Spying on the Mystery Shopper

'A Study of the Reliability Concerns with Respect to the Method'

Master Thesis

Corporate Communication Studies

Student: Dorothee Render

Student number: s1258249

Supervisors:

Dr. J. F. Gosselt

Dr. J. J. van Hoof

UNIVERSITY OF TWENTE.

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ABSTRACT

Aim. Based on literature regarding service quality measurement, service quality has been classified into four distinctive levels: the physical environment, the employee, policies & proficiencies and the overall service quality evaluation. Level 1 includes attributes regarding physical aspects around and in the store, Level 2 refers to the employee behavior and the employee-customer interaction, Level 3 consists of policies and proficiencies and Level 4 is the combining level for an overall impression of the service quality based on Level 1, 2 and 3. A known phenomenon from psychology is the Halo Effect which states that individuals do not evaluate single object attributes, but tend to evaluate them as a whole in order to maintain cognitive consistency. The aim of this study was to approach the question whether this effect applies in case of mystery shopping evaluations. Therefore hypotheses regarding the possible effects of Level 1 on other levels, Level 2 on other levels and the composition of Level 4 have been developed and tested.

Method. In order to test whether the Halo Effect has consequences for the reliability of mystery shopping, a 2 (Level 1) x 2 (Level 2) experiment was performed in a Dutch supermarket. Sixty four mystery shoppers were instructed to perform a mystery shopping visit and were not aware of the fact that their behavior was actually the object of investigation. Due to the fact that the Levels 1 and 2 have repeatedly been found to be important dimensions in the evaluation of service quality, they were chosen as variables to be manipulated.

Results. A SPSS analysis of the data revealed that Level 1 had no significant effect on any of the other service levels. Level 2 evaluations had a marginally significant effect on Level 3, while no significant effects on Level 1 could be found. Furthermore it has been proven that the overall service evaluation is based on the other three service levels, with Level 2 as strongest predictor.

Discussion. Based on the results, it can be stated that mystery shoppings' reliability is not undermined by the Halo Effect, due to the fact that mystery shoppers are able to evaluate Level 1 and Level 2 independently, despite the fact that the Halo Effect suggests otherwise. Finally some valuable suggestions for further research, focusing on the pressing questions on the reliability of mystery shopping are made.

Keywords: Mystery shopping, Halo Effect, Service Quality Measurement, Reliability.

Chapter 1

‘Introduction’

1. Introduction

In the last three decades measuring service quality has been named one of the biggest obstacles in marketing literature (Martínez & Martínez, 2010; Urban, 2013; Ihtiyar & Ahmad, 2012). Due to the fact that services are produced, delivered and consumed at the same time a quality check of the service prior to the delivery is impossible (Strawderman & Koubek, 2008; Beck & Miao, 2003). A traditional research technique to elaborate service quality is the use of customer surveys. However those are restricted to the measurement of customers' opinions about the outcome of a service delivery. Therefore, in order to measure whether predefined service standards have been met during the service process, the use of mystery shopping has become common practice. According to the Mystery Shopping Providers Association (MSPA) the current value of the mystery shopping industry is 1.5 billion dollar worldwide (MSPA, 2014). The most typical characteristic of the method is that the service providers do not know they are being evaluated. Trained mystery shoppers pretend to be regular customers and engage in the service delivery process as a participant or client, in order to report about their observations of predetermined service attributes in detail (Finn & Kayandé, 1999; Wilson, 2001).

Strikingly, there are only a few academic attempts to test the reliability of the method, despite the extensive use of mystery shopping (Steinman, 2014; Wilson, 2001). Mystery shopping aims at discovering the quality of different levels of service, as for example the quality of the physical environment or the quality of the employee-customer interaction. Therefore mystery shopping enables service providers to evaluate service levels individually and to find bottlenecks within their service delivery (Wilson, 2001). Within the method of mystery shopping, persons are being used as measurement instruments. The use of persons as a measurement instrument is the major weakness of the method and threatens its'

reliability (Calvert, 2005; Morrison, Colman, & Preston, 1997).

Findings in psychology give reason to doubt mystery shoppers' ability to evaluate single service attributes independently. The Halo Effect states that individuals tend to evaluate objects as a whole in order to maintain cognitive consistency (Wirtz, 2000). An example of the Halo effect can be seen below.

Figure 1. Halo effect example. Picture Retrieved From: http://www.someecards.com/usercards/viewcard/MjAxMi0xMjk0M2JlZmFlYjUwNTcw

If this effect also applies to mystery shoppers, the reliability of the method would not satisfy the set requirements. The current study tries to give an insight into the debate described above and tries to answer the question whether people can be able to fulfill the investigative goal of an evaluation of service quality by means of mystery shopping. In sum, the aim of the study is to find out whether the reliability of mystery shopping can be guaranteed despite the fact that the Halo Effect threatens the capability of shoppers to observe service levels individually.

Chapter 2

‘Theoretical Background’

2. Theoretical Background

In the following chapter, the literature the study was based on will be discussed. First, literature about mystery shopping will be presented and it will be outlined in how far it constitutes a reliable research method. In a second step the Halo Effect will be discussed which is used as one of the most important tools for criticism of the method and it will be elaborated on its possible effects on the reliability of mystery shopping. In a third step the literature on service quality measurement will be discussed and four generalized service levels will be introduced. In a final step these three approaches will be combined and it will be shown how the research hypotheses have been developed.

2.1. Mystery Shopping

Traditionally customer surveys or customer complaints were used to measure employee performance, but those are not able to give detailed information about whether predetermined service standards have been met (Wilson, 2001). Furthermore the majority of unsatisfied customers simply do not return instead of expressing their dissatisfaction. A study of TARP (Technical Assistance Research Program) revealed that 26 out of 27 customers of low prized goods chose not to buy again in the specific branch rather than to complain (Hesselink & van der Wiele, 2003). This clearly reveals the need for an additional method for retailers and service providers to measure their service processes. A common alternative for testing service quality is mystery shopping. Mystery shopping is a qualitative research technique and was developed out of the Participant Observation Technique (Wilson, 2001; Wilson, 1998). It can be used in the retail sector as well as in the service sector in order to accomplish multiple research purposes, such as identifying failings or weak points during service delivery, motivate personnel or assess the service level of the competition (Wilson, 2001). The most typical characteristic of this technique is that the data subjects are not

aware of their participation in the study (ESOMAR, 2005). The observer pretends to be a regular customer and reports in detail about the gained service and the store environment by filling in a questionnaire afterwards (Finn & Kayandé, 1999; Wilson, 2001). The mystery shopping method offers several advantages in measuring service quality compared with the traditional customer surveys: (1) Mystery shopping measures the process rather than the outcome of a service experience (Wilson, 2001); (2) Mystery shopping measures whether procedures are followed rather than gathering opinions about the quality of those procedures (Wilson, 2001); (3) Mystery shopping measures facts instead of perceptions of different customers (Wilson, 2001); (4) Mystery shopping allows the evaluation of whole branches, rather than just one service facility (Finn & Kayandé, 1999); (5) Mystery shopping allows the evaluation of objective, single service encounters, while customer surveys are not able to isolate single encounters and are rather biased by multiple previous service encounters (Lowndes & Dawes, 2001).

However, apart from the advantages, it can be argued that several concerns regarding the reliability of mystery shopping remain. The most important threat concerns the measurement instrument (Morrison, Colman, & Preston, 1997). Due to the fact that the used measurement instrument is a person, the reliability of the method depends on this person. The observations made by the mystery shopper should be identical with reality in order to gain reliable data (Schwartz & Schwartz, 1955). The purenesses of these observations are threatened by several cognitive factors and are a major area of weakness according to Calvert (2005). Summarizing these statements it can be said that the reliability of mystery shopping may only be guaranteed if the observations of the mystery shoppers reflect reality.

Despite these concerns and the rise of mystery shopping, very few academic attempts to test its value have been pursued (Latham, Ford, & Tzabbar, 2012; Wilson, 2001). Therefore a

thorough investigation of the reliability and thus the value of mystery shopping outcomes is long overdue. One possible reliability threat concerns perception influences between different service attributes. Assuming a mystery shopper evaluates the surroundings of a store very negative due to the neglected state of the store, this evaluation might bias his perception of the sales persons in a negative way. In order to deepen possible effects of this phenomenon the following part will outline the Halo effect, which may form a threat to the assumption that mystery shoppers are able to deliver reliable data about service standards.

2.2. HALO EFFECT

The earliest theories about the Halo Effect go back to the 1920s where Thorndike first defined the phenomenon. Thorndike developed the theory which states that individuals are unable to evaluate specific attributes without the affective influence of general evaluations (Beckwith & Lehmann, 1975; Nisbett & Wilson, 1977). The research however was mainly focused on psychology, but was rapidly expanded to other research fields, such as marketing. Consequences for the marketing research were that service evaluations were threatened in their reliability due to the Halo Effect. Models with the aim to evaluate service quality are commonly based on multi attribute levels (Wirtz & Bateson, 1995) and are therefore likely to be affected by the Halo Effect. In this context the Halo Effect is defined as a misrepresentation of attribute perceptions of consumers, due to the tendency to judge attributes based on general and attribute-specific impressions (Van Doorn, 2008; Wirtz, 2000; Wu & Petroshius, 1987). The misrepresentation is caused by the tendency to maintain cognitive consistency (Holbrook, 1983). This means their positive or negative impression of the whole service delivery process overshadows contradicting service level experiences. This type of effect threatens the goal of service quality research, which aims at finding the strengths and weaknesses within a service. Mystery shopping, as other service quality

measurement methods, detect attribute evaluations which are possibly inaccurate due to the Halo Effect (Van Doorn, 2008). In marketing literature two types of Halo Effects have been researched (Wirtz, 2000). The first type states that the evaluation of service attributes may be affected by the customers' affection towards the brand and the second type asserts that service attributes individually affect the evaluation of other service attributes in either a positive or a negative way (Wirtz, 2000; Wirtz & Bateson, 1995). Empirical evidence for both effects have been found (Singh, 1991; Nisbett & Wilson, 1977; Wirtz & Bateson, 1995; Gómez, McLaughlin, & Wittink, 2004). In sum, the first type of the Halo Effect states that corporate image may affect the evaluation of service quality while type II states that single attributes may be affected mutually, as for example a very dirty store may shed a negative light on the service personnel. The current study focuses on the Halo II type and thus on the dependencies of single service attributes.

In closing it may be assumed that the Halo Effect is a serious threat to the reliability of mystery shopping, as the reliability of mystery shopping may only be guaranteed if the observations of the mystery shoppers reflect reality. Therefore the current study will aim at answering the question whether mystery shoppers can be assumed capable of observing service levels independent of each other. In the following part, service quality measurement will be discussed and the generalized four underlying levels of service quality will be introduced.

