of calculating every answer in percentage of max values is to be able to compare the answers of questions with different grading scales. For example, in this case, the authors found it appropriate to use a grading scale of four options regarding the question “How important is each area in a shopping mall?” which was used in every survey. But for the question regarding the importance of the service which each survey was about; “When you choose where to go shopping, is safety & security/information/cleaning an important deciding factor?”, a scale of 6 options were used. The reason for using different scales were mainly that originally, four services were going to be examined, thus ranking the four services using a scale of 4 options seemed appropriate when discussed with the case company. In addition to this, not having the same scale of the two questions regarding importance could make the customer think through the question more, rather than just answering the same on both questions.

Table 9: shows the percentage of max values of each service when the two questions regarding importance was summarized:
Discussions and conclusion

Table 9: Service Importance

<table>
<thead>
<tr>
<th>Service</th>
<th>Importance, percentage of max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; security</td>
<td>83,18%</td>
</tr>
<tr>
<td>Guest service</td>
<td>71,26%</td>
</tr>
<tr>
<td>Cleaning operation</td>
<td>77,44%</td>
</tr>
</tbody>
</table>

This information indicates that the most important service is safety & security, with cleaning operations following secondly and lastly guest service. The authors expected safety & security to be regarded as a high importance service because people naturally want to feel safe, especially families bringing children to the shopping mall. In addition to this, the authors’ experiences of living in Thailand for several malls indicate that the safety & security industry is entirely different than in western countries. Comparing the amount of security guards in shopping malls, generally anywhere, in Thailand and Sweden you find huge differences. In Sweden you can basically walk through a shopping mall without noticing any guards anywhere while in Thailand they are much more common. In Thailand there are guards and scanners checking bags by many entrances to shopping malls and there are guards around the parking spaces and roads around many shopping malls and other areas which are unusual to find security guards in Sweden. It seems that the Thai people are much more used to having a lot of security guards around them which would also make the service feel more important.

Regarding the second two services the authors believes there are a few reasons why cleaning operations were ranked higher than guest services. The authors believe that a lot of returning customers do not use or does not have to use the guest service since they already know the layout and where different shops are located. The reason returning shoppers might use the guest services are if they want to rent a wheelchair or baby-stroller but this does not apply for customers without that need. In addition to this, the cleaning operations affect all customers visiting the shopping mall since it includes the cleanliness of areas all over the shopping mall. The authors also believe that customers generally are very positive about clean public bathrooms since public bathrooms are generally seen as the opposite.

Overall the result of this research questions seems reasonable and accurate. The authors expected cleaning operations to be seen as the most important one, coming from a western country were security guards are much more uncommon and feeling safe generally is not an issue, according to the authors. However, after living in Thailand for several months and observing the culture and how everything works in the country, it is understandable why safety & security is seen as such an important factor of a shopping mall. The authors believe that in western countries, people generally feel safe which makes the safety function of a shopping mall more obsolete since the overall safety & security of, for example a country, might be much more advanced.
6.1.2 Research question 2

The second information that was needed for the creation of a model was the current performance of each customer service. The performance within the IPA framework, which was used as a basis for the model, should be the performance as perceived by the customer. Therefore the information for research question three was also gathered by the use of surveys.

The same type of percentage of max values used for research question one and the reasoning behind this were discussed in the above chapter. However the percentage of max value meaning is slightly different than in research question one. When the percentage of max is calculated regarding performance, a value of 100 percentage would mean that the performance of a service is providing perfect customer satisfaction as explained in the analysis of research question two. A percentage of max value of 80 percentages could in turn be equalized as providing a customer satisfaction of 80 percentages. However, this depends on what the customer demand for being satisfied is.

Table 10: shows the percentage of max values for the performance of each customer service. According to these values, safety & security is currently performing best out of the three with cleaning operation coming second and lastly guest service. Interestingly this follows level of importance very closely with the services falling in the same order. The authors believe that this could be the effect of two different things. Either, the customers rate the services which they believe are important with a higher performance rating without intent which seems unrealistic since rating a performance higher than what the customer believes is counterproductive for the customers’ themselves. The other possible reasons, which the authors believe is more likely is that the case company has used more resources on improving the services which they believe is important based on experience.

