

MASTER PROJECT IN INDUSTRIAL ENGINEERING

***Customer Satisfaction across countries. The potential use
of anchoring vignettes***

Department of Management and Engineering

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1.- INTRODUCTION

This section describes the background of the research study. The purpose and research questions are also presented. The section ends with the scope and limitations of the study carried out.

1.1.- Background

As a result of the increasing globalization of the world, the interest in cross-cultural management has emerged, becoming a significant research field. The business world environment is continuously changing and national economies are closely intertwined. Within this context, national boundaries have lost some of their significance. The playing field is no longer restricted to a concrete area but the whole planet. It seems that the current growth pattern and diversity of the number of enterprises operating across national boundaries will not be reversed in the years to come. Consequently, a greater attention in the academic research has been allocated to the area of cross-cultural management.

From birth to death, social interactions are not isolated phenomena but events that are embedded within a cultural context (**Engel & Blackwell, 1982**). Therefore, it is undoubtedly true that culture possesses, directly or indirectly, a dominant influence on the values, personality and behaviour of the individuals (**Kassim & Abdullah, 2010**). Consequently, expectations, service encounters perceptions and the posterior evaluations are affected by the cultural background of the customer.

However, even though both customer focused orientation in Quality Management and the importance of customer satisfaction are familiar concepts, a more cross-cultural approach in those areas has been claimed in the last few decades. Indeed, in order to establish consistent conclusions regarding how culture influences the service satisfaction experiences, more research studies are required (**Winsted, 1997**).

The behavioural and ideological differences identified centuries ago remain observable despite the increased level of interaction between countries. In fact, despite the recent trend towards globalization and interdependence between countries, researchers suggest that the cultural diversity of the planet will remain intact for the foreseeable future (**Hofstede et al., 2010**).

The benefits of achieving high customer satisfaction are innumerable. High customer satisfaction usually leads to price elasticity reduction. In other words, larger changes in the price of the service or the product in question will originate smaller amount of change in the quantity demanded. Moreover, satisfied customers not only help enhancing the image of the company but also strengthen the links with the current customers, reinforcing a relationship of trust and loyalty (**Fornell, 1992; Tung 2010**). In fact, previous studies have empirically proven the existence of a direct correlation between customer loyalty and profitability (**Dawkins & Reichheld, 1990; Reichheld 1996**).

Regarding Europe, a structural economic change toward a service society has also taken place, while the industry sector is moving to emerging countries such as China or India.

In the 1990s, national customer satisfaction indexes emerged in response to the necessity of measuring the quality of the economic activity at a national level. Since then, they have been providing valuable information, enabling not only a comparison between industries but also between companies in the same field. Nevertheless, the need of a cross-cultural approach regarding measuring customer satisfaction has been requested. Indeed, the European Performance Satisfaction Index (EPSI) rating model was established as an attempt to coordinate national customer satisfaction indices among European countries. The index, whose model is based on the SCSB and ACSI, is administered by the European Foundation for Quality Management (EFQM), European Organization for Quality (EOQ) and the International Foundation for Customer Focus (IFCF).

Customer satisfaction measurement is typically done by using quantitative surveys. Nevertheless, even though customer evaluations are greatly influenced by the background of the respondent, i.e. their personal experiences and culture, (Ueltschy et al., 2007) the cultural bias is not contemplated in the analysis of results of these survey techniques. In other words, customers might rate their level of satisfaction vastly different. Even if the customer service is similar, the cultural background and their own experiences influence their perceptions. Her results lend additional support to the urgency of considering culture in the analysis of the results from customer satisfaction ratings. In fact, culture might have greater influence on the degree of satisfaction regarding customer experiences than the service provided or the product itself (Boshoff & Gray, 2004). This argument may explain the unexpected results obtained in cross-country satisfaction studies, such as the European Satisfaction Performance Index. Consequently, the cultural influence on the customer satisfaction results should not be underestimated.

Due to the fact that the way individuals describe their customer experiences is greatly influenced by their cultural background, the validity of comparing the results obtained in classical cross-country studies is questionable (Chevalier & Fielding, 2011). Nevertheless, it has been claimed that a new survey methodology could help comparing incomparable survey responses. The use of anchoring vignettes is suggested (King et al., 2004) to improve the cross-cultural comparability of measurement in survey research.

1.2.- Purpose and research questions

The main purpose of this research work is to analyse how culture influence customer satisfaction. Moreover, the aim of this project is to determine the suitability of the use of a new survey methodology, anchoring vignettes, in order to achieve more comparable results in the studies involving customer satisfaction across cultures.

The following research questions are brought forward accordingly:

- What are the possibilities and limitations of using anchoring vignettes as a general survey method?
- Specifically, what is the potential of this methodology in the context of customer satisfaction?
- Specifically, could the cultural bias in cross-cultural management studies be solved by using this survey instrument?

In this research, a pilot test is conducted in the context of mobile phone operators in Sweden and Spain, two European countries which are significantly different in cultural terms. More specifically, the scope of the analysis is focused on university students. Both the development and testing of the vignettes are fundamental prerequisites to perform the pilot study.

The results may provide valuable information not only about the potential use of anchoring vignettes but also contribute to a better understanding of cross-cultural differences in customer satisfaction. A deeper knowledge regarding the impact of culture on the customer's behaviour would lead to an enhancement of overall customer satisfaction. Furthermore, it would enable a customization of the services and the products provided based on the cultural differences identified in customers' requirements (**Vilares & Cohelo, 2003**). Considering customer as an abstract term, treating culturally diverse customers indiscriminately should be done with caution. This ethnocentric vision of the world often leads to suboptimal economic choices and failures in foreign markets (**Khan et al., 2009**).

Up to now, EPSI, the inspiration of this research work, has been put into practise in several industries such as banking, energy, public administration, insurance and mobile phone operators, the field of this study. Therefore, conclusions might be drawn regarding the cultural influence in the European Performance Satisfaction Index results.

1.3.- Design and scope of the study

The validity of comparing cross country results using classical survey questionnaires is called into question (**Khan et al., 2009**). Traditional customer satisfaction survey methodologies do not consider the cultural bias in the survey result. Therefore, the main purpose of this research work is to identify how the cultural background differences influence customer satisfaction.

The results from previous cross-country studies showed that common patterns can be identified in the way customers from a certain nationality interpret survey constructs (**Khan et al., 2009**). A comparative study performed in Japan and USA, revealed some general similarities and disparities, related with specific characteristic of each culture, in the way individuals assess their customer experiences.

Generally, conceptual models and research methodologies are created within a specific cultural framework. Consequently, it has been claimed the risk of inconsistency of directly applying these techniques in cross-cultural research studies without any previous adjustment (**Khan et al.,2009**). On the other hand, merely the use of different methodologies may increase the variability in the data results. Therefore, new research approaches are required to make valid cross-cultural comparisons.

In this research study, a new methodology based on anchoring vignettes (**King et al., 2004**) is developed and tested as an alternative to fulfil the both requirements mentioned above. Both the possibilities and limitations of the use of anchoring vignettes are investigated, specifically testing the methodology for measuring customer satisfaction among university students. Furthermore, the American Customer Satisfaction Index model constitutes the theoretical framework of the development of the customer satisfaction study.

Regarding the structure of the research study, four different main phases are conducted:

1. The development of vignettes.
2. The testing of vignettes suitability in the context of Swedish and international students at Linköping University.
3. Final test with students from two vastly culturally different European countries: Sweden and Spain.
4. Analysis of the results.