2.3. Service Quality Measurement

Service quality is the achievement of meeting customers' needs, wants and expectations (Strawderman & Koubek, 2008). Measuring service quality has been one of the biggest obstacles in marketing literature within the last three decades (Martínez & Martínez, 2010; Urban, 2013; Ihtiyar & Ahmad, 2012). Service quality is immaterial and therefore hard to

measure. Since services are produced, delivered and consumed at the same time, a quality check previous to the service delivery is impossible (Beck & Miao, 2003; Strawderman & Koubek, 2008). A common method to measure service quality is the use of after sales customer surveys, which are based on service quality models. A large amount of attention has been devoted to the development of standardized scales to measure service quality. An extensive literature search on service quality models was conducted in order to define the underlying levels of service quality perception and their measurement techniques. Based on the models' measurement technique, two groups can be distinguished. The first group is based on the "disconfirmation paradigm" and the second group is based solely on the perception of customers. The "disconfirmation paradigm" states that service quality can be measured by finding the gap between expectations of service level and the perceived service level (Brady & Cronin, 2001). The second group of models is based on "perception only" scores. Carillat, Jaramillo and Mulki (2007) state that perception based scores are already based on the comparison of expected and actual service, which means that respondents base their perception scores on their expectations. By measuring both, the expectation and the perception scores, the expectation would be measured twice. Therefore measuring expectations using separate items is superfluous. Within the last decades several authors found that the "perception only" measurement scale is to be preferred rather than the "disconfirmation paradigm" measurement scale in order to avoid redundancy and to achieve more reliable and valid results (Carrillat, Jaramillo, & Mulki, 2007; Cronin & Taylor, 1992). Concerning the underlying levels of service quality, a lack of consensus between authors still exists. All models share the belief of a multidimensional conceptualization of service quality. Nevertheless authors disagree on the grouping of underlying dimensions. Therefore the current study aimed at setting up a generalized conceptualization of service quality levels from the existing amount of literature. The first step was to search the marketing literature

for predefined underlying levels of service quality. The second step was the collection of service quality models and their corresponding items. And the final step was to match the collected items of the models with the definitions of service levels. Based on this, four general levels have been defined which will be introduced in the following part. An overview of all used scales and the corresponding items can be found in Appendix A.

Level 1 'Physical Environment'

Kotler first recognized the importance of tangibles as a marketing tool in 1973. The author defined the construct called "atmospherics" as the conscious designing of a service setting with the aim to evoke positive emotional effects in consumers (Rajic & Dado, 2013). The work Bitner conducted in (1992) is similar to the work of Kotler (1973), in which the author explained the term "servicescape" as the man-made physical surrounding.

The research conducted on service quality scales revealed the following variables to compose the physical environment: the store's surroundings, the merchandise, the store's equipment, the comfort and the ambience (Brady & Cronin, 2001; Parasuraman, Zeithaml, & Berry, 1988; Dabholkar, Thorpe, & Rentz, 1996; Vazquez, Rodriguez-del Bosque, Diaz, & Ruiz, 2001; Sureshchandar, Rajendran, & Kamalanabhan, 2001). Those variables may underlie several rating criteria, such as cleanliness, beauty, availability or quality. In other words, the merchandise a store offers may for example be evaluated based on its quality or its availability and the stores equipment may be evaluated on its cleanliness, its availability and its beauty. Summarizing the first level, 'physical environment', includes all items which concern either: the presence, the quality or the appearance of physical factors within and around the store and the comfort those factors provide for the customers. It can be said that Level 1, the 'physical environment', comprises the more consistent variables, since they are less subject to change, although they are man-made.

Level 2 'Employees'

In the literature the human aspect of service quality is indicated as the "humanic clue". Definitions include the behavior of service employees (including body language and tone of voice) and their level of enthusiasm (Wall & Berry, 2007). Berry, Carbone and Haeckel (2002) simply defined the humanic aspect of service quality as service attributes emitted by people. The research on service quality scales revealed the following variables to compose Level 2: the employee-customer interaction is being evaluated on its quality regarding communication patterns, complaints handling and provision of information and the employee is being evaluated based on, for example, friendliness, expertise, attitude, responsiveness and appearance (Brady & Cronin, 2001; Parasuraman, Zeithaml, & Berry, 1988; Dabholkar, Thorpe, & Rentz, 1996; Vazquez, Rodriguez-del Bosque, Diaz, & Ruiz, 2001; Sureshchandar, Rajendran, & Kamalanabhan, 2001). Summarizing the second level, 'employees', comprises items which are directly linked to the employee-customer interaction or the employees' characteristics. Therefore it can be said that Level 2 is malleable, but less constant than Level 1.

Level 3 'Policies & Proficiencies'

In the literature these variables are called credence or ambiguous attributes. Credence attributes are attributes which are being evaluated by the customers without them having the ability to gain sufficient information (Wirtz, 2000). In other words, customers are not able to evaluate all attributes even after the service has been delivered, e.g. whether a retail store is environmentally involved or not. Additionally there are ambiguous attributes, which refer to attributes that may be evaluated in different ways based on different hypotheses made by the customer (Wirtz, 2000). Those interpretations are normally seen as more diagnostic then they are and therefore lead to rushed evaluations of the service quality.

Services have a high amount of credence and ambiguous attributes compared to goods (Wirtz, 2000).

The research on service quality scales revealed the following variables to compose Level 3: compliances, administration, corporate social responsibility and customer treatment (Brady & Cronin, 2001; Parasuraman, Zeithaml, & Berry, 1988; Dabholkar, Thorpe, & Rentz, 1996; Vazquez, Rodriguez-del Bosque, Diaz, & Ruiz, 2001; Sureshchandar, Rajendran, & Kamalanabhan, 2001). In the context of mystery shopping, respondents are only once exposed to the service provider. Therefore they are not able to gather sufficient information to evaluate the service providers' policies properly. Evaluation of this category is thus often based on assumptions, made on cues they encountered during their visit. A mystery shopper, who encounters for instance a supermarket where the coffee is out of stock, will easily make the assumption that the company must lack a good administration. This assumption can be incorrect since the reason for the absent coffee could as well be a problem of the producer, who had faced troubles with a shipment. Summarizing the third level: 'Policies and Proficiencies' includes items concerning the handled policies of the service provider and its proficiencies.

Level 4 'Overall Service Evaluation'

The fourth and last level is called 'overall service evaluation' and includes the overall feeling about the service and the emotional outcomes the service evoked. The research on service quality scales revealed the following variables to compose Level 4: feelings about, for instance, atmosphere, design, level of service, cleanliness and the emotional outcomes the service evoked, for instance convenience or the feeling of equal treatment (Brady & Cronin, 2001; Parasuraman, Zeithaml, & Berry, 1988; Dabholkar, Thorpe, & Rentz, 1996; Vazquez, Rodriguez-del Bosque, Diaz, & Ruiz, 2001; Sureshchandar, Rajendran, & Kamalanabhan, 2001). Basically, Level 4 is meant to be the outcome of the evaluations of Level 1, 2 and 3.

Based on the attribute evaluations of those levels the customer forms an overall perception of the service level. In the following part the literature regarding mystery shopping, the Halo Effect and service quality have been combined in order to develop the research hypotheses.

2.4. The Interdependencies of Service Levels

Based on the literature about service quality levels and the Halo Effect, several concerns about the reliability of mystery shopping must be taken into consideration. Therefore the possible interactions of each level, introduced in section 2.3, will be discussed in the following part.

Level 1 'Physical Environment'

There is growing empirical support for the effect of the physical environment on service quality evaluations of customers (Rajic & Dado, 2013). Kim and Moon (2009) researched whether the physical environment has a positive effect on the overall perceived service quality perception within a hospitality setting. They used after sales surveys in which, among other constructs, the servicescape (facility aesthetics, layout, electric equipment, seating comfort and ambient conditions) and the perceived service quality (performance, expectations and normative evaluation) have been measured. The authors succeeded in demonstrating that a better servicescape increases perceived service quality (Kim & Moon, 2009). A second study in the retail industry divided the servicescape into two different constructs: design factors (color, displays, layout and organization of merchandise) and ambient factors (music and lightning) (Baker, Grewal, & Parasuraman, 1994). In a 2 (ambient factors) x2 (design factors) x2 (social factors) laboratory experiment they managed to prove that ambient conditions increase perceived service quality (customer treatment, employees and merchandise). However it has not been indicated that design factors increase service quality. Even though it is well known that the physical environment impacts service quality

perception and consumer behavior, only little is known about how to explain, predict or control those effects (Turley & Milliman, 2000). Finally research revealed that a very good attribute specific performance, for instance beautiful interior or a high quality product may cause a Halo Effect on other service levels (Wirtz, 2000). Credence and ambiguous attributes can be assumed to be particularly influenced by this effect, due to the fact that individuals search for arguments and hypotheses to evaluate those attributes. Thus any outstanding performances in Level 1 are assumed to affect the evaluation of Level 3. The Halo Effect, as earlier discussed, along with the above mentioned findings lead to the assumption that Level 1 attributes may affect other attributes of the service delivery as well as the overall evaluation of the service quality. This effect may also be interactive for the reason that other service attributes may cause an effect on Level 1 attributes. Based on this the following hypotheses have been stated:

H1a: The evaluation of Level 1 impacts mystery shoppers' evaluation of Level 2.

H1b: The evaluation of Level 1 impacts mystery shoppers' evaluation of Level 3.

The assumed effect of Level 1 on Level 4 will be evaluated with Hypothesis H1c.

Level 2 'Employee'

As mentioned earlier the study by Baker, Grewal and Parasuraman (1994) also included the effect of social factors (number of sales people, greeting by salesperson and salesperson dress) on service quality as well as merchandise quality. The authors did find a significant positive effect of social factors on merchandise quality and a marginally significant (p = 0.07) positive effect of social factors on service quality (Baker, Grewal, & Parasuraman, 1994). More recently an empirical study in the hospitality industry succeeded in demonstrating a significant effect of employee behavior on the perception of service quality (Wall & Berry, 2007). The study enlightened that the humanic clues have a much larger effect size on the perception of service quality than the physical environment (c.f. Hypothesis 4).

As discussed earlier, credence and ambiguous attributes are considered to be influenced the most by other outstanding service attributes, therefore it can be assumed that also Level 2 will affect Level 3. The Halo Effect along with the above mentioned findings lead to the assumption that Level 2 attributes may affect other attributes of the service delivery as well as the overall evaluation of the service. This effect may also be interactive for the reason that other service attributes may cause an effect on Level 2 attributes. Based on this the following hypotheses have been stated:

H2a: The evaluation of Level 2 impacts mystery shoppers' evaluation of Level 1.

H2b: The evaluation of Level 2 impacts mystery shoppers' evaluation of Level 3.

The assumed effects of Level 2 on Level 4 will be evaluated with Hypothesis H2c and H4.

Overall Service Evaluation

Based on the findings about the three service levels it is assumed that Level 4 is the outcome of all perceived service attributes during the visit. It thus functions as an umbrella construct to the other variables. Furthermore Level 2 attributes are expected to have a larger effect size on the overall perception of service quality than Level 1 attributes. Therefore the following hypotheses have been stated:

H1c: The evaluation of Level 4 is based on the evaluations of Level 1.

H2c: The evaluation of Level 4 is based on the evaluations of Level 2.

H3: The evaluation of Level 4 is based on the evaluations of Level 3.

H4: Level 2 has a stronger correlation with the overall perception of service quality (Level 4) than Level 1.

Whether these hypotheses can be accepted or have to be rejected, will enlighten to what extent the research method mystery shopping is indeed a reliable method and whether the claims made about mystery shopping can be confirmed.

2.5. THE RESEARCH MODEL

Based on the theoretical framework a research model has been developed. This model illustrates the used variables. The research is based on four variables; Level 1 and Level 2 are the independent variables and Level 3 and Level 4 the dependent variables. Furthermore the hypotheses can be seen in this model.