Table 10: Service performance

<table>
<thead>
<tr>
<th>Service</th>
<th>Performance, percentage of max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; security</td>
<td>81,19%</td>
</tr>
<tr>
<td>Guest service</td>
<td>72,10%</td>
</tr>
<tr>
<td>Cleaning operation</td>
<td>76,55%</td>
</tr>
</tbody>
</table>

The authors also discussed the possibilities that in this case, guest service, which was ranked as the least important of the three, have received low grades simply because customers who does not use the service to any major degree answered the survey questions based on other things than their own experience. However this cannot be validated by the authors and is therefore not considered a valid reason for the outcome of the surveys in this case.

The authors believes that the case company has allocated resources based on previous experience and knowledge and that this has led to that services which are important to the customer have been given more attention. Another important factor regarding this as well as for the creation of the model is that different
customer services might have different demands from the customer. For example, a customer service with a lower degree of importance might also, naturally, have a lower degree of service demand since the customer values this service to a lesser degree. This has to be examined further and will be taken up in chapter 6.4 regarding future studies.

6.1.3 Research question 3

When both the importance and performance of each customer service was found, a model for prioritization could be created and tested. The resulting model presented in this thesis work is solely based on theories which could limit its potential but it also means it is easier to generalize since no factors of the specific case company was included. The main function of the model is that it compares several values with each other using basic programming and then returns different values depending on the input values. What value that is returned is limited by the Herzberg’s two factor theory, Kano’s model, TOC and IPA theories. The model is programmed in a very basic manner in excel and should a company need to compare a lot of different options, a better programmed model might have to be used to speed up calculations.

Another limitation with the model is that it is based on the assumption that a weighted performance improvement can be used by multiplying the performance improvement with the level of importance according to customers to see how much it would improve overall customer service. It does give a fair value for each service, turning an improvement percentage into how much it theoretically could yield in actual, overall customer service improvement. However there might be better ways of combining these two values which have not been investigated in this case since the authors had to focus on applying the different limitations into a model.

The model does not take costs into consideration, which could aid in prioritization of improvements. Due to before organizations improve a service, calculations regarding the cost are normally performed to see if the organization can afford the improvement or if it worth to invest. Improving a service that generates a less improvement of customer satisfaction to a lower cost can be more favorable compared to a service that generate a higher improvement of customer satisfaction to a higher cost. The costs could in this case be calculated separately and then be used in conjunction with the model, to further aid in prioritizing improvements.
6.2 Implications

The constructed model supports recurring decisions regarding prioritizing improvements. By using the model, calculations are not required to do by hand each time a decision will be decided. The reason behind this is due to that the model is standardized for recurring decisions. This way the model removes the need for unique calculations to be performed for each case that arises. One of the advantages of the model is that it can be further developed if the current situation changes, by adjusting the model different parameters can be applied. This makes the model susceptible for improvements and adjustments. Important to notice is that the model is simplified compared to reality to make it comprehensible for the users. Therefore it can not be used exclusively to make decisions, experience from the decision makers as well as other types of information regarding the specific case has to be considered. In this case only outsourced services at a shopping mall were investigated. Other companies may require additional data to use within the model.

6.3 Limitations

Criticism can be aimed towards the approaches and methods used to achieve the thesis work’s result. The purpose of the following section is therefore to discuss why the methods and approaches were used, what was favorable and what could have been improved. The discussion revolves around the case study, data collection, data analysis and the thesis work reliability and validity.

6.3.1 Case study

The case study was mainly performed to be able to link the theories with the reality, in a real life context. It has also given the authors an understanding of difficultness and problems in reality. Throughout this case study, the authors have gained increased knowledge by a better insight how a shopping mall in Thailand manage their work. In addition to this, knowledge about theories that can be used to compare service performance with importance as well as theories regarding customer satisfaction has been gathered. During the third research question, the model that was created could be tested with real data collected from the case study. The model was constructed only on basis of theory. The model revealed what service the shopping mall management should prioritize for further improvements, to increase the customer satisfaction and mall patronage.

