

# The impact of employees' customer education behavior on customers' service encounter evaluations

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## 1MR05 Research Proposal

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## Introduction

In order to succeed in an increasingly competitive market, today's firms are challenged to create highly valuable products or services that meet customers' needs and expectations. It is difficult for firms to differentiate their offering from others, especially in services industries, because competitors could relatively easily imitate each other's unique capabilities through increased technology and/or available expertise (Ligas, 2004). Hence, firms need to differentiate their offering on other aspects that are more difficult to imitate by competitors than the core service, which could consist of functional service quality aspects. Functional service quality includes elements which are related to service processes, and the nature of interpersonal interactions (Eisingerich & Bell, 2007). It is generally accepted that customers evaluate both technical service quality, which refers to the quality of the core service that is received by customers, and functional service quality (e.g., Eisingerich & Bell, 2007; Seth, Deshmukh & Vrat, 2005; Oldfield & Baron, 2000; Grönroos, 1984).

The *service encounter*, which is often the only contact situation between the firm and the customer (Bitner, Booms & Tetreault, 1990), is the 'moment of truth' for firms to demonstrate customers that their service-offering is in line with or beyond customers' needs and expectations, and that they offer more value to their customers compared to their competitors. The service encounter can take many forms for many purposes. For considerable services, customers completely consume the service during this contact situation, for example, hairdressers and dentists. In contrast, a service provider could also provide the necessary maintenance and service to a particular product that is possessed by the customer in the after-sales period. During the service encounter, employees interact directly with firm's customers. Hence, firms are completely, or at least partially, dependent on their employees to deliver a high-quality service. So, the manner in which employees, which are representatives of the firm, behave during this moment of contact is crucial to customers' evaluation. This statement is in line with previous research, which demonstrated the effect of employee behavior on customer perceptions of service quality, satisfaction, and perceived value (e.g., Brady & Cronin, 2001).

Considerable research attention is paid on the identification of appropriate *employee behavior* during the service encounter to develop and deliver a high-quality service. Most of these studies were focused on industries that perform pure services, situations in which no tangible product is exchanged and the service is completely consumed during the service encounter. Due to the intangibility of pure services, customers' evaluation is mainly based on

the manner in which the service is delivered (functional service quality) instead of the service output (technical service quality). In contrast, research to appropriate employee behavior in *product/service bundles* is lacking. In this situation, customers usually possess a product for a longer period of time and the required services are generally performed by a specialized firm. In contrast to pure services, service encounters on product/service bundles are mainly focused on the provision of maintenance and service to a product (technical service quality) instead of the interaction (Hakanen & Jaakkola, 2012). The study of van der Heijden, Schepers, Nijssen & Ordanini (2013) demonstrated that employees' knowledge sourcing behavior, which refers to the acquisition and provision of information about firms' products and services, has a positive indirect effect on service recovery quality. This behavior could be identified as a functional service quality aspect. Based on this study outcome, it is thought that functional service quality may also form an important aspect in product/service bundles as long as the interaction provides customers useful and relevant information about products or services.

The following three statements explain the essence of the interaction in service encounters on product/service bundles. First, customers are often involved in multiple service encounters during the product lifetime. Hence, it is expected that customers are more willing to establish rapport, which refers to the development of a commercial relationship between the employee and the customer, because they will have multiple interactions in the near future. Second, customers might want to obtain more product knowledge in order to optimally use the product. Service encounters are ideal situations for customers to obtain specific knowledge, and to ask questions about products and services. Third, the provision of specific information about products and services during service encounters could increase customers' expertise, and could indirectly influence customers' evaluation. Because highly knowledgeable customers are more capable to correctly evaluate the technical service quality (Eisingerich & Bell, 2007).

This study is focused on employee behaviors and skills that increase the usefulness of the interaction between the employee and the customer. In more detail, this study is aimed at (I) employees' customer education behavior, and (II) employee adaptability. First, *customer education*, which are "*educational initiatives undertaken by a firm to better educate, inform, and develop the knowledge and skills of the customers*" (Antonios, 2011, p. 3), could increase the usefulness of the interaction in service encounters on product/service bundles because customers obtain specific information about products and services that is probably unknown to them. Previous studies, which were mainly performed on pure services, demonstrated the positive effect of customer education on customers' evaluation, expertise, loyalty, rapport,

trust, and employees' ideas for improvement (e.g., Suh, Greene, Israilov & Rho, 2015; van der Heijden et al., 2013). In order to educate customers, effective communication is essential that could be achieved by minimizing noise, and by providing high-quality and an appropriate amount of information to customers. In addition, asking feedback is necessary to examine whether customers completely understood and received the provided information. Second, *employee adaptability* could increase the usefulness of the interaction because employee's ability to adapt their customer education initiatives to a specific situation could be essential in order to create shared meaning and understanding with different customers. In summary, this study investigated the following research question: *"To what extent does employees' customer education behavior have an effect on rapport and customers' evaluation in after-sales service on product/service bundles?"*

This study offers three important contributions. First, while prior research focuses mainly on the identification of appropriate employee behavior in pure services (e.g., Leischnig & Kasper-Brauer, 2015; Fatima & Razzaque, 2014) it has received little attention in product/service bundles. Literature recognizes that the provision of specific information about products and services through employees is expected by customers in specialized services (Ford, 2001), and is indirectly related to service recovery quality in product/service bundles (van der Heijden et al., (2013). However, empirical evidence remains scant. This study examines the effect of customer education behavior, which belongs to functional service quality and is related to technical service quality, in product/service bundles. Firm's customer education initiatives may increase the usefulness of the interpersonal interaction in service encounters, and lead to higher perceived customer value.

Second, prior research usually examines customer education from customer's perspective (e.g., Suh et al., 2015; Marshall & Bly, 2004) and, in contrast, only a few studies assessed this construct from employee's perspective (e.g., van der Heijden et al., 2013). Moreover, the study of Chandon, Leo & Philippe (1997), which assessed service encounter quality from both customer's and employee's perspective, recognized that constructs need to be examined from both perspectives to provide a complete analysis. Due to different outcomes could be gathered from different perspectives, this study assesses customer education from both perspectives.

Third, a field experiment is conducted to examine the causal effect of an increase in the provision of specific information about products and services in service encounters on customers' evaluation. A positive relationship is expected because customers want to obtain information about products and services in a specialized services (Ford, 2001).

## **1. Business Context**

This chapter introduces the firm that is central to this study, and discusses their current situation and problems in more detail.

### **1.1. Organization**

The study is conducted during a research internship at Beko Bakkerij Techniek, which is a business unit of the Beko cooperation. This cooperation was founded by a group of independent bakers in 1965, and is focused on the achievement of economies of scales by purchasing ingredients in large quantity and the provision of business support to the associated firms. Currently, 80 percent of the bakeries that are located in the Netherlands are member of the Beko cooperation. Moreover, retail firms (supermarkets and wholesales), schools, and other institutions are also member of this cooperation.

Beko Bakkerij Techniek is one of the five business units of the Beko cooperation. This business unit sells bakery machinery and tools, gives advice, and provides maintenance and service to bakery machinery. This study is focused on the latest element, namely the provision of maintenance and service to bakery machinery. Beko Bakkerij Techniek has five offices across the Netherlands and the headquarter is located in Wijchen. In more detail, the firm employs 19 employees distributed over these five offices. Each of these employees has years of experience and has considerable technical knowledge. This latest aspect is crucial, because employees must be able to independently provide maintenance and service to a broad product portfolio.

### **1.2. Current Situation**

Beko Bakkerij Techniek is characterized as a highly innovative firm that is focused on the development of product improvements in order to fulfill their customers' needs, and on the identification of ways in which they could obtain a more efficient service process. Recently, the firm developed a new knife that has a lifetime of one year, which is six times longer than regular knives. Furthermore, the firm equips their employees with state-of-the-art devices in order to obtain a highly efficient service process. For example, the firm introduced the PDA five years ago. These PDA's will be replaced by iPads this year. In more detail, Beko Bakkerij Techniek developed their own iPad application in order to optimally use product' features, and to align their service process to this application.

In total 1800 bakeries are located in the Netherlands. Around 80 percent of them, 1,440 bakeries, are member of the Beko cooperation. Despite this high rate, only 32 percent of these bakeries (460 out of 1,440) are contracted with Beko Bakkerij Techniek. These numbers are visualized in Table 1. The firm provides maintenance and service to the machinery of these bakeries, which consists of providing preventive maintenance, solving accidental breakdowns, helping customers use products, and providing spare parts. This type of service provision, called product/service bundles, consists of a product that is possessed by the customer for a longer period of time, and the required service to this product is conducted by a specialized firm. According to Beko Advies (2009) the remaining 68 percent of the bakeries are not contracted to Beko Bakkerij Techniek because they conduct the machinery maintenance by themselves or by another firm, or they do not perform any maintenance to their machinery.