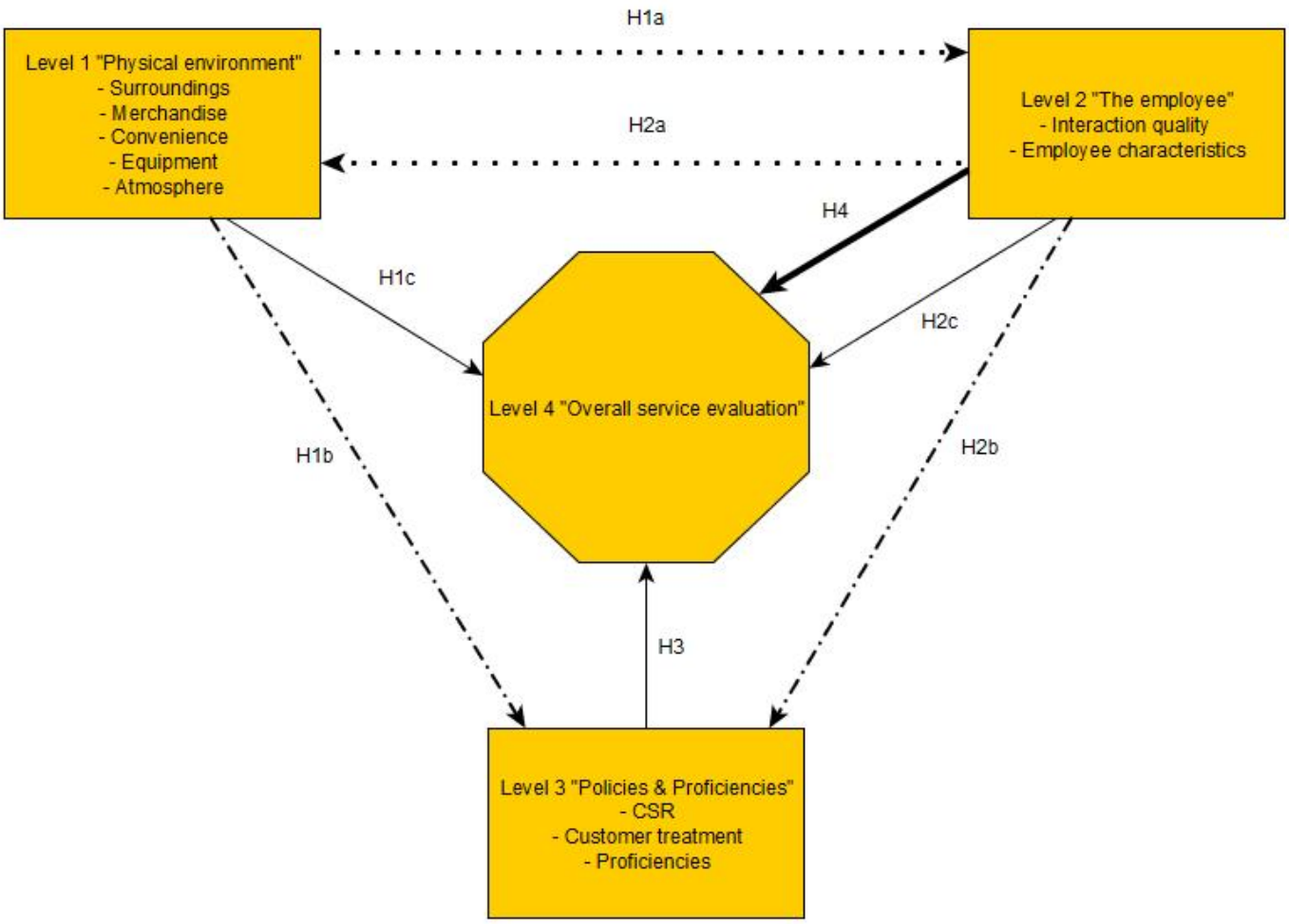


Figure 2. The research model.

Chapter 3

‘Method’

3. Method

The aim of the study was to investigate whether the reliability of mystery shopping can be guaranteed. Therefore an experiment with a 2 (positive Level 1 and negative Level 1) x 2 (positive Level 2 and negative Level 2) factorial design has been set up. The measurement instrument asked respondents to evaluate all four service quality levels. In order to validate the composition of the levels a pretest has been executed, in which researchers categorized each item to one of the four levels. Additionally the manipulations have been tested during a second pretest in order to test their efficacy. Finally the participants were instructed to perform a mystery shopping visit at the butchery of an Emté supermarket. During the controlled interaction between the mystery shopper and the service provider, an essential condition for achieving valid research results was that the mystery shoppers were unaware of the fact that they were being observed (Schwartz & Schwartz, 1955). This is due to the fact that mystery shoppers, who are aware of the observation, might show deviant behavior and thus bias the results. In the following the two pretests, the applied manipulations, the design, the instrument, the procedure and the mystery shoppers will be discussed.

3.1. Pretest 1 – Composing the Levels

In order to ensure that the categorization into four levels is indeed valuable and representative, three other researchers were asked to categorize the items into one of the four levels. One researcher was familiar with the subject, while the other researchers were not familiar with neither mystery shopping nor service quality research. The researchers were provided with a short explanation letter in which they were asked to assign each item to one of the four levels. During the categorization process participants were not allowed to ask questions about the items or definitions in order to avoid any kind of bias. Once the

participants completed the categorization the researcher compared their assigned items. Each item mismatching the original categorization was held apart. Afterwards short interviews were held with the participants in order to gain more insight into their argumentation. A multi rater kappa analysis, called Gwet's AC1 (Gwet, 2001), has been executed using the syntax developed by King (2008). Gwet's AC1 is an alternative kappa type, which is able to take into account the number of categories as well as the possibility of category non-use. This method has been used because it is accepted as one of the most robust measures of multi rater agreement (King J. E., 2004). A second analysis of the inter-rater agreement was based on the method developed by Light in (1971). It showed almost the same outcome and therefore the results can be assumed to be trustworthy.

Category	AC1	*SE*	*z*	*p*
1	.79564	.15782	5.04161	.00000
2	.92404	.15370	6.01182	.00000
3	.30135	.12630	2.38596	.00852
4	.42280	.11328	3.73230	.00009

Table 1. Empirical Confidence Interval - Category kappa.

A kappa value of .5 represents moderate agreement, higher than .7 represents good agreement and values above .8 represent very good agreement (Pallant, 2011). Level 1 and Level 2 both represent very good agreement. Level 3 and 4 did not deliver a satisfactory level of agreement. Several limitations may have caused an unsatisfactory result. Due to the limited time frame a very small sample size (N = 4) has been used. Moreover the respondents were not categorizing items from their first language, which may have caused misinterpretations of several items.

3.2. Pretest 2 – Manipulations Level 1 & Level 2

The service levels chosen to manipulate were the physical environment and the employee, due to the fact, that both levels have been found repeatedly to be important dimensions in the evaluation of service quality (Finn & Kayandé, 1999; Morrison, Colman, & Preston, 1997). In order to ensure that the developed manipulations had the desired effect a pretest with 7 participants has been executed. The mean scores for the manipulated variables have been analyzed using an independent sample t-test. The manipulations which did not lead to a significant difference between the positive and the negative manipulation were modified (see Appendix B). It has been reasoned that the cause for most of the manipulation failures was vague phrasing of the items.

3.3. MANIPULATIONS

An overview of the final manipulations and the subsequent condition groups can be found in Table 2.

	Level 1 Positive	**Level 1 Negative**
Level 2 Positive	Condition group 1 +/+	Condition group 3 -/+
	+ *Baskets:* clean + *Freshness:* red burger + *Packaging:* label bag has been sealed + *Price tag:* was visible + *Equipment:* bag sealer worked	- *Baskets:* sticky - *Freshness:* brown burger - *Packaging:* label bag has not been sealed - *Price tag*: was not visible - *Equipment:* bag sealer did not work
	+ *Smile:* friendly + *Knowledge:* good expertise + *Name tag:* present + *Valediction:* friendly + *Handiness:* professional handling of the scale	+ *Smile:* friendly + *Knowledge:* good expertise + *Name tag:* present + *Valediction:* friendly + *Handiness:* professional handling of the scale
Level 2 Negative	Condition group 2 +/-	Condition group 4 -/-
	+ *Baskets:* clean + *Freshness:* red burger + *Packaging:* label bag has been sealed + *Price tag:* was visible + *Equipment:* bag sealer worked	- *Baskets:* sticky - *Freshness:* brown burger - *Packaging:* label bag has not been sealed - *Price tag*: was not visible - *Equipment:* bag sealer did not work
	- *Smile:* no smile - *Knowledge:* no expertise - *Name tag:* not present - *Valediction:* no valediction - *Handiness:* amateurish handling of the scale	- *Smile:* no smile - *Knowledge:* no expertise - *Name tag:* not present - *Valediction:* no valediction - *Handiness:* amateurish handling of the scale

Table 2. Overview Manipulations.

Manipulation Check

In order to ensure that the performed manipulations worked, an independent sample t-test has been executed for Level 1 manipulated items and Level 2 manipulated items. The grouping variable for both constructs is positive versus negative manipulation for the respective construct.

Level 1 Manipulations

	Positive (G1 & G3)		Negative (G2 & G4)				
	M	*SD*	*M*	*SD*	*t*	*df*	*p*
Baskets	4.18	1.044	1.84	1.157	8.512	62	.000*
Freshness	4.52	.508	2.52	1.151	8.892	40.687	.000*
Packaging	4.67	.816	3.26	1.460	4.723	46.461	.000*
Price tag	4.27	.977	3.39	1.334	3.044	62	.003*
Equipment	3.91	.723	3.61	.882	1.473	62	.146

Table 3.Independent sample t-test: manipulation level 1 check. Note: * significant at .05 significance level.

As can be seen in Table 3 the equipment manipulation did not have a significance level below .05. Therefore the performed manipulation did not have the intended effects and the item was deleted for further analyses.

Level 2 Manipulations

	Positive (G1 & G3)		Negative (G2 & G4)				
	M	*SD*	*M*	*SD*	*t*	*df*	*p*
Smile	4.81	.397	2.25	1.107	13.326	38.8	.000*
Knowledge	4.72	.457	1.38	.833	19.914	62	.000*
Name tag	4.56	.914	3.75	1.606	2.478	49.2	.016*
Handiness	4.53	.718	2.78	1.099	7.540	53.4	.003*
Valediction	3.66	.701	1.91	1.445	9.688	44.8	.000*

Table 4. Independent sample t-test: manipulation level 2 check. Note: * significant at .05 significance level.

As can be verified from Table 4 all manipulations have a significance level lower than .05. Therefore all items were used for further analyses.

3.4. PROCEDURE

The study was carried out between November, 11th, 2013 and December, 29th 2013. Using a 2 x 2 factorial design the experiment had four different scenarios and participants were randomly assigned to one of these four scenarios. Prior to the mystery shopping visit participants took part in an introduction given by a second researcher, where they received a research booklet. The booklet included an introduction to the study, an informed consent sheet, the protocol they had to follow and the questionnaire. The entire booklet can be found in Appendix C. The participants were asked to memorize the protocol and the attributes they had to focus on during their visit. Before the mystery shopping visit started, the researcher mentioned that the manipulated items are especially important for the Emté. Finally the participants were asked to take along a bag during their visit. This bag was necessary for the other researcher to distinguish between other regular customers and the mystery shopper. After the briefing the participants were asked to enter the supermarket and walk straight to the butchery. Once the mystery shopper arrived at the service desk the vendor greeted the participant (with a smile and said 'Good morning/afternoon/evening. May I help you?') / (without a smile and said: 'Tell me'). The mystery shopper responded with 'Good morning/afternoon/evening. I would like a fresh hamburger.' Subsequently the vendor grabbed a (red burger) / (brown burger) and put it into a transparent bag. In order to seal the bag the vendor (used a working bag sealer) / (tried to seal the bag three times with a non-working bag sealer and said: 'the old sealer does not work, as always'; before finally using another one). Then the vendor laid the burger onto the scale and (handled the scale professionally, clicking the right buttons immediately) / (handled the scale amateurishly, searching for the right buttons before finally asking a colleague for help). Afterwards the vendor put the hamburger into a corporate labeled bag and (sealed the bag with a bag

sealer) / (did not seal the bag). Finally the vendor put the bag into a (clean shopping basket) / (dirty shopping basket) and presented it to the mystery shopper (with a smile) / (without a smile). The mystery shopper then asked 'Could you give me some advice about the preparation of the hamburger?' to which the vendor responded: ('The best way to prepare the hamburger is to slowly fry the hamburger for at least 8 minutes in a glug of olive oil and a knob of butter.') / ('I wouldn't know. I'm not a chef. Maybe you can look it up on the internet'). Finally the mystery shopper said 'Thank you. Goodbye' and the vendor responded: ('Goodbye. Have a nice day') / (…*nothing*).