As mentioned in 2.5.2 performing a multiple case study could further validate the result and make it more generalized. However, the authors do believe that the result of the constructed model and theory regarding prioritizing improvements could be generalized in a fair way; however individual studies must be conducted at other shopping malls to retrieve each service level of performance and importance, to enter into the model. The main reason to only have a single case study is due to the authors wanting to investigate the research questions more deeply within the timeframe.
The first and second research question was mainly answered by an empirical study, which was supported by a literature study, to strengthen and increase the accuracy of the data collected from the empirical study. The third research question was answered by combining the results from the previous questions together with literature studies. Therefore, the case study has been essential to support the result and fulfill the purpose.

6.3.2 Data collection

Through a literature study and a case study the data collection was accomplished. The case study was also a compliment to the theory, in form of interviews in collaboration with observations and surveys, when the literature was insufficient. The gathered data from managers interviewed were considered reliable, because each manager has responsibility to manage the outsourced service. Observations that were made simultaneously with the interviews were also considered reliable because the authors have viewed the process of each service. When interviews and observations were performed, no questions were sent in advance to the manager, due to the subjected area not being familiar to the authors, wrong questions could be asked regarding each service. Therefore both authors contributed with questions that occurred during the interviews and observations. This to assure that all questions that arisen could be asked and answered by the managers. An alternative approach could have been to record the interviews that were ongoing together with the observations, which could be reviewed if any uncertainties occurred afterwards. The authors, however, structured the data collected directly afterwards when the data were still fresh, so that no data would be lost. The third data collection, surveys, were also considered reliable due to each question in the survey having a purpose regarding the service performance or importance. In addition to this a controller verified each question from the surveys. It was also distributed at the shopping mall which gives the customer a fresh memory about the questions asked. The authors found that a third useful measurement that in this case could not be provided is the lowest level of service performance demanded by the customer. However, this measurement is difficult to achieve, though it is challenging to rank a lowest level of performance since the customers might not even know what their demanded level is. Therefore, the reliability provided from such questions can be seen as unreliable, because customers might not understand what the lowest performance can perform. This solitary, would require a new study to achieve a useful result. The amount of surveys that was handed out could be a disadvantage; more surveys will generally provide a more accurate data. However, the authors did statistical calculation to validate and therefore the results of the surveys could be generalized to a larger population.
6.3.3 Data analysis

The adductive approach that was used to answer the first and second research question, through both empirical- and literature study, were carefully selected due to the importance of the data collected to these questions. Incorrect data would lead to an incomplete model, with insufficient data. Therefore, the theory and empirical data have been compared back and forward to receive correct data. The deductive approach that was used to answer the third research question, through a thorough literature study connected different theories to construct a model. Data collected from previous questions were used in the model to verify, which service the case company should prioritize for improvement and how the model function with real data. These two approaches secured that the chosen theories were relevant for the thesis work and therefore had a high utility.

6.3.4 Reliability & validity

This thesis work’s three research questions have been able to be answered, by applying the methods chosen to collect data and data analysis. The purpose of this thesis work: develop a model which can aid in prioritizing which of the three customer services; safety & security, cleaning operation and guest service, in a Thailand shopping mall that should be the focus of improvement by combining values of customers' judgment of importance and current perceived performance of the three customer services, have therefore been achieved. The thesis work has a high reliability according to the authors. Every interview together with observations of each service made it clear how the services worked, which lead to what each service main work tasks were. These were then used in the questionnaire survey. The results of the survey were reliable, due to the surveys handed out during the same time-frames to ensure that as many parameters as possible remained the same for all surveys.

To ensure that the right things have been taken into consideration, the research questions have been carefully formulated to support the thesis work and to fulfill the purpose which ensures the internal validity. Concerning the surveys, the authors have asked the reality, customers, regarding the shopping mall performance and importance, which also support the internal validity. Theories that have been used are well known and applicable for reality and the authors have combined these theories to fulfill the thesis work’s purpose. Therefore, it can be considered to support the internal validity.