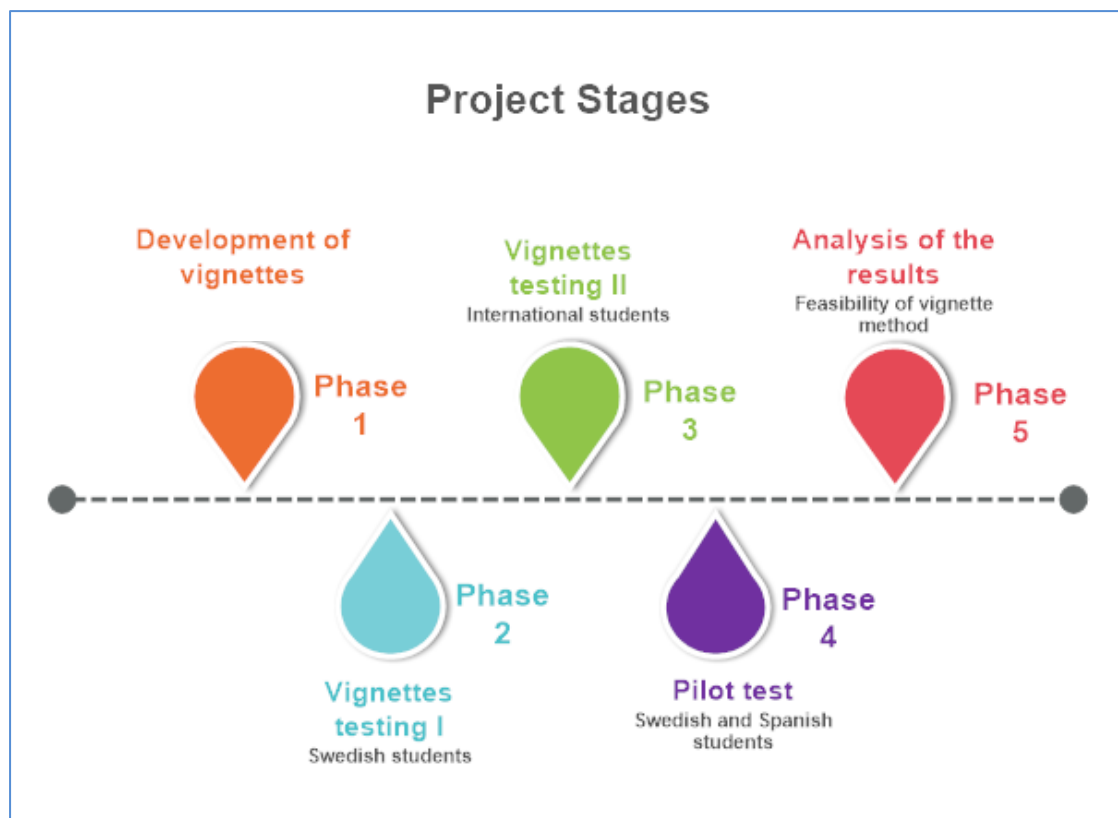


Figure 1. Development and testing of the vignette method, Project stages.

Due to the limited time resources, the scope of this Master Thesis only covers the pilot study, a full study is required in further research. The final pilot study is limited to Spanish and Swedish university students. The testing of the vignettes is carried out at the Linköping University whereas the final pilot study is carried out also with the collaboration of the University of Oviedo. In the final pilot study, not only the vignettes but also traditional self-assessment questions are included in the questionnaire. Moreover, whereas the testing of the vignettes is carried out in English, the final pilot study is conducted in both Spanish and Swedish languages. In fact, language is a distinctive cultural feature (**Hofstede, 2001**), which affects the cognitive process. Therefore, merely the use of language or the translation procedures in this research study are one of the problematic points since even the cultural background of the researcher has an influence on the results.

One of the main limitations of this study is the fact that national cultures nowadays are very heterogeneous. Therefore, country and culture should not be longer considered as equivalent terms. Currently, countries that could be regarded as culturally homogeneous, constitute an exception. Furthermore, as different cultures are mixed, new subcultures are formed within nations, based on religion, race, ethnicity or socioeconomic classes (**Kassim & Abdullah, 2010**).

The obtained results are statistically analysed to identify the suitability of this method in the context of university students and customer satisfaction across countries. It is questioned whether this methodology provides more comparable results or not as well as both weak and strong points are identified.

2.- THEORETICAL FRAMEWORK

This section describes the most relevant concepts concerning this research study. After an introduction of Quality Management practices and, the importance of both customer and culture in this concept; customer satisfaction concept is introduced. The most relevant customer satisfaction index models are presented, giving more attention to the ACSI model.

The details about how culture influence customer satisfaction and individual's perceptions are also described based on Hofstede's cultural dimensions. Finally, anchoring vignettes, the new survey method analysed in this research, is explained.

2.1.- Quality Management

The origins of Quality Management (QM) can be traced back in the 1920s. Since then, the implementation of QM practises has been contributing to the performance of a large number of enterprises. Concepts as Total Quality Management (TQM), Six Sigma or Lean Production have been gaining weight over the last decades. QM is a managerial approach that strives for quality excellence in all the areas of the organization, enhancing their performance. **Bergman and Klefsjö (2010)** define focus on customers, process approach, evidence-based decision making, continuous improvement, committed leadership and people engagement as the cornerstones of TQM.

The most known and used standard in QM is ISO 9001, which establishes the requirements of a quality management system and is based on seven management principles. Customer focus is the first and the most important one. This is further supported by **Merli (1990)** as the company's survival is governed by the customer.

In other words, in the Total Quality Management approach, the customer is regarded as the centrepiece. Not only external customer but also internal customers are essential, determining respectively the quality of the product and the internal process, i.e. working environment. As **Deming (1981)** pointed out, customer focus implies not only meeting but exceeding customer's requirements. Indeed, this customer orientation is also fundamental in the Lean philosophy, where value is defined from the final customer perspective (**Womack & Jones, 1996**). Consequently, measuring both internal and external customer satisfaction is of primary importance since it is considered "*the ultimate measurement of quality*" (**Bergman & Klefsjö, 2010**). Nowadays, many companies prioritise customer satisfaction, dedicating a lot of effort to this area.

2.2.- Customer Satisfaction

The origins of customer satisfaction studies can be traced back to the 1960s, when some researchers (**Cardozo, 1964; Howard & Sheth, 1969**) begun to analyse the relationship between expectations and customer satisfaction. These studies can be regarded as the precursors of the paradigm of non-conformity of expectations (**Parasuraman et al., 1988**), one of the main fundamental theories in this research field.

Two main conceptual approaches are found in the literature, transaction-specific and cumulative perspective (**Boulding et al., 1993**).

In the first approach, customer satisfaction is regarded as the assessment or evaluation of a specific event, i.e. the purchase of a certain product or service at a given point in time (**Hunt, 1977**). Therefore, customer satisfaction is defined by **Oliver (2014)** as follows: *“Satisfaction is the consumer’s fulfilment response. It is a judgement that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfilment, including levels of under-or overfulfillment”*.

On the other hand, cumulative customer satisfaction perspective is a global evaluation over a longer measurement period, considering not only the isolated transaction but also the consumption of the product or service concerned over time (**Fornell, 1992; Johnson & Fornell, 1991**). This cumulative perspective approach is the one that has been taken into account in this research work.

Customer satisfaction is not only used externally but internally, i.e. within the company (**Anderson et al., 2004**). Internally it can be used to allocate resources more efficiently or develop promotion plans. Additionally, it provides information regarding the company’s performance (**Anderson et al., 1997; McDougall & Levesque, 2000**). On the other hand, customer satisfaction reveals valuable information, covering not only customers but also other stakeholders.

There is a positive correlation between high quality and customer retention (**Steenkamp, 1989**), which favourably influences profitability. Customer satisfaction reveals valuable information regarding the economic performance of the enterprises’ past, present and future (**Anderson, Fornell, and Lehmann, 1994**). It has been claimed to be one of the most accurate indicators of the company’s expected profitability in the long term (**Kotler, 1998**).

Within this context, the link between customer satisfaction and customer loyalty has been discussed by several studies (**Anderson & Sullivan, 1993; Bearden & Teel, 1983; Oliver & Swan, 1989**). Indeed, in an increasingly competitive business world, loyal customers have become key for ensuring the firm’s survival (**Lam et al., 2004**). Despite the fact that customer satisfaction is not an indispensable prerequisite to achieve customer

loyalty, it is extremely difficult to gain customer's loyalty without having succeeded to previously achieve their satisfaction (**Shoemaker & Lewis, 1999**). Nevertheless, there is a tendency of satisfied customers becoming loyal (**Fornell, 1992**).

On the other hand, the compatibility between high customer satisfaction and high market share is not always clear. A negative relationship might arise as a consequence of the expansion of the customer base. It is more demanding to meet or exceed the needs and expectations of a larger amount of customers. (**Anderson, Fornell, and Lehmann, 1994**).