Because the size of bakeries and the number of machines differ from customer to customer, the firm offers three service contracts to serve the different customers – Low, medium, and high. As can be seen in Figure 1 on the next page, four out of five bakeries are contracted with a low maintenance contract. The remaining 20 percent of contracted bakeries can be assigned to medium and high contracts. In general, customers who are intensively contracted to Beko Bakkerij Techniek receive annually more service encounters with regard to preventive maintenance. Table 2 visualizes these different service contracts and the number of contracted bakeries.

Aspect	Number of Bakeries	Percent
Total bakeries located in the Netherlands	1,800 *	
Bakeries associated to Beko cooperation	1,440 *	80% (1,440 out of 1,800)
Bakeries associated to Beko cooperation and Beko Bakkerij Techniek	460 *	32% (460 out of 1,440)

\* Numbers are obtained from Beko Bakkerij Techniek

Table 1. Background Information

Type service contract	Provision of preventive maintenance annually	Number of contracted bakeries
Low	1	368
Medium	2 – 8	60
High	8 or more	32

Table 2. Types of Service Contract



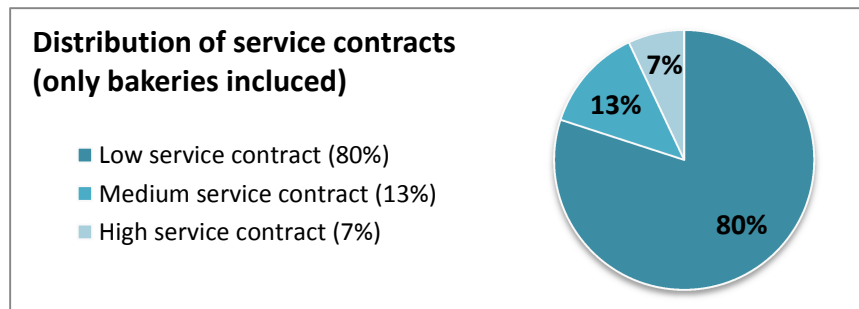


Figure 1. Distribution Of Service Contracts Among Bakeries

### 1.3. Problem Definition

This paragraph identified and described four practical problems that the firm is currently facing. First, based on Table 1 it can be seen that relatively few bakeries (32%) that are associated to the Beko cooperation are also contracted to Beko Bakkerij Techniek. The firm is looking for ways to increase the number of customers, and is especially focused on potential customers that are already member of the Beko cooperation. According to the customer satisfaction survey of 2009 (Beko Advies), customers who are member of the Beko cooperation orientate their purchasing decision mainly on three sources, namely internet, peers from other firms and their sales agent. In addition, customers who are not member of the Beko cooperation orientate their decision mainly on internet and peers from other firms. Based on these findings, it is suggested that customer's word-of-mouth, which could be communicated by speaking or writing in an offline and online environment, is importance to in order to acquire and attract new customers. In more detail, customer's word-of-mouth level could be positively influenced by firm's employees during service encounters. This is caused by the fact that customer's word-of-mouth level increases as customers positively experience a service encounter. Despite the survey outcome suggested the potential of customer's word-of-mouth, the firm was not especially focused on the identification of ways to enhance customer's word-of-mouth level.

Second, the firm wants to gain insight into the actual customer satisfaction level of service encounters. The survey of 2009 suggested that most customers are satisfied with the firm's service provision and indicated the potential of this activity in the coming years. Due to the fact that this survey becomes outdated and the survey was focused on all firm's activities, the firm wants to assess specific elements of the service provision by conducting a more specific customer satisfaction survey. Beko Bakkerij Techniek wants to assess customer's satisfaction level, and to gain insight into potential improvements in order to fit their service provision to customer's requirements and expectations.

Third, the firm wants to gain insight into the effect of employee's education behavior on customers' service encounter evaluations. At this moment, the firm is mainly focused on the technical service quality and service encounter's efficiency. Based on the study outcomes, the firm could conclude if it is beneficial to spend time and effort on the exhibition of education behaviors during a service encounter, or should the firm only be focused on increasing the efficiency of the service encounter.

Fourth, due to firm's customer portfolio consists of a variety of customers; the firm wants to examine if the needs of these different customers differ from each other. For example, the firm suggests that bakeries have different needs and priorities than the other customer segments. This could be caused by the fact that bakery products are the main product of bakeries, but these products are a side product for the other customer segments. In summary, the firm wants to understand how they could acquire new customers by customer's positive word-of-mouth. In addition, the firm wants to gain insight in the actual customer satisfaction level of the service encounter. Subsequently, Beko Bakkerij Techniek wants to examine the influence of employee's education behavior on customer's satisfaction level and word-of-mouth level. Moreover, the firm suggests that the needs and priorities differ between the customer segments. Hereby, the firm wants to gain insights in the expectations of the service provision of each customer segments.

## **2. Theoretical Background & Hypotheses Development**

This chapter describes the current study in more detail and is structured as follows: First, the theoretical background of customer education is discussed and the hypotheses are formulated. Second, a conceptual framework is developed that provides a clear visualization of the formulated hypotheses and their underlying relations. Third, the expected results of the hypotheses are forecasted. Fourth, study limitations are identified.

### **2.1. Theoretical Background**

Firms could educate their customers in various ways, for example, by self-instructional material (leaflets, instruction manuals and advertisements), employee interaction, formal courses (seminars and workshops), web sites and multimedia (Suh et al., 2015; Antonios, 2011).

Although a firm could perform some of these aforementioned customer education activities internally (e.g., websites and multimedia), firms are also dependent on employees who are in contact with customers to perform this task in, for example, service encounters. In particular, service firms are often completely dependent on employee's customer education initiatives because employees are often only in contact with customers in this situation. So, successful customer education is the ability and motivation of employees to appropriately implement customer education strategies in real time. Customer education behavior refers to the extent to which employees provide information about products and services to their customers, and acquire information about experiences with the firms' products and services from customers.

Employees' customer education behavior consists of the following three behaviors, namely asking questions, giving advice, and sharing expertise and knowledge (Gremler & Gwinner, 2008). First, employees could determine customers' needs by asking specific questions to them. Second, employees could provide advice to their customers about product or service features, could recommend them about specific (new) products or services, and could provide insight into side issues that are indirectly related to products or services. Third, employees could share their own expertise and knowledge about a specific product or service with their customers.

In order to achieve shared meaning and understanding between the employee (sender) and the customer (receiver), it is necessary to have an effective communication process (Shannon & Weaver, 1949). While noise, which are distortions to the message causing that the message is incompletely received by the receiver, adversely affect the effectiveness of the

communication process (Shannon, 1949), the provision of high-quality and an appropriate amount of information to receivers has a positive impact on the effectiveness (Simpson & Prusak, 1995; Keller & Staelin, 1987). The sender could determine if the message is completely received and understood by asking feedback from the receiver. Based on the obtained feedback, the sender could decide to repeat the message or to adjust the information to a certain situation in order to achieve shared meaning and understanding. From this, it is concluded that effective communication is essential to enhance customers' knowledge and skills, and to successfully educate customers.

### **Consequences:**

In general, the literature recognizes that customer education has six consequences. First, it is suggested that customer education increases *customer satisfaction* with firm's products and services (Antonios, 2011; Honebein, 1997). This suggestion is supported by the study of Bell & Eisingerich (2007) on financial services, in which is demonstrated that customers develop a more positive attitude towards the firm when customers become more knowledgeable. In addition, the study of Winsted (2000) recognized that the factors related to customer education have high factor loadings on customer evaluation, namely the factors 'the employee was very knowledgeable' and 'the employee seemed very intelligent'. Although previous research suggests the effect of customer education on customer satisfaction, the extent to which customer education influences customer satisfaction has not been studied before.

Second, the share of information that is probably unknown to customers enhances their *expertise* (Bell & Eisingerich, 2007) because it helps customers to fully understand the proper usage of products and services (Suh et al., 2015). This statement is supported by Marshall & Bly (as cited in Yang & Maxwell, 2011), in which is indicated that the share of specific expertise and knowledge result in more knowledgeable customers.

Third, customer education is positively related to *loyalty* (Bell & Eisingerich, 2007). This study demonstrated that firms could augment their service process by providing clear explanations and essential information to their customers. This statement is supported by the study of Suh et al. (2015), in which is shown that customer education is indirectly related to customer's intention to stay with a firm.

Fourth, the study of Gremler & Gwinner (2008) proved that employee's customer education behavior is essential to the development of *rapport* between the employee and the customer. This study indicated that the share of expertise and knowledge develops an initial connection between the employee and customer. This statement is supported by the study of Webb & Barrett (2014), in which is demonstrated that the share of information enhances *rapport* between instructors and their students. They concluded that students wanted to have clear explanations and feedback from instructors, and wanted to know what to expect in their classes. Based on these findings, it could be concluded that it is essential to provide customers clear information and feedback about products and services in order to develop *rapport*.

Fifth, customer education is positively related to *trust* (Suh et al., 2015; Eisingerich & Bell, 2007). Both studies recognized that customer education enhances customer's willingness or confidence to rely on a firm's competence and reliability. Because customers link firm's customer education initiatives to high-quality services. Moreover, Anderson and Narus (as cited in Suh et al., 2015) stated that clear explanations and the provision of essential information about products and services generate positive outcomes, and eventually develop trust.