The amount of surveys distributed, supported the decision to generalize the result to different situations. Statistical calculations were performed on every question from the surveys if the results achieved a standard distribution with a certain variance and standard deviation, to support the external validity in this thesis work. The model is built on theories as mentioned above and it can be used in different situations if the other organizations performed the basis, performance and importance calculations that the model requires, which enhance the external validity. To increase the models validity, a repetition of this study should be done after an improvement has been completed at the case company or use this study at more organizations.
6.4 Conclusion and further research

By completing the thesis work it has shown that theories about customer satisfaction can be combined to support the decisions regarding prioritization of improvements. The model is only calculated and built on customer satisfaction, performance and importance, which means that it leaves space for future studies to add cost in the model's equation.

Another interesting subject is how to find the lowest level of importance that is acceptable for customers, to clarify how high or low the hygiene- and must be factors levels are. An interesting topic related to this is how the level of importance of a customer service is related to the hygiene and must be factors, for example, does a lower level of importance equal a lower level of the hygiene and must be factors?

The model should aid the decision what to prioritize as mentioned above. Therefore can it be interesting to do repeated studies after an improvement has been made to see if the “actual” improvement which is currently an assumption is closely related to the real results from a prioritization. This would give the model a higher validity.

It is also interesting to examine how several factors, for example, square meters, amount of bathrooms and amount of personnel is related to performance –level. Studies could be done to calculate that a shopping mall with ”x” square meters, ”y” amount of bathrooms and ”z” amount of personnel, gives a performance level of ”p”. This could then be used to calculate the need of personnel to reach a desired level of performance. In addition to this, studies regarding the relationship between amount of customers and amount of personnel would be interesting to examine. Data regarding, for example, the amount of personnel needed per customer or per 1000 customers to provide a certain performance level of a service would be valuable for the shopping mall management.
References


Appendices

Appendix 1: Safety & Security survey

Security Survey

General questions

When you choose where to go shopping, is the amount of security guards to assist you one of your main deciding factors?
(Not important) (Very important)
1. 2. 3. 4. 5. 6.

What do you feel about the amount of security guards inside and around MEGA?
(Too few) (Too many)
1. 2. 3. 4. 5. 6.

Which of these four areas are the most important to you in a shopping mall?
Please rank the areas from 1 to 4 with 1 being the most important and 4 being the least important. One answer per row and column
Security 1. 2. 3. 4.
Information 1. 2. 3. 4.
Cleaning 1. 2. 3. 4.
Technical Maintainance 1. 2. 3. 4.

Parking questions (If you did not park skip this part)

Were you pleased with the service when you parked your car?
(Not pleased) (Very pleased)
1. 2. 3. 4. 5. 6.

Were you pleased with the service to avoid traffic jams by guards controlling and directing traffic?
(Not pleased) Very pleased)
1. 2. 3. 4. 5. 6.

Do you need security guard assistance in the car park?
(Yes I need) (Yes, but no guards available) (No, I don’t need)

63
Appendix 2: Cleaning operation survey

1. When you choose where to go shopping, is the cleanliness an important deciding factor?

<table>
<thead>
<tr>
<th>Extremely unimportant</th>
<th>Very unimportant</th>
<th>Unimportant</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. How would you rank MEGA’s cleanliness?

<table>
<thead>
<tr>
<th>Extremely poor</th>
<th>Very poor</th>
<th>Poor</th>
<th>Good</th>
<th>Very good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. How pleased are you with the cleanliness of these four areas:

<table>
<thead>
<tr>
<th>Extremely displeased</th>
<th>Very displeased</th>
<th>Unpleased</th>
<th>Pleased</th>
<th>Very pleased</th>
<th>Extremely pleased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common areas inside of MEGA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking lot</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk areas outside of MEGA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. If the cleanliness were poor would you go to another mall next time you went shopping?

<table>
<thead>
<tr>
<th>It would not affect my decision</th>
<th>I would consider it</th>
<th>I would strongly consider it</th>
<th>I would definitely change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. How important is each area in a shopping mall? On a scale 1 to 4 with 1 being the most important and 4 being the least important.