Following "The exit-voice theory" (**Hirschman, 1970**) customers might express their dissatisfaction either via the *exit option* or the *voice option*. Therefore, enterprises should provide a suitable complaint managing system, giving the customers the opportunity to complain and therefore avoiding the silent loss of costumers. In addition, an efficient complaint managing system might strengthen the relationship with the customer, turning complaining customer into loyal customer.

Finally, it is important to highlight that a long-term perspective is required when analysing the effectiveness of the efforts devoted to achieve higher quality and customer satisfaction. As highlighted in previous studies, a high degree of competitiveness among the companies of a certain industrial sector as well as a significant market differentiation lead to higher overall customer satisfaction levels (**Fornell & Johnson, 1993**).

2.2.1.- Customer-based performance measure

The importance of customer satisfaction in the actual business world is undeniable. Nevertheless, quantifying and measuring the satisfaction of the customers is not a straightforward issue.

Customer satisfaction measurement can be defined as a "*formalised, objective tool for assessing both external and internal customer satisfaction*" (**Vavra, 1997**). The disconfirmation paradigm laid the foundations to numerous theoretical structures to measure customer satisfaction based on its antecedents. The underlying concept is that the degree of satisfaction is based on the level of conformation of the customer's expectations (**Smith & Houston, 1982**). At the end of the 1980s, customer satisfaction started to be measured at a national level by using traditional surveys methodologies, which resulted in the creation of national customer satisfaction indices.

Babin, Darden and Griffin (1994) proposed to evaluate buying experiences from a hedonistic and utilitarian approach, capturing both the subjective and objective perceptions of the consumer experience.

One of the main determinants of customer satisfaction is the degree of quality. Due to the distinctive features associated to services, a differentiation between product quality and service quality is required. The quality of goods is determined by several dimensions such

as appearance, reliability or durability (**Bergman & Klefsjö, 2010**). Therefore, in the manufacturing industry, quality controls are performed to enhance the quality of the final product. An abundance of instruments and procedures, such as Quality Function Deployment (QFD) or Statistical Process Control (SPC) are employed to achieve quality in the processes.

Nevertheless, due to the singular attributes of services, evaluating service quality is a much more complex process than evaluating the quality of physical goods. Several ways for measuring service quality has been proposed in the literature, with SERVQUAL being one of the most recognized models among researchers.

2.2.1.1.- Gap model

The SERVQUAL model, which was developed by **Parasuraman et al. (1988)**, is placed among the most widely accepted quality service models.

Five different gaps (**Parasuraman et al., 1985**) can be identified concerning service quality: *consumer expectation-management perception gap*, *management perception-service quality specification gap*, *service quality specifications-service delivery gap*, *service delivery-external communication gap*, *expected-service-perceived service gap*. The first four gaps are associated to the service provider whereas the last one can be regarded as a function of the previous ones.

Based on the fifth gap, ten different service dimensions were selected as the cornerstones of quality, which were later reduced to the following five attributes: tangibles, reliability, responsiveness, assurance and empathy. Service quality is evaluated in terms of the existence gap between expectations and service perceptions.

2.2.2.- ACSI Model

Within the framework of customer satisfaction measurement models, The American Customer Satisfaction Index is described as the most relevant to examine customer satisfaction. It is a cause and effect model which aims to investigate the relationships between both the antecedents and consequences of customer satisfaction. Its theoretical framework is illustrated in the figure below. On the left side of the diagram, the drivers of satisfaction can be identified, i.e. perceived quality, perceived value and customer satisfaction. All of these categories combined are the antecedents of customer satisfaction (ACSI), which constitutes the heart of the model. On the other hand, the outcomes of satisfaction are located on the right side of the diagram. More specifically, customer complaints and customer loyalty, including both customer retention and price tolerance (**Angelova & Zekiri, 2011**).

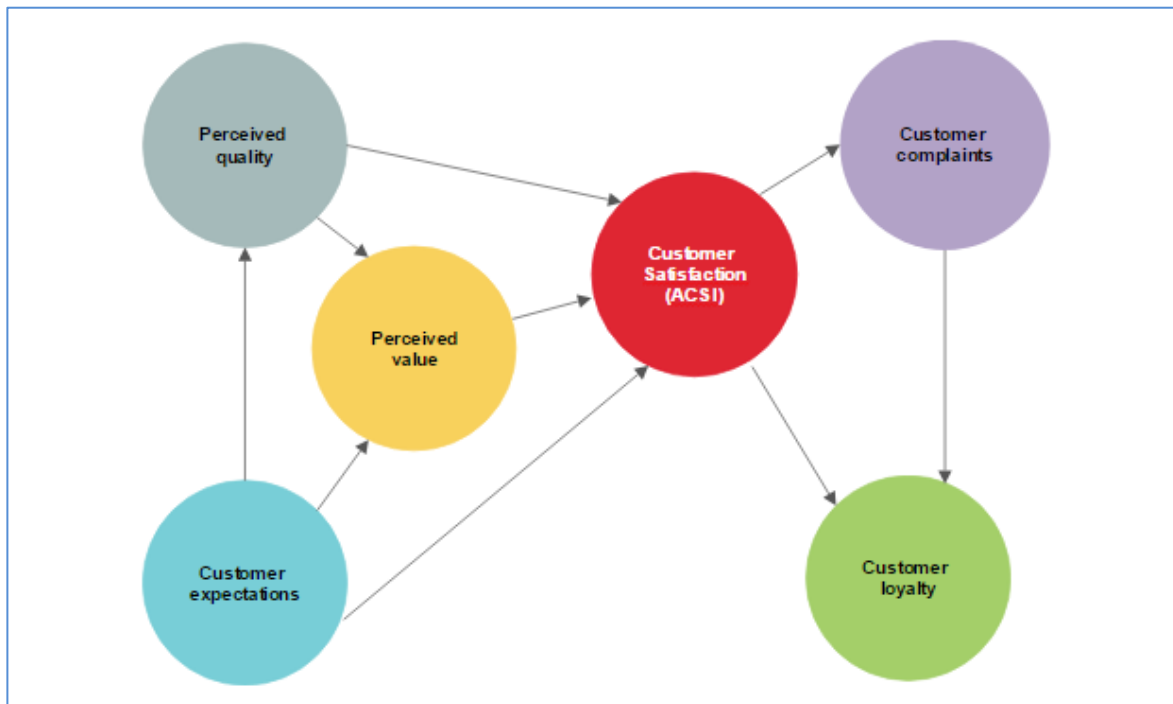


Figure 2. Source: own elaboration from the ACSI model

2.2.2.1.- Customer expectations

Customer expectations are a measure of the customer's quality predictions of the product or service provided. Expectations are set prior to the act of consumption and are mainly formed from the previous personal experiences with either the product or service in question. Additionally, external information, such as advertising or recommendations also have a great influence (**Knutson et al., 2008**). Therefore, expectations constitute a common reference point, facilitating the comparison between goods and services of different price levels (**Oliver, 1980; Raaij, 1989**).

It is claimed that expectations are a fair reflection of the customers' capacity of learning from their own experiences, since the previous acquired knowledge is continuously updated by the last consumption experience (**Howard, 1977**). Moreover, customer expectations introduce the capability of predicting the degree of quality to be delivered by the respective providers in the near term (**ACSI, 2017**).

Due to the fact that expectations are based on previous consumption experiences, they are said to be a more accurate indicator of quality, perceived value and overall satisfaction of frequently consumed products or services (**Howard, 1977**). In such cases, the underlying information is based on a higher amount of experiences as well as more recent events.

On the other hand, the cause and effect relationship between the customers' expectations and their level of satisfaction has been questioned (**Ospina & Gil, 2011; Johnson et al., 1995**). This construct is considered to be one of the debilities of the ACSI model.

2.2.2.2.- Perceived quality

Perceived quality can be defined as “*the consumer's judgment about a product's overall excellence or superiority*” (**Zeithaml, 1988**). Several studies have demonstrated the impact of perceived quality on customer satisfaction (**Anderson & Sullivan, 1993; Oliver & DeSarbo 1988**). Furthermore, a positive correlation is expected. In other words, an improvement in the quality perceived by the customers is supposed to favourably influence their overall satisfaction.

Quality is measured in terms of both customization and reliability (**Fornell et al., 1996**). Customization refers to the level of achievement in meeting the individual customer needs whereas reliability constitutes the company's ability to provide a product or service according to the required standards and without imperfections. It is therefore usually linked to the frequency of failures.