During the above described procedure, the participant observed the following additional attributes (price tag visible) / (no price tag visible); Employee wore (a name tag) / (no name tag). After the interaction at the service desk, the participant went to the cash register and paid for the hamburger. Then the participant left the shop and returned to the location where the second researcher welcomed him again and asked him to fill in the questionnaire. After filling in the questionnaire the participants took part in another mystery shopping study. Due to the fact that the current study was finished by then, no effects were expected.

3.5. DESIGN

In order to ensure the standardization of every visit several measures have been taken. Both the vendor and the mystery shopper followed a script during the visit. Other employees working in the supermarket at the time of a visit have been informed about the research in order to avoid different treatment of the mystery shoppers. They were asked to behave as if they were serving a regular customer. Furthermore they were asked not to react in any way to the fact that some of the shopping baskets were dirty or that some of the bags were not properly sealed.

3.6. INSTRUMENT

Based on the research model and the collected items from the literature search on service scales the measurement instrument has been developed. The detailed process of the item selection can be found in Appendix D. In the following part the instrument will be discussed. The questionnaire included a total of 58 items: 26 items measuring the evaluation of the 4 service levels, 26 items measuring the importance of those items for the respondent and 6 additional items. The 26 items measuring the evaluation of the service levels had to be rated on a five point Likert scale (totally disagree – totally agree). Level 1 has been measured using 9 items of which 5 were manipulated (baskets, freshness, packaging, price tag and equipment) and 4 were fillers (interior, neatness, meat variety, advertising signs). The 4 fillers have been added in order to have the same number of fillers in each level (see below). Level 2 has also been measured using 9 items of which 5 were manipulated (smile, knowledge, name tag, valediction and handiness) and 4 were fillers (waiting time, language use, responsiveness and focus). Level 3 has been measured using 4 items (social project involvement, environmental care, administration accuracy and customer involvement) and finally Level 4 has also been measured using 4 items (excellence of service, cleanliness, convenience and positive experience). The 26 items measuring the importance of each item had to be rated on a five point Likert scale (not important at all – very important). Those have been added to the measurement instrument in order to run an ANCOVA analysis in case of a significant outcome for the dependencies of the levels. This test is important in order to rule out the possibility that dependencies have been caused by respondents' personal preferences. Finally 3 demographic items (age, gender and shopping behavior) and 3 items for the Emté management (grade, importance butchery, and preference for fresh or packed meat) were added to the questionnaire.

Reliability Analysis

In order to ensure the reliability of the constructs a reliability analysis for Level 1, 2, 3 and 4 has been performed.

Construct	Measuring scale	Cronbach's α
Level 1	8* items / 5-point scale	.72
Level 2	9 items / 5-point scale	.86
Level 3	4 items / 5-point scale	.574
Level 4	4 items / 5-point scale	.766

Table 5. Reliability analysis. *The item 'equipment' has been deleted due to unsatisfactory results of its manipulation.

Cronbach's alpha for construct 'Level 3' was .574. Deletion of items did not deliver a value above the acceptance level of .7. However Cronbach's alpha is known to depend on the number of items. Therefore a homogeneity analysis of the scale using the inter item correlation has been performed (Wagena, Arrindell, Wouters, & Van Schayck, 2005; Pallant, 2011). An inter item correlation of .2 to .4 is considered as an optimal range (Pallant, 2011). The inter item correlation for construct 'Level 3' is .244 and can thus be considered reliable and will therefore be included in further analyses.

3.7. MYSTERY SHOPPERS

Participants were all students at the University of Twente, which is located in the Netherlands. Participants had no experience with the method, which is important due to the fact that differences in experience levels could lead to different results (Morrison, Colman, & Preston, 1997). Furthermore a sample of students was suitable due to the fact that they do represent a part of the normal customer population of a supermarket. This is important for the usefulness of the mystery shopping results (Finn & Kayandé, 1999; Wilson, 2001).

Students were compensated for their participation. Each behavioral sciences student at the University of Twente is required to participate for fifteen hours in research experiments as part of their curriculum. For the participation in the current study students received two of the fifteen research hours as compensation, which equals the invested amount of time. The sample consisted of 64 respondents. The distribution between the condition groups was: Group 1 (*n* = 17); Group 2 (*n* = 16); Group 3 (*n* = 15); Group 4 (*n* = 16). 24 of the respondents were male and 40 respondents were female. 89% were aged between 17 and 25 and 11% were aged between 26 and 31 (see Table 6 for details on the demographic distribution per condition group). Prior to the research project, ethical issues have been addressed in order to acknowledge the research participants' rights. Before the study, participants were fully notified about the procedure and were asked to sign a consent sheet. Furthermore participants were guaranteed that their data would be treated anonymously.

		Level 2	
		Positive	Negative
Level 1	Positive	Condition group 1 Mean age: 20.65 Gender: F=58.8% M=41.2%	Condition group 2 Mean age: 21.87 Gender: F=56.3% M=43.8%
	Negative	Condition group 3 Mean age: 21.38 Gender: F=73.3% M=26.7%	Condition group 4 Mean age: 21.38 Gender: F=62.5% M=37.5%

Table 6. Demographic distribution across manipulation levels.

In order to rule out any effects of age or gender a one-way between-groups analysis of variance has been performed for both variables. Subjects were divided into 5 groups according to their age (Group 1: 19 or less; Group 2: 22 or less; Group 3: 25 or less; Group 4: 28 or less and Group 5: 31 or less). There was no statistical significant difference at the $p < .05$ level for the five age groups [$F(4, 62) = ,211$, $p = .931$]. The one-way between-groups analysis of variance for the two gender groups (Group 1: male; Group 2: female) did neither result in a significant difference at the $p < .05$ level [$F(1, 62) = ,022$, $p = .882$].

Chapter 4

‘Results’

4. Results

In the following chapter the results of the data analysis will be discussed. The data was analysed using SPSS (Statistical Package for the Social Sciences) version 21. A principal component analysis has been performed prior to other analyses. Due to the fact that no useful clusters have been found the PCA was not included. This could have been caused by the relative small sample size.

4.1. Accuracy of Measuring Facts Level 1

Exploration of the data revealed that mystery shoppers were not always able to measure the facts accurately. Therefore a detailed analysis of the fact measuring items has been performed. Level 1 included two fact measuring items: *Packaging* and *Price tag*.

	Packaging: Label bag has been sealed		*Packaging:* Label bag has not been sealed	
	%	n	%	n
Correct	94	31	32.3	10
Incorrect	3	1	45.1	14
No recall	3	1	22.6	7

Table 7. Correctness of evaluation packaging item.

	Price Tag: was visible		*Price Tag:* was not visible	
	%	n	%	n
Correct	81.8	27	22.6	7
Incorrect	9.1	3	58.1	18
No recall	9.1	3	19.4	6

Table 8. Correctness of evaluation price tag item.

In the negative condition respondents gave more incorrect answers (n = 14; n = 18) than in the positive condition (n = 1; n = 3). In order to test whether those differences are statistically significant an independent t-test was performed. Before executing the analysis, the 5-point scale for the negative condition has been reversed in order to compare the two condition groups. The reason for recoding the scale was that one condition group should have seen the price tag/seal and the other group should have seen that there was no price tag/seal. Thus both conditions were measured on the same scale: totally agree and agree are correct answers and totally disagree and disagree are incorrect answers. The differences in scores for both condition groups were significant at a $p < .05$ level (see Table 9). In other words, in the negative condition respondents did answer significantly more incorrect than respondents in the positive condition. The differences between the means were large (η^2 = .41; η^2 = .34). The statistical power for both t-tests is .99, which is very high (Pallant, 2011).

	Positive environment		Negative environment					
	M	*SD*	*M*	*SD*	*t*	*df*	*p*	η^2
Packaging	4.67	.816	2.74	1.460	6.56	62	.000	.41
Price tag	4.27	.977	2.61	1.334	5.705	62	.000	.34

Table 9. Independent sample t-test for *packaging* and *price tag* item. Likert scale for the negative condition has been recoded into (5=1; 4=2; 3=3; 2=4; 1=5).

4.2. INFLUENCES OF LEVEL 1

H1a: The evaluation of Level 1 impacts mystery shoppers' evaluation of Level 2.

In order to test Hypothesis H1a an independent t-test has been executed for the mean scores of Level 2, with manipulation Level 1 (positive/negative) as grouping variable. There was no significant difference in scores for respondents in the positive Level 1 condition (M = 34.50, SD = 8.95) and respondents in the negative Level 1 condition (M = 3.83, SD = .995; $t(63) = .78$, $p = .44$). Hypothesis H1a has therefore been rejected. The statistical power of the performed analysis was .12, which is very low (Pallant, 2011).

	Positive environment		Negative environment				
	M	*SD*	*M*	*SD*	*t*	*df*	*p*
Mean 'Employees'	3.83	.995	3.64	.967	.775	61	.441

Table 10. Independent sample t-test; Effect of level 1 on Level 2.

H1b: The evaluation of Level 1 impacts mystery shoppers' evaluation of Level 3.

An independent sample t-test was executed for the mean scores of Level 3, with Level 1 (positive and negative) as grouping variable. There was no significant difference in scores of Level 3 for respondents in the negative Level 1 condition (M = 3.25, SD = .632) and the positive Level 1 condition (M = 3.23, SD = .571; $t(62) = -.151$, $p = .880$). In short, differences in Level 1 did not lead to differences in Level 3 (see table 11). Hypothesis H1b has therefore been rejected. The executed power analysis revealed a statistical power of .088, which is very low (Pallant, 2011).

	Positive environment		Negative environment				
	M	*SD*	*M*	*SD*	*t*	*df*	*p*
Mean 'Policies & Proficiencies'	3.23	.571	3.25	.632	-.151	62	.880

Table 11. Independent sample t-test; effects of Level 1 on Level 3.

4.3. ACCURACY OF MEASURING FACTS LEVEL 2

As mentioned in 4.1 exploration of the data revealed that mystery shoppers were not always able to measure facts accurately. Therefore a detailed analysis of the fact measuring items was performed. Level 2 also included two fact measuring items: *name tag* and *valediction*.

	Name tag: Employee wore a name tag		*Name tag:* Employee did not wear a name tag	
	%	n	%	n
Correct	87.5	28	21.9	7
Incorrect	3.1	1	68.8	22
No recall	9.4	3	9.4	3

Table 12. Correctness of name tag item evaluation.

	Valediction: Employee wished farewell		*Valediction:* Employee did not wish farewell	
	%	n	%	n
Correct	93.8	30	78.1	25
Incorrect	3.1	1	18.8	6
No recall	3.1	1	3.1	1

Table 13. Correctness of valediction item evaluation.