Sixth, the study of van der Heijden et al. (2013) showed that employees' customer education behavior is positively related to *ideas for improvement*, in a professional service context. Employees could come up with more ideas for improvement because the acquired information could reveal insights and needs "*that would not have been shared if the interaction were limited to a rudimentary conversation to determine the product problem the employee was called for*" (van der Heijden et al., 2013, p.5). Although customer education increases ideas for improvement, it also impairs recovery speed. The longer recovery duration is caused by the fact that employees have to perform additional actions in service encounters. These additional actions take extra time. The main conclusion of this study is that employees "*can learn from recovery situations and improve their performance accordingly*" (van der Heijden et al., 2013, p.13).

## 2.2. Hypotheses Development

In order to answer the research question that was defined in the introduction, this paragraph is focused on the formulation of hypotheses that transform the research question into testable propositions. This paragraph is divided into five subparagraphs that includes a subset of hypotheses that covers the same topic.

Prior to the formulation of the hypotheses, three important aspects of this study are highlighted. First, although most research attention is spent on the identification of appropriate employee behavior in service encounters on pure services, this study examines the impact of specific employee behavior in service encounters on product/service bundles.

Second, although considerable characteristics of employees (e.g., sex, age and tenure), customers (e.g., sex, age, type and relation length) and the service encounter (e.g., type and duration) are recorded, most of these characteristics and control variables are excluded to the initial hypotheses that are formulated in next subparagraphs. Variables and characteristics that have a large variation are included to the conceptual framework in a later phase of this study.

Third, this study measured customer education from two perspectives, namely from the customer and the employee. So, all hypotheses with regard to customer education that are stated in next subparagraph are examined from both perspectives.

### 2.2.1. Customer Education On Rapport & Firm's Customer Orientation

Employees often display customer education behaviors to build rapport between them and their employees (Webb & Barrett, 2014; Gremler & Gwinner, 2008). In more detail, the study of Gremler & Gwinner (2008) showed that information sharing could ensure an initial connection between the employee and the customer, which is important for the establishment of rapport. Moreover, employees could gain a better understanding of specific customer needs by asking questions (acquisition of information). According to the study of Gremler & Gwinner (2008) asking question could foster customer's sense that the employee is truly listening to their answers, which makes those customers feel more comfortable. Consistent with aforementioned study findings, the study of Ford (2001) found that firms that provide specialized services share more specific information with customers, for example lawyers, physicians, and auto mechanics. This study showed that customers of these specialized service firms are more willing to establish a commercial relationship with employees because customers classified this relation as useful. This relationship is useful for customers because they obtain specific knowledge, and information about products and services that is probably unknown to them during the service encounter. The current study is conducted in a professional service firm that is substantially similar to auto mechanics in the study of Ford (2001). So, it is thought that customers are more willing to build rapport between them and the employee. Because customers classify this relationship as useful as long as the employee exhibits customer education behaviors. Accordingly, the following is hypothesized:

*H1: Employees' customer education behavior increases the rapport between employees and their customers.*

Based on the study outcome of Ford (2001), it could be that employees' customer education behavior meets customers' needs with regard to the attainment of specific knowledge, and information about products and services. In line with this statement, firm's customer education initiatives could enhance the value of the service-offering for customers because these firms demonstrate that they understand customers' needs, and focus their activities on these needs. This suggestion is in line with the study of Ndubisi (2012) in which is revealed that the provision of reliable information is positively related to customer orientation. Based on this reasoning, it is expected that customer education has a positive effect on customer's perspective about firm's customer orientation. Thus, it is hypothesized:

*H2: Customer education positively influences customer's perspective about firm's customer orientation.*

### 2.2.2. Customer Education On Employee Creativity

Creativity can be defined as “*the ability to come up with ideas that are both novel and appropriate within a given domain*” (Amabile, 1988, p.125). In more detail, creativity is a function of three components: expertise, motivation, and creative-thinking skills. It is thought that customer education could influence two out of three creativity dimensions, namely expertise and motivation.

First, customer education could have a positive impact on employee’s expertise because employees perform additional tasks that are beyond their regular activities. These additional tasks could broaden employees’ knowledge and expertise in a specific domain. Moreover, employees may become more critical about their performed activities when they are confronted with their own way of working as they share specific knowledge, and information about products and services among customers. The study of van der Heijden et al. (2013) demonstrated that employee’s customer education behavior is positively related to ideas for improvement. Also, the study of Madjar & Ortiz-Walters (2008) found that a higher level of customer input, which consists partly of the acquisition of information, was positively related to employee creativity. Based on aforementioned suggestions and study outcomes, it is expected that the provision and acquisition of information could increase the expertise dimension of creativity.

Second, customer education could enhance employee’s internal motivation because employees may feel that their work is highly important for customers and the firm. This is caused by the fact that both parties are dependent on employees’ exhibition of customer education behaviors during service encounters. For example, the amount of information that is shared with the customer is highly dependent on the employee. Based on aforementioned statements, it is expected that customer education enhances the expertise and motivation dimensions of creativity. Accordingly, the following is hypothesized:

*H3: Employee’s customer education behavior positively influences employee creativity.*



### 2.2.3. Customer Satisfaction

#### **Service quality:**

The study of Oh (1999) found that perceived service quality is crucial to customer satisfaction in the hospitality industry. This result is in line with the study outcome of Sivadas & Baker-Prewitt (2000), in which is stated that service quality is an antecedent of customer satisfaction, in a retail setting. Based on these study results, it is thought that service quality is positively related to customer satisfaction. Accordingly, it is hypothesized:

*H4: Service quality is positively related to customer satisfaction.*

#### **Customer education:**

The study of Bell & Eisingerich (2007) stated that customers must possess a minimum level of knowledge in order to appropriately evaluate the offered service, especially in highly technical services. Employees' customer education behavior could enhance customers' knowledge because the shared abilities, skills, and specific information are probably unknown for them. Hereby, customers become more capable of evaluating the provided services. It is thought that customer education increases customer satisfaction with firm's products and services (Antonios, 2011; Honebein, 1997). This suggestion is supported by the study of Bell & Eisingerich (2007) on financial services, in which is demonstrated that customers develop a more positive attitude towards the firm when customers become more knowledgeable. In addition, the study of Winsted (2000) recognized that the factors related to customer education have high factor loadings on customer evaluation, namely the factors 'the employee was very knowledgeable' and 'the employee seemed very intelligent'. Based on aforementioned statements and study outcomes, it is thought that customer education increases customer satisfaction. Thus, the following is hypothesized:

*H5: Employee's customer education behavior is positively related to customer satisfaction.*

#### **Rapport:**

The study of Bitner et al. (1990) claimed that rapport between the employee and the customer can impact the evaluation of goods and services. In line with this statement, the study of Gremler & Gwinner (2000) examined the link between rapport and customer's evaluation. They divided the construct of rapport into two dimensions, namely enjoyable interaction and personal connection. They found that an enjoyable interaction is positively related to customer satisfaction and to their level of word-of-mouth in service encounters on pure services.

Moreover, a personal connection is also positively related to customer satisfaction, but the effect on the level of word-of-mouth is conflicting between the two samples (bank and dental).

The current study takes only the personal connection dimension of rapport into account because it is thought that this dimension becomes more important as rapport is established between the employee and the customer. This statement is supported by Gremler & Gwinner (2000) who stated that a personal connection is developed in a more extensive interaction or series of interactions. Although the effect of a personal connection could increase as rapport is developed, it is thought that the effect of an enjoyable interaction declines as rapport is built (Gremler & Gwinner, 2000). This statement is in line with the study of Tickle-Degnen & Rosenthal (1990), in which is argued that the importance of rapport aspects evaluate over time. Based on aforementioned statements, it is thought that rapport is positively related to customer satisfaction. According it is hypothesized:

*H6: Rapport is positively related to customer satisfaction.*

**Firm's customer orientation:**

In the healthcare industry, the study of Ndubisi (2012) showed that firm's customer orientation has a positive effect on customer satisfaction. Customer oriented firms create superior value for key customers because the firm demonstrates that it has sufficient knowledge of customers' needs, and adjusts their service-offering to these specific needs. Firm's customer orientation could enhance customer satisfaction when it has a good understanding of customers' needs (Ndubisi, 2012). Therefore, it is hypothesized:

*H7: Firm's customer orientation is positively related to customer satisfaction.*

### **Employee's creativity:**

The study of Dong, Liao, Chuang, Zhou & Campbell (2015) found that employee creativity is positively related to customer satisfaction in the hairdressing industry. Because employees who are more creative generate more novel solutions that are useful in solving customer's problems, and dealing with the service tasks at hand. This is caused by the fact that more creative employees approach problems in unconventional ways that extend beyond standard proceedings, and are more focused on pleasantly surprising customers (Dong et al., 2015). Based on this statement, it is thought that highly creative employees are more capable to fulfill specific customer needs, and devise appropriate solutions to actual problems. So, employee creativity could enhance customer satisfaction, or:

*H8: Employee creativity is positively related to customer satisfaction.*

#### **2.2.4. Word-Of-Mouth Communication**

According to Mangold et al. (1999) the level of word-of-mouth is directly related to customer satisfaction or dissatisfaction with previous experiences. This finding is supported by the study of Hutchinson, Lai & Wang (2007), which showed that satisfaction is highly related to the level of word-of-mouth. In more detail, the level of word-of-mouth of dissatisfied customers is higher than the level of satisfied customers, because people are tended to share their negative experiences to others (Knauer, as cited in Mangold et al., 1999). Based on aforementioned study outcomes, it is expected that customer satisfaction is positively related to customer's level of word-of-mouth. Accordingly, the following is hypothesized:

*H9: Customer satisfaction will increase word-of mouth communication.*

#### **2.2.5. Employee Adaptability**

The study of Gwinner et al. (2005) demonstrated that employee adaptability, which is defined as the ability of employees to adjust their behaviors to the interpersonal and service-offering needs of customers in this study context, is necessary to customize the performed services in order to meet specific needs of customers. Since employees are in contact with a wide variety of customers during service encounters, it is expected that customer education initiatives are differently valued by these customers. Customers could vary, for example, on their technical knowledge, level of education, expertise, area of interest, and use of language. Based on these differences, it is thought that employees need to modify their customer education initiatives in such a way that customers understand the message, and that the message meets customers' knowledge, needs and expectations. Employees could modify their customer education initiatives, for example, by adjusting the amount of information that is provided, by varying

the technical complexity of the provided information, or by changing the way in which the information is provided. Asking feedback is necessary to examine whether customers completely understood and received the provided information. Based on the obtained feedback, employees could decide to repeat the message or to adjust the information to a certain situation in order to achieve shared meaning and understanding. Based on aforementioned statements, it is expected that employee adaptability is required in order to fit firm's customer education initiatives to customers' knowledge, needs, and expectations. In sum:

*H10: Employee adaptability positively moderates the relationship between customer education and (a) customer satisfaction, (b) rapport, and (c) firm's customer orientation.*

### 2.3. Conceptual Framework Development

The conceptual framework is developed based on ten hypotheses that are formulated in the previous paragraph. The conceptual framework visualizes the relations between the different constructs, and identifies the expected direction of these relations. Figure 2 shows the developed conceptual framework that is central to this study. As discussed in previous paragraph, the conceptual framework does not contain any hypotheses regarding to customer and service encounter characteristics. These characteristics are initially included as control variables, which are described in paragraph 3.1.3.1.

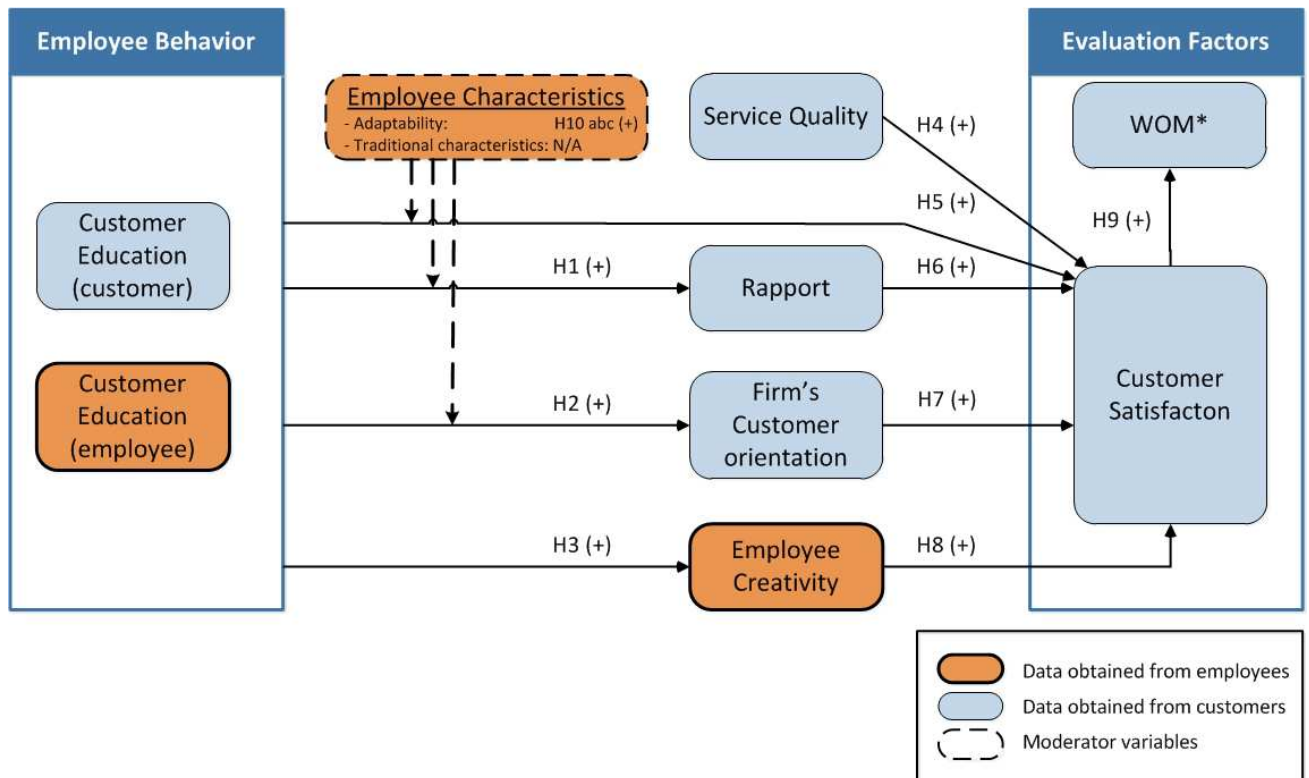


Figure 2. Conceptual Framework  
\*WOM = Word-of-Mouth Communication

## 2.4. Expected Outcomes & Limitations

This paragraph provides a forecast of the study outcomes that is based on the formulated hypotheses, and identifies study limitations.

### 2.4.1. Expected Outcomes

This subparagraph provides a clear overview of the formulated hypotheses and the expected outcomes. Table 3 indicates the effect (positive or negative) of the hypotheses that are formulated in paragraph 2.2 and provides an explanation for this effect.

Hypothesis	Description	Expected effect	Reason
<b>H1</b>	Customer education on rapport	Positive	- Frequently used employee behavior to build rapport. - Customers classify this relation as useful because they obtain specific information about products and services.
<b>H2</b>	Customer education on firm's customer orientation	Positive	- Customer education could contribute to the creation of a superior service-offering.
<b>H3</b>	Customer education on employee creativity	Positive	- The execution of additional tasks could foster employee's expertise. - Employees are internally motivated because they may feel that their work is highly important for customers and the firm.
<b>H4</b>	Service quality on customer satisfaction	Positive	- Important antecedent of customer satisfaction.
<b>H5</b>	Customer education on customer satisfaction	Positive	- Customers become more capable to appropriately evaluate the service-offering.
<b>H6</b>	Rapport on customer satisfaction	Positive	- Antecedent of customer satisfaction.
<b>H7</b>	Firm's customer orientation on customer satisfaction	Positive	- Firm's customer orientation could enhance customer satisfaction when it has a good understanding of customers' needs.
<b>H8</b>	Employee creativity on customer satisfaction	Positive	- More creative employees generate more novel solutions that are useful in solving customer's problems.

<b>H9</b>	Customer satisfaction on word-of-mouth communication	Positive	- Important antecedent of word-of-mouth communication.
<b>H10</b>	Moderating effect of employee adaptability on customer education and (a) customer satisfaction, (b) rapport, and (c) firm's customer orientation	Positive	- Employees need to modify their customer education initiatives in such a way that customers understand the message, and that the message meets customers' knowledge, needs and expectations.

**Table 3. Expected Outcome Of Formulated Hypotheses**

### 2.4.2. Study Limitations

First, firm's customer education initiatives could be differently valued among different types of customers. So, it could be the case that some customer segments are more willing to obtain specific knowledge, and information of products and services than other segments. The impact of this study limitation could be minimized by tracking specific customer information. In order to classify customers into segments, the following characteristics are recorded: Type of customer, type of service contract, relation length, number of machines, and number of employees.

Second, the extent to which customers want to obtain additional information about products and services in service encounters could be dependent on the situation, for example situations in which preventive maintenance is performed could differ from situations in which an accidental breakdown is recovered. In order to provide a generalizable answer to the research question, which is applicable to multiple situations, it is necessary to distinguish different situations. In order to classify service encounters into groups, the following characteristics are recorded: Type of service encounter, duration, involved office, and average productivity of involved office.