The customers' evaluation depends on the degree of tangibility of the concerned product. Therefore, a distinction can be drawn between service and product quality. Service quality refers to “*the customer's overall impression of the relative inferiority or superiority of a service provider*” (**Bitner, 1990**). Consequently, it is also considered analogous to the customer's opinion of the firm (**Parasuraman et al., 1988**). The impact of cultural differences on customer's service quality evaluation has been studied by several authors. The study conducted by **Winsted (1999)**, comparing Japan and USA cultures across eight different service dimensions, concludes that differences and common patterns between the two countries can be identified when they evaluate the service experiences. Similarly, **Mattila (1999)** examines the role that culture plays on perceived quality, focusing on a comparative study between Western and Asian customers.

As expected, the cultural influence is stronger if the service involves high degree of customer-provider interaction (**Furrer et al., 2000**) since culture shapes human relationships.

2.2.2.3.- Perceived value

Perceived value refers to the level of quality relative to price paid. Therefore, with the incorporation of this construct, price information is indirectly integrated into the model, empowering the customers to compare providers from an economic perspective (**Johnson, 1984**). Moreover, it facilitates the cross-industry comparison of the results.

Perceived value is regarded as a crucial element in the first purchasing decision. Nevertheless, the degree of influence is expected to decrease in subsequent purchases.

2.2.2.4.- Customer satisfaction

Customer satisfaction is the centrepiece of the ACSI model. Customer expectations, perceived quality and perceived value provide the input for customer satisfaction. In other words, customer satisfaction is built based on the combination of these three antecedents. Customer satisfaction refers to the measurement of the level of fulfilment originated as the comparison result between the actual service usage and the customer's expectations (**Balaji, 2009**).

In particular, within the context of mobile phone operators, which is the framework of this study; the degree of trust to the supplier as well as the level of attachment constitute important consequences of customer satisfaction. This stems from the fact that mobile phone services are provided on an ongoing basis.

2.2.2.5.- Customer complaints

As stated in the "Exit voice theory" (**Hirschman, 1970**), an increase in customer satisfaction is expected to strengthen customer loyalty and diminish the number of customer complaints (**Fornell & Wernerfelt, 1988; Johnson et. al, 2001**)

A negative correlation is expected between customer satisfaction and customer complaints. In other words, dissatisfied customers have a greater tendency to complain. Therefore, this construct is said to represent "the voice of the customers" and is usually measured by the proportion of customers who reported having express their dissatisfaction with either the concerned product or service within a concrete period of time (**Balaji, 2009**).

2.2.2.6.- Customer loyalty

Customer loyalty, the final construct of the ACSI model, is said to be related to the economic profitability (**Reichheld & Sasser, 1990**). Loyalty is defined as the "*customer's overall attachment or commitment to a service provider*" (**Oliver, 1999**). **Jacoby and Chestnut (1978)** also highlight the importance of the attitude of the customer to achieve a truly loyal customer. The loyalty construct covers the repurchase intention and the price tolerance (**Angelova & Zekiri, 2011**). The repurchase intention indicates the customers' willingness to select the same provider for future purchases. Price tolerance refers to the customer's price sensitivity, i.e. how likely they would acquire the concerned product or service from a certain provider at different price levels. Therefore, loyalty is measured based on both quality and financial considerations.

As illustrated in the framework, a relationship between customer complaints and customer loyalty can be established. The degree of efficiency of the company's complaint handling system can be inferred by analysing the impact of customer complaints on customer

loyalty (**Fornell, 1992**). A positive correlation implies an efficient processing of claims, i.e. the firm is capable of successfully turning an unsatisfied customer into a loyal one. On the other hand, a negative correlation reflects how an inadequate customer handling system might encourage customer disloyalty, which can result in a loss of customers (**Johnson et al., 2001**).

Previous studies have shown that the industrial sectors in which customer satisfaction is quality-driven achieve higher customer loyalty levels than those where the price is a crucial element (**Fornell et al., 1996**). It is also important to highlight the differences between *false loyalty* and *true loyalty* (**Bergman & Klefsjö, 2010**). False loyalty is related to the absence of customer's emotional attachment; having no objection to leave the provider if a better offer appears. On the contrary, when truly loyalty exists, the customer is committed to stay with the provider due to its emotional ties.

2.2.3.- Customer Satisfaction indices

The relevance of measuring customer satisfaction has been highlighted by several studies since it provides valuable information regarding the company's future economic performance (**Tung, 2010**).

Since 1989, the establishment of Customer Satisfaction indices has been providing valuable information regarding the quality of the economic activity from a customer perspective. They fill the gap left by traditional economic indicators, such as consumer price indices, which do not include quality as a determinant factor.

Sweden, the scope of this research work, was a pioneer in the development of national economic indices (**Fornell, 1992**). It was Claes Fornell who authored the Swedish Customer Satisfaction Barometer (SCSB) in 1989. Since then, Sweden has had customer surveys on a yearly basis. The index is built from the results of these annual customer surveys, concerning 31 Swedish industries. Due to the fact that SCSB constitutes the basis in the development of all the significant following national indices, it is regarded as a fundamental pillar within this field.

The SCSB underlying framework considers perceived performance and customer expectations as the constructs influencing customer satisfaction. Furthermore, the framework of this model was inspired by the "Exit-voice theory" (**Hirschman, 1970**), which states that customer dissatisfaction can lead to either the silent loss of the customer, i.e. they stop purchasing the product or service from the concerned provider, or the utilization of complaint procedures.

One of the distinguishing features from SCSB is the fact that quality is measured from the customer standpoint. Nevertheless, a relationship can be drawn between the SCSB results

and several economic indicators, such as Return of Investment, the most employed profitability ratio (**Anderson, Fornell and Lehmann, 1994**).

Since the development of the SCSB, other national customer satisfaction indices have been introduced. An historical timeline is illustrated in the figure below.

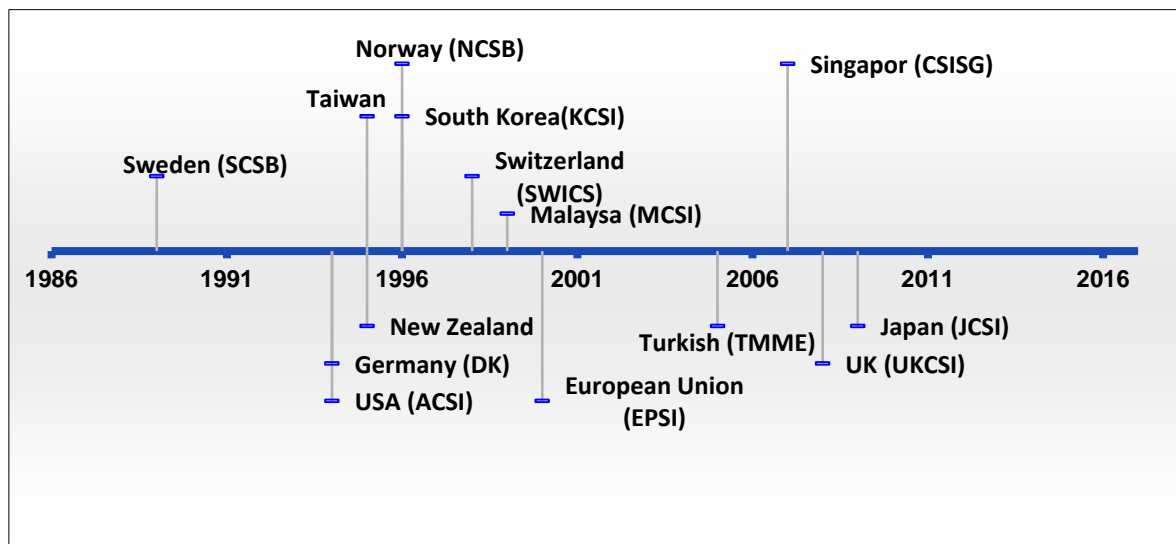


Figure 3. Time line of the national customer satisfaction indices

As illustrated in the diagram, it was in 1994 when the German satisfaction index, called “*Das Deutsche Kundebarometer*” (DK) was established (**Meyer, 1994**).

Simultaneously, the most renowned model, The American Customer Satisfaction Index (ACSI) was developed by researchers at the University of Michigan in collaboration with the American Society for Quality.

