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How to measure the perceived service quality of a quality analysis laboratory – Design of a tool

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Master in Applied Management

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BUSINESS
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To my supervisor, Prof. Doctor Sofia Lopes Portela: my immense gratitude for all the patience and guidance, and for not giving up on me.

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When I applied for this Master, my mom was the most invested in it. When it started, she was already gone. As she often liked to remind us, she had two degrees (pre-Bologna!), the first with no calculator, and the second with two kids and a husband! If she was here, I would tease her that I’m almost there – doing my second Master while working and raising a little human.

So here it is, mom – I hope you’re proud of this thing I made.

Resumo

Este projeto debruça-se sobre uma empresa líder mundial em testes, inspeção e certificação. É reconhecida como a referência global de qualidade e integridade e trabalha com várias indústrias diferentes, desde o retalho (sendo SONAE e Jerónimo Martins os maiores clientes) a clientes mais pequenos, mas mais técnicos, como empresas de cosmética.

Embora a empresa tenha uma relação muito bem estabelecida com várias empresas, não tem uma forma normalizada de lidar com as reclamações ou sugestões de melhoria dos clientes, nem procede à avaliação da qualidade do seu serviço.

Existe investigação considerável sobre o tema da perceção da qualidade do serviço e a sua influência na decisão de compra e recompra por parte dos clientes. De facto, a medição da qualidade do serviço desempenha um papel crucial na fidelização dos clientes, e, consequentemente, na sua retenção.

O objetivo deste projeto é desenhar uma escala de avaliação para medir a qualidade de serviço percebida pelos clientes desta empresa. Tendo por base a revisão de literatura sobre o tema, foi desenvolvida uma adaptação do instrumento SERVQUAL.

Palavras-chave: Qualidade, qualidade de serviço, SERVQUAL

Classificação JEL: L80, M10

Abstract

This project is about a company which is the world leader of testing, inspection, and certification company. It is recognized as the global benchmark for quality and integrity. They work with several different industries, from retail (SONAE and Jerónimo Martins being the biggest clients) to smaller but more technical clients like cosmetic companies.

Although the company has a very well-established relationship with several businesses, there is no standard way of dealing with complaints or improvement suggestions from clients, and there is no instrument to measure the service quality.

There is considerable research on the topic of perceived service quality and its influence on purchase and repurchase decision by customers. Actually, measuring service quality plays a crucial role in building customer loyalty, and, consequently, on customer retention.

The aim of this project is to design a scale of assessment to measure the perceived service quality from their customers. Taking into account the literature review, an adaptation of the SERVQUAL instrument was developed.

Keywords: Quality, service quality, SERVQUAL

JEL Classification: L80, M10

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1. Introduction

The company in study is the world leader of testing, inspection, and certification. It is recognized as the global benchmark for quality and integrity. In Portugal, it was launched in the early 1920s and operates in several sectors, namely health and safety. Besides acquiring in the 2010s a pioneer in applying Next Generation Sequencing, this company has always been in the front end of analytical developments. This way, they have labs for chemistry, microbiology, and molecular biology. The company has a wide range of services, working with every intervenient of the spectrum of Health & Nutrition, from the producer to the retail. They work with several different industries, from retail (SONAE and Jerónimo Martins being the biggest clients) to smaller but more technical clients like cosmetic companies.

Although the company has a very well-established relationship with several businesses, through the lab directors and key account managers, there is no standard way of register and manage these relationships, as in how to deal with complaints or improvement suggestions from clients. There is considerable research on the topic of perceived service quality and its influence on purchase and repurchase decision by customers. It is safe to conclude that measuring service quality plays a crucial role in building customer loyalty – when organizations effectively measure and address service quality, identify gaps, and strive to exceed customer expectations, it leads to improved customer satisfaction, which, in turn, fosters customer loyalty and promotes customer retention.

The aim of this project is to design a scale of assessment of service quality on the customer perspective, based both on the best international practices and literature, as well as its administration and validation with the company's customers. As such, a literature review about service quality and service quality models was done, in order to select the most appropriate model to be applied in the company in study.

Since the business in question is a very specific one, to measure the perceived service quality from their customers, an adaptation of the SERVQUAL instrument was developed. The company works with several different industries, but for the purpose of this thesis, we focused on the pharmaceutical industry, one where they have well identified clients and where there is a greater need for service quality assessment. The first section of the survey was to be filled with information about the customer for demographic purposes; the next section contains several statements that portray examples of expectations and perceptions that the customer must then classify on a Likert scale from 1 to 7 on how much they agree or disagree with the statements; and a last section with a request to distribute 100 points across every dimension of the SERVQUAL. This survey was then sent by the company to customers from the pharmaceutical industry by using intentional sampling. The survey was translated into Portuguese, so it could be distributed among Portuguese clients.

This project has five chapters. The first chapter is the introduction. The second chapter comprehends an overview of the literature regarding the topic of customer perception of service quality, its importance, and the several methods created to measure it. The third chapter reports to the methodology used to follow-up with the problem presented by the company – what tool could be used to measure the perceived service quality of the company in question? Next, we reach the chapter presenting the process to reach a tool that could adequately assess the perceived service quality of Company X. The fifth and final chapter portrays the conclusions and recommendations to the company.

2. Literature Review

2.1. What is service quality and why do we need to measure it?

Service quality is possibly one of the most discussed matters in business research. As a result, the concept of service quality has evolved greatly along the years. The early conceptualization of service quality focused primarily on the technical aspects of the service delivery itself, as well as meeting predefined specifications. However, several researchers such as Grönroos (1988) and Parasuraman *et al.* (1988) expanded the concept by emphasizing the importance of customer perceptions and expectations in assessing service quality.

Nowadays, the perception of quality can be defined as a consumer's judgment about the general quality of a service. Service quality is thus an abstract and elusive construct, and it is not the same as the objective quality of said service/good. It differs from the latter since it is an attitude (Oliver, 1981; p. 42), which results from comparing the consumer's expectations to the performance of the company/brand. According to the Japanese philosophy, quality is "zero defects – doing it right the first time."

Hence, service quality comes from a comparison between the consumer's feelings of what the service should offer – expectation – and the perception of the performance itself. Perceived service quality is hence deemed as "the degree and direction of discrepancy between consumers' perceptions and expectations" (Parasuraman *et al.*, 1988; p. 17), the discrepancy between consumers' perceptions of services offered by a particular firm and their expectations about firms offering such services.

Measuring service quality is therefore inherently intricate due to its subjective nature. In the absence of objective measures, an appropriate approach for assessing the quality of a firm's service is to measure consumers' perceptions of quality of said service. Consumer satisfaction may then be a company's performance indicator, measuring how much that company can attend to the consumer's expectations. It provides insights into the customer's perceptions and expectations, allowing organizations to identify where to improve. This in turn, enables organizations to align their services with the needs of their customers, building long-term relationships with them by building customer trust and delivering value-added services.

When a consumer is satisfied, they will probably be a defender of the brand/company and their products or services and voluntarily advertise them. So, it is safe to say a good customer experience heavily impacts recommendations. According to Dorsey *et al.* (2020), from Qualtrics XM Institute, those who rate a company's service as "good" are 38% more likely to recommend that company. Anderson (1998) found that dissatisfied customers do engage in greater word of mouth than satisfied ones, although common suppositions concerning the size of this difference appear to be exaggerated. It is widely spread that the likelihood a company makes a sale from a new customer is only 5-20%, whereas the probability of a sale from an existing customer is between 60 to 70%. It's worth noting that while the percentages mentioned can vary, the underlying principle remains consistent – retaining and nurturing existing customers is often more cost-effective and beneficial than constantly acquiring new customers. In fact, 80% of a company’s future profits will most likely come from 20% of its existing customers. (Farris *et al.*, 2010) For these reasons, creating customer loyalty may be proven to be vital to businesses.

In addition, in a survey by the digital customer engagement platform Khoros (2023), it was found that 83% of customers agree that they feel more loyal to brands that respond and resolve their complaints and for 86%, good customer service turns one-time clients into long-term brand advocates. Several reports also state the vast majority of customers are likely to make repeat purchases with companies who offer excellent customer service and after having a positive experience (Salesforce, 2020), even saying they are willing to pay more for products and services from a brand known to offer good customer service experiences. (Gladly, 2018).

Oliver (1981) states satisfaction soon decays into one’s overall attitude toward purchasing products. Indeed, in the twelve focus groups included in the exploratory research conducted by Parasuraman *et al.* (1985), respondents gave several illustrations of instances when they were satisfied with a specific service but did not feel the service firm was of high quality. In this way, the two constructs – customer satisfaction and service quality – are related, given that incidents of satisfaction over time result in perceptions of service quality.

Thus, it is established that relationships between companies and their customers are a big intervenient in customer maintenance, where a big percentage of customers abandon a company due to bad customer service. In fact, Accenture (2008) found customer churn is actually mainly due to the overall poor quality of customer service and not price. Consumers are also becoming less forgiving of companies that fail to satisfy their expectations, as 20% of respondents reported that they would immediately leave a company because of a poor service experience.

Since then, numerous reports by Accenture have reached important conclusions regarding customer service. In the 2022 report “End-to-Endless Customer Service,” Accenture stated that companies which view customer service as a value center, rather than as a cost center, achieve 3.5 times more revenue growth and are spending an average of only 50 basis points more on customer service. Another important take from this study is that factors driving purchasing decisions now extend beyond price and quality to include other five: health and safety, service and personal care, ease and convenience, product origin, and trust and reputation. More noteworthy is that these five factors, which have been previously important only to Gen Z and Millennials, are now considered critical across the full scope of consumer demographics. (Accenture, 2021)

According to Kumar and Reinartz (2016; p. 36), customer value is a dual concept – “the purpose of a sustainable business is, first, to create value for customers and, second, to extract some of that customer value in the form of profit, thereby creating value for the firm”. Several studies have examined the relationship between perceived service quality and service loyalty from a multi-dimensional perspective, as well as the impact of service experiences over time on customer retention. All findings suggest that when customers perceive high service quality across various dimensions, such as reliability, responsiveness, assurance, empathy, and tangibles, they are more likely to develop loyalty towards the service provider; and by measuring the quality of its services, identify gaps, and striving to exceed customer expectations, an organization can enhance customer satisfaction and build customer loyalty and consequently customer retention. (Anderson, 1998; Bloemer *et al.*, 1999; Bolton, 1998; Bolton *et al.*, 1999, 2000, 2006; Capraro *et al.*, 2003; Cronin & Taylor, 1992; Kumar & Reinartz, 2016, 2018; Zeithaml, 1987).