Third, the extent to which an employee is willing to provide information to customers, and acquire information from customers in service encounters could vary on their characteristics. In order to provide a generalizable answer and to control these characteristics during the survey and experiment, the following employee characteristics are recorded: Age, tenure, adaptability, and average service encounter duration.

### **3. Research Design**

This section of the research proposal describes the research design in more detail. Due to a survey and an experiment are performed in this study; this chapter is divided into two parts. First, a survey is conducted among customers and employees in order to assess the formulated hypotheses of paragraph 2.2. Second, an experiment is conducted in order to examine the effect of a specific manipulation. The manipulation is focused on the provision of specific information about products and services to customers, which belong to firm's education initiatives, during the service encounter.

#### **3.1. Survey Design**

The survey is conducted to gain insight into the formulated hypotheses and to provide an answer to the research question. Like field studies, the research environment of this study is characterized by low control of extraneous factors and high ecological validity. In contrast to a laboratory study, extraneous factors are hard to control in a field study. Some of these extraneous factors could be influenced, for example customers could be motivated to participate in this survey by providing compensations. The ecological validity of this study is considered to be high, because it is expected that the study outcome will represent the real-world.

In order to acquire a realistic picture of the current situation the survey data is obtained from three different sources – customers, employees, and firm records. First, customers provide subjective information about how customers generally experienced a service encounter. Second, employees provide subjective information about the way in which a service encounter is generally performed. Third, firm records provide additional objective information about a specific service situation.

This paragraph described the survey in more detail and is divided into five subparagraphs. First, a description of the sampling design is given. Second, the data-collection strategy is discussed. Third, a description of the latent constructs and measurement instrument are given. Fourth, the costs that are involved to conduct the survey are estimated. Fifth, the strengths and weaknesses of the survey are indicated.



### 3.1.1. Sampling Design

#### **Level of analysis:**

Employee customer education behavior is investigated at the service encounter level.

#### **Customers:**

*Focused customer segments.* The survey is focused on the following customer segments: bakeries, hospitality, schools, and other institutions. Retail, which consists of supermarkets and wholesalers, is the only customer segment that is excluded from the survey. The customers who belong to this segment are excluded, because it is impossible to send the questionnaire to the customers who were presented in the service encounter. Subsequently, customers are categorized by geographical region in order to test regional differences.

*Sample size.* The required sample size is determined according Snijders (2012), who stated that the sample size is dependent on the number of predictors. The conceptual framework of paragraph 2.3 consists of seven predictors, namely customer education (customer), customer education (employee), service quality, rapport, firm's customer orientation, employee creativity, and employee adaptability. Based on the amount of predictors, the minimum required sample size in order to detect a big effect is 50, must be at least 100 to detect a medium effect, and needs to be bigger than 500 to detect a small effect (Snijders, 2012).

Based on firm's historical data, it can be concluded that the firm executes on average 800 service encounters a month. 260 of them are covered by retail, and the remaining 540 service encounters fall within the other customer segments. In more detail, some customers are involved in multiple service encounters in a month. Due to customers may participate the survey only once, the amount of monthly service encounters is reduced to 300. By assuming that customer's response rate is between 20 and 30 percent, the survey is conducted among customers who engaged in a service encounter in the preceding two months. In more detail, the survey is sent to approximately 600 customers and it is expected that among 120 and 180 of these customers will complete the survey. According to Snijders (2012) the sample size is large enough in order to discover big and medium effects.

**Employees:**

Beko Bakkerij Techniek employs 19 employees distributed over five offices across the Netherlands. In order to minimize the effect of distinct personalities between employees and to overcome regional variations all 19 employees are involved in this study. Furthermore, the involvement of all employees ensure that the required sample size is achieved in a shorter period of time. It is expected that all employees participate in this survey, so a response rate of 100% is achieved.

**3.1.2. Data-Collection Strategy**

This paragraph discusses the data-collection strategy in more detail. The data is collected cross-sectional, which means that the data is collected over a short period of time and provides a snapshot of the situation at a given moment. Furthermore, all surveys that are sent towards employees and customers are developed using the online tool Qualtrics.

**Customers:**

As stated in the aforementioned paragraph, only customers who engaged in a service encounter in the preceding two months are invited to participate in the survey. In order to increase the response rate, all selected customers received an introduction e-mail before the actual invitation was sent to them. This e-mail introduces the survey to the selected customers, clearly explains the importance of their participation, and describes the purpose of this study. This e-mail was sent on the 17<sup>th</sup> of June. Subsequently, customers received the actual invitation to participate in the study on the 21<sup>th</sup> of June. In the subsequent two weeks, two reminders were sent to customers who have not completed the survey till that moment. These reminders were sent on the 27<sup>th</sup> of June and the 4<sup>th</sup> of July. In the case that customer's e-mail address is not registered, particular customers were phoned in order to introduce them towards the survey, to convince them to participate in the survey, and to ask their e-mail address.

**Employees:**

A first invitation to the survey was sent to all employees by e-mail on the 29<sup>th</sup> of June. In order to achieve a response rate of 100% a reminder was sent on the 1<sup>st</sup> of July and a phone call was made to these employees who did not participate in the survey on the 4<sup>th</sup> of July.

### 3.1.3. Latent Constructs & Measurement Instrument

This paragraph describes the latent constructs and the measurement instrument in more detail. In order to retain construct validity (Hair, Black, Babin, Anderson & Tatham, 2006), proven measurement items are adopted from the present literature where possible. First, all latent constructs of the survey are categorized by type (customers, employees, or control variables), and an argumentation for the chosen measurement item is given. Subsequently, an overview of the measurement instrument and the related measurement questions is given.

#### 3.1.3.1. Latent Constructs

##### Customers:

Latent Constructs	Adoption Of Measurement Items
1. Customer Education	Scale of Bell & Eisingerich (2007) is adopted, which consists of four items to examine the construct customer education. Due to this study was focused on financial services education by an advisor, the items are slightly modified to fit the current study
2. Service Quality	Assessed by using the two-item scale that was developed by van der Heijden et al. (2013). This scale measured employee's problem solving behavior with regard to the core activity. One of these measurement questions is divided into two separate items because this question assesses two specific aspects of a service encounter
3. Rapport	Three out of five measurement questions of the item scale of Gremler & Gwinner (2000) are adopted. This scale assesses the personal connection between customers and employees. The other two questions are excluded because these questions do not fit well in the current study setting. This is caused by the fact that these questions are focused on a close relationship between customers and employees. In this setting, customers and employees will not establish a close relationship because they do not frequently interact with each other
4. Firm's Customer Orientation	Two out of four measurement questions of the item scale of Ndubisi (2012) are adopted. This study found that these two questions have the highest factor loadings. The other two questions are excluded in the current study because one question is focused on the employee, and the other question is frequently hard to answer

5. Customer Satisfaction Assessed by using the four-item scale that was developed by Macintosh (2009). This scale was used to determine customer satisfaction with their dentist. In order to fit the scale to current study, some measurement questions are slightly modified
6. Word-Of-Mouth Communication Assessed by using the four-item scale of Gremler & Gwinner (2000). Due to this study was performed in the banking industry, the items are slightly modified to fit the current study. The items that are formulated in the scale of Gremler & Gwinner (2000) are almost similar to other scales that measure customer's word-of-mouth communication (e.g., Hutchinson, Lai & Wang, 2007). The scale of Gremler & Gwinner is chosen because this scale consists of more specific items and fits best to current study setting

**Table 4. Customers: Latent Constructs & Measurement Items**

**Employees:**

<b>Latent Constructs</b>	<b>Adoption Of Measurement Items</b>
1. Customer Education	<p>- <i>Provision of information:</i> Three-item scale of van der Heijden et al. (2013) is adopted. In order to fit the scale to current study some measurement questions are slightly modified</p> <p>- <i>Acquisition of information:</i> Assessed by using the five-item scale of van der Heijden et al. (2013). In order to fit the scale to current study some measurement questions are slightly modified</p>
2. Employee Creativity	Assessed by using the scale of Dong et al. (2015). These measurement questions need to be modified because the current study measures employee creativity from employee's perspective while Dong et al. (2015) measured this construct from customer's perspective. Furthermore, some measurement questions of Dong et al. are almost identical to each other. Hence, some of the initial measurement questions are merged to one measurement question in the current study.
3. Employee Adaptability	<p>- <i>Interpersonal:</i> The scale of Leischnig &amp; Kasper-Brauer (2015) is adopted that consists of three items</p> <p>- <i>Service-offering:</i> Assessed by using the scale that was developed by Leischnig &amp; Kasper-Brauer (2015). Two out of four measurement questions of this scale are adopted in the current study. The other two questions are excluded because these items are almost identical to the included items</p>

**Table 5. Employees: Latent Constructs & Measurement Items**

**Control Variables:**

The control variables, which are stated in Table 6, might be included as moderator variables into the conceptual framework at a later stage.