<table>
<thead>
<tr>
<th>Area</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THANK YOU FOR YOUR TIME!
Appendix 3: Guest service survey

1. When you choose where to go shopping, are the information services an important deciding factor?

<table>
<thead>
<tr>
<th>Extremely unimportant</th>
<th>Very unimportant</th>
<th>Unimportant</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. How would you rank MEGA’s information services?

<table>
<thead>
<tr>
<th>Extremely poor</th>
<th>Very poor</th>
<th>Poor</th>
<th>Good</th>
<th>Very good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. How pleased are you with the each service provided at MEGA (If you have not used the service, leave blank):

<table>
<thead>
<tr>
<th>Service</th>
<th>Extremely unpleased</th>
<th>Very unpleased</th>
<th>Unpleased</th>
<th>Pleased</th>
<th>Very pleased</th>
<th>Extremely pleased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Desk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheelchair/Baby stroller</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golf cart</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maps located throughout the mall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. If the information services were poor would you go to another mall next time you went shopping?

<table>
<thead>
<tr>
<th>Decision Impact</th>
<th>It would not affect my decision</th>
<th>I would consider it</th>
<th>I would strongly consider it</th>
<th>I would definitely change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. How important is each area in a shopping mall?
On a scale 1 to 4 with 1 being the most important and 4 being the least important.

<table>
<thead>
<tr>
<th>Area</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THANK YOU FOR YOUR TIME!
Appendix 4: Organization chart
### Appendix 5: Survey summary

#### Q5: How important is each area in a shopping mall?

<table>
<thead>
<tr>
<th></th>
<th>Grade</th>
<th>Grade</th>
<th>Safety &amp; Security</th>
<th>Guest service</th>
<th>Cleaning operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade points</strong></td>
<td>4</td>
<td>3</td>
<td>887</td>
<td>503</td>
<td>670</td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td>1</td>
<td>2</td>
<td>248</td>
<td>480</td>
<td>384</td>
</tr>
<tr>
<td><strong>Safety &amp; Security</strong></td>
<td>2</td>
<td>3</td>
<td>208</td>
<td>378</td>
<td>272</td>
</tr>
<tr>
<td><strong>Guest service</strong></td>
<td>3</td>
<td>4</td>
<td>150</td>
<td>131</td>
<td>167</td>
</tr>
<tr>
<td><strong>Cleaning operation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Summary of all surveys

<table>
<thead>
<tr>
<th></th>
<th>Total respondents</th>
<th>Mean Grade</th>
<th>Percentage of max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Security</td>
<td>1493</td>
<td>3.253851306</td>
<td>81.35%</td>
</tr>
<tr>
<td>Guest service</td>
<td>1492</td>
<td>2.908176944</td>
<td>72.70%</td>
</tr>
<tr>
<td>Cleaning operation</td>
<td>1493</td>
<td>3.042866711</td>
<td>76.07%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Combined % of max result regarding importance</th>
<th>Combined % of max result regarding service performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Security</td>
<td>83.18%</td>
<td>81.19%</td>
</tr>
<tr>
<td>Guest service</td>
<td>71.26%</td>
<td>72.10%</td>
</tr>
<tr>
<td>Cleaning operation</td>
<td>77.44%</td>
<td>76.55%</td>
</tr>
</tbody>
</table>
### Appendix 6: Cleaning operation

#### Q1: When you choose where to go shopping, is the cleanliness an important deciding factor?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Extremely Unimportant</th>
<th>Very Unimportant</th>
<th>Unimportant</th>
<th>Important</th>
<th>Very Important</th>
<th>Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total respondents</th>
<th>Mean Grade</th>
<th>% of max</th>
<th>StDev</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/98</td>
<td>4.7289</td>
<td>78.82%</td>
<td>0.873</td>
<td>0.761</td>
</tr>
</tbody>
</table>

#### Q2: How would you rank MEGA's cleanliness?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Extremely Poor</th>
<th>Very Poor</th>
<th>Poor</th>
<th>Good</th>
<th>Very Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total respondents</th>
<th>Mean Grade</th>
<th>% of max</th>
<th>StDev</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/98</td>
<td>4.6807</td>
<td>78.05%</td>
<td>0.662</td>
<td>0.438</td>
</tr>
</tbody>
</table>