It is therefore safe to conclude that measuring service quality plays a crucial role in building customer loyalty, as when organizations effectively measure and address service quality, it leads to improved customer satisfaction, which, in turn, fosters customer loyalty and promotes customer retention. Moreover, in this day and age, information systems provide companies with the necessary communication and analytical power to manage commercial relationships and organizations on a global scale – giving them a competitive advantage. Organizations can therefore leverage technology and data to understand customer preferences, personalize services, and enhance the overall customer experience.

2.2. How can perceived quality be measured?

Throughout the years, several models to assess perceived service quality have been designed. Nowadays, several methods are used to collect data that allows to measure service quality, including structured surveys, customer feedback systems, complaint handling analysis, mystery shopping, and net promoter score (NPS), for instance. These methods capture customer perceptions, expectations, and satisfaction levels, providing valuable insights for organizations to improve service quality.

Across the globe, depending on the region and culture, one can see different tendencies for service quality models. The Nordic School of service quality, for instance, emphasizes the interactive nature of services and the importance of customer-provider interactions, highlighting the role of interpersonal relationships, customer participation, and customized service delivery. This model emphasizes that service quality is co-created through the interaction between customers and service providers, as well as the importance of customer satisfaction and loyalty in achieving service excellence.

On the other hand, the European school of service quality is a broader framework that incorporates aspects beyond the customer-provider interaction. This perspective takes into account the overall service delivery process, including pre-service and post-service activities. It considers factors such as service expectations, service outcomes, and service recovery in addition to the interactive elements. It acknowledges the role of external influences, organizational factors, and service delivery systems in shaping service quality.

While there can be overlap between the two schools, with researchers drawing inspiration from both perspectives, there are differences reflecting the unique approaches and areas of focus within each school. Both models contribute to understanding and managing service quality, but the Nordic School stresses the interactive and collaborative nature of the service experience, while the European School is more institutionally oriented, focusing on the structural and organizational factors that influence service quality.

Christian Grönroos is considered one of the pioneers of both the Nordic and the European schools of service quality. His work has significantly contributed to shaping these perspectives on service quality and marketing. Grönroos introduced concepts such as relationship marketing, interactive marketing, and the idea that service quality is based on the interaction between the service provider and the customer.

The Japanese School of service quality incorporates unique dimensions such as "omotenashi" (hospitality) and "kikubari" (attention to detail). It focuses on creating memorable customer experiences, exceeding expectations, and building long-term relationships. This perspective highlights the cultural aspects of service quality in Japan. It refers to the unique approach and practices adopted by Japanese companies in delivering high-quality services. This School emerged from the service culture and philosophy prevalent in Japan, which emphasizes a strong customer focus, attention to detail, continuous improvement, and customer satisfaction. It is associated with the overall service-oriented culture and practices in Japan and is often associated with Noriaki Kano, a Japanese professor and researcher known for his work in quality management and customer satisfaction. While Kano doesn't focus exclusively on service quality, his principles have been applied to service contexts, making it influential in shaping the Japanese approach to service quality and customer satisfaction.

These models offer different perspectives on measuring service quality, taking into account cultural, relational, and performance-based aspects. Each model has its own strengths and limitations, and their applicability may vary across industries and contexts. Researchers and practitioners can choose the most appropriate model based on their specific research objectives and the nature of the service being evaluated.

Following the Nordic School of research for service quality, Oliver (1980) proposed the cognitive model of satisfaction decisions. In this model, he examines the cognitive processes through which costumers form judgments based on their experiences with a service provider. He also provides insights into the psychological processes that influence customer satisfaction. This model suggests that customer satisfaction is influenced by two key cognitive processes: expectations and disconfirmation. According to Oliver, customers' expectations are formed prior to experiencing a product or service and are based on a variety of factors, such as past experiences, word-of-mouth, advertising, and personal needs and desires. They can be either explicit (consciously articulated) or implicit (tacitly understood) and function as a benchmark compared to the costumers' actual experiences.

Disconfirmation refers to the comparison between those expectations and the actual experiences with a product or service. Disconfirmation occurs when customers perceive a gap between their expectations and the actual performance or outcome, and this can be positive – resulting in a higher level of satisfaction and a positive evaluation of the product or service – or negative – resulting in a lower level of satisfaction and a negative evaluation of the product or service. When the customer's experience matches their expectations, then this is called confirmation, resulting in a neutral or moderate level of satisfaction.

Overall, Oliver (1980) cognitive model provides a theoretical framework for understanding how customers form satisfaction judgments based on their expectations and the degree of disconfirmation they experience. This model has been influential in the field of customer satisfaction research and has paved the way for further studies on the antecedents and consequences of satisfaction decisions.

Also in the early '80s, Grönroos (1984), one of the most prolific contributors to the Nordic stream of service quality research, presents a service quality model that emphasizes the importance of understanding customers' expectations, influenced by the "promises" of the service provider, as opposed to the customers' perceptions of the actual service quality ("expected service" versus "perceived service"/ "performance"). Hence, for Grönroos (1984), in a service quality model, one needs to know the resources and activities that have an impact on those variables. The author gives several examples of what influences the "expected service" – traditional marketing activities ("promises"), word-of-mouth communication, previous experience – and the "perceived service" ("performance"), which can be divided in "instrumental performance" and "expressive performance".

The instrumental performance would be the technical result of a service production process (what the customer "is left with"), while expressive performance is related to the psychological level of performance (buyer-seller interactions). It is also argued that although satisfactory instrumental performance is needed for customer satisfaction, it is not enough – if the consumer is not satisfied with the expressive performance of a service, they will not be satisfied with said service, regardless of their satisfaction with the instrumental performance.

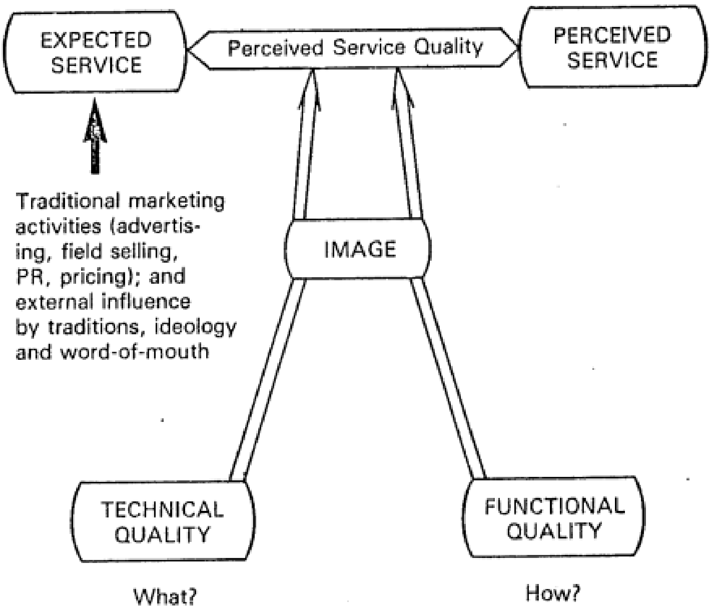
For Grönroos (1984), these kinds of performance needed to be translated into quality terms; therefore, Grönroos’ service quality model consists of two main components: the technical quality and functional quality (see Figure 2.1). Technical quality refers to the outcome of the service delivery process. It is concerned with the tangible aspects of the service, such as the reliability, accuracy, and effectiveness of the service provided.

Technical quality represents what the customer receives from the service encounter and is comparable to the traditional understanding of product quality in goods – it corresponds to the instrumental performance of the service. Technical quality can be measured in an objective manner. Functional quality focuses on the process of service delivery and the interactions between customers and service providers. It encompasses the relational aspects of the service experience, including responsiveness, empathy, communication, and trust. Functional quality emphasizes the customer's perception of how the service is delivered, rather than just the outcome. This dimension is hence perceived in a very subjective way.

According to this model, the perceived service is the result of a consumer’s view of a collection of service dimensions, some technical and others functional. This model suggests that meeting customer expectations on both dimensions is essential for achieving high service quality and customer satisfaction. While technical quality forms the foundation, functional quality adds the crucial interpersonal and relational elements that shape the customer's experience. The author also states that the corporate image can be viewed as a third variable in this model. This image is the result of how consumers perceive the company and also influences their expectations. A consumer’s positive image of a firm makes them find excuses for their negative experiences; however, if disappointment happens many times, the image of the firm will deteriorate. The same way, a negative image might increase perceived problems with the quality of the service – and this already bad image will likely become worse.

Grönroos' service quality model hence provides a holistic view of service quality by considering both the technical and functional aspects of service delivery. It emphasizes the importance of customer perceptions, interactions, and relationships in shaping the overall service experience.

Figure 2.1 - Grönroos' service quality model.


EXPECTED SERVICE
Perceived Service Quality
PERCEIVED SERVICE
Traditional marketing activities (advertising, field selling, PR, pricing); and external influence by traditions, ideology and word-of-mouth
IMAGE
TECHNICAL QUALITY
FUNCTIONAL QUALITY
What?
How?

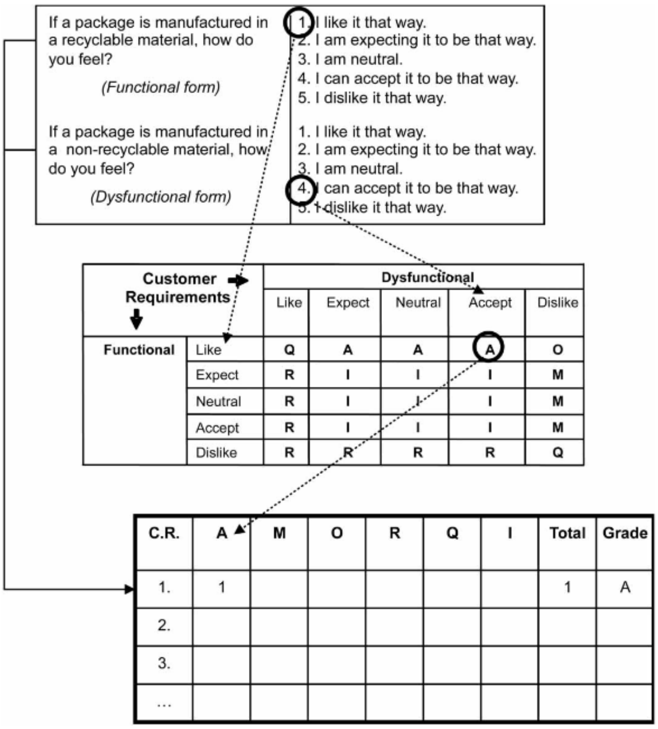
Source: Grönroos (1984)

Grönroos concluded that the functional quality was in fact very important, in some cases more than the technical quality, as long as the latter is satisfactory. This is particularly important in industries where the technical quality is very similar among different firms' services. This model has then been widely influential and has contributed significantly to the field of service marketing and management.