Customer	Employee	Service Encounter
- Type	- Age	- Type
- Type of service contract	- Tenure	- Duration
- Number of machines	- Associated office	
- Number of employees	- Average service encounter	
- Relation length	duration	
- Age		
- Gender		
- Job position		
- Geographical region		

**Table 6. Control Variables Customer, Employee & Service Encounter**

**3.1.3.2. Measurement instrument**

The measurement instrument consists of all questions that are used in the current study and are categorized by customers, employees, and firm records. Most of these measurement questions are based on existing proven literature. The questions are measured using a 5-point likert-scale because this type of distribution is easy for respondents to answer, and previous research (e.g., Dawes, 2008) has shown insignificant differences between 5-point and 7-point likert-scale measurements. In total 59 measurement questions are created to measure all constructs, and to assess the effect of moderator and control variables. 31 out of 59 questions are asked to customers, 18 of them are asked to employees, and the other items are answered by firm records. The formulated measurement questions, which are categorized by customers, employees, and firm records, that correspond to the identified constructs are stated in respectively Table 7, Table 8, and Table 9.

**Customers:**

<b>Construct</b>	<b>Code + Number</b>	<b>Measurement Question (English)</b>	<b>Measurement Question (Dutch)</b>
<b>1. Customer Education</b>	C_CE1	The employee keeps me very well informed about the machinery condition and the services performed. (Adopted from Bell & Eisingerich, 2007)	Onze servicemonteur houdt mij op de hoogte van de staat van de machines en de verrichte werkzaamheden.
	C_CE 2	The employee explains machine features and its operating system in a meaningful way. (Adopted from Bell & Eisingerich, 2007)	Onze servicemonteur legt op een duidelijke en een goed te begrijpen manier uit welke mogelijkheden de machine biedt en hoe de machine kan worden bediend.
	C_CE 3	The employee offers me additional machine information. (Adopted from Bell & Eisingerich, 2007)	Onze servicemonteur geeft mij aanvullende machine-informatie.
	C_CE 4	The employee always explains to me the pros and cons of the machine or service that is recommended for me. (Adopted from Bell & Eisingerich, 2007)	Onze servicemonteur geeft mij informatie over machineonderhoud en de voor- en nadelen ervan.
<b>2. Service Quality</b>	C_SQ1	The employee performed the planned maintenance in an efficient manner. (Adopted from van der Heijden, Schepers, Nijssen & Ordanini, 2013)	Onze servicemonteur heeft de werkzaamheden op een efficiënte wijze uitgevoerd.

	C_SQ2	The employee executed the maintenance in such a way that little disruption was experienced and the machine could be re-used as soon as possible. (Adopted from van der Heijden, Schepers, Nijssen & Ordanini, 2013)	2) Onze servicemonteur heeft de werkzaamheden op een dusdanige manier verricht waardoor ik weinig tot geen overlast van het servicebezoek ondervond.
	+ C_SQ3		3) Onze servicemonteur heeft de werkzaamheden op een dusdanige manier verricht waardoor ik mijn machine weer snel en probleemloos kon gebruiken.
<b>3. Rapport</b>	C_RA1	I feel like there is a “bond” between this employee and myself. (Adopted from Gremler & Gwinner, 2000)	Ik heb het gevoel dat onze servicemonteur en ik een klik hebben.
	C_RA2	I look forward to seeing this employee when the maintenance is planned. (Adopted from Gremler & Gwinner, 2000)	Ik vind het leuk om onze servicemonteur weer bij een volgend onderhoudsbezoek te zien.
	C_RA3	This employee has taken a personal interest in me. (Adopted from Gremler & Gwinner, 2000)	Onze servicemonteur is geïnteresseerd in mij als persoon.
<b>4. Firm’s Customer Orientation</b>	C_FCO1	Beko Bakkerij Techniek offers personalized services. (Adopted from Ndubisi, 2012)	Onze serviceafdeling biedt mij een persoonlijke service.
	C_FCO2	Beko Bakkerij Techniek makes adjustments to suit customers’ needs. (Adopted from Ndubisi, 2012)	Onze serviceafdeling stemt de servicelening af op mijn specifieke eisen en wensen.

<b>5. Customer Satisfaction</b>	C_SA1	Based on all my experience with Beko Bakkerij Techniek as service firm, I am very satisfied with the service provided. (Adopted from Macintosh, 2009)	Hoe tevreden bent u over de service- en onderhoudswerkzaamheden van Beko Bakkerij Techniek op basis van uw ervaringen?
	C_SA2	My choice to use Beko Bakkerij Techniek was a wise one. (Adopted from Macintosh, 2009)	Het is voor mij een juiste keuze om machineonderhoud door Beko Bakkerij Techniek te laten verrichten.
	C_SA3	Overall, I am very satisfied with the decision to use the service provision of Beko Bakkerij Techniek. (Adopted from Macintosh, 2009)	Hoe tevreden bent u over Beko Bakkerij Techniek als machine-specialist?
	C_SA4	My overall evaluation of Beko Bakkerij Techniek is very good. (Adopted from Macintosh, 2009)	Hoe beoordeelt u de service- en onderhoudswerkzaamheden van Beko Bakkerij Techniek?
<b>6. Word-Of-Mouth Communication</b>	C_WOM1	I encourage co-workers and other businesses to do businesses with Beko Bakkerij Techniek. (Adopted from Gremler & Gwinner, 2000)	Ik raad collega's bij andere bedrijven aan om machineonderhoud door Beko Bakkerij Techniek uit te laten voeren.
	C_WOM2	I recommended Beko Bakkerij Techniek whenever anyone seeks my advice. (Adopted from Gremler & Gwinner, 2000)	Als iemand mijn advies over machineonderhoud vraagt, beveel ik Beko Bakkerij Techniek aan.



	C_ WOM3	When the topic of service provision comes up in conversation, I go out of my way to recommend Beko Bakkerij Techniek.  (Adopted from Gremler & Gwinner, 2000)	Als machineonderhoud ter sprake komt, spreek ik vol lof over Beko Bakkerij Techniek.
	C_ WOM4	I have actually recommended Beko Bakkerij Techniek to co-workers and other businesses.  (Adopted from Gremler & Gwinner, 2000)	Ik heb collega's bij andere bedrijven serviceverlening en/of machineonderhoud van Beko Bakkerij Techniek al aanbevolen.
<b>Customer Characteristics:</b>			
<b>Gender</b>	C_GEN	What is your gender? (male/female)	Wat is uw geslacht?  (Man/Vrouw)
<b>Age</b>	C_AGE	What is your age? (years)	Wat is uw leeftijd? (jaren)
<b>Job Position</b>	C_JP	What is your job position?  (Choose from drop down menu)	Wat is uw functie binnen het bedrijf? (Selecteer uw functie uit de onderstaande opties)
<b>Number Of Employees</b>	C_NE	How many employees are employed by the firm?	Hoeveel medewerkers heeft uw bedrijf?
<b>Relation Length</b>	C_RL	For what period do you use the services from Beko Bakkerij Techniek? (start-year)	Vanaf welk jaar voert Beko Bakkerij Techniek uw machineonderhoud uit? (jaar)
<b>Questions added by Beko Bakkerij Techniek:</b>			
	EX1	Are you aware of the customer portal? (Yes/No)	Bent u bekend met het online serviceportaal? (Ja/Nee)
	EX2	Are you aware of the following features of the customer portal? (select the known features)	Met welke van de volgende mogelijkheden van het online serviceportaal bent u bekend? U kunt meerdere antwoorden selecteren.
	EX3	Do you use the customer portal? (Yes/No)	Maakt u gebruik van het online serviceportaal? (Ja/Nee)

EX4	Which of the following features do you use of the customer portal? (Select the used features)	Welke van de onderstaande mogelijkheden gebruikt u van het online serviceportaal? U kunt meerdere antwoorden selecteren.
EX5	How often do you use the customer portal? (select from the drop down menu)	Hoe vaak maakt u gebruik van het online serviceportaal?
EX6	Why do you not use the customer portal? (select some options from the drop down menu)	Waarom maakt u geen gebruik van het online serviceportaal? U kunt meerdere antwoorden selecteren.

Table 7. Customers: Measurement Questions

### Employees:

Construct	Code + Number	Measurement Question (English)	Measurement Question (Dutch)
<b>1. Customer Education (Provision Of Information)</b>	E_CE_P11	I always completely informed customers about my way of working with the machine. (Adopted from Van der Heijden, Schepers, Nijssen & Ordanini, 2013)	1) Ik laat altijd aan de klant zien hoe je het beste met de machines kunt werken (gebruiksaanwijzing).
	E_CE_P12		2) Ik laat altijd aan de klant zien welke onderhoudswerkzaamheden hij zelf kan uitvoeren (onderhoudsaanwijzing).
	E_CE_P13	I made sure that my customers were informed about my repair activities. (Adopted from Van der Heijden, Schepers, Nijssen & Ordanini, 2013)	Ik leg de klant altijd uit aan welke machines werkzaamheden zijn uitgevoerd.
	E_CE_P14	I always provided the customers with information on the actions I took during my service visit. (Adopted from Van der Heijden, Schepers, Nijssen & Ordanini, 2013)	Ik leg de klant altijd uit welke werkzaamheden per machine zijn verricht en welke onderdelen zijn vervangen.