One year later, Austria introduced The Austrian Customer Satisfaction Barometer (ACSB) as a pilot study (**Hackl et al., 1996**). At the same time, several national customer satisfaction indices were developed outside Europe. Such is the case of the Civil Society Index (CSI) of New Zealand or the national index of Taiwan (**Fornell et al., 1996**).

Similarly, other European countries such as Norway or Switzerland put national indices in practise. SERVQUAL was incorporated in The Norwegian Customer Satisfaction Barometer (NCSB) to evaluate the quality construct (**Andreassen & Lervik, 1999; Johnson et al., 2001**). The Swiss Index of Customer Satisfaction (SWICS), launched in 1998, distinguished itself by substituting the customer complaint construct with customer dialogue (**Bruhn & Grund, 2000**). In the same year, South Korea implemented the Korean Customer Satisfaction Index (KCSI).

Subsequently, after the implementation of the European Performance Satisfaction Index (EPSI), several countries have tried to establish national indices. This is the case of

the Turkish National Customer Satisfaction Index (TMME), which has been carried out since 2005 on a quarterly basis. Malaysia (**Grigoroudis & Siskos, 2004**) and Singapore also developed their customer satisfaction indices (MCSI and CSISG). Additionally, the UK Customer Satisfaction Index (UKCSI) was established in 2008, collecting information across 13 key sectors. One year later, the Japanese Customer Satisfaction Index (JCSI) was implemented.

Other attempts to develop customer satisfaction indices at a national level can be found. For example, the Mexican User Satisfaction Index (MUSI), which focuses on the public sector (**Calleros et al., 2012**), or the Brazilian Customer Satisfaction Index (BCSI). In 1997 Hong Kong also developed a customer satisfaction index (HKCSI) (**Chan et al., 2003**), which is characterized to capture the satisfaction towards the quality of products rather than evaluating the companies. Nevertheless, this index is no longer carried out since 2010.

2.2.3.1.- The American Customer Satisfaction Index (1994)

A more detailed description about ACSI is given below regarding the relevance of this index in the context of this research. This model constitutes the reference point for the development of the European Index. Therefore, understanding its underlying framework is essential when analysing the European Performance Satisfaction Index itself.

The American Customer Satisfaction Index (ACSI) represents the voice of the USA customers, collecting their quality perceptions of the products and services provided in the national market. The analysis of customer satisfaction is based on customer interviews and the use of econometric models.

This model, which is based on the Swedish national index, widened the scope of analysis, collecting customer satisfaction data from a larger number of enterprises from a wider variety of industries. Concretely, more than 200 companies are quarterly considered in the customer satisfaction measurement (**Fornell et al., 1996**). Moreover, customer evaluations of public companies are also presented in the results.

The most remarkable feature of this model is the incorporation of the perceived quality construct as an antecedent of customer satisfaction (**Fornell et al., 1996**). The perceived performance construct from the SCSB framework is divided into perceived quality and perceived value. This division allows researchers to identify whether the customer satisfaction is mainly price or quality driven.

With regard to the consequences, the customer loyalty construct is evaluated in terms of both price tolerance and repurchase likelihood.

The customer evaluations are reported on a 10-point scale (**Knutson et al., 2004**). The reason behind the selection of this scale is to enable respondents to better express their judgements (**Andrew, 1984**).

Nevertheless, in line with the objectives of this research work, the comparability of the ACSI results has been questioned (**Johnson & Fornell, 1991**). Doubts on the veracity or suitability of comparing satisfaction levels across different customers or industries have emerged.

2.2.3.2.- The European Performance Satisfaction Index (EPSI)

The EPSI model, developed by **Eklöf (2000)**, was created in 2001 as an attempt to unify the customer satisfaction national indices within the European territory, enabling comparisons among the different countries. It can be defined as “*a measurement of customer satisfaction as well as key success factor, especially image/brands of individual agencies, companies and organisations in a specific market, via periodical analyses by a respected, neutral institution, using quality standards based on state-of-the art methodology*” (**Fornell, 2005**).

The EPSI collects data from more than 20 European countries through regional intermediaries. Traditional surveys questionnaires are employed to collect the perceptions of the individuals through the interviewing methodology. Whereas the customers' evaluations are reported on a 10-point scale, the results are presented on a 100-point scale.

The underlying framework is based on the ACSI model. The most distinctive feature of this model is the inclusion of the “corporate image” construct as an antecedent of customer satisfaction. In addition, the original perceived quality construct is divided in product quality and service quality (**González Menorca et al., 2015**).

EPSI has annually performed customer satisfaction studies in Sweden since 1999, when the first pilot test was carried out. The contribution of this country to EPSI is unquestionable. Indeed, much of the research and data analysis is performed at the Stockholm School of Economics. However, Spain was not incorporated in the project until 2010.

The Svenkst Kvalitetsindex (SKI) is the regional intermediary of the EPSI rating group in the Swedish territory, performing annual studies in several industries. Traditional surveys questionnaires are employed to collect the perceptions of the individuals via telephone interviews.

The EPSI project was the inspiration of this research study, questioning the credibility of comparability of results across the different European countries using traditional survey methodologies. Indeed, the results provided are in some cases, at the very last, surprising. Within the context of mobile phone operators, it is shocking that the Nordic countries, which have good domestic infrastructures, have always obtained very low satisfaction scores; whereas countries as Latvia or Azerbaijan score high on the list (**EPSI, 2011**). Therefore, it can be doubted if the customer satisfaction differences between the European countries are

based on the actual service or the respondents' perceptions, in which the cultural background possesses a great influence.

2.3.- Culture in Customer Satisfaction

The successful implementation of Quality Management procedures is claimed to be culturally affected. This underlying influence is originated both internally and externally (Naor et al., 2008; Kull & Wacker, 2010). Internally, the organizational culture is determined by the employees and the organization itself, in terms of values, vision and corporate principles. Externally, national culture is the result of a wide range of factors inherited by the country's history and location.

An abundance of scientific research has been performed analysing the impact of organizational culture on QM (Powell, 1995). Nevertheless, despite the fact that the national culture influence might be stronger, research studies in this area remains scarce. Zhang and Wu (2014) has proposed that caution is required when adopting QM practices as they should be adapted to the national context.

A culture can be defined as *“shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations”* (House & Javidan, 2004).

Ignoring the importance of the cultural factor is one of the main reasons behind the unexpected failure of the implementation of new technologies in developing countries (Varela et al., 2010) since they have been conceived from an ethnocentric perspective.

In areas such as psychology, sociology and anthropology, a vast literature is dedicated to analyse the behaviour of the individuals from a cultural perspective, examining how beliefs, norms and values are shaped by culture. Nevertheless, in the field of customer satisfaction cross cultural approach remains still unexplored. Some studies have pointed out that culturally diverse customers interpret and respond to customer satisfaction survey questions differently (Khan et al, 2009).

Particularly, two specific cultural theories deserve special mention because of their wider impact in subsequent research works: Hall's classification of cultures (1976) and Hofstede's cultural dimensions (2001). Therefore, the following two sections are focused on describing both theories.

2.3.1.- Hall's cultural theory

Edward T. Hall's anthropologist research studies focused on a cross-cultural perspective. His theory is grounded in the importance of the context. As he claimed, “every

culture has its own hidden, unique form of unconscious culture” (Hall, 1977). Indeed, as Hall describes, culture is present in all facets of life, influencing them directly or indirectly.

The importance of the underlying context has been highlighted in many scientific fields. **Faber Birren’s (1961)** studies analysed the effects of colour context in the human sensory perceptions. Similarly, context constitutes a determinant factor in certain languages. Such is the case for the Mandarin language, where four different tones are necessary to differentiate the meaning of the words.

Therefore, cultures can be classified in high context and low context cultures (**Hall, 1977**). It is important to highlight that this division is performed in a continuous scale, the Hall’s continuum. Whereas Spanish culture is considered a quite high context culture, Sweden, as its Scandinavian neighbours, is placed closer to the low context end of the scale.

In high context cultures, the context of the message plays an important role. On the contrary, in low context cultures, the centre of attention is the message itself since it carries all the significance.