At the same time, Noriaki Kano and colleagues (1984) introduced the theory of attractive quality to better explain the roles played by different quality attributes for customers. This theory is inspired by the motivator-hygiene (M-H) theory (Herzberg *et al.*, 1959), which implies the factors causing job satisfaction are different from those causing job dissatisfaction. Kano and Takahashi (1979) developed the concept of the M-H property of quality, which Kano *et al.* (1984) rebranded as "attractive quality and must-be quality". The authors are therefore regarded as having established a new research field, since besides providing a conceptual basis for the theory, they also provided a methodology for its application – known as the Kano methodology. Since then, this model has been helping businesses understand which attributes are most important to customers and how they contribute to their overall satisfaction.

With the Kano model, there are three steps: a questionnaire, a scoring table, and an evaluation table. The questionnaire includes pairs of questions, each pair about a single feature. The first question is phrased to assess how the person feels about having said feature present ("functional" form), while the second question asks how they feel should the feature be absent ("dysfunctional" form) (see Figure 2.2).

Figure 2.2 - Kano's model for service quality.



If a package is manufactured in a recyclable material, how do you feel? *(Functional form)*	1. I like it that way. 2. I am expecting it to be that way. 3. I am neutral. 4. I can accept it to be that way. 5. I dislike it that way.
If a package is manufactured in a non-recyclable material, how do you feel? *(Dysfunctional form)*	1. I like it that way. 2. I am expecting it to be that way. 3. I am neutral. 4. I can accept it to be that way. 5. I dislike it that way.

Customer Requirements		**Dysfunctional**				
		Like	Expect	Neutral	Accept	Dislike
Functional	Like	**Q**	**A**	**A**	**A**	**O**
	Expect	**R**	**I**	**I**	**I**	**M**
	Neutral	**R**	**I**	**I**	**I**	**M**
	Accept	**R**	**I**	**I**	**I**	**M**
	Dislike	**R**	**R**	**R**	**R**	**Q**

C.R.	**A**	**M**	**O**	**R**	**Q**	**I**	**Total**	**Grade**
1.	1						1	A
2.								
3.								
…								

Source: Kano (1984)

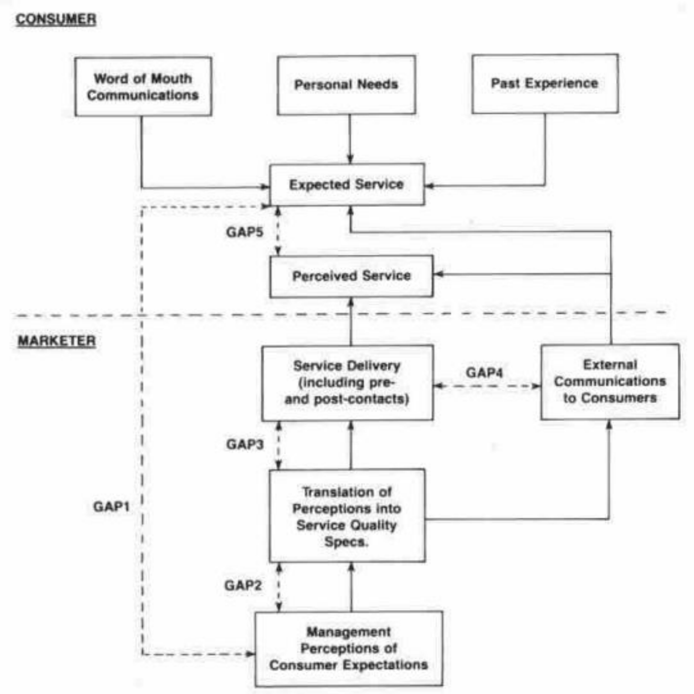
Kano (1984) theorized that there are five different emotional responses to any given feature, ranging from dislike to delight. The second step consists of noting the answers in a scoring table, while the third step is identifying where these responses fit in the evaluation table. Customer preferences are then classified into five different categories, based on their impact on satisfaction and dissatisfaction, as:

- attractive (A): unexpected features customers are delighted to have, that often go beyond expectations to create positive feedback;
- one-dimensional (O): features explicitly requested which directly impact customer satisfaction – more of these features means increased satisfaction;
- must-be (M): basic or fundamental features expected as a minimum requirement – when absent, there is extreme dissatisfaction, but when present there is not necessarily high satisfaction;
- indifferent (I): features that do not significantly impact customer satisfaction – their presence or absence has little effect on overall perception;
- or reverse (R): features that, when present, lead to customer dissatisfaction, but their absence does not necessarily result in high satisfaction.

The Kano model helps businesses prioritize product or service attributes based on their impact on customer satisfaction and dissatisfaction. By understanding customer preferences and focusing on providing attractive and one-dimensional quality features, businesses can enhance customer satisfaction and differentiate themselves in the market.

Exploratory research by Parasuraman *et al.* (1985), pioneers in the forefront of the North American School of service quality, pinpointed a set of key discrepancies or gaps in regard to the consumer's perception of service quality and these gaps can be the main obstacles while delivering a service perceived as of high quality. This became later known as the gap theory, where the authors identified five key gaps contributing to the difference between customer expectations and perceptions of service quality (see Figure 2.3). Four of those gaps were on the service providers' side and include the knowledge gap (GAP1), the standards gap (GAP2), the delivery gap (GAP3), and the communication gap (GAP4).

Figure 2.3 - Illustration of the gap theory by Parasuraman, Zeithaml, and Berry.


CONSUMER
Word of Mouth Communications
Personal Needs
Past Experience
Expected Service
GAP5
Perceived Service
MARKETER
Service Delivery (including pre- and post-contacts)
GAP4
External Communications to Consumers
GAP3
GAP1
Translation of Perceptions into Service Quality Specs.
GAP2
Management Perceptions of Consumer Expectations

Source: Pasaruraman *et al.* (1985)

The knowledge gap (GAP1) is the gap between customer expectations and management's understanding of those expectations. It arises when the service provider lacks knowledge or insight into the specific needs, preferences, and desires of their customers. The standards gap (GAP2) is also known as the design gap, and it exists when the service provider has defined certain service standards or specifications but fails to meet them. It is a result of shortcomings in the translation of customer expectations into specific service attributes or performance metrics. The delivery gap (GAP3) is the gap between the service provider's performance and what customers perceive as the actual service delivered. It can occur due to inconsistent service delivery across different touchpoints, employee errors or variability, or service breakdowns during the delivery process. The communication gap (GAP4) is about the disconnection between what the service provider communicates to customers and what customers actually perceive or understand. It arises when there is a failure in effectively conveying information about the service features, performance, or other relevant aspects to customers.

The remaining gap stays on the consumer’s side and is known as the perception gap (GAP 5). It refers to the difference between customer perceptions and the service provider's understanding of those perceptions. It arises when there is a lack of awareness or knowledge on the part of the service provider regarding how customers perceive the service quality.

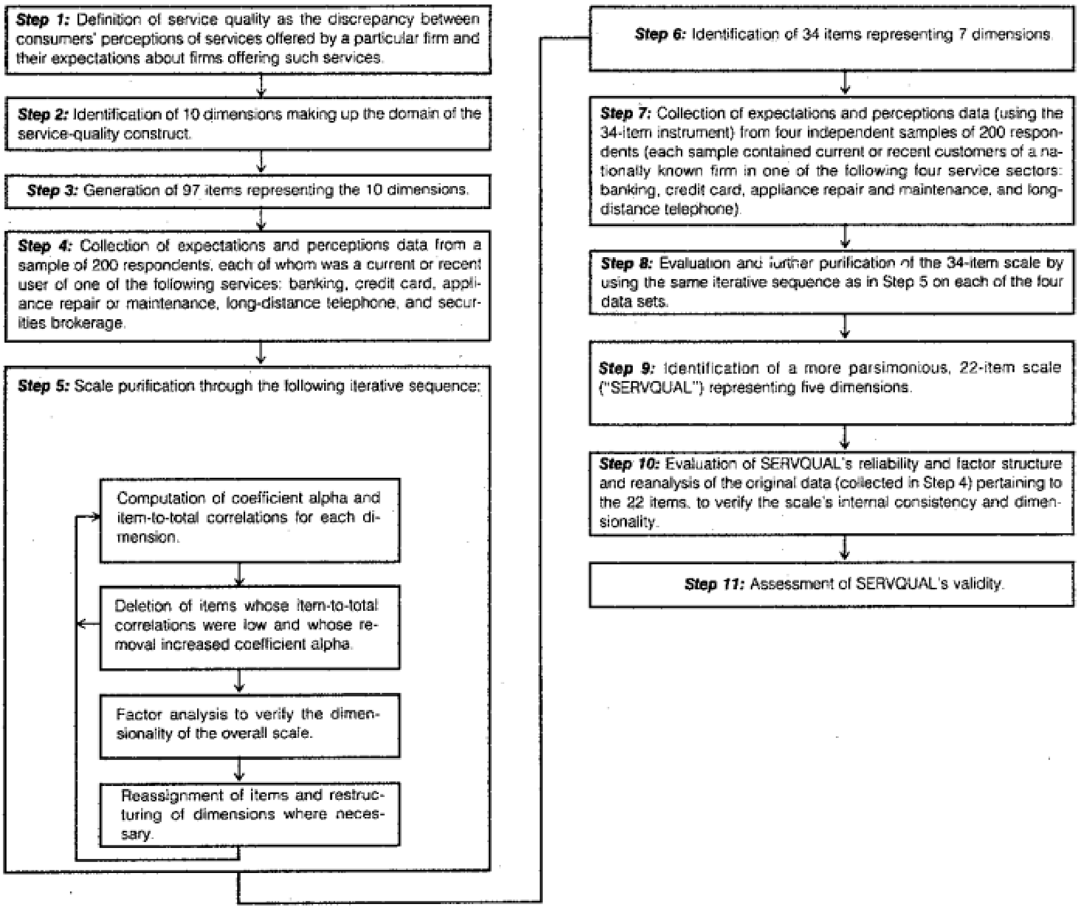
This research also revealed that the criteria used by consumers in assessing service quality fit 10 potentially overlapping dimensions: tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding/knowing the costumer, and access. These dimensions served as the basic structure of the service-quality domain from which items derived for the SERVQUAL scale.