#### Q3: How pleased are you with the cleanliness of these four areas?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Extremely Unplesased</th>
<th>Very Unplesased</th>
<th>Unplesased</th>
<th>Plesased</th>
<th>Very Plesased</th>
<th>Extremely Plesased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total respondents</th>
<th>Mean Grade</th>
<th>% of max</th>
<th>StDev</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/98</td>
<td>4.5786</td>
<td>76.12%</td>
<td>0.753</td>
<td>0.57</td>
</tr>
</tbody>
</table>

#### Q4: If the cleanliness were poor would you go to another mall next time you went shopping?

<table>
<thead>
<tr>
<th>Grade</th>
<th>It would not affect my decision</th>
<th>I would consider it</th>
<th>I would strongly consider it</th>
<th>I would definitely change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys</td>
<td>46</td>
<td>195</td>
<td>177</td>
<td>80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total respondents</th>
<th>Mean Grade</th>
<th>% of max</th>
<th>StDev</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/98</td>
<td>2.5843</td>
<td>64.01%</td>
<td>0.866</td>
<td>0.75</td>
</tr>
</tbody>
</table>

#### Q5: How important is each area in a shopping mall?

<table>
<thead>
<tr>
<th>&quot;Grade points&quot;</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Security</td>
<td>317</td>
<td>80</td>
<td>68</td>
<td>33</td>
</tr>
<tr>
<td>Information</td>
<td>203</td>
<td>171</td>
<td>85</td>
<td>39</td>
</tr>
<tr>
<td>Cleaning</td>
<td>288</td>
<td>102</td>
<td>62</td>
<td>46</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total respondents</th>
<th>Mean Grade</th>
<th>% of max</th>
<th>StDev</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/98</td>
<td>3.3674</td>
<td>84.19%</td>
<td>0.951</td>
<td>0.905</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total respondents</th>
<th>Mean Grade</th>
<th>% of max</th>
<th>StDev</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/98</td>
<td>3.0803</td>
<td>77.01%</td>
<td>0.942</td>
<td>0.887</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total respondents</th>
<th>Mean Grade</th>
<th>% of max</th>
<th>StDev</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/98</td>
<td>3.2690</td>
<td>81.73%</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
When you choose where to go shopping, are the information services an important deciding factor?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Extremely unimportant</th>
<th>Very unimportant</th>
<th>Unimportant</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>#surveys</td>
<td>6</td>
<td>19</td>
<td>38</td>
<td>280</td>
<td>111</td>
<td>38</td>
</tr>
</tbody>
</table>

How would you rank MEGA’s information services?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Extremely poor</th>
<th>Very poor</th>
<th>Poor</th>
<th>Good</th>
<th>Very good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#surveys</td>
<td>0</td>
<td>1</td>
<td>19</td>
<td>358</td>
<td>96</td>
<td>15</td>
</tr>
</tbody>
</table>

Q3: How pleased are you with the cleanliness of these four areas:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Extremely unpleased</th>
<th>Very unpleased</th>
<th>Unpleased</th>
<th>Pleased</th>
<th>Very pleased</th>
<th>Extremely pleased</th>
</tr>
</thead>
<tbody>
<tr>
<td>#Toilets</td>
<td>1</td>
<td>2</td>
<td>15</td>
<td>292</td>
<td>77</td>
<td>18</td>
</tr>
<tr>
<td>#Common areas inside</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>190</td>
<td>106</td>
<td>26</td>
</tr>
<tr>
<td>#Parking lot</td>
<td>1</td>
<td>1</td>
<td>22</td>
<td>182</td>
<td>80</td>
<td>33</td>
</tr>
<tr>
<td>#Walk areas outside</td>
<td>0</td>
<td>3</td>
<td>22</td>
<td>244</td>
<td>108</td>
<td>39</td>
</tr>
</tbody>
</table>

Q4: If the cleanliness were poor would you go to another mall next time you went shopping?