Regarding personal space, high context cultures, such as the Spanish one, are characterised by group belonging and closeness to the people. Consequently, private space is less of a concern. Accordingly, physical proximity in conversations and more physical contact are socially accepted. Additionally, body language is easily observable. On the other hand, in low context cultures, like the Scandinavian ones, individuality is desired. Each one’s privacy is appreciated and therefore respected. Social interactions are characterised by less body language; all the attention is placed on the message.

In high context cultures, time is polychronic. Time cannot be controlled ergo events take place in their own pace. Consequently, time is flexible according to the social standards. On the contrary, in low context cultures time is monochronic. There is an absolute and universal truth regarding time, i.e. concepts such as punctuality are a great concern among individuals.

In high context societies, as the Japanese one, loyalty is irrefutable after the establishment of a relationship. Moreover, confrontation is socially rejected in high context cultures, where harmony is desired (**Kim, Pan and Park, 1998**). Therefore, concerning customer satisfaction, high context customers tend to avoid using the low end of the scales (**Ueltschy et al., 2007**). As a result, in the large majority of truly dissatisfaction cases, the lowest scores are still infrequent in the results. On the other hand, in low context societies, honesty and forthrightness are socially welcome (**Hall, 1977**), therefore customers freely express their dissatisfaction. Consequently, the underlying influence of culture should be considered when the analysis of customer satisfaction results is performed (**Ueltschy et al., 2007**).

2.3.2.- The Hofstede Model

The Hofstede model of national culture (**Hofstede, 2001**) constitutes an extremely valuable framework in which countries are categorised based on four cultural dimensions: power distance, uncertainty avoidance, individualism, masculinity. Long-term orientation as well as indulgence were later incorporated into the model thanks to the contribution of Bond's and Minkov's studies (**Hofstede & Bond, 1984; Hofstede et al., 2010**). The combination of distinctive features in every Hofstede's cultural dimension, symbolised by numerical scores, characterises every national culture.

2.3.2.1.- The six cultural dimensions

The first dimension of national culture, power distance dimension (PDI), refers to the expectations of authority and power concentration in the hands of the superiors (**Kull & Wacker, 2010**), described from a lower-class perspective, i.e. it is seen from below.

The underlying anthropological concept is human inequality, the degree of unevenness in the distribution of power and dominance among the members of a society. This means that in large power distance cultures, such as Malaysia or the Arab countries, social stratification is accepted and internalised, i.e. society is divided in hierarchical classes where everyone assumes its position.

Language reflects the historical heritage. Therefore, power distance differences can be related to language areas. This observation can be made when comparing countries' PDI score with Germanic and Romanic languages (**Hofstede et al., 2010**). Therefore, Spain, with

Small Power Distance	Large Power Distance
Use of power should be legitimate and is subject to criteria of good and evil	Power is a basic fact of society antedating good or evil: its legitimacy is irrelevant
Parents treat children as equals	Parents teach children obedience
Older people are neither respected nor feared	Older people are both respected and feared
Student-centered education	Teacher-centered education
Hierarchy means inequality of roles, established for convenience	Hierarchy means existential inequality
Subordinates expect to be consulted	Subordinates expect to be told what to do
Pluralist governments based on majority vote and changed peacefully	Autocratic governments based on co-optation and changed by revolution
Corruption rare; scandals end political careers	Corruption frequent; scandals are covered up
Income distribution in society rather even	Income distribution in society very uneven
Religions stressing equality of believers	Religions with a hierarchy of priests

Figure 4. Ten differences between small and large power distance societies. (Hofstede, 2011)

its Latin heritage, scored medium on the power distance scale, obtaining an index equal to 57. On the contrary, the Germanic influence is observed in Sweden. This Scandinavian country has a low power distance index, concretely 31. That implies that hierarchical differences are more socially accepted in the Spanish society than in the Swedish one.

Individualism versus collectivism (IDV) refers to the existing relationship between the members and the group in human societies. The underlying anthropological concept behind it is social dependency (**Hofstede & Bond, 1984**). On one hand, the higher the degree of individualism, the weaker the linkages between the society members. Consequently, the individuals are expected to be self-oriented, mainly caring for themselves and their inner circle (**Kanousi, 2005**). On the other hand, collectivism concerns building strong sense of group belonging since birth, concepts such as loyalty or protection remain crucial among the members of the collective.

This cultural dimension tends to be negatively correlated with the power distance dimension, i.e. high power distance societies are typically linked to a remarkable level of collectivism.

Although both Spain and Sweden, as almost every European country, are mainly individualist societies, the individualism features are more pronounced in the Scandinavian country. In the table below, some behavioural differences from collectivist versus individualist societies were selected, taken from Hofstede's study, based on the relevance for this study research.

Collectivist	Individualist
<ul style="list-style-type: none"> • People are born into extended families or other groups that continue protecting them in exchange for loyalty 	<ul style="list-style-type: none"> • Everyone grows up to look after him or herself and his or her immediate nuclear family only
<ul style="list-style-type: none"> • Social network is primary source of information 	<ul style="list-style-type: none"> • Media is primary source of information
<ul style="list-style-type: none"> • The internet and e-mail are less attractive and less frequently used 	<ul style="list-style-type: none"> • The internet and e-mail hold strong appeal and are frequently used to link individuals
<ul style="list-style-type: none"> • In-group customers get better treatment (particularism) 	<ul style="list-style-type: none"> • Every customer should get the same treatment (universalism)

Table 1. Features of collectivist and individual societies. Source: compilation based on Hofstede et al. (2010)

According to **Hofstede (2001)**, masculinity and femininity (MAS), as a societal characteristic, refers to the effect of the existence of two genders on the society values. In

this case, the underlying concept behind MAS is the influence of social gender roles on individual's perceptions (**Hofstede & Bond, 1984**). In masculinity societies the ego factor is exalted, all the facets of life are strongly characterised by materialism. On the contrary, social values such as life quality or personal relationships, are of major importance in femininity societies. Moreover, gender roles are clearly defined in masculinity cultures whereas the distinction between gender roles becomes weaker and more diffuse in femininity societies.

In relation to economic wealth, the MAS dimension is different from the other cultural dimensions as no correlation can be established between MAS scores and countries economic development (**Hofstede et al., 2010**). Therefore, it can not be economically justified that masculinity is better than femininity or viceversa.

Additionally, the age affects masculinity values. Among young people, the target group of this research work, not only the masculinity index tends to be higher but also the gap between women's and men's MAS values is wider. As people get older, the social factor outweighs the ego one, resulting in a lower MAS.

A wide gap between Sweden and Spain is found regarding this cultural dimension. Sweden is among the most feminine-scoring countries whereas the masculine part has a bigger influence on Spanish society. In high feminine societies like the Swedish one, quality of life is the main objective. Excessive rivalry is avoided and attracting attention is not socially admirable. This is reflected in both the Scandinavian educational system and the effort devoted to reconciliation of work and private life. Despite the gap, Spain does not have a dominant masculinity. The Spanish society strives towards harmony. Polarization and extremists' positions are socially avoided. Middle ground is the fundamental concept.

MAS is also influenced by religion. Spain, as many of the Catholic countries, presents more masculine features compared to the Protestants societies such as Sweden, where feminine values stand out.

Uncertainty avoidance (UAV) reflects the manner in which societies deal with ambiguity (**Hofstede, 2001**). The underlying anthropological concept is how conflictive and aggressive situations are confronted (**Hofstede & Bond, 1984**). In high UAV societies, both explicit and implicit rules as well as defined structures are desired to reduce the stress caused by unpredictable or uninterpretable scenarios.

UAV should not be confused with risk avoidance; it refers to the sensitivity towards unpredictability, i.e. the way society deals with the fact that the future can never be known. In other words, it shows the comfort degree of the society's individuals when dealing with unknown or unfamiliar situations. Surprisingly, the need for reducing ambiguity and the sense of urgency make them more willing to take part in risky actions in order to relieve stress.

Stress and anxiety are common symptoms among individuals from high UAV cultures, everything that is different is avoided. On the contrary, cultures that accept uncertainty are meant to be more tolerant to diversity, individuals are open to different opinions, trying to have fewer rules. As a consequence, innovation and changes are frequent.