The SERVQUAL is a multiple-item scale for measuring service quality introduced by Pasaruraman *et al.* (1988), later revised and refined (Pasaruraman *et al.*, 1991), after the authors’ reassessment and taking suggestions from managers who tested the instrument. It is one of the most widely recognized models for measuring service quality. The authors not only described the development of this scale, but also discussed the scale’s properties and potential applications. This process resulted in the generation of 97 items, each of them recast into two statements – one to measure expectations about firms in general and the other to measure perceptions about the particular firm being assessed. From here, through a process of data collection and scale purification, the authors reached a refined scale with 22 items spread among 5 dimensions, described below:

- Tangibles: refers to the physical aspects of the service encounter, including the appearance of physical facilities, equipment, personnel, and other visible elements. It assesses whether the physical environment conveys professionalism, cleanliness, modernity, and other tangible attributes.
- Reliability: pertains to the ability to perform the promised service dependably and accurately. It includes aspects such as delivering services as promised, meeting deadlines, providing consistent and error-free service, and keeping customers informed about service delivery.
- Responsiveness: refers to the willingness of service providers to help customers and provide prompt service. It encompasses attributes such as willingness to listen to customers, promptness in addressing customer requests and complaints, and overall willingness to provide assistance.

- Assurance: focuses on the knowledge, courtesy, competence, and credibility of service providers. It involves instilling trust and confidence in customers through factors such as the expertise of personnel, their ability to convey trust and security, and the presence of appropriate certifications or credentials.
- Empathy: refers to the extent to which service providers demonstrate caring, individualized attention, and understanding towards customers. It involves attributes such as personalized service, attentiveness, empathy towards customer needs, and the ability to provide customized solutions.

Figure 2.4 - Summary of steps employed in developing the SERVQUAL scale by Parasuraman, Zeithaml, and Berry.



Step 1: Definition of service quality as the discrepancy between consumers' perceptions of services offered by a particular firm and their expectations about firms offering such services.

Step 2: Identification of 10 dimensions making up the domain of the service-quality construct.

Step 3: Generation of 97 items representing the 10 dimensions.

Step 4: Collection of expectations and perceptions data from a sample of 200 respondents, each of whom was a current or recent user of one of the following services: banking, credit card, appliance repair or maintenance, long-distance telephone, and securities brokerage.

Step 5: Scale purification through the following iterative sequence:

Computation of coefficient alpha and item-to-total correlations for each dimension.

Deletion of items whose item-to-total correlations were low and whose removal increased coefficient alpha.

Factor analysis to verify the dimensionality of the overall scale.

Reassignment of items and restructuring of dimensions where necessary.

Step 6: Identification of 34 items representing 7 dimensions.

Step 7: Collection of expectations and perceptions data (using the 34-item instrument) from four independent samples of 200 respondents (each sample contained current or recent customers of a nationally known firm in one of the following four service sectors: banking, credit card, appliance repair and maintenance, and long-distance telephone).

Step 8: Evaluation and further purification of the 34-item scale by using the same iterative sequence as in Step 5 on each of the four data sets.

Step 9: Identification of a more parsimonious, 22-item scale ("SERVQUAL") representing five dimensions.

Step 10: Evaluation of SERVQUAL's reliability and factor structure and reanalysis of the original data (collected in Step 4) pertaining to the 22 items, to verify the scale's internal consistency and dimensionality.

Step 11: Assessment of SERVQUAL's validity.

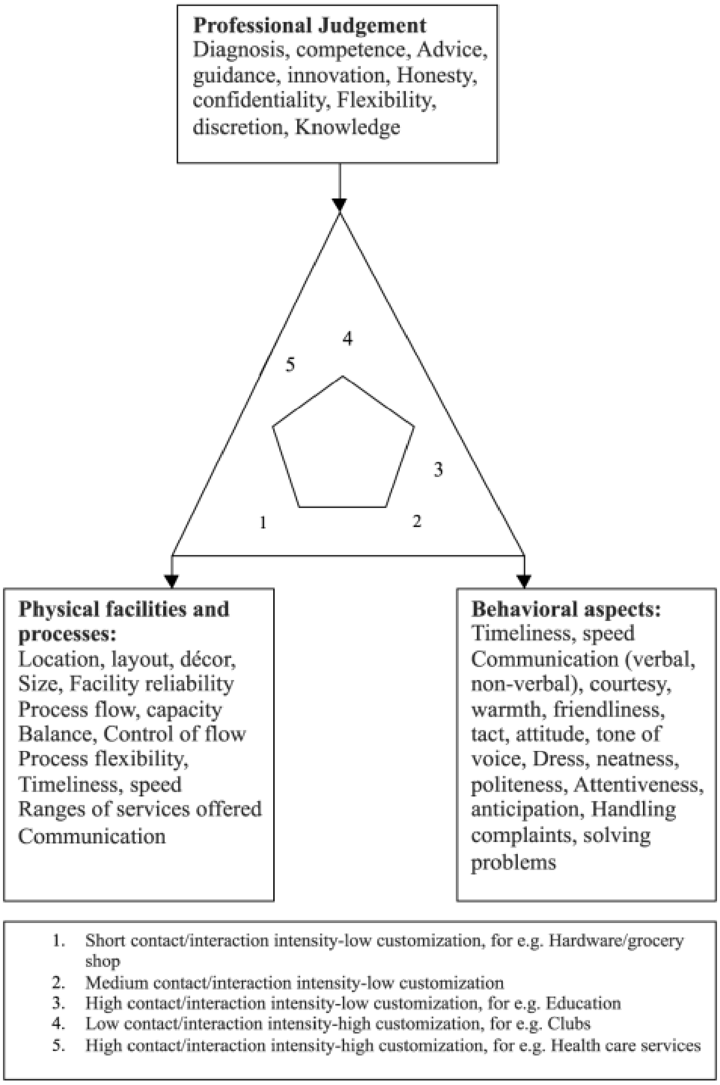
Source: Pasaruraman *et al.* (1988)

This model is therefore based on the premise that service quality is a multidimensional construct and should be evaluated from the customer's perspective. It is worthy of note that the iterative procedure the authors used to refine the initial version of the scale was guided by empirical criteria and by the goal of obtaining a concise scale on which items would be meaningful to a variety of service firms. Hence, and by design, this procedure retained mainly items common and relevant to all service firms included in the authors' study. On the other hand, it may also have deleted certain "good" items relevant to some but not all firms. Therefore, although this method was structured to be valid across a wide range of services, the authors advise adaptation of the scale when assessing the service of a given firm.

In summary, SERVQUAL had a wide range of potential applications and could help diverse service organizations in assessing consumer expectations and perceptions of service quality. It could also help in pinpointing areas requiring managerial attention and action to improve service quality. Since its introduction, the SERVQUAL model has been widely adopted and adapted in various industries and contexts to measure service quality and guide service improvement initiatives. It has been used in both academic research and practical applications, serving as a valuable tool for understanding and managing customer perceptions of service quality.

Around the same time, Haywood-Farmer (1988) published a model which states that a service provider has "high quality" if it consistently meets customer preferences and expectations. Haywood-Farmer then posed that, to develop a service quality model, the attributes need to be separated into several groups, and that each attribute consists of several factors. Services are separated into three basic attributes: physical facilities and processes; people's behavior; and professional judgement (see Figure 2.5), where the emphasis should be balanced between the three – "too much concentration on any one of these elements to the exclusion of other may lead to disaster" (Seth *et al.*, 2005; p. 920).

Figure 2.5 - Attribute service quality model by Haywood-Farmer.


Professional Judgement
Diagnosis, competence, Advice, guidance, innovation, Honesty, confidentiality, Flexibility, discretion, Knowledge
4
5
3
1
2
Physical facilities and processes:
Location, layout, décor, Size, Facility reliability Process flow, capacity Balance, Control of flow Process flexibility, Timeliness, speed Ranges of services offered Communication
Behavioral aspects:
Timeliness, speed Communication (verbal, non-verbal), courtesy, warmth, friendliness, tact, attitude, tone of voice, Dress, neatness, politeness, Attentiveness, anticipation, Handling complaints, solving problems

1. Short contact/interaction intensity-low customization, for e.g. Hardware/grocery shop
2. Medium contact/interaction intensity-low customization
3. High contact/interaction intensity-low customization, for e.g. Education
4. Low contact/interaction intensity-high customization, for e.g. Clubs
5. High contact/interaction intensity-high customization, for e.g. Health care services

Source: Haywood-Farmer (1988)

The author tried to map different types of service settings according to degree of contact and interaction, degree of labor intensity and degree of service customization. For example, services which are low in terms of customers' contact customization and labor intensity (utilities, transportation of goods, etc.), are closer to physical facility and process attribute of the model. Thus, the model suggests that special care at this instant must be taken to make sure that equipment is reliable and easy for customer to use.