<b>1. Customer Education (Acquisition Of Information)</b>	E_CE_AI1	I always took the initiative to obtain detailed information on customers' experiences with our solutions. (Adopted from Van der Heijden, Schepers, Nijssen & Ordanini, 2013)	Ik vraag altijd aan de klant hoe hij onze serviceverlening ervaart.
	E_CE_AI2	I actively sought feedback from customers to get information about their satisfaction with the machine or service. (Adopted from Van der Heijden, Schepers, Nijssen & Ordanini, 2013)	2) Ik vraag altijd aan de klant of hij tevreden is met de machine.
	E_CE_AI3		3) Ik vraag altijd aan de klant of hij tevreden is over de verrichte werkzaamheden.
	E_CE_AI4	I always took time to actively solicit suggestions from customers about the firm's products and services. (Adopted from Van der Heijden, Schepers, Nijssen & Ordanini, 2013)	4) Ik vraag altijd naar ideeën hoe onze serviceverlening kan worden verbeterd.
	E_CE_AI5		5) Ik ben altijd geïnteresseerd naar suggesties over de geleverde machines en/of uitgevoerde werkzaamheden.
	E_CE_AI6	I always obtained diagnostics information on product or service performance from my customers, even if this cost me some extra time. (Adopted from Van der Heijden, Schepers, Nijssen & Ordanini, 2013)	Ik neem altijd de tijd om één of meerdere van bovenstaande onderwerpen met de klant te bespreken.
<b>2. Employee Creativity</b>	E_C1	I come up with creative solutions to customer's technical problems. (Adopted from Dong, Liao, Chuang, Zhou & Campbell)	Ik bedenk creatieve oplossingen om technische problemen van de klant te verhelpen.
	E_C2	I come up with new and practical ideas to improve service quality. (Adopted from Dong, Liao, Chuang, Zhou & Campbell)	Ik bedenk nieuwe en/of praktische toepassingen om <u>mijn</u> servicekwaliteit te verbeteren.

	E_C3	In general, I frequently suggest new ways of performing the maintenance tasks. (Adopted from Dong, Liao, Chuang, Zhou & Campbell)	Ik stel regelmatig nieuwe manieren voor die de werkzaamheden vereenvoudigen en/of verbeteren.
<b>3. Employee Adaptability (Inter-personal)</b>	E_A_IP 1	I Typically adjust the tone of my voice to fit the type of customer I am dealing with. (Adopted from Leischnig & Kasper-Brauer, 2015)	Ik pas mijn aanspreekvorm (u, meneer, je, jij) aan op de voorkeur van de klant.
	E_A_IP 2	I act differently at different times, depending on the situation. (Adopted from Leischnig & Kasper-Brauer, 2015)	De manier waarop ik mijn service verleen pas ik aan op de stemming van de klant.
	E_A_IP 3	I try to match the level of my vocabulary to that of the customer. (Adopted from Leischnig & Kasper-Brauer, 2015)	Ik pas mijn taal- en woordgebruik aan op die van de klant.
<b>3. Employee Adaptability (Service-Offering)</b>	E_A_S O1	I usually adapt the type of service to meet the unique needs of each customer. (Adopted from Leischnig & Kasper-Brauer, 2015)	Als klanten specifieke verzoeken hebben buiten de afgesproken werkopdracht om, pas ik de werkzaamheden hierop aan.
	E_A_S O2	I vary the actual service-offering on a number of dimensions depending on the needs of the customer. (Adopted from Leischnig & Kasper-Brauer, 2015)	Mijn handelswijze tijdens een servicebezoek pas ik aan op basis van mijn ervaringen met deze klant.

Table 8. Employees: Measurement Questions

## Firm Records:

Construct	Code + Number	Measurement Question (English)	Measurement Question (Dutch)
<b>Customer Characteristics:</b>			
<b>Type Of Customer</b>	C_TYPE	Bakery/Hospitality/School/ Industry/Institution	Bakkerij/Horeca/School/ Industrie/instituut
<b>Type Of Service Contract</b>	C_TSC	None/Low/Medium/High/Other	Geen/Laag/Medium/Hoog/ Anders
<b>Number Of Machines</b>	C_NM	Number of machines delivered by Beko Bakkerij Techniek	Het aantal machines dat door Beko Bakkerij Techniek is geleverd
<b>Service Encounter Characteristics:</b>			
<b>Type Of Service Encounter</b>	SE_TY PE	Acute failure/Schedulable reparation/Preventive maintenance	Acute storing/Inplanbare reparatie/Preventief onderhoud
<b>Involved Office</b>	SE_O	Grou/Nijverdal/Wateringen/ Weert/Wijchen	Grou/Nijverdal/Wateringen/ Weert/Wijchen
<b>Productivity Involved Office</b>	SE_PO	Average productivity of involved office	Gemiddelde productiviteit van de vestiging
<b>Duration</b>	SE_D	Duration of service encounter (hours)	De duur van het servicebezoek (uren)
<b>Employee Characteristics:</b>			
<b>Age Of Employee</b>	E_AGE	Age of employee (years)	De leeftijd van de medewerker (jaren)
<b>Average Duration</b>	E_DE	Average service encounter duration of employee (hours)	Gemiddelde duur servicebezoek van een servicemonteur (uren)
<b>Tenure Of Employee</b>	E_T	The period of time that the employee is employed at Beko Bakkerij Techniek (years)	De periode dat de servicemonteur in dienst is bij Beko Bakkerij techniek (jaren)

Table 9. Firm Records

### 3.1.4. Involved Costs

This paragraph provides insight to the costs that are involved of conducting the survey. The costs are relatively low because all the required tasks are performed in-house. In more detail, the costs are determined by one single item, namely the compensation for customers who participated in the survey. As agreed with the firm, customers receive € 10 discount on a subsequent purchase in the firm's web shop.

Expenses		Response Rate = 20%	Response Rate = 30%
- Compensation Customers	Total Customers 760 Compensation € 10	120 * € 10 = € 1.200	180 * € 10 = € 1.800
<b>Total expenses</b>		<b>€ 1.200</b>	<b>€ 1.800</b>

Table 10. Overview Expected Costs Of Conducting The Survey

### 3.1.5. Strengths & Weaknesses

After describing the required sample size, data-collection strategy, latent constructs and measurement instrument, and the involved costs, this paragraph discusses the strengths and weaknesses of the survey. Furthermore, the paragraph identifies ways to overcome these weaknesses.

#### Strengths:

First, surveys are cost-effective research methods because one has only to pay for the development of the questionnaire. Hence, the costs per respondent decreases as more customers participated in the survey. The costs of this survey are very limited because research tool Qualtrics is free to use by students from the University of Technology in Eindhoven. The only costs that are involved in this study are the compensation for customers who participated in the study.

Second, surveys are capable of collecting data from a large number of respondents in a relatively short period of time. Moreover, surveys can reduce or prevent geographical limitations because respondents, which are in this study located across the Netherlands, can be easily invited to the survey by sending them an automatically generated e-mail.

Third, surveys can be used to perform extensive research in which data is linked between different groups of actors to one specific situation. In more detail, research tool Qualtrics enables to link data obtained from customers to employee data and firm records. These links can only be made when an individual link of the survey is sent to respondents.

Fourth, a survey is considered as a reliable method of inquiry because a standardized questionnaire, which consists of same questions that are phrased in exactly the same way, is sent to all respondents. In contrast, other research methods (e.g., interviewing) do not achieve this high reliability because questions can be formulated differently in a different setting. In order to achieve reliability in this study, most of the measurement questions are adopted from previous proven literature, and a standardized questionnaire is developed for all respondents.

Fifth, surveys are developed in a relatively short period of time and can be customized to a specific situation. Moreover, surveys are relatively easy to administer and results can be viewed in real-time. Hence, it is very attractive to use surveys in a study.

### **Weaknesses:**

First, surveys achieve relatively low response rates in comparison to other research methods in general. Moreover, there is no control over the response process. In order to motivate customers to participate in the survey and to shorten the response process, customers will receive a compensation when they have completely finished the survey. Furthermore, it is expected that customers will be more willing to participate in this survey because their opinion could actually change firm's service provision.

Second, the results that are obtained from surveys are largely dependent on respondents. In more detail, important respondents could be left out of the study or could be not willing to participate in the study. Hence, the obtained survey outcome could differ from the actual situation. In order to prevent a biased outcome, as many customers as possible will be invited to the survey, two reminders will be sent to customers that have not yet been participated, and a phone call is made to powerful customers.

Third, respondents may not provide accurate and honest answers to the questionnaire, and they may not want to provide answers that present themselves in an unfavorable manner. This potential danger could be avoided by accentuating that the survey is anonymous, and by indicating that the provision of honest answers is crucial to obtain an adequate view of the current situation.