As was the case in 4.1, respondents in the negative condition gave more incorrect answers (n = 22, n = 6) than in the positive condition (n = 1, n = 1). In order to test whether those differences are statistically significant an independent t-test has been performed using the same recoding procedure as in 4.1. The difference in mean scores for the correctness of the name tag item was significant at a $p < .05$ level with a large magnitude of difference (η^2 = .45) (Pallant, 2011). The statistical power for the t-test is .99, which is very high.

For the correctness of the valediction item, the difference in scores was marginally significant (p = .052) with a moderate magnitude of difference (η^2 = .06). The statistical power for the t-tests is .51, which is below the acceptable score of .8 (Pallant, 2011).

	Positive employee		Negative employee					
	M	*SD*	*M*	*SD*	*t*	*df*	*p*	η^2
Name tag	4.56	.914	2.25	1.606	7.078	62	.000	.45
Valediction	4.66	.701	4.09	1.445	1.982	62	.052	.06

Table 14. Independent sample t-test for item *name tag* and *valediction*. Likert scale for the negative condition has been recoded into (5=1; 4=2; 3=3; 2=4; 1=5).

4.4. INFLUENCES OF LEVEL 2

H2a: The evaluation of Level 2 impacts mystery shoppers' evaluation of Level 1.

To answer Hypothesis H2a the same procedure as in 4.2 has been followed. The mean scores of Level 1, with manipulation Level 2 (positive/negative) as grouping variable were compared with an independent sample t-test. There was no significant difference between scores for respondents in the positive Level 2 condition (M = 3.82, SD = .575) and respondents in the negative Level 2 condition (M = 3.77, SD = .700; $t(64)$ = .342, p = .734). Hypothesis H2a has therefore been rejected. The statistical power of the performed analysis is .06, which is very low (Pallant, 2011).

	Positive employee		Negative employee				
	M	*SD*	*M*	*SD*	*t*	*df*	*p*
Mean 'Physical environment'	3.82	.575	3.77	.700	.342	62	.734

Table 15. Independent sample t-test; effects of Level 2 on Level 1.

H2b: The evaluation of Level 2 impacts mystery shoppers' evaluation of Level 3.

An independent sample t-test for the mean scores of Level 3, with Level 2 (positive and negative) as grouping variable has been performed in order to answer Hypothesis H2b. There was a marginally significant difference in scores of Level 3 for respondents in the negative Level 2 condition (M = 13.53, SD = 1.934) and the positive Level 2 condition (M = 12.38, SD = 2.673; $t(62)$ = 1.98, p = .052). In other words, respondents in the negative

condition of Level 2 did evaluate Level 3 more negatively than respondents in the positive condition of Level 2. The effect size is η^2 = .06, which represents a moderate effect. Hypothesis H2b has therefore been accepted. The calculated statistical power is .62, which is below the acceptance score of .80 (Pallant, 2011).

	Positive employee		Negative employee				
	M	*SD*	*M*	*SD*	*t*	*df*	*p*
Mean 'Policies & Proficiencies'	3.38	.484	3.09	.668	1.98	62	.052

Table 16. Independent sample t-test; effects of Level 2 on Level 3.

In order to rule out that there has been an interaction effect of Level 1 and Level 2, on Level 3 an additional two way ANOVA analysis has been executed. The results did not reach statistical significance [$F(1, 64) = .046$, $p = .831$].

4.5. Composition of Level 4

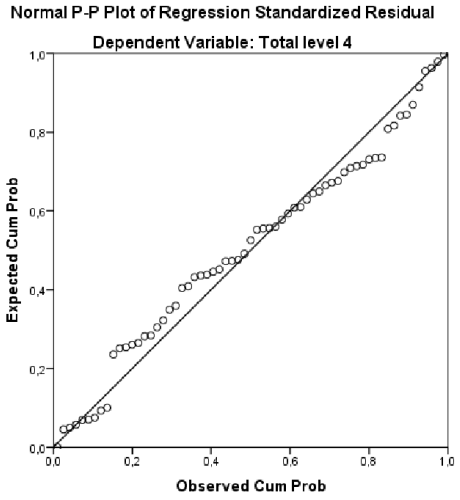
H1c: The evaluation of Level 4 is based on the evaluations of Level 1.

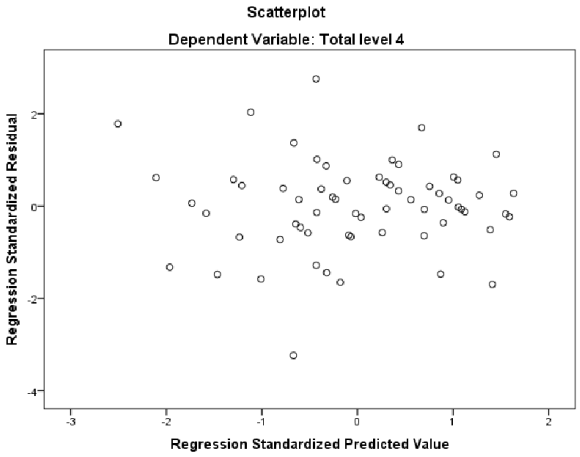
H2c: The evaluation of Level 4 is based on the evaluations of Level 2.

H3: The evaluation of Level 4 is based on the evaluations of Level 3.

In order to test Hypothesis H1c, H2c and H3 a regression analysis has been performed. The outcome gave insights into the question of whether Level 4 is indeed based on Level 1, 2 and 3. In order to test whether the data is suitable for a regression analysis several checks have been made. Correlations between the dependent variable Level 4 and the independent variables were all higher than .3, which means they all have at least some kind of relationship. Correlations between the independent variables have been checked and were all below .7, which means none of the independent variables were too highly correlated. In the following, the data was checked with regard to its normal distribution. In order to

perform a valuable regression analysis the normal P-P plot should give a reasonably straight diagonal line and the scatter plot should resemble a reasonable rectangle (Pallant, 2011). According to the following output the data was normally distributed and thus suitable for a regression analysis. The outliers in the scatter plot diagram seemed to be incidental and therefore no further actions have been taken.





The next step included the evaluation of the regression model. The R square score was .689 and the adjusted R square score was .674. Due to the small sample size of this research it is more accurate to use the adjusted R square score. This score provides a better estimate of the true population (Pallant, 2011). 67.4 % of Level 4 can thus be explained by Level 1, 2 and 3. Hypothesis H1c, H2c and H3 have therefore been accepted.

H4: Level 2 has a stronger correlation with the overall perception of service quality (Level 4) than Level 1.

In order to test Hypothesis H4 the variance coefficients for each independent variable were calculated. Level 1 (β = .362, $t(64) = 4.99$, $p = .000$) explained 35.8%, Level 2 (β =.549, $t(63) = 7.20$, $p = .000$) 54.9% and Level 3 (β =.295, $t(64) = 3.90$, $p = .000$) 29.7%. Level 2 explained more than half of the Level 4 construct. Therefore Level 2 explained the highest percentage

of variance in the overall judgment of service quality (Level 4). Hypothesis H4 has therefore been accepted.

	Unstandardized coefficients		Unstandardized coefficients		
	b	*SE*	b_i	*t*	*p*
Constant	-4.67	1.76		-2.66	.010*
Physical Environment	.219	.044	.362	4.99	.000*
Employee	.191	.027	.549	7.20	.000*
Policies & Proficiencies	.380	.097	.295	3.90	.000*

Table 10. Regression analysis level 4; predictors: Level 1, 2 & 3. Note: * significant at .05 significance level.

In order to test whether the outcome of the regression analysis had sufficient statistical power, a power analysis has been performed. The statistical power of the presented regression analysis is .99, which means the analysis is of high statistical power (Pallant, 2011).

4.6. SUMMARY RESULTS

In the following figure, the research model has been complemented with the most important results from the research. Hypothesis marked with the black lined edges have been accepted, while hypotheses with the grey lined scale have been rejected.

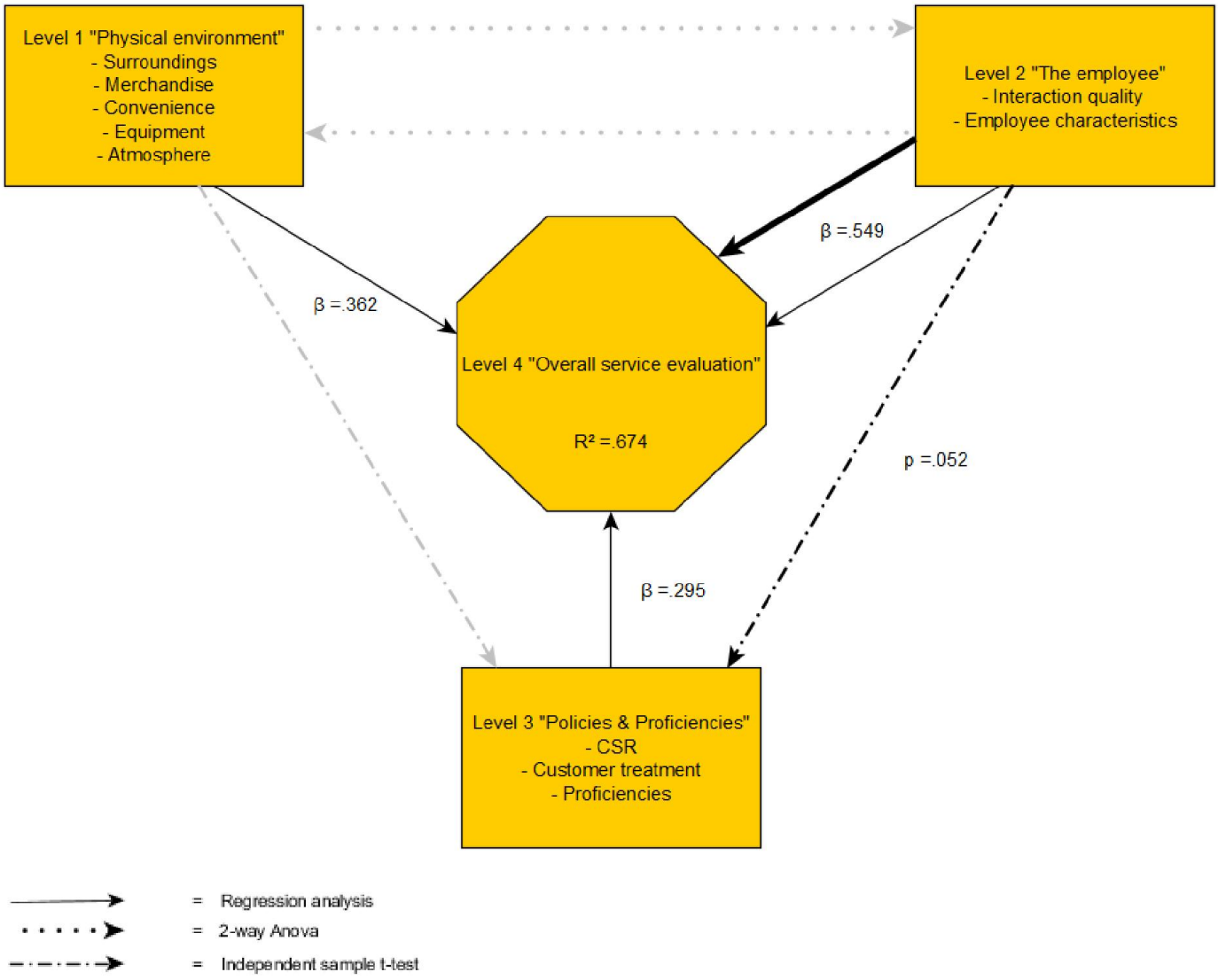


Figure 3. Most important results illustrated in the research model.