Brogowicz *et al.* (1990) introduced a "Synthesised Service Quality Model", under the premise that a service quality model must incorporate potential customers' perceptions of service quality offered, as well as actual customers' perceptions of service quality experienced. This model brings together some consensual topics and concepts from previous models:

- Customers evaluate service quality by comparing their service quality expectations with their perceptions of the service quality they experienced;

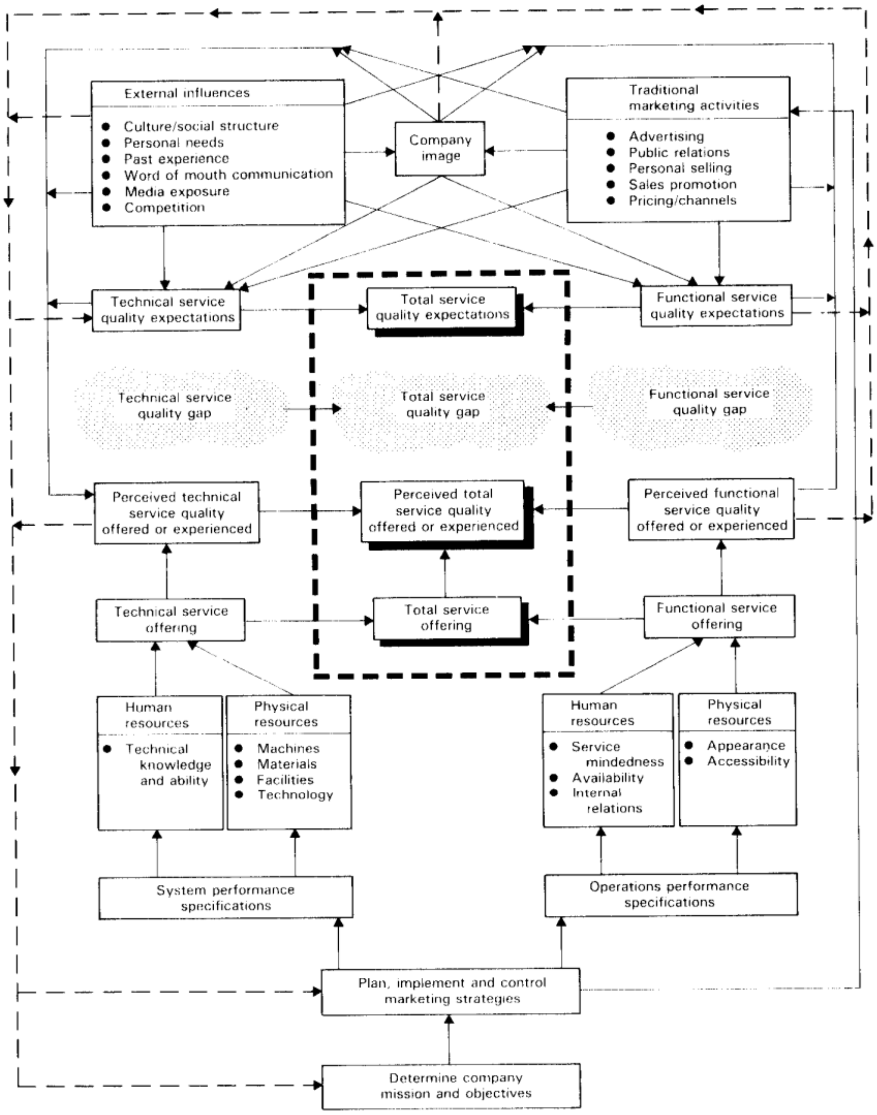
- Customer satisfaction occurs when perceived service quality meets or exceeds its expectations;
- When the opposite occurs, there is a service quality gap;
- Service providers' job is to prevent or eliminate these gaps;
- Service quality consists of both what the customer is offered and how it is offered.

Where these authors differ from previous consensus is that service providers must be concerned about customer attraction as well as customer satisfaction. Potential customers regularly have perceptions about the service quality of a firm without having experienced the service itself (through word of mouth and advertising, for instance). Thus, in the authors perspective, the service quality gap can exist even when customers do not have actual experience with the service and this perception can influence them to reject the service. This gap is therefore at the core of the suggested model.

The authors also took the Grönroos' (1984) technical and functional dimensions of service quality – what Parasuraman *et al.* (1988) called "outcome-related" and "process-related" –, and applied them to their model, expanding their model to reach a "Synthetised Service Quality Model with Technical and Functional Dimensions" (see Figure 2.6). Brogowicz *et al.* (1990) then state that management should determine what customers expect and how they expect it, and the consequent managerial tasks (planning, performance, and implementation and control) inevitably focus on both technical and functional performance, which should at least minimize service quality gaps.

In conclusion, Brogowicz *et al.* (1990) suggest the technical and functional service quality expectations are influenced by three factors: company image, external influences, and traditional marketing activities; and the relative importance of each should be empirically researched and evaluated. The authors also suggest that better knowledge about behavior and expectations of "the lost costumer group" (those who refused the offered services and those who have tried it and never returned) would be as profitable as that of existing customers.

Figure 2.6 - Synthetised Service Quality Model with Technical and Functional Dimensions.


External influences
Culture/social structure
Personal needs
Past experience
Word of mouth communication
Media exposure
Competition
Company image
Traditional marketing activities
Advertising
Public relations
Personal selling
Sales promotion
Pricing/channels
Technical service quality expectations
Total service quality expectations
Functional service quality expectations
Technical service quality gap
Total service quality gap
Functional service quality gap
Perceived technical service quality offered or experienced
Perceived total service quality offered or experienced
Perceived functional service quality offered or experienced
Technical service offering
Total service offering
Functional service offering
Human resources
Technical knowledge and ability
Physical resources
Machines
Materials
Facilities
Technology
Human resources
Service mindedness
Availability
Internal relations
Physical resources
Appearance
Accessibility
System performance specifications
Operations performance specifications
Plan, implement and control marketing strategies
Determine company mission and objectives

Source: Brogowicz *et al.* (1990)

The “Performance-only model” is later proposed by Cronin and Taylor (1992). This model is an extension of the SERVQUAL model, which the authors found inadequate. As such, they proposed the SERVPERF scale. While the SERVQUAL model focuses on the gap between customer expectations and perceptions, the SERVPERF model eliminates the expectations component and directly measures customer perceptions of service performance. Cronin and Taylor (1992) also examined the relation between service quality, consumer satisfaction, and purchase intentions, claiming more recent research implied “perceived service quality is strongly affected by current performance and the impact of disconfirmation is relatively weak and transitory” (p. 57).

The authors consider that the service quality measurement procedure suggested by Parasuraman *et al.* (1988) problematic and state the proposed delineation of the five key gaps is not consistent when subjected to cross-sectional analysis. However, they concluded the 22 performance items established by Parasuraman and colleagues adequately define the domain of service quality and used the same items to examine their alternative scale and in the analyses of the relationships between service quality, consumer satisfaction, and purchase intentions.

To reach their alternative model, the authors investigated three leading questions. Their first question was “How should service quality be conceptualized and measured?”. The authors concluded the literature review and empirical results suggest that service quality should be theorized and evaluated as an attitude. They call into question the efficacy of the 5 key gaps and state the evidence supports the use of performance-based measures of service quality. The next question the authors poised referred to the causal order of the correlation between service quality and consumer satisfaction – suggesting that perceived service quality leads to customer satisfaction, contrary to what much of the recent literature had been suggesting. The final question investigated by the authors pertained to the effects of service quality and consumer satisfaction on purchase intentions – concluding that customer satisfaction has a more significant and consistent effect on purchase intention than service quality does.

Teas (1993) also found issues with SERVQUAL, pointing out concerns related to the conceptual definition of expectations, the theoretical justification of the expectations component of the “perceptions-minus-expectations” in the perceived service quality model. The author argued the ideal standard of service quality could be interpreted in two views: the ideal point (specified in classical ideal point models) and a feasible ideal point. In the author’s perspective, SERVQUAL was not consistent with either. Teas (1993) questioned the validity of the SERVQUAL measures of expectation, as well as the link between service quality and consumer satisfaction or dissatisfaction.

As such, Teas (1993) proposed two frameworks for service quality: the evaluated performance (EP) model and the normed quality (NQ) model. The EP model incorporates the classic ideal point concept into a perceived quality model; the NQ model integrates the classic ideal point concept with the SERVQUAL revised expectation concept. Basically, the EP model emphasizes that customers evaluate service quality based on the comparison between their expectations and the actual service performance. The NQ model emphasizes the importance of the normative expectations of consumers, which refer to customers' beliefs about what is considered acceptable or adequate in terms of service performance. These expectations are shaped by customers' past experiences with similar services, recommendations from others, and societal norms and standards, providing a standard against which customers evaluate the service quality. The results of the author’s empirical study indicated that the criterion and construct validity of the EP model was higher than those of SERVQUAL and NQ model.

The three-component model of Rust and Oliver (1994) expanded the Grönroos (1994) model, through the addition of service environment as a third component, together with service product (equivalent to technical quality) and service delivery (functional quality). The authors did not provide a conceptualization of service quality with this model but found evidence supporting similar models in industries as distinct as retail banking and healthcare. The authors find that the perception of service quality comes from an evaluation the consumer makes of the three dimensions of the service encounter – outcome (technical quality), customer-employee interaction (functional quality), and service environment. These findings were supported by recent evidence at the time, showing the perception of service quality is affected by the service environment.