<table>
<thead>
<tr>
<th>Grade</th>
<th>It would not affect my decision</th>
<th>I would consider it</th>
<th>I would strongly consider it</th>
<th>I would definitely change</th>
</tr>
</thead>
<tbody>
<tr>
<td>#surveys</td>
<td>136</td>
<td>202</td>
<td>107</td>
<td>35</td>
</tr>
</tbody>
</table>

Q5: How important is each area in a shopping mall?

<table>
<thead>
<tr>
<th>&quot;Grade points&quot;</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>#Security</td>
<td>282</td>
<td>96</td>
<td>54</td>
<td>60</td>
</tr>
<tr>
<td>#Information</td>
<td>199</td>
<td>149</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>#Cleanings</td>
<td>222</td>
<td>113</td>
<td>100</td>
<td>57</td>
</tr>
</tbody>
</table>

Total respondents: 482
Mean Grade: 4.18302459
% of max: 69.82%
Std Dev: 0.91764172
Variance: 0.84197417
### Appendix 8: Safety & Security

#### Q5: How important is each area in a shopping mall?

<table>
<thead>
<tr>
<th>&quot;Grade points&quot;</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Security</td>
<td>188</td>
<td>73</td>
<td>86</td>
<td>57</td>
</tr>
<tr>
<td>Information</td>
<td>169</td>
<td>169</td>
<td>193</td>
<td>42</td>
</tr>
<tr>
<td>Cleaning</td>
<td>160</td>
<td>160</td>
<td>110</td>
<td>64</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total respondents</th>
<th>Mean Grade</th>
<th>% of max</th>
<th>StdDev</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>503</td>
<td>1,946384628</td>
<td>79.78%</td>
<td>1.04586288</td>
<td>1.17004068</td>
</tr>
</tbody>
</table>

#### How do you feel about the amount of security guards inside and around MEGA?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Extremely poor</th>
<th>Very poor</th>
<th>Poor</th>
<th>Good</th>
<th>Very good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runners</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Runners</td>
<td>3</td>
<td>8</td>
<td>9</td>
<td>40</td>
<td>52</td>
<td>391</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total respondents</th>
<th>Mean Grade</th>
<th>% of max</th>
<th>StdDev</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>503</td>
<td>5,10395196</td>
<td>85.18%</td>
<td>0.94502394</td>
<td>0.8569138</td>
</tr>
</tbody>
</table>

#### Were you pleased with the service when you parked your car?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Extremely displeased</th>
<th>Very displeased</th>
<th>Unpleased</th>
<th>pleased</th>
<th>Very pleased</th>
<th>Extremely pleased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runners</td>
<td>6</td>
<td>6</td>
<td>42</td>
<td>33</td>
<td>7</td>
<td>48</td>
</tr>
</tbody>
</table>

#### Were you pleased with the service when you parked your car?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Extremely displeased</th>
<th>Very displeased</th>
<th>Unpleased</th>
<th>pleased</th>
<th>Very pleased</th>
<th>Extremely pleased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runners</td>
<td>14</td>
<td>17</td>
<td>65</td>
<td>33</td>
<td>9</td>
<td>36</td>
</tr>
</tbody>
</table>

#### If you wanted assistance while parking, were the service provided?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Yes I need but no guards</th>
<th>Yes I need, guards available</th>
<th>No I don't need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runners</td>
<td>22</td>
<td>23</td>
<td>253</td>
</tr>
</tbody>
</table>

####% of respondents: Mean Grade: % of max: StdDev: Variance

- Security: 188, 73, 86, 57
- Information: 169, 169, 193, 42
- Cleaning: 160, 160, 110, 64

When you choose where to go shopping, is the amount of security guards to assist you one of your main deciding factors?

- Yes
- No

What do you feel about the amount of security guards inside and around MEGA?

- Extremely poor
- Very poor
- Poor
- Good
- Very good
- Excellent

Were you pleased with the service when you parked your car?

- Extremely displeased
- Very displeased
- Unpleased
- pleased
- Very pleased
- Extremely pleased

Were you pleased with the service when you parked your car?

- Extremely displeased
- Very displeased
- Unpleased
- pleased
- Very pleased
- Extremely pleased

If you wanted assistance while parking, were the service provided?

- Yes I need but no guards
- Yes I need, guards available
- No I don't need