Chapter 5

‘Discussion’

5. Discussion

Despite the extensive use of mystery shopping in several industries, researchers have rarely attempted to test the method on its reliability or validity. Therefore the aim of the study was to shed more light on the reliability of mystery shopping. This has been accomplished by studying the weaknesses of the measurement instrument. As discussed earlier the measurement instrument is the major weakness of the reliability of mystery shopping due to the fact that it relies on persons. Based on the results of the current study it can be stated that the reliability of mystery shopping is not restricted by the fact that people tend to evaluate objects as a whole in order to maintain cognitive consistency (Halo Effect). However several threats remain worrisome.

5.1. Absence of the Halo Effect in Service Evaluations

Based on the results of this study it can be stated that there are no Halo Effects between the most important service levels: the physical environment and the employee. Nonetheless the study did indicate a marginally significant effect (p = .052) of Level 2 on Level 3. This result suggests an interdependency between Level 2 and 3, but no firm conclusions can be drawn. Therefore further research is advisable in order to provide more insight into the dependency of Level 3. With the exception of the effect of Level 2 on Level 3 no further interdependencies have been found between the service levels. Therefore it can be stated that mystery shoppers are able to evaluate Level 1 and Level 2 individually, in contrast to previous assumptions drawn from the Halo Effect (Holbrook, 1983). A possible explanation for this might be that participants of a mystery shopping study are specifically ordered to evaluate service attributes independently prior to the actual observation. Mystery shoppers are trained and asked to memorize the questionnaire prior to their visit, in order to focus on

the service attributes they have to evaluate (Wilson, 2001). This causes a more conscious observation of individual service attributes by the mystery shoppers, which distinguishes mystery shopping from customer surveys. Customer surveys do not enable service providers to reveal bottlenecks, which can be traced back to the Halo Effect. Regular customers solely form an overall impression, rather than a detailed memory of single service attributes. In sum, the current study renders support for the fact that the use of mystery shopping is a valuable addition to customer surveys and that mystery shoppings' reliability is not restricted by the Halo Effect. These findings partially contrast with the study of Wirtz (2001), as discussed in section 2.4. The author managed to prove the influence of the Halo Effect between attributes of different service levels. The results of Wirtz revealed that the manipulated attribute "offered payment methods" (Level 3) caused a Halo Effect on three other attributes: helpfulness of staff (Level 2), knowledgeability of staff (Level 2) and a marginal effect on the physical environment (Level 1). The current study only found a marginally significant effect (p = .052) of Level 2 on Level 3, rather than the other way around.

5.2. Composition of the Overall Service Quality

The results of this study illustrated that the overall service quality evaluation is based on the mystery shoppers evaluation of Level 1, 2 and 3. Based on the data it can be concluded that 67.4% of Level 4 can be predicted by those level evaluations. Level 1 predicts 36.2%, Level 2 predicts 54.9% and Level 3 29.5%.

The in section 2.4 discussed studies also found this effect for Level 1 and Level 2 (Kim & Moon, 2009; Baker, Grewal, & Parasuraman, 1994). However the current study extends those findings by managing to indicate that also Level 3 is a predictor of Level 4. Strikingly

was that Level 2 came out to be the most important predictor with more than half of the predicting value. This confirms the finding of Wall and Berry (2007) that Level 2 is the most important predictor of overall service quality and makes it possible to extend their findings from the hospitality industry to the retail industry.

5.3. Accuracy of Mystery Shoppers when Measuring Facts

Mystery shoppers are expected to measure facts instead of perceptions (Wilson, 2001). Several researches pointed out that Level 1 attributes measure facts and Level 2 attributes measure observations based on the mystery shoppers' interpretation. Level 1 attributes are therefore considered to be more reliable and free from errors. This is supported by the recommendations given by Finn and Kayandé (1999), where it has been stated that at least 11 mystery shoppers are needed to measure Level 1 attributes and at least 40 mystery shoppers are needed to measure Level 2 attributes. However the current study showed some worrisome outcomes regarding the correct evaluation of objective items. One item in the measurement instrument asked the respondents to evaluate the following statement '*the employee wore a name tag'.* This item clearly asks for the evaluation of a fact and does not require any interpretation from the mystery shopper. Exploration of the data revealed that 87.5% (*n* = 28) of the respondents in the condition where the employee did wear a name tag answered correct, 9.4% (*n* = 3) stated they could not recall and 3.1% (*n* = 1) of the respondents gave the wrong answer. Strikingly only 27.9% (*n* = 7) of the respondents in the condition where the employee did not wear a name tag answered correct, 9.4% (*n* = 3) stated they did not recall and 68.8% (*n* = 22) gave the wrong answer. Notable is that when the respondents had to disagree with the item and thus had to evaluate that there was no name tag the amount of wrong answers was significantly higher than when the respondents

had to agree with the fact that the employee wore a name tag. A total of four fact measuring items has been included in the questionnaire and three of those items (including name tag) were answered significantly more incorrect in the negative condition group. The fourth item revealed a marginally significant difference. An empirical study in 2006 also found a worrisome amount of wrong answers given by mystery shoppers when they had to evaluate items which were not actually present during their visit (Prinsen, Gosselt, Van Hoof, & De Jong, 2006). Those findings lead to the assumption that either mystery shoppers find it easier to agree with an item than to disagree and / or they find it hard to evaluate items which were not present during their visit. This would have a large impact on the reliability of mystery shopping and further research should address this problem.

5.4. Managerial Implications

This research supports the importance of Level 2 service attributes for the overall judgment of service quality. As mentioned earlier, the regression analysis clearly revealed that the employee is the most important predictor of respondents judgments about the overall service quality. This is in line with prior research (Wall & Berry, 2007) and stresses the importance of the employees in retail service encounters. Service providers should therefore pay special attention to the training of their employees in order to achieve a satisfactory overall service quality.

5.5. Limitations

This study has some limitations that should be discussed. The service level categorizations were based on service quality scales and a pretest was executed in order to ensure the validity of the levels. Nonetheless the current researches' main goal was to test the

reliability of mystery shopping and therefore some limitations to the generalized levels cannot be ruled out. The sample size of the pretest was very small and in order to make a well-founded statement about the validity of the levels more research is needed. The second limitation is the small sample size used in the main study. As the power analyses revealed, the statistical power for the tests regarding the interdependencies of the service levels were very low. Therefore the possibility that a second study using a larger sample might find significant dependencies of the levels cannot be ruled out. In order to empirically prove the absence of dependencies between the levels with an acceptable amount of statistical power, 80 participants per condition group are necessary, when an effect size of .25 is maintained. Another limitation of the study is that all respondents were inexperienced mystery shoppers. Even though each participant took part in a training prior to the research, a bias of their low level of experience may not be ruled out. Another study using experienced mystery shoppers might therefore lead to different results.

5.6. Suggestions for Future Research

Mystery shopping is exposed to several reliability threats. Those threats can take place during three different stages in the research process: before the visit, during the visit and after the visit. All three stages offer opportunities for further research regarding the validity and reliability of mystery shopping. Before the mystery shopping visit, respondents take part in a training in order to be well informed about predetermined service standards (Wilson, 2001). Those trainings may of course bias the mystery shoppers' evaluation. Empirical research should test the influences of those trainings on the evaluations of service. During the mystery shopping visit reliability may be threatened by the complexity of the script. Additional research should establish some ground rules about the complexity of mystery

shopping scripts. During the current research the script did not involve a very complex scenario. However 6% of the respondents did not recall that they had to ask for the preparation of the hamburger. This biased the data, due to the fact that all these respondents gave an evaluation about the knowledge level of the vendor even though they had not managed to test that knowledge. Furthermore the ability of mystery shoppers to accurately memorize their observations determines the reliability of mystery shopping. Research revealed that mystery shopping involves three memorizing stages: the encoding stage, the storage stage and the retrieval stage (Morrison, Colman, & Preston, 1997). At each stage several influences may bias the memory process of the mystery shopper and therefore the retrieved data. During the encoding stage physical factors and factors regarding attention may influence the memory process. Additionally the own personal experience, prejudices or social pressure may bias what a mystery shopper recalls after his or her visit and finally the duration of the visit may influence the accuracy of the recall (Morrison, Colman, & Preston, 1997). Future research should investigate those concerns. Following the visit, the storage and retrieval stage are delicate points in time for valid data collection. The storage stage defines the time lying between the actual exposure of observations and the reporting time. The more time expires the more the memory becomes reconstructive instead of reproductive (Morrison, Colman, & Preston, 1997). When mystery shoppers reconstruct their visit, experiences from earlier shop visits may be used in order to fill memory gaps. Further research should approach this problem and guidelines about the maximum time between observation and reproduction should be set. Finally during the last memory stage the reliability of mystery shopping may be restricted. Researchers pointed out the fact that the format of the questionnaire, which is used to gather the final data, may frame the observations of the mystery shoppers. Items may be too coarse as well as too

detailed (Morrison, Colman, & Preston, 1997; Wilson, 2001). Too detailed questions might encourage mystery shoppers to reconstruct their memory and they might be so detailed that they are suggestive and thus leading the mystery shopper to a certain answer (Morrison, Colman, & Preston, 1997). Therefore research should approach this problem in order to determine the optimal balance between coarse and detailed items. In sum, extensive further research is needed in order to make a well-founded statement about the validity and reliability of mystery shopping as a method to evaluate service quality in retail settings.

5.7. Conclusions

In the following paragraph the conclusions, which can be drawn based on the findings from this research will be briefly summarized. The study combined the literature regarding mystery shopping, service quality measurement and the Halo Effect and rendered more insight into each of those research fields.

Mystery Shopping

The reliability of the method mystery shopping as a tool to measure service quality lacked academic attention. Due to the current research it can be stated that the reliability of mystery shopping is not restricted by the Halo Effect. Nonetheless further research is needed to eliminate the remaining reliability concerns.

Halo Effect

Based on the findings of the current research it can be stated that the Halo Effect may be prevented. If respondents are pointed at particular attributes, prior to the visit, their evaluations are more conscious and swap-over effects between levels of service quality are eliminated. Therefore respondents seem to overcome the difficulties of handling possible cognitive inconsistencies in this kind of scenario.

Service Quality Measurement

The research pointed out that mystery shopping is a valuable addition to customer surveys, due to its ability to identify weak points in a service delivery process. Regular customers lack conscious perception of individual service attributes and are therefore only capable to reproduce an overall impression, which is very likely affected by the Halo Effect. Thus no conclusions about single service attribute quality should be drawn based on customer surveys.

5.8. ACKNOWLEDGEMENTS

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‘Appendix’

Appendix A: Used Service Quality Scales.