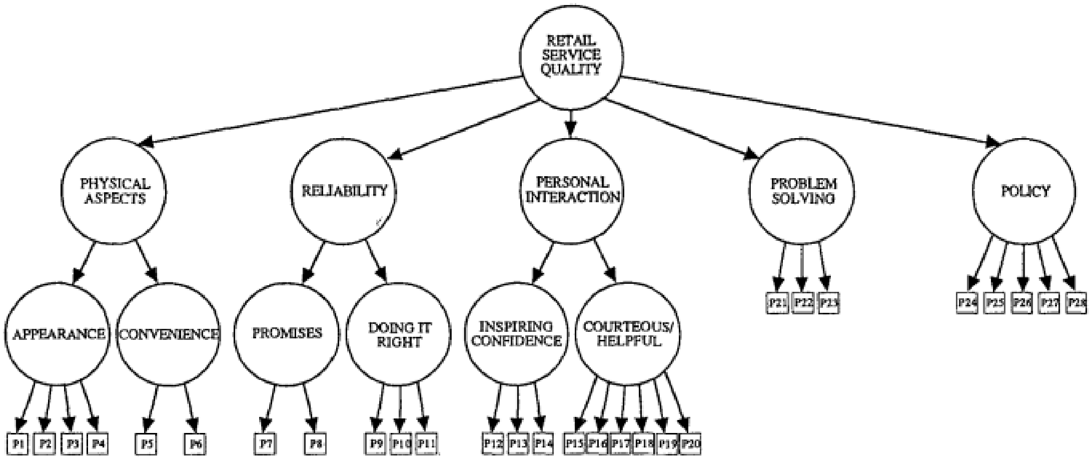
Dabholkar *et al.* (1996) tested the SERVQUAL instrument and stated that this measurement was not adapted to some industries such as retail. The authors identified and tested a hierarchical conceptualization of retail service quality that proposed three levels: customers' overall perceptions of service quality, primary dimensions, and subdimensions, which was later called the multi-level model (see Figure 2.7). The authors also propose five dimensions as crucial to service quality:

- Physical aspects: it has a broader meaning than does the SERVQUAL tangibles dimension. Besides the appearance of the physical facilities, it includes the convenience offered by the arrangement of the physical facilities.
- Reliability: similar to the SERVQUAL reliability dimension, except that it has two subdimensions and a couple of other variations. The authors' depth interviews revealed that customers view reliability as a combination of keeping promises and "doing it right".
- Personal interaction: it includes two subdimensions – service employees inspiring confidence and being courteous/helpful –, which are very closely related and capture how the customer is treated by the employee. This dimension is based on the SERVQUAL dimensions of responsiveness, assurance, and empathy.
- Problem solving, which addresses the handling of returns and exchanges as well as of complaints. Although it would also involve interaction customer-employee, it is specifically related to the handling of problems and therefore merits a separate dimension, according to the authors.
- Policy: it captures aspects of service quality directly influenced by store policy. The authors give the example of when customers evaluate whether a store has convenient hours, this is viewed as whether the store's policy is responsive to customers' needs.

The authors focused on retail service quality and proposed a 28-item scale, consisting of 17 items from SERVQUAL and 11 items developed from the literature review and their qualitative research. To generate items to measure the five main dimensions, they first scrutinized the 22 items in the SERVQUAL scale. Although they propose a different factor structure, since SERVQUAL items are based on extensive qualitative research conducted by Parasuraman *et al.* (1985, 1988, 1991), the authors felt comfortable with using modified SERVQUAL items in their new alternative scale.

Dabholkar *et al.* (1996) believed it was not realistic to try to create a single measure which fits across service industries. Therefore, they suggested future research should encompass the development of industry-specific measures of service quality following the triangulation of qualitative research procedures and the cross-validation technique used in this study.

Figure 2.7 - Hierarchical structure for Retail Service Quality.


RETAIL SERVICE QUALITY
PHYSICAL ASPECTS
RELIABILITY
PERSONAL INTERACTION
PROBLEM SOLVING
POLICY
APPEARANCE
CONVENIENCE
PROMISES
DOING IT RIGHT
INSPIRING CONFIDENCE
COURTEOUS/ HELPFUL
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
P23
P24
P25
P26
P27
P28

Source: Dabholkar *et al.* (1996).

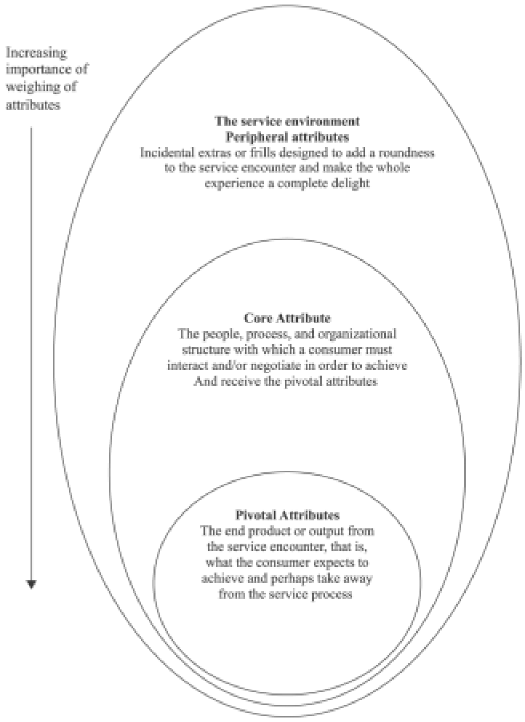
Following the hierarchical structure approach, Philip and Hazlett (1997) proposed the P-C-P attributes model, which was based on three main classes of attributes: pivotal, core, and peripheral. According to the authors, this P-C-P model has the ability to span any industry, since what is proposed is a “skeletal framework”, within which to consider respective services. According to the proposed model (see Figure 2.8), every service consists of three, overlapping, levels, where are the vast majority of the dimensions and concepts which have thus far been used to define service quality.

The pivotal attributes, located at the core, are considered to be the most determining influence on why the consumer decided to approach a particular organization and exert the greatest influence on the satisfaction levels. They are defined as the “end product” or “output” from the service encounter; in other words, what the consumer expects to achieve and receive.

The core attributes are centered around the pivotal attributes and can be described as the amalgamation of the people, processes and the service organizational structure through which consumers must interact and/or negotiate so that they can achieve/receive the pivotal attribute.

The peripheral attributes can be defined as the “incidental extras”, or frills designed to add a “roundness” to the service encounter and make the whole experience for the consumer a complete delight. When a consumer makes an evaluation of any service encounter, he is satisfied if the pivotal attributes are achieved, but as the service is used more frequently, the core and peripheral attributes may begin to gain importance. The authors state this model is highly theoretical and need more research to thrive.

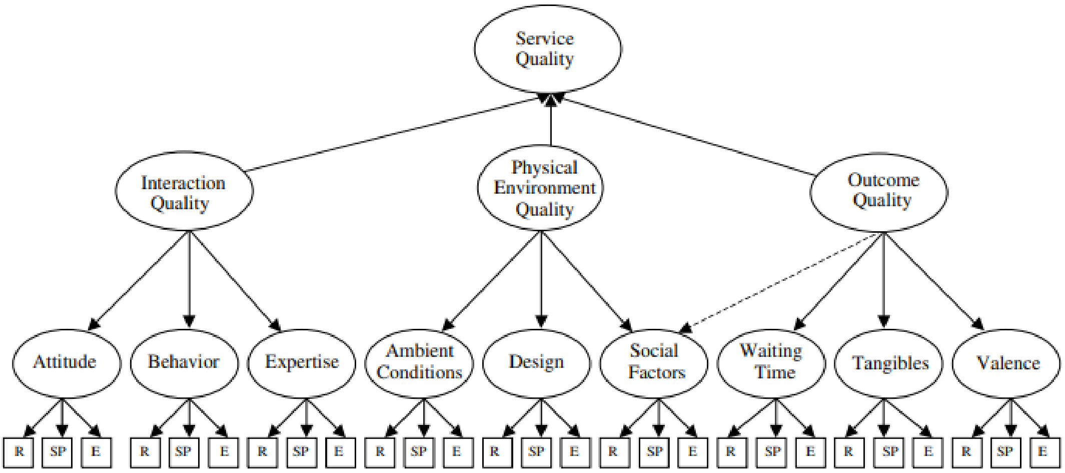
Figure 2.8 - The P-C-P attributes model.


Increasing importance of weighing of attributes
The service environment
Peripheral attributes
Incidental extras or frills designed to add a roundness to the service encounter and make the whole experience a complete delight
Core Attribute
The people, process, and organizational structure with which a consumer must interact and/or negotiate in order to achieve And receive the pivotal attributes
Pivotal Attributes
The end product or output from the service encounter, that is, what the consumer expects to achieve and perhaps take away from the service process

Source: Philip & Hazlett (1997).

Brady and Cronin (2001) also took a hierarchical approach and combined the three-component model of Rust and Oliver (1994) and the multi-level model of Dabholkar *et al.* (1996) to generate the third-order factor model. This model ties service quality perceptions to distinct and actionable dimensions: outcome, interaction, and environmental quality. In turn, each has three subdimensions that define the basis of service quality perceptions. The authors suggest that for each of these subdimensions to contribute to improved service quality perceptions, the quality received by consumers must be perceived to be reliable, responsive, and empathetic (see Figure 2.9).

Figure 2.9 – The third-order factor model.


Service Quality
Interaction Quality
Physical Environment Quality
Outcome Quality
Attitude
Behavior
Expertise
Ambient Conditions
Design
Social Factors
Waiting Time
Tangibles
Valence
R
SP
E

Note: R = a reliability item, SP = a responsiveness item, E = an empathy item. The broken line indicates that the path was added as part of model respecification.

Source: Brady & Cronin (2001).

There is considerable research on the topic of perceived service quality and its influence on purchase and repurchase decision by customers. Some proposed models for service quality measurement are innovative, while others are based on or are improvements of existing concepts and measurement methods. Seth *et al.* (2005), Ghotbabadi *et al.* (2012), and Khader and Madhavi (2017) accomplished a good review and summary of the concepts of service quality proposed so far, as well as the several service quality models, describing their similarities and differences in concise manners.

3. Methodology

The purpose of this project was to design a tool that could accurately assess the perceived service quality of Company X's clients, which are other companies. Company X has a wide range of analytic services, working with every intervenient of the spectrum of several departments (such as Health, Nutrition, Energy, Agricultural, and so on), from the producer to the seller, and works with several different industries (Retail, Pharmaceutical, Cosmetics, etc.).

Since the business of the company in study is a very specific one, to measure the perceived service quality from their customers, information was collected with the company through interviews and visits, about how the laboratories work, which services each laboratory provides, and what type of relationship there is between laboratories and the client-companies. Information was also collected on what is currently done to assess clients' views and opinions on said services. The company intended to create a fully new tool without relying on current processes.

Hence, the resulting tool should be able to be used in all the possible scenarios for this company. From the previously described models, SERVQUAL is one that could be applied to numerous types of services, as mentioned before. What several authors do is propose variations to SERVQUAL, so it is applicable to the specific service they want to assess. Thus, SERVQUAL seemed an appropriate tool to utilize for the purpose of this project, with the necessary adaptations.

Taking this into consideration, a survey adapted from the modified SERVQUAL instrument (Pasaruraman *et al.*, 1991) was developed as shown in Chapter 4. The resulting survey is divided into three sections: the first section intends to get information about the customer's demographic; the next section contains several statements that portray examples of expectations and perceptions that the customer must then classify on a Likert scale from 1 to 7 on how much they agree or disagree with the statements; and a last section presents a request to distribute 100 points across every dimension of the SERVQUAL tool, to measure the relative importance of each one to the customer.