It seems that a relationship between the degree of uncertainty avoidance and religion can be drawn (**Hofstede et al., 2010**). Indeed, there is a large difference between Spain and Sweden regarding this cultural dimension. Spain, Catholic country, scored very high, as almost all the Mediterranean countries. Nevertheless, the Nordic countries, where the Protestant religion is the norm, are placed at the lower end of the rank. Indeed, this is reflected in the high degree of expressiveness related to the anxious Spanish culture. Facial expressions and body language are easily recognisable among the individuals. Moreover, showing emotions or raising the voice are socially acceptable. On the one hand, rules are desired in every facet of life since changes and ambiguity cause high levels of stress among Spanish citizens. Contradictorily, there is a tendency to avoid rules which make life difficult.

The fifth dimension, long term orientation (LTO), refers to the influence of temporal perspective in individual's perceptions and their choices through life, i.e. the relative importance of the future, present and past. This fifth dimension was defined as follows: *"long-term orientation stands for the fostering of virtues toward future rewards – in particular, perseverance and thrift. On the other hand, short-term orientation, stands for the fostering of virtues related to the past and present- in particular, respect for tradition, preservation of face, and fulfilling social obligations"* (**Hofstede, 2001**). Moreover, it is the only dimension where a correlation with national economic growth was found (**Hofstede, 2001**).

In the 2000s, the incorporation of a sixth dimension, indulgence versus restraint, enriched the model (**Hofstede et al., 2010**). This dimension refers to the degree of control regarding individual desires, in relation to the satisfaction of impulses and enjoyment of life. Therefore, it is defined by **Hofstede (2001)** as follows: *"Indulgence stands for the tendency to allow relatively free gratification of basic and natural human desires related to enjoying life and having fun. Its opposite pole, restraint, reflects a conviction that such gratification needs to be curbed and regulated by strict social norms"*. Higher levels of optimism are found among individuals from indulgent societies. This dimension is aimed to fill the gap left by the other five ones. Nevertheless, more empirical research is still required concerning this cultural dimension.

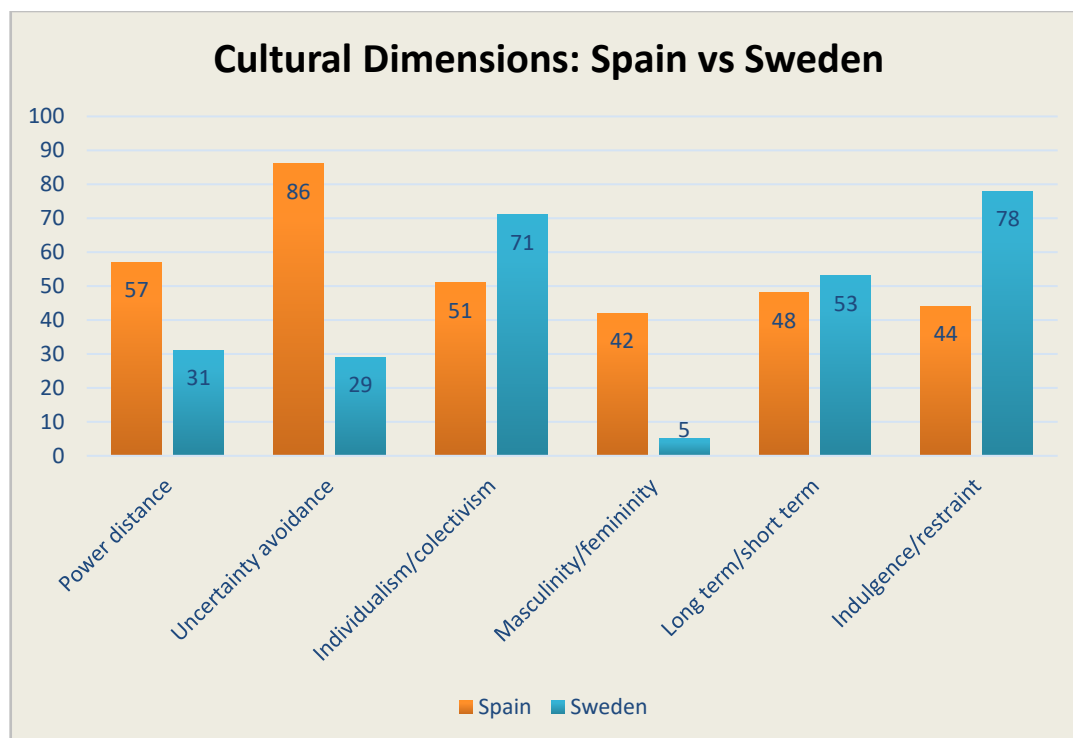


Figure 5. Hofstede's cultural dimensions' score comparison between Spain and Sweden

2.3.2.2.- The cultural dimensions in the context of CS

It is undoubtedly true that the descriptions of the consumer experiences are influenced by the culture of the individuals. Indeed, the underlying cultural influence is evident by the individual's behaviour (**Patterson & Mattila, 2008**). However, culture is also involved in the cognitive process, i.e. the way each person thinks is affected by culture (**Hall, 1977**). This is in line to the way respondents from different cultures may understand customer satisfaction surveys in different ways. Nevertheless, further studies are still required to fully understand the linkages between culture and customers' satisfaction as this research area has not been covered yet.

The application of QM principles is greatly affected by the cultural environment (**Chiang & Birtch, 2007**). Within this context, the above described Hofstede's dimensions are the most frequently employed in the area of QM research (**Kull, 2009**). Indeed, links might be drawn between these dimensions and customer satisfaction (**Tsoukatos & Rand, 2007**).

Mattila's (1999) research within the hostel industry, provides valuable information regarding the cultural influence in the assessment of customer satisfaction. Western and Asian travellers were selected as target groups due to their cultural disparity in both Hall's and Hofstede's classifications.

Her findings indicate that in large power distance societies, where power is distributed unequally, the customer-provider relationship is greatly influenced by the social status. Service employees tend to provide higher quality services towards powerful customers, as a reflection of their subordinated position. Similarly, among weak customers in those cultures, a strong positive correlation is expected between the degree of failure acceptance and the power of the service supplier. Furthermore, in long-term orientation societies, building a stable and lasting customer-provider relationship is essential. Therefore, among the SERVQUAL dimensions, reliability, responsiveness and empathy are the most relevant attributes in those cultures.

Within the context of customer satisfaction, uncertainty avoidance is closely linked to the word of mouth concept. Customers from high UAV societies, such as the Greek or the Japanese, tend to avoid the use of complaint handling systems (**Money et al., 1998**).

Moreover, in high uncertainty avoidance societies, the position held on the rating scale by each of the SERVQUAL attributes; i.e. reliability, responsiveness, assurance, empathy and tangibles; depends on the frequency of the service encounters (**Furrer et al., 2000**).

Additionally, **Liu and McClure (2001)** performed an analysis of the relationship between the IDV cultural dimension and customer complaint behaviour. The study is based on customers from United States, recognized as the most individualistic society, and South Korea, where collectivism predominates. The results suggest that dissatisfied customers from collectivist societies are less likely to use complaint processes. Moreover, among dissatisfied customers, a negative correlation between expressing dissatisfaction and switching provider exists in collectivist societies whereas a positive correlation is expected in individualist ones.

The IDV dimension might also influence the level of service efficiency required by the customers. A higher levels of service efficiency is expected by customers from individualistic societies (**Liu et al., 2001**).

The MAS cultural dimension unconsciously affects customer expectations. In masculine societies, there is a social role differentiation between genders. Therefore, customer expectations might be influenced by the gender of the employee providing the service (**Furrer et al., 2000**). Whereas gentleness and empathy are regarded as female qualities, professionalism and perfectionism are expected in male employees.

In addition, students from masculine societies tend to exaggerate their own performance, “*ego-boosting*”, whereas in the feminine Scandinavian countries, students tend to undervalue their own performance, “*ego-effacement*” (**Hofstede, 2001**). This might also influence the way the students answer the questionnaire carried out by this research study.

2.4.- Anchoring Vignettes

In the increasingly globalised and competitive world, a valid cross-cultural research methodology has become a necessity.

As an attempt to address the issues regarding the impossibility of comparing interpersonal and cross-cultural survey results different techniques, such as careful question wording or cognitive debriefing have already been applied (**King & Wand, 2007**). Nevertheless, the employment in different countries of an instrument designed and tested within the cultural context of one specific country and the subsequent comparison of results between countries is, in principle, a quite debatable form of cross-cultural research (**Hofstede & Bond, 1984**).