Study	Dimensions (Number of items)	Scale	Short Definition of the dimensions	Reliability
(Brady & Cronin, 2001) **BCM**	3 primary dimensions (1) interaction quality, (2) physical environment quality and (3) outcome quality) 9 subdimensions (3 per primary dimension)	35 items to measure 13 constructs	(1) employee-customer interface (2) surrounding environment (3)"what the customer is left with when the production process is finished"	Coder reliability: 89% Cronbach's alpha: from 0,62-0,72 to 0,90-0,92
(Parasuraman, Zeithaml, & Berry, 1988) **SERVQUAL**	Tangibility (4 items), reliability (5 items), responsiveness (4 items), assurance (4 items), empathy (5 items)	22 items to measure 5 constructs on 7-point scale Each item is measured in two ways: Expectations and Perception	see picture dimensions	Reliability Coefficient Alpha's: from 0,52-0,87
(Dabholkar, Thorpe, & Rentz, 1996) **RSQS**	5 first - order dimensions: (1) Physical aspects, (2) reliability, (3) personal interaction, (4) problem solving, (5) policy Dimensions (1), (2) and (3) have each 2 subdimensions: (1) Appearance & Convenience (2) Promises & Doing it right (3) Inspiring confidence & Courteous	28 items on 5-point scale	(1) Appearance of the physical facilities plus the convenience offered by the layout of the physical environment to the customer (2) Similar to the SERVQUAL reliability dimension except the 2 subdimensions (3) Unites the SERVQUAL dimensions Responsiveness and assurance (4) Adresses the handling of returns and exchanges as well as of complaints (5) Captures aspects of SQ that are directly influenced by store policy	Cronbach's alpha varied from 0,81-0,92 Cronbach's alpha was computed for constructs with less than 4 items and varied from 0,82-0,89
(Vazquez, Rodriguez-del Bosque, Diaz, & Ruiz, 2001) **CALSUPER**	4 first order Dimensions: (1) physical aspects, (2) reliability, (3) personal interaction, (4) policies 8 subdimensions	18 items	(1) Appearance of the shop and the convenience of shopping (2) Keeping promises and doing it well (3) How the customer is treated (4) Aspects of SQ directly influenced by the merchandise and by strategies of the retailer	Cronbach's alpha between 0,7523-0,9224

(Chiu & Lin, 2004) **SQ-NEED**	7 Dimensions: (1) Physological needs (2) Safety needs (3) Belongingness/ love needs (4) Esteem needs (5) Self-actualization needs (6) Knowledge/understanding needs (7) Aesthetic needs	33 items: 4-5 items per dimension	see picture dimensions	Cronbach's alpha between 0,81-0,93
(Kelkar, 2010) **SERVDIV**	3 dimensions: (1) Path of knowledge (2) Path of action (3) Path of submission	16 items; 6 items for dimension (1) and (2) and 4 items for dimension (3)	(1) Knowledge about the customer and the desire to serve customers (2) Items should test in how far customer satisfaction philosophy is implemented (3) items assess whether the customer is treated as the supreme being in the organization	No test have been made concerning the reliability or the validity
(Maklan, 2012) **EXQ**	4 Dimensions: (1) Product experience (2)Outcome focus (3) Moments-of-truth (4) Peace-of-mind	19 items: 4-6 items per dimension	(1) Importance of customer's perception of having choices (2) importance of goal-oriented experiences (3) importance of service recovery and flexibility (4) includes statements strongly associated with the emotional aspects of service	Cronbach's alpha varied from 0,75-0,81
(Sureshchandar, Rajendran, & Kamalanabhan, 2001) **HSE**	5 Dimensions: (1) Service or service product, (2) Human element of service delivery, (3) Systematization of service delivery, (4) Tangibles of service and (5) Social responsibility	41 items	(1) Core service or service product (2) Human element of service delivery (3) Systematization of service delivery - non human element (4) Tangibles of service (servicescapes/atmospherics) (5) Social responsibility	

Table A.1. Note: In order to see the items, open table A.1 in Excel and swipe over the marked columns.

Table 1 is based on the following sources:

Al-allak, B. A., & Bekhet, H. A. (2011). Beyond SERVQUAL: A Paradigm Shift. *Australian Journal of Basic and Applied Sciences, 5*(7), 129-134.

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Appendix B: Pretest 2 – Manipulation Check

	M +	*M* -	*p*	Modifications
Freshness	4.0	4.0	-	Item has been rephrased from 'fresh meat' to 'fresh hamburger'
Price tag	4.0	3.6	0.576	Item has been rephrased from 'visible price tags' to 'visible hamburger price tag'
Equipment	4.0	2.0	.013*	n/a
Bag	4.33	3.5	.352	Item has been rephrased from 'was packaged appropriately' to 'the bag was sealed with a bag sealer'
Basket	4.0	2.0	.011*	n/a
Smile	4.5	4.0	.182	The researcher took a private acting class and rehearsed each condition repeatedly
Knowledge	4.75	1.0	.000*	n/a
Handiness	4.25	1.65	.009*	n/a
Name tag	4.75	1.33	.000*	n/a
Valediction	4.67	1.75	.006*	n/a

Table B.1. Manipulations check. Note: *significant at a .05 significance level.

Appendix C: Research Booklet

MYSTERYSHOP ONDERZOEK

Kwaliteitscontrole van EMTÉ Supermarkten

AFSTUDEEROPDRACHT

S.J. VAN DER TANG

INTRODUCTIE

Welkom mysteryshopper,

Allereerst hartelijk dank voor uw deelname aan dit onderzoek! Dit onderzoek is onderdeel van het afstudeertraject van Sijbrand van der Tang, masterstudent Corporate Communication aan de Universiteit Twente. Het supermarktconcern '*Emté Supermarkten*' heeft gevraagd om een kwaliteitscontrole van haar vestigingen. Zoals u wellicht weet is *mysteryshopping* een geschikte methode voor deze kwaliteitscontrole. In dit onderzoek zult u namelijk een bezoek, als undercover klant, gaan brengen aan een Emté supermarkt in Enschede. Dit onderzoek bestaat uit twee delen, oftewel twee bezoeken. Hieronder ziet u een schematische weergave van het onderzoeksproces dat u gaat doorlopen.

Op de volgende pagina's vindt u een protocol waarin stap voor stap staat hoe u zich dient te gedragen en wat er precies van u verwacht wordt tijdens het bezoek.

Mochten er vragen en of opmerkingen zijn, dan hoor ik dit graag!

Succes met het mysteryshop bezoek!

Sijbrand van der Tang

NOTE: *Er zijn random proefpersonen toegewezen om deel te nemen aan een kort follow-up interview na het laatste bezoek (5 - 10 min.). U hoort bij het inleveren van de checklist of u dient deel te nemen aan dit onderdeel.*

MYSTERYSHOP ONDERZOEKDEEL I

KWALITEITSCONTROLE EMTÉ SLAGERIJ

De data zal **anoniem** verwerkt worden. In verband met privacy- en copyrightrechten mogen er **geen beeld- en/of geluidsopnamen** (foto's/video's) van dit document, de winkel en de producten gemaakt worden.

Door onderstaande gegevens in te vullen geef ik aan dat ik vrijwillig deelneem aan dit onderzoek, maar behoud ik het recht om te allen tijde te kunnen stoppen met dit onderzoek:

Naam	
E-mail	
Handtekening	

PROTOCOL MYSTERY SHOPPING

Het protocol voor dit mysteryshopping bezoek bestaat uit drie stappen. Lees deze zorgvuldig door. Geef bij de onderzoeksleider aan als iets niet duidelijk is.

In dit onderdeel zult u een bezoek, als undercover klant, gaan brengen aan de Emté supermarkt, om precies te zijn de **slagerij**. Om een zo realistisch mogelijke beoordeling te krijgen, is het personeel vooraf niet van uw bezoek op de hoogte gebracht. Alleen de supermarktmanager is op de hoogte van uw komst. Door de tas te dragen, die u zult ontvangen van de onderzoeksleider, bent u herkenbaar voor de manager, zodat hij weet wie de echte klant is en wie de mystery shopper. De manager zal op geen enkele manier ingrijpen of invloed uitoefenen tijdens uw bezoek. U presenteert uzelf als een gewone klant en u let tijdens het bezoek op de vooraf opgestelde criteria (oftewel, de checklist). Voor de Emté zijn de **versheid van de producten**, de **wijze van verpakking** en de **vriendelijkheid en kennis** van de medewerker vooral belangrijke aandachtspunten.

Vergeet niet een handtekening te zetten op het voorblad voordat u het bezoek doet. Hiermee geeft u aan dat u het doel van het onderzoek snapt en dat u vrijwillig mee doet.

Briefing

U krijgt van de onderzoeksleider een tas en geld voor de aankoop. Draagt u te allen tijde de tas, hieraan kan de manager zien dat u een mysteryshopper bent. Lees de checklist (volgende pagina) zorgvuldig door en stel vragen mocht er iets niet duidelijk zijn. Onthoud waar u op moet letten tijdens het bezoek, want de checklist mag *niet* meegenomen worden tijdens het bezoek! Voor de Emté zijn de *versheid van de producten*, de *wijze van verpakking* en de *vriendelijkheid en kennis* van de medewerker vooral belangrijke aandachtspunten. Wanneer u de checklist goed in uw hoofd hebt zitten kunt u verder met: H*et Bezoek.*

Het Bezoek

U gaat de winkel in. Zodra u binnen komt, loopt u rechtdoor en ziet u aan het einde van de gang de slagerij. U loopt rechtstreeks naar deze afdeling. Begroet de medewerker vriendelijk en zodra u aan de beurt bent bestelt u een *VERSE HAMBURGER ("Goedemorgen/middag/avond, één verse hamburger graag.")*. Na het ontvangen van de *VERSE HAMBURGER* vraagt u de medewerker om informatie over de bereidingstijd (*"Kunt u mij vertellen hoe lang ik hamburger moet bakken?"*). Tijdens uw bezoek let u bij de slagerij goed op de aandachtspunten van de checklist. Na het antwoord van de medewerker gaat u naar de kassa en rekent u de hamburger af. Vergeet niet om het bonnetje te vragen. Als er geen hamburger meer te krijgen is, dan is het bezoek ook afgelopen en mag u, zonder aankoop, de winkel verlaten.

Na het verlaten van de winkel gaat u weer terug naar het huis van de onderzoeker (Kuipersdijk 132) om de checklist in te vullen en een korte briefing te krijgen voor Deel II van het onderzoek.

Nummer mystery shopper: ☐

Dag: O maandag O dinsdag O woensdag O donderdag O vrijdag O zaterdag O zondag

Tijdstip bezoek: O 8 -10 uur O 10 - 12 uur O 12 - 14 uur O 14 - 16 uur O 16 -18 uur O 18 - 20 uur O 20 - 22 uur

Hieronder volgen enkele stellingen over de slagerij van de Emté. Het gaat dus alleen over de slagerij en niet de rest van de winkel. Geef aan in hoeverre u het eens bent met de onderstaande stellingen: helemaal mee oneens, oneens, niet mee eens/niet mee oneens, mee eens of helemaal mee eens.

	Helemaal mee oneens				Helemaal mee eens
Het interieur is mooi	O	O	O	O	O
Het vlees ligt netjes in de toonbank	O	O	O	O	O
De gekochte hamburger was rood en vers van kleur	O	O	O	O	O
Het prijskaartje van de hamburger is duidelijk zichtbaar	O	O	O	O	O
De aanwezige apparatuur is up-to-date	O	O	O	O	O
Er is een ruime keuze aan verschillende soorten vlees	O	O	O	O	O
Het vlees was correct verpakt (beide zakjes waren netjes met plakband dicht gemaakt)	O	O	O	O	O
De gebruikte mandjes zijn schoon	O	O	O	O	O
De advertentieborden zijn mooi	O	O	O	O	O
Ik werd onmiddellijk geholpen door de medewerker	O	O	O	O	O
Het taalgebruik van de medewerker was goed	O	O	O	O	O
De medewerker glimlachte vriendelijk	O	O	O	O	O
De medewerker beschikte over voldoende kennis om mijn vragen te beantwoorden	O	O	O	O	O
De medewerker kon mijn vragen snel beantwoorden	O	O	O	O	O
De medewerker kon goed over weg met de apparatuur	O	O	O	O	O
De medewerker droeg een naamskaartje	O	O	O	O	O
De medewerker wenste mij aan het eind een fijne dag	O	O	O	O	O
Tijdens mijn bezoek hield de medewerker zich niet met andere zaken bezig	O	O	O	O	O

Nu volgen er enkele stellingen met betrekking tot de Emté. Geef aan wat u verwacht naar aanleiding van uw bezoek.