To create this survey in a publishable manner so Company X could easily send it to their client-companies, the online platform Qualtrics XM™ was used. With this platform, it is possible to generate a link to give to your respondents, and also analyze the data generated from their responses.

4. Design of the tool

The modified SERVQUAL instrument (Pasaruraman *et al.*, 1991) has three sections, the first two with 22 statements each, while the last one is a "point-allocation question". The first section presents statements portraying expectations of the customer about what an excellent quality of service would be for the type of company of the firm in question (telephone company is the example given by the authors). This is called the "Expectations Section".

This section invites the customer to think about the kind of company with which they think they would be pleased to do business. The customer then needs to show the extent to which they think such a company would possess the feature described by each statement. Each statement is accompanied by a 7-point scale (Likert scale) with the labels "Strongly Disagree" (=1) and "Strongly Agree" (=7).

The second section presents a set of statements related to the customer's feelings about the service of the specific company in question. This is called the "Perceptions Section". The customer is then invited to show the extent to which they believe the company in question has the feature portrayed in each statement. Again, there is a Likert scale next to each statement. These statements are all about the same features as the previous statements but worded differently.

Finally, the third section of this modified SERVQUAL instrument is a point-allocation question, meaning that the authors list five features representing the five dimensions, pertaining to the type of companies in question, where it is asked from the customer to allocate a total of 100 points among the five features, according to how important each feature is to the customer.

The headings (tangibles, reliability, etc.) shown in the first two sections to indicate which statement fall under each dimension, were not included in the actual SERVQUAL questionnaire. However, since the survey here created has a section where the customer is asked to attribute a relative importance to each dimension, similar to the third section of the SERVQUAL, the dimensions were clearly portrayed as headers in the second section of this project's survey (instead of describing features as the authors did in SERVQUAL).

Below are shown the 22 statements from the modified SERVQUAL where this survey was based on, in English, and then their translation to Portuguese. The statements were translated to Portuguese as the final version of this tool must be in Portuguese, since the customers from the company in study are all working in this language.

To avoid being redundant, since the statements from the Expectations Section pertain to the same features as those from the Perceptions Section, the statements shown here are worded as in the latter. As mentioned before, the statements are divided by dimension – tangibles, reliability, responsiveness, assurance, and empathy.

English version of SERVQUAL statements

Tangibles
S1 – XYZ has modern-looking equipment.
S2 – XYZ’s physical facilities are visually appealing.
S3 – XYZ’s employees are neat-appealing.
S4 – Materials associated with the service (such as pamphlets or statements) are visually appealing at XYZ.

Reliability
S5 – When XYZ promises to do something by a certain time, it does so.
S6 – When you have a problem, XYZ shows a sincere interest in solving it.
S7 – XYZ performs the service right the first time.
S8 – XYZ provides its services at the time it promises to do so.
S9 – XYZ insists on error-free records.

Responsiveness
S10 – Employees of XYZ does tell you exactly when services will be performed.
S11 – Employees of XYZ give you prompt service.
S12 – Employees of XYZ are always willing to help you.
S13 – Employees of XYZ are never too busy to respond to your requests.

Assurance
S14 – The behavior of employees of XYZ instills confidence in customers.
S15 – You feel safe in your transactions with XYZ.
S16 – Employees of XYZ are consistently courteous with you.
S17 – Employees of XYZ have the knowledge to answer your questions.

Empathy
S18 – XYZ gives you individual attention.
S19 –XYZ has operating hours convenient to all its customers.
S20 –XYZ has employees who give you personal attention.
S21 – XYZ has your best interest at heart.
S22 – Employees of XYZ understand your specific needs.

Portuguese version of SERVQUAL statements

Tangíveis

S1 - A XYZ possui equipamento de aparência moderna.

S2 - As instalações físicas da XYZ são visualmente apelativas.

S3 - Os empregados da XYZ são bem arrumados.

S4 - Os materiais associados ao serviço (tais como panfletos) são visualmente apelativos na XYZ.

Fiabilidade

S5 - Quando a XYZ promete fazer algo a uma determinada hora, cumpre-o.

S6 - Quando o cliente tem um problema, a XYZ mostra um interesse sincero em resolvê-lo.

S7 - A XYZ executa o serviço corretamente à primeira.

S8 - A XYZ fornece os seus serviços na altura em que promete fazê-lo.

S9 - A XYZ insiste em registos sem erros.

Capacidade de resposta

S10 - Os empregados da XYZ informam-no exatamente quando os serviços serão prestados.

S11 - Os empregados da XYZ prestam-lhe um serviço rápido.

S12 - Os empregados da XYZ estão sempre dispostos a ajudá-lo.

S13 - Os funcionários da XYZ nunca estão demasiado ocupados para responder aos seus pedidos.

Confiança

S14 - O comportamento dos empregados da XYZ inspira confiança nos clientes.

S15 - Sente-se seguro nas suas transações com a XYZ.

S16 - Os empregados da XYZ são sempre corteses consigo.

S17 - Os funcionários da XYZ têm os conhecimentos necessários para responder às suas questões.

Empatia

S18 - A XYZ dá-lhe atenção individual.

S19 - A XYZ tem um horário de funcionamento conveniente para todos os seus clientes.

S20 - A XYZ tem empregados que lhe dão atenção pessoal.

S21 - A XYZ preocupa-se com os seus interesses.

S22 - Os empregados da XYZ compreendem as suas necessidades específicas.

The next step to design this adapted SERVQUAL tool was to create statements that would be adequate for the company's business and at the same time correspond in some way to the original statements shown above. Some statements are practically identical to the original ones, whereas others would not be adequate to use for the company in study; others even were specifically generated for this purpose, still somewhat relating to the category of a statement from the modified SERVQUAL instrument.

The comparison between these two sets of statements can be seen (in Portuguese) in Table 4.1 below. To note that the adapted statements may be switched in order, as to correspond to their original match (as is the case of statements 21 and 22).

A survey was then created in the Qualtrics XM™ platform, where the abovementioned statements were included in the second section. Below Table 4.1, you can find the transcription of this survey on the perception of company X's customers about their service quality, in English and its translation to Portuguese (the published version).

Table 4.1 – Confrontation between original statements from the modified SERVQUAL instrument (Pasaruraman *et al.*, 1991) and those from the adapted SERVQUAL created for this project (in Portuguese).

SERVQUAL	SERVQUAL adaptado
Tangíveis	
S1 - A XYZ possui equipamento de aparência moderna.	1. A XYZ utiliza tecnologia de ponta.
S2 - As instalações físicas da XYZ são visualmente apelativas.	2. O *website* da XYZ é intuitivo e *user-friendly*.
S3 - Os empregados da XYZ são bem arrumados.	.
S4 - Os materiais associados ao serviço (tais como panfletos) são visualmente apelativos na XYZ.	3. Os relatórios da XYZ são claros e fáceis de compreender
Fiabilidade	
S5 - Quando a XYZ promete fazer algo a uma determinada hora, cumpre-o.	4. Quando a XYZ promete fazer algo num determinado prazo, cumpre-o.
S6 - Quando o cliente tem um problema, a XYZ mostra um interesse sincero em resolvê-lo.	5. Quando há um problema, os trabalhadores da XYZ mostram interesse genuíno em resolvê-lo.
S7 - A XYZ executa o serviço corretamente à primeira.	6. Os resultados são consistentemente precisos e confiáveis.
S8 - A XYZ fornece os seus serviços na altura em que promete fazê-lo.	7. A XYZ entrega os relatórios no prazo acordado.
S9 - A XYZ insiste em registos sem erros.	8. São mantidos registos precisos sobre os serviços já realizados.
	9. Não há erros de faturação.
Capacidade de resposta	
S10 - Os empregados da XYZ informam-no exatamente quando os serviços serão prestados.	10. A XYZ atualiza-me regularmente sobre a data estimada para a conclusão dos serviços.
S11 - Os empregados da XYZ prestam-lhe um serviço rápido.	11. Os serviços são rápidos e os relatórios entregues prontamente.
S12 - Os empregados da XYZ estão sempre dispostos a ajudá-lo.	12. Os trabalhadores da XYZ estão sempre dispostos a ajudar os clientes.
S13 - Os funcionários da XYZ nunca estão demasiado ocupados para responder aos seus pedidos.	13. Os trabalhadores da XYZ respondem prontamente a qualquer questão ou pedido de orçamento.
	14. Os trabalhadores da XYZ estão dispostos a acomodar pedidos urgentes de análise.
Confiança	
S14 - O comportamento dos empregados da XYZ inspira confiança nos clientes.	15. A XYZ transmite-me confiança.
S15 - Sente-se seguro nas suas transações com a XYZ.	16. A XYZ respeita a confidencialidade dos clientes.
S16 - Os empregados da XYZ são sempre corteses consigo.	17. Os trabalhadores da XYZ são educados e respeitadores.
S17 - Os funcionários da XYZ têm os conhecimentos necessários para responder às suas questões.	18. Os trabalhadores da XYZ têm os meios necessários para a realização do seu trabalho.
Empatia	
S18 - A XYZ dá-lhe atenção individual.	19. Os trabalhadores da XYZ prestam atenção individualizada.
S19 - A XYZ tem um horário de funcionamento conveniente para todos os seus clientes.	
S20 - A XYZ tem empregados que lhe dão atenção pessoal.	20. Os trabalhadores da XYZ estão dispostos a fazer um esforço extra para atender aos nossos pedidos singulares.
S21 - A XYZ preocupa-se com os seus interesses.	22. Os trabalhadores da XYZ preocupam-se com os melhores interesses da minha empresa.
S22 - Os empregados da XYZ compreendem as suas necessidades específicas.	21. Os trabalhadores da XYZ compreendem as nossas necessidades específicas.

English version of survey

This survey intends to assess the customers perceptions about the company's service quality, with the purpose of improving it and bettering customer satisfaction. The answers to this survey are totally anonymous and confidential, and it will take around 5 minutes to complete. Your opinion is very important for us, so we kindly ask you to answer with as much rigor and honesty as possible. We thank you in advance for your cooperation.

Section I: General sociodemographic information about the client

Which sector does your organization belong to?