Fourth, respondents may not understand or misinterpret the standardized questions or the survey question answer options. Hence, the survey outcome could be biased. In order to avoid this problem, most of the measurement questions are adopted from previous proven literature, the questions are checked for logical content, completeness and errors by two managers, and a test panel is used for testing the survey.

Fifth, the development of a customized survey could contain certain types of errors causing that respondents may quit the questionnaire prematurely or they are not able to complete the questionnaire. This survey contains several customization aspects, for example, the background color, text and question color, and header are modified per page by a script. In order to detect and solve unforeseen errors, a test panel is used for testing the survey extensively.

### **3.1.6. Method Of Analysis**

The data is analyzed by using IBM SPSS 22 and Microsoft Excel 2010. The following steps are performed in sequence:

1. Deal with missing data and outliers.
2. Descriptive statistics.
3. An exploratory factor analysis is performed to identify the underlying structure of the data (latent constructs). The reliability of each individual construct is determined by using Cronbach's alphas. The assumptions of factor analysis are checked.
4. A multiple regression analysis is performed to estimate all relationships. The assumptions of multiple regression are checked.

## **3.2. Experimental Design**

As stated in the introduction of chapter 3, the second part of this study consists of a field experiment. The purpose of this experiment is to examine the cause and effect relationship between customer education and customer satisfaction, which is identified as hypotheses 5 in the conceptual framework that is stated in paragraph 2.3. This experiment determines whether changes in customer education causes subsequent changes in customer satisfaction. This paragraph discusses the experiment in more detail and is divided into five subparagraphs. First, a description of the experimental design is given. Second, the sampling design is discussed. Third, the data-collection strategy is specified. Fourth, the costs that are involved to conduct the experiment are estimated. Fifth, the strengths and weaknesses of the experiment are indicated.

### **3.2.1. Description Of Field Experiment**

In this experiment, the extent to which employees provide specific information about products and services to customers in service encounters is manipulated. In more detail, customers could receive (I) a usual amount of information or (II) an extra amount of information through employees in the service encounter. The extra information is provided through small



information cards that contains essential maintenance tips and instructions about a particular machine. The extra information is provided through these cards because customers are often not presented during the service encounter in this research setting. Hence, employees could provide additional information in every service encounter regardless of customer attendance.

In order to involve a majority of the customers to this experiment, information cards are developed for the three most commonly possessed machines by the selected customer segments. Moreover, the information cards are distributed to all selected customers who possess the selected machines even though no maintenance was performed on that machine. So, it is expected that customers frequently receive multiple information cards during one service encounter. Two examples of these information cards can be seen in Figure 3. A fourth information card is developed that contains information about the current study and experiment.

Employee's role during the experiment is to distribute the information cards among customers in service encounters, and to provide a brief explanation of these cards to them.

Due to customers could receive multiple information cards in a service encounter, it is expected that the manipulation effect is noticed earlier than when only one card is distributed. In addition, the brief explanation of employees could also enhance the effect of the manipulation. Based on aforementioned statements, it is thought that the manipulation has more impact on customer satisfaction (dependent variable). Hence, the manipulation effect could be noticed in a relatively small sample size.



Figure 3. Two Examples Of Information Cards

**Groups:**

In order to determine the cause and effect relationship between customer education (independent variable) and customer satisfaction (dependent variable), two independent groups are created that have different conditions. Moreover, customers are randomly assigned to these groups.

First, the control group consists of customers who have participated in the survey of paragraph 3.1. These customers received the usual amount of information about products and services from employees in the service encounter.

Second, the treatment group (manipulation group) consists of customers who have received extra information about products and services from employees in the service encounter.

**3.2.2. Sampling Design**

Most of the information that is discussed in this subparagraph corresponds to the sampling design from the survey that is described in paragraph 3.1.1.

**Level of analysis:**

The field experiment examines employee customer education behavior at the service encounter level.

**Customers:**

*Focused customer segments.* Idem to the survey, this experiment is focused on the following customer segments: bakeries, hospitality, schools, and other institutions. Retail, which consists of supermarkets and wholesalers, is the only customer segment that is excluded from the experiment. Customers who belong to this segment are excluded because it is impossible to send the questionnaire to the customers who were presented in the service encounter. Subsequently, customers are categorized by geographical region in order to test regional differences.

*Sample size.* The firm executes on average 540 service encounters monthly to the selected customer segments. By excluding customers who already participated in the survey of section 3.1 and customers who were involved in multiple service encounters during the research period, it is expected to retain 150 customers who could be assigned to the treatment group.

Furthermore, it is expected to obtain a response rate between 25 and 35 percent, which is slightly higher than the response rate of the survey, because customers are introduced to the experiment during the service encounter through the employee and the actual invitation is sent no later than three days after the service encounter. Based on expected response rate, between 38 and 53 of customers who are assigned to the treatment group complete the survey.

### **Employees:**

Idem to the survey, all 19 employees are involved in this experiment in order to obtain a representative sample size of customers in a relative short period of time, to minimize the effect of distinct personalities between employees, and to overcome regional variations.

### **3.2.3. Data-Collection Strategy**

Due to the same employees are involved to the survey as the experiment, the employee data that is used in the survey is also used in this experiment.

In addition, the customer data during this experiment is obtained from the questionnaire that is used during the survey. All customers who belong to the treatment group and received one or more information cards are invited to participate in the experiment by e-mail. To enhance the response rate, customers are introduced to the experiment through the corresponding information card and the invitation by e-mail that was sent no later than three days after the service encounter. Moreover, two reminders were sent to customers who have not yet participated in the experiment. The experiment is conducted in a period of four weeks from 7<sup>th</sup> July to 4<sup>th</sup> August.

### **3.2.4. Involved Costs**

This paragraph provides insight into the costs that are involved of conducting the experiment. In order to minimize these costs, most of the tasks are performed in-house, for example the design of the information cards. The first expense is printing the information cards which are estimated on € 300. The second expense related to the compensation towards customers who completely finished the survey. Customers receive € 10 discount on a subsequent purchase at the firm's web shop. The aforementioned costs are visualized in Table 11 on the next page.

Expenses		Response Rate = 25%	Response Rate = 35%
- Printing information cards	540 service encounters monthly, 4 different cards 750 prints per card	$4 * 750 * € 0,10 = € 300$	$4 * 750 * € 0,10 = € 300$
- Delivery costs to the different locations	Locations 5 Delivery costs € 7,50	$5 * € 7,50 = € 37,50$	$5 * € 7,50 = € 37,50$
- Compensation Customers	Total Customers 380 Compensation € 10	$38 * € 10 = € 380$	$53 * € 10 = € 530$
<b>Total expenses</b>		<b>€ 717,50</b>	<b>€ 867,50</b>

Table 11. Overview Expected Costs Of Conducting The Field Experiment

### 3.2.5. Strengths & Weaknesses

#### Strengths:

First, a field experiment is conducted to examine the cause and effect relationship between the manipulating independent variable and the dependent variable. In this study, the manipulating independent variable is related to an increase in the provision of specific information about products and services to customers. The dependent variable is customer satisfaction. Through an experiment, it is possible to determine whether changes in the independent variable causes subsequent changes in the dependent variable. Contrary to field experiments, other types of research are not able to examine this cause and effect relationship, but could only determine whether there is a correlation between two variables.

Second, customers that are involved in a field experiment are expected to behave more naturally than in a laboratory experiment. In this study, customers are not aware that they are involved in a field experiment because the employee and the survey do not explicitly indicate this information to them. Hence, it is expected that these customers behave ‘normally’ in the service encounter, and participate ‘normally’ to the survey. In contrast, in the situation that customers are aware that an experiment is taking place the obtained experimental outcome could be biased because customers could change their behavior.

**Weaknesses:**

First, a field experiment has less control over extraneous variables. Hence, other factors that are not included to the experiment could affect the experimental outcome. To gain more control over the experimental situation and minimize bias to the outcome, it is necessary to include traditionally important variables, and employee and service encounter characteristics to the experiment.

Second, field experiments are less replicable than laboratory experiments. Field experiments are harder to repeat because every sample of customers and the experimental environment is slightly different. To overcome this weakness, the sample that is involved to this experiment and the research setting are discussed in detail.

**3.2.6. Method Of Analysis**

After analyzing the survey data, the data that is collected from the field experiment is analyzed by using IBM SPSS 22 and Microsoft Excel 2010. During the analysis process, the experimental data is compared to the survey data. The following steps are performed in sequence in this analysis:

1. Deal with missing data and outliers.
2. Descriptive statistics.
3. An exploratory factor analysis is performed to identify the underlying structure of the data (latent constructs). The reliability of each individual construct is determined by using Cronbach's alphas. The assumptions of factor analysis are checked.
4. Analysis Of Variance (ANOVA) is performed to compare means between the experimental data and survey data. Assumptions of ANOVA are checked (e.g., equal variance).

## 4. Timeframe

This chapter provides a clear overview of the tasks and activities that will be performed in each week. The purpose of the timeframe is to monitor the progress of the study. All the tasks and activities, and their expected duration are visualized in Figure 4.



Figure 4. Timeframe Thesis

## 5. References

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