	Helemaal mee oneens				Helemaal mee eens
De Emté zet zich in voor sociale projecten	O	O	O	O	O
De Emté hecht belang aan milieu bescherming	O	O	O	O	O
De Emté houdt zijn administratie accuraat bij	O	O	O	O	O
De Emté houdt rekening met suggesties van klanten	O	O	O	O	O
De slagerij/ Emté verleent excellente service	O	O	O	O	O
De winkel is gekenmerkt door zijn schoonheid	O	O	O	O	O
De service van de Emté stelt mij op mijn gemak	O	O	O	O	O
Mijn bezoeken bij de Emté leveren positieve ervaringen op	O	O	O	O	O

Er volgen nu een aantal stellingen over dingen die u belangrijk vindt in een winkel. Geef aan in hoeverre de genoemde waarden voor u belangrijk zijn: onbelangrijk, minder belangrijk, redelijk belangrijk, belangrijk of zeer belangrijk.

	Onbelangrijk				Zeer belangrijk
Ik vind het belangrijk dat:					
het interieur mooi is	O	O	O	O	O
het vlees netjes in de toonbank ligt	O	O	O	O	O
de producten er vers uitzien	O	O	O	O	O
de productprijzen duidelijk zichtbaar zijn	O	O	O	O	O
de aanwezige uitrusting up-to-date is	O	O	O	O	O
er een ruime keuze aan verschillende soorten vlees is	O	O	O	O	O
het vlees netjes verpakt is	O	O	O	O	O
de gebruikte mandjes schoon zijn	O	O	O	O	O
de advertentieborden mooi zijn	O	O	O	O	O
ik onmiddellijk geholpen wordt door de medewerker	O	O	O	O	O
het taalgebruik van de medewerker goed is	O	O	O	O	O
de medewerker vriendelijk glimlacht	O	O	O	O	O
de medewerker over voldoende kennis beschikt om mijn vragen te beantwoorden	O	O	O	O	O
de medewerker mijn vragen snel kan beantwoorden	O	O	O	O	O
de medewerker een naamskaartje draagt	O	O	O	O	O
de medewerker mij aan het einde een fijne dag toewenst	O	O	O	O	O
de medewerker zich niet met andere zaken bezig houdt tijdens mijn bezoek	O	O	O	O	O
de Emté zich inzet voor sociale projecten	O	O	O	O	O
de Emté belang hecht aan het milieu	O	O	O	O	O
de Emté zijn administratie accuraat bij houdt	O	O	O	O	O
de Emté rekening houdt met suggesties van klanten	O	O	O	O	O
de Emté excellente service verleent	O	O	O	O	O
de winkel gekenmerkt wordt door zijn schoonheid	O	O	O	O	O
de service van de Emté mij op mijn gemak stelt	O	O	O	O	O
mijn bezoeken bij de Emté een positieve ervaring opleveren	O	O	O	O	O

Tot slot volgen nog enkele laatste vragen

Wat voor cijfer zou u de slagerij geven als geheel: O 1 O 2 O 3 O 4 O 5 O 6 O 7 O 8 O 9 O 10

Wat is uw geslacht? O man O vrouw

Wat is uw leeftijd?

Doet u privé wel eens boodschappen bij de Emté? O nooit O soms (1-2keer per maand) O vaak (vaker dan 2 keer per maand)

	Onbelangrijk				Zeer belangrijk
Hoe belangrijk is het voor u dat er een versafdeling aanwezig is?	O	O	O	O	O

Koopt u liever voorverpakt of vers vlees? O voorverpakt vlees O vers vlees O ik koop nooit vlees

Licht u hier toe waarom:

Appendix D: Item Selection

As discussed in section 2.1 a literature search on service quality models has been conducted in order to develop a valid measurement instrument. The literature search included 7 different service quality scales with a total of 213 items. First identical items and items which were not considered relevant for the retail industry were deleted (e.g. “getting a mortgage was really easy”).

Afterwards the pretest, as described in paragraph 3.1, has been carried out with the remaining 158 items. Items which were assigned to the same service level by all researchers have been considered most valid and were thus retained. Then items measuring similar attribute properties were excluded (e.g. if 4 items measured visual attractiveness of the physical environment only one has been added to the next step). A total of 62 items remained.

Those items were evaluated based on a rating system in order to calculate a total score for each item.

The rating scores for Level 1 (*N* = 15) and Level 2 items (*N* = 14) were based on the following criteria. Each criterion had the same weighting factor.

- Possibility to manipulate

  Level 1 and Level 2 were supposed to be manipulated and thus the included items needed to hold the possibility of being manipulable;

- Controllability

  The item must be controllable; in order to guarantee that during every visit the manipulation was performed in the same way;

- Objectivity

Objective items should be prioritized, due to the fact that objective items do not require interpretation from the mystery shopper. This interpretation of observation is a possible limitation to the reliability (Prinsen, Gosselt, Van Hoof, & De Jong, 2006);

- Applicability in the service setting

  The item must be applicable to the butchery service setting;

- Pretest match

  As mentioned earlier items which were assigned to the same service level by all researchers were considered most valid.

Level 3 (*N* = 18) and 4 (*N* = 15) items were not manipulated. Furthermore those items are always based on interpretations of the mystery shopper and can thus not be objective. Therefore, the scores for Level 3 and 4 were only based on the last two criteria (applicability in the service setting and pretest match).

Finally the number of items included in the instrument for each level was determined based on the following criteria:

- Average number of items in mystery shopping research

  The length of the questionnaire is crucial for the reliability of the data, due to fact that mystery shoppers have to memorize their observations until after the visit (Morrison, Colman, & Preston, 1997; Wilson, 1998). The average number of used items is 40 (Van der Tang, 2014). Thus a questionnaire of approximately 40 items is considered to be desirable;

- Level 1 and Level 2 were measured with twice the amount of items

In order to keep the amount of not manipulated items uniform between all four levels, Level 1 and 2 were measured with at least twice the amount of items;

- Personality test

  In order to be able to test whether significant differences between service levels were caused by personal preferences of the participants, a character test has been added to the instrument.

Based on these criteria the nine highest scoring items from Level 1 and Level 2 and the four highest scoring items of Level 3 and Level 4 were included in the instrument. In tables C.1 - C.4 the items, which were evaluated based on the above described rating system can be found.

Item	Manipulable	Applicability	Controllable	Pretest match	Objectivity	Score	Item # in questionnaire
Materials associated with this store's service (such as shopping bags, catalogs, or statements) are visually appealing.	1	1	1	1	0	4	Item 7 & 8
The meat section is characterized by its freshness and quality.	1	1	1	1	0	4	Item 3
clearly indicated	1	1	1	0	1	4	Item 4
XYZ has up-to-date equipment.	1	1	1	1	0	4	Item 5
The products are appropriately displayed in the shelves.	1	1	1	1	0	4	Item 2
A broad assortment of products and brands is offered.	0	1	1	1	0	3	Item 6
The physical facilities at this store are visually appealing.	0	1	1	1	0	3	Item 1
Signs, symbols, advertisement boards, pamphlets and other artifacts in the organization are visually appealing.	0	1	1	1	0	3	Item 9
This store accepts most major credit cards.	0	1	1	0	1	3	
The store layout at this store makes it easy for customers to find what they need.	0	1	1	1	0	3	
This store provides plenty of convenient parking for customers.	0	1	1	0	0	2	
The ambient conditions such as temperature, ventilation, noise, odor, etc. prevailing in the organization premises.	0	1	0	0	0	1	
This store has clean, attractive, and convenient public areas (restrooms, fitting rooms).	0	0	1	0	0	1	
The fish section is characterized by its fresh, quality products.	0	0	1	1	0	2	
The retailer's own brand products are high quality.	0	0	1	1	0	2	

Table D.1: Item scores for Level 1.

Items	Manipulable	Applicability	Controllable	Pretest match	Objectivity	Score	Item # in questionnaire
Employees are elegant and refined in speech.	1	1	1	1	0	4	Item 11
Employees of XYZ are polite.	1	1	1	1	0	4	Item 12 & 17
Employees have the knowledge and competence to answer customers' specific queries and requests.	1	1	1	1	0	4	Item 13
XYZ employees are able to answer my questions quickly.	1	1	1	1	0	4	Item 14
Employees in this store give prompt service to customers.	1	1	1	1	0	4	Item 10
Employees have a neat and professional appearance.	1	1	1	1	0	4	Item 16
Employees can give customers individual attention.	1	1	1	1	0	4	Item 18
Employee's capabilities and behaviors are dependable.	1	1	1	1	0	4	Item 15
Employees of this store are able to handle customer complaints directly and immediately.	0	1	1	1	0	3	
Employees understand the needs of their customers.	0	1	1	1	0	3	
Employees in this store tell customers exactly when services will be performed.	0	0	1	1	0	2	
You feel safe in your transactions with XYZ's employees.	0	0	1	1	0	2	
You can count on XYZ's employees knowing their jobs.	0	1	0	1	0	2	

Table D.2: Item scores for Level 2.

Item	Applicability	Pretest match	Score	Item # in questionnaire
XYZ often participate the activities about social fairs.	1	1	2	Item 19
XYZ emphasizes the problems of environmental protection.	1	1	2	Item 20
XYZ keeps its records accurately.	1	1	2	Item 21
XYZ always keeps customers' suggestions in mind.	1	1	2	Item 22
XYZ apprises the customers of the nature and schedule of services available in the organization.	1	1	2	
This store willingly handles returns and exchanges.	1	0	1	
Employees get adequate support from XYZ to do their jobs well.	1	0	1	
XYZ employ some handicapped person to serve.	1	0	1	
This store insists on error-free sales transactions and records.	1	0	1	
XYZ often provides new service contents.	1	0	1	
This store gives customers individual attention.	1	0	1	
The feedback from customers is used to improve service standards.	1	0	1	
XYZ responds my requests quickly.	1	0	1	
XYZ stresses customer's personal privacy.	1	0	1	
XYZ tries to keep my waiting time to a minimum.	1	0	1	
XYZ apprises the customers of the nature and schedule of services available in the organization.	1	1	2	
XYZ can establish long-term relationships with customers.	0	0	0	
XYZ provides prompt service to customers.	1	0	1	

Table D.3: Item scores for Level 3.

Item	Applicability	Pretest match	Score	Item # in questionnaire
I believe XYZ offers excellent service.	1	1	2	Item 23
The store is characterized by its cleanliness and efficient running.	1	1	2	Item 24
XYZ_'s service makes me feel convenient.	1	1	2	Item 25
When I leave XYZ, I usually feel that I had a good experience.	1	1	2	Item 26
I find that XYZ's other customers consistently leave me with a good impression of its service .	1	1	2	
Customers feel safe in their transactions with this store.	1	1	2	
I am confident in XYZ's expertise; XYZ knows what they do.	1	1	2	
XYZ is dependable.	1	0	1	
Equal treatment stemming from the belief, everyone, big or small, should be treated alike.	1	0	1	
XYZ knows the kind of _products_ its customers are looking for.	1	0	1	
I receive VIP treatment in _XYZ_.	0	0	0	
XYZ understands that the design of its facility is important to me.	0	0	0	
I have a feeling of growth after _XYZ_'s service.	0	0	0	
I can learn from _XYZ_'s service contents (investment,…etc.).	0	0	0	
After receiving _XYZ_'s service, I am confident of choosing this company.	0	0	0	

Table D.4: Item scored for Level 4.

Appendix E: Data Set