[Drop-down with all the segments Company X works with]

How long have you been a customer?

Section II: Assessing Service Quality

This questionnaire aims to assess your expectations of company X's service, as well as your perception of the reality (of your experience) as a customer of the company. The statements below are divided into 5 dimensions: tangibles, reliability, responsiveness, trust and empathy. Please indicate your position on a scale of 1 to 7, where 1 means "Strongly disagree" and 7 "Strongly agree".

	Expectation							Perception						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Tangibles 1. Company X uses state-of-the-art technology. 2. The Company X's website is intuitive and user-friendly. 3. Company X reports are clear and easy to understand. **Reliability** 4. When Company X promises to do something within a certain timeframe, it delivers. 5. When there is a problem, Company X employees show a genuine interest in solving it.														

6. Results are consistently accurate and reliable.														
7. Company X delivers reports on time.														
8. Accurate records are kept of services already performed.														
9. There are no billing errors.														
Responsiveness														
10. Company X regularly updates me on the estimated date for completion of services.														
11. Services are quick, and reports delivered promptly.														
12. Company X employees are always willing to help customers.														
13. Company X employees respond promptly to any questions or requests for quotes.														
14. Company X employees are willing to accommodate urgent requests for analysis.														
Assurance														
15. Company X gives me confidence.														
16. Company X respects client confidentiality.														
17. Company X employees are polite and respectful.														
18. Company X employees have the necessary means to carry out their work.														
Empathy														
19. Company X employees provide individualized attention.														
20. Company X employees are willing to go the extra mile to meet our unique requests.														
21. Company X employees understand our specific needs.														
22. Company X employees care about the best interests of my company.														

Section III: Relative importance of each dimension

Finally, we ask you to rank each dimension according to their relative importance to you, with the total of the 5 dimensions being 100.

Tangibles	
Reliability	
Responsiveness	
Assurance	
Empathy	
Total	100

Portuguese version of survey

Este questionário pretende avaliar a perceção dos clientes da empresa X quanto à qualidade dos seus serviços, tendo em vista a sua melhoria e, consequentemente, uma melhor satisfação do cliente.

A resposta ao questionário é anónima e confidencial e demora cerca de 5 minutos. A sua opinião é muito importante para nós, pelo que pedimos que responda com o máximo de rigor e honestidade. Agradecemos desde já a sua colaboração.

Secção I: Informação geral sobre o cliente

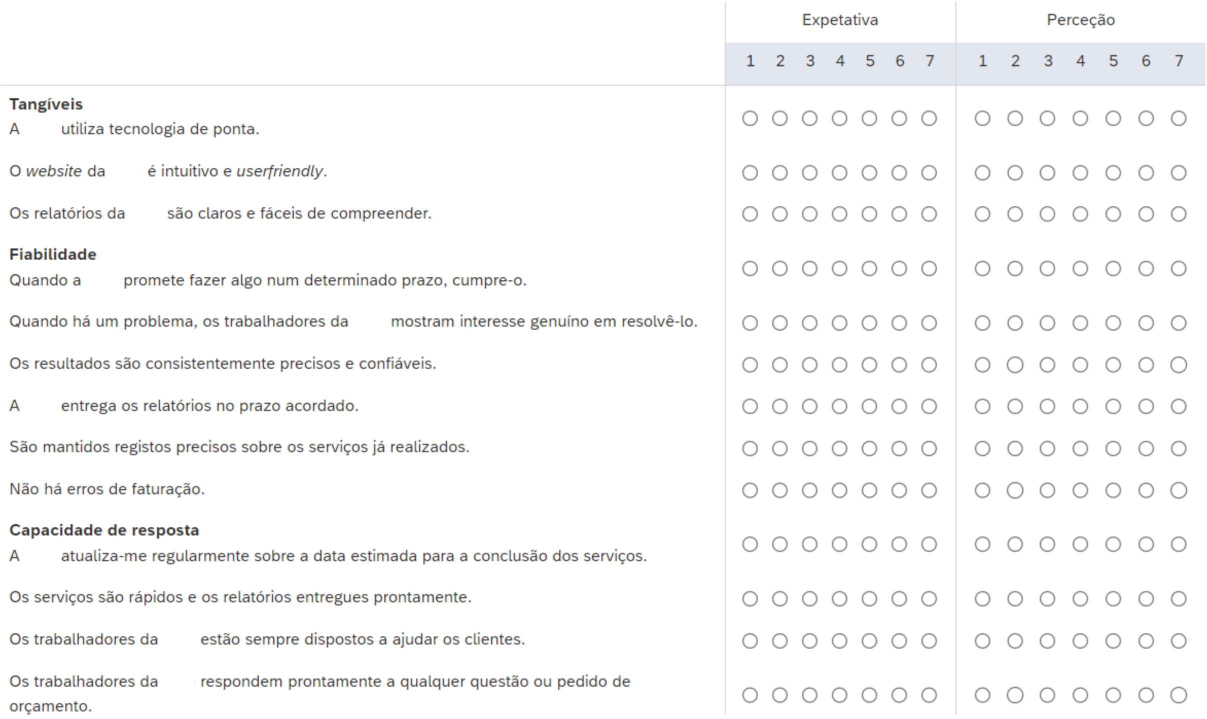
Qual o setor onde atua a sua empresa?

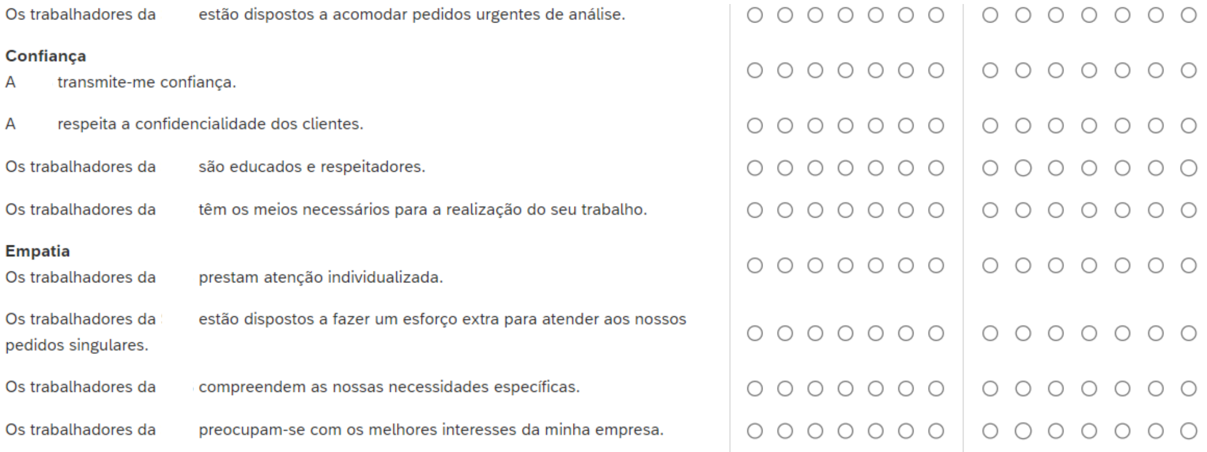
[Menu *dropdown* com todos os segmentos com que a empresa X trabalha]

Há quantos anos é cliente da empresa X?

Secção II: Avaliação da Qualidade de Serviço

Este questionário pretende avaliar as suas expetativas em relação ao serviço da empresa X, bem como a sua perceção da realidade (da sua experiência) enquanto cliente da empresa. As afirmações abaixo estão divididas por 5 dimensões: tangíveis, fiabilidade, capacidade de resposta, confiança e empatia. Indique o seu posicionamento numa escala de 1 a 7, onde 1 significa “Discordo totalmente” e 7 “Concordo totalmente”.





	Expetativa							Perceção						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Tangíveis A utiliza tecnologia de ponta.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
O *website* da é intuitivo e *userfriendly*.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os relatórios da são claros e fáceis de compreender.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Fiabilidade Quando a promete fazer algo num determinado prazo, cumpre-o.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Quando há um problema, os trabalhadores da mostram interesse genuíno em resolvê-lo.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os resultados são consistentemente precisos e confiáveis.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
A entrega os relatórios no prazo acordado.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
São mantidos registos precisos sobre os serviços já realizados.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Não há erros de faturação.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Capacidade de resposta A atualiza-me regularmente sobre a data estimada para a conclusão dos serviços.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os serviços são rápidos e os relatórios entregues prontamente.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os trabalhadores da estão sempre dispostos a ajudar os clientes.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os trabalhadores da respondem prontamente a qualquer questão ou pedido de orçamento.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os trabalhadores da estão dispostos a acomodar pedidos urgentes de análise.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Confiança A transmite-me confiança.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
A respeita a confidencialidade dos clientes.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os trabalhadores da são educados e respeitadores.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os trabalhadores da têm os meios necessários para a realização do seu trabalho.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Empatia Os trabalhadores da prestam atenção individualizada.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os trabalhadores da estão dispostos a fazer um esforço extra para atender aos nossos pedidos singulares.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os trabalhadores da compreendem as nossas necessidades específicas.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Os trabalhadores da preocupam-se com os melhores interesses da minha empresa.	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Secção III: Importância relativa de cada dimensão

Em último lugar, solicitamos que classifique cada dimensão consoante a importância relativa que têm para si, sendo que o total das 5 dimensões deverá ser 100.

Tangíveis	
Fiabilidade	
Capacidade de resposta	
Confiança	
Empatia	
Total	100

5. Conclusions and Recommendations

The company in this study is world leader of testing, inspection, and certification company Although this company is recognized as the global benchmark for quality and integrity, it needed concrete processes to gather customer feedback regarding the service quality of their laboratories.

The aim of this project was therefore to design a scale of assessment to measure the perceived service quality from their customers. For this, an adaptation of the SERVQUAL instrument was developed, as shown in the Chapter 3. The survey created in this project was approved by Company X.

It is recommended that Company X tests the survey for its validity and adequacy, among a well-known and established department of customers. This was discussed with the company and 30 clients from the pharmaceutical industry were chosen for this purpose. The survey will thus be distributed to these clients in the future.

If revealed successful in assessing the perceptions of the company's customers about their service quality, this survey will be a part of the service quality assessment from company X and hence be distributed among all customers from the several industries, for a standardized approach within the company.

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