Furthermore, some researches claim that traditional surveys do not combine well with Likert-type scales (**Schwarz, 1999**). This psychometric scale is the one most commonly used in customer satisfaction questionnaires.

Within this context, anchoring vignettes are proposed as a new survey methodology for studying Quality Management practises across countries (**King et al., 2004**). They emerged as an alternative to overcome the problem of the interpersonal incomparability of survey results, a term that is commonly named as differential item functioning (DIF) within this field of research (**King et al., 2004; Holland & Wainer, 2012**). Similarly, other authors refer to this concept by using the term *reporting heterogeneity* (**D’Uva et al., 2011**). Indeed, many relevant authors have already claimed their potential application to improve cross cultural comparability of survey results (**King et al., 2004; Kristensen & Johansson, 2008**).

Anchoring vignettes can be defined as “*brief descriptions of hypothetical people or situations*” (**King, 2017**). This methodology aims to obtain DIF-free measures by identifying and subtracting the inter-personal incomparable factor, allowing researchers to be able to correct the biased survey results.

Each self-assessment question is combined with several vignettes, which describe different levels of the described variable. Since questions are subjects to interpretation, identical questions are understood widely different among respondents. Therefore, by adding vignettes to the classical self-assessment questions, each respondent’s unique DIF can be estimated and later corrected. This can be accomplished since each respondent reflects its unique DIF consistently when answering both the self-assessment questions and the vignettes. Indeed, the problem with classical self-assessment questions is that the differences among respondent’s answers are originated not only by the DIF but also the actual level, whereas the answers to vignettes only differ because of the DIF.

Vignettes method have already been used in a wide variety of areas, such as political science (**King et al., 2004; Salomon et al., 2004**), international comparisons of health (**King**

et al., 2004; d’Uva et al., 2006) life satisfaction (Christensen et al., 2006), work disability (Kapteyn et al., 2007), state effectiveness in Eastern Europe (Gryzmala-Busse, 2007), problem drinking in Ireland (Soest et al., 2007), job satisfaction (Kristensen & Johansson, 2008), community strength in the United States (Buckley, 2008) or satisfaction with the health care system (Murray et al., 2003; Damacena et al., 2005; Sirven et al., 2008; Poksinska & Cronemyr, 2017).

According to King et al. (2004), two measurement assumptions are required – response consistency and vignette equivalence. *Response consistency* assumes that each respondent “uses the survey response categories in the same way to answer both the anchoring vignettes and the self-assessment questions” (King & Wand, 2007). *Vignette equivalence* is the assumption that “all respondents understand in the same way the level of the variable represented in the vignette, apart from random measurement error” (King & Wand, 2007).

The assumption of *vignette equivalence* is violated if respondents have diverging understanding of the vignettes themselves (Grol-Prokopczyk, 2014). Of course, each person understands and uses response categories in a unique way, but the text descriptions of the vignettes should not leave room to open interpretations.

Furthermore, the existence of DIF in the questions is not address, it only focuses on response-category DIF. In other words, response-category DIF is considered but question equivalence is assumed. This might be one of the weakest points of this methodology since only response-category DIF correction could not be sufficient, further development of the methodology is required to deal with both types of incomparability.

Grol-Prokopczyk goes one step further by making a distinction between *cross-respondent vignette equivalence* and *cross-character vignette equivalence*. The new concept of cross-character vignette equivalence refers to the statement that respondents interpret the actual level independently from a single modification in either the age, gender or background of the vignette character (Grol-Prokopczyk, 2014).

If *response consistency* is violated, the information extracted from the vignette results do no longer serve its purpose. The differential item functioning, which represents the interpersonal comparability of the indicator concerned, can no longer be identified and therefore corrected (D’Uva et al., 2011). By explicitly or implicitly motivating respondents to relate themselves to the characters of the vignettes in terms of personal attributes such as age or sex, *response consistency* can be improved (Grol-Prokopczk, 2014). Nevertheless, despite the recently growing use of anchoring vignettes, only a few attempts to test the *response consistency* assumption can be identified. One of these examples is the study carried out by King et al. (2004), which compared the visual acuity of the Chinese and Slovakian respondents. Similarly, D’Uva et al. (2011), who compared the results extracted from the vignettes with data from the English Longitudinal Study of Ageing (ELSA).

By using objective measures, response consistency can be tested. Both the self-assessment results and the vignette adjusted responses are compared to this third source. Therefore, it can be mathematically determined if after the DIF correction, the obtained results are more consistent with the objective data than the unadjusted self-assessment responses. Unfortunately, vignettes are usually employed when objective measures of the attribute of interest are not available, making it difficult to perform the above described tests.

Cross respondent vignette equivalence has been tested in the literature by checking the rank-order of the vignettes. If vignette equivalence is not violated, respondents are meant to consistently rank-order the vignettes, apart from random measurement error (**Murray et al., 2003; Rice et al., 2011; Grol-Prokopczyk, 2014**).

The number and type of vignettes needed in each study research is not an obvious decision. Increasing the number of vignettes implies less error and variability in the results but also higher survey costs. According to **King et al. (2004)**, the aim is to achieve a balance, considering also both the type of DIF and the data required in the study.

Once survey results are collected, data must be properly transformed. DIF is corrected by using statistical techniques. Both non-parametric and parametric have been developed to achieve DIF-free measures (**King et al., 2004**). The mathematical procedure of the non-parametric model is explained in the following paragraphs.

The general mathematical transformation procedure, for 5-point rating scales, states: for a study with I respondents and J vignettes, the DIF-free self-assessment estimator C_i is constructed, for those respondents who consistently ranked the vignettes ($z_{j-1} < z_j$, for $j=2, \dots, J$), by using the formula below.

$$C_i = \begin{cases} 1 & \text{if } y_i < z_{i,1} \\ 2 & \text{if } y_i = z_{i,1} \\ 3 & \text{if } z_{i,1} < y_i < z_{i,2} \\ \vdots & \vdots \\ 2J + 1 & \text{if } y_i > z_{i,J} \end{cases}$$

Where

i : respondent, $i \in \mathbb{N} \quad i \in [1, I]$

j : number of the vignette $j \in [2, J]$

y_i : self-assessment response from respondent i , $y_i \in [0,5]$

$z_{i,j}$: rate of the vignette j performed by the respondent i $z_{i,j} \in [0,5]$

C_i : DIF-free self-assessment response from respondent i

$j, y_i, z_{i,j} \in \mathbb{N}$

Specifically, for the case of two-vignette studies, the self-assessment responses y can be converted into the non-parametric estimator C by using the transformation table designed by **King and Wand (2007)**, which is illustrated below. It is important to highlight that z_1 represents the “bad vignette scenario” whereas z_2 describes the “good vignette scenario”. Therefore, the vignettes are meant to be rated as $z_1 < z_2$. Response inconsistency refers to the case where the respondents place the self-assessment above the good vignette and below the bad vignette on the scale (**Hopkins & King, 2010**).

Survey responses	$y < z_1 < z_2$				$z_1 < z_2 < y$	$y = z_1 = z_2$
	$y < z_1 = z_2$	$y = z_1 < z_2$	$z_1 < y < z_2$	$z_1 < y = z_2$	$z_1 = z_2 < y$	$y = z_2 < z_1$
	$y < z_2 < z_1$				$z_2 < z_1 < y$	$z_2 < y < z_1$
						$z_2 < y = z_1$
C	1	2	3	4	5	Inconclusive

Table 2. Calculations for the non-parametric estimator C , based on King and Wand (2007)

High accuracy is needed when designing the vignettes since minor changes might have a great influence in the data results. Therefore, an iterative process of testing and design is required before using the vignettes in practice.

3.- MOBILE PHONE MARKETS

The beginnings of the mobile telephony industry can be traced back in the 1980s. In this chapter a short description about how both the Swedish and Spanish mobile phone markets have evolved over the last few decades is included.

3.1.- Introduction

In the European mobile phone services market, differences among countries in the number of national operators have always been noticed. Moreover, there are also wide disparities in the pace at which the gradual liberalization process of the telecom markets has taken place (**Calzada & Estruch, 2011**).

According to the Organisation for Economic Co-operation and Development (OECD), Spain is placed among the countries with the highest prices whereas the Scandinavian countries are found at the bottom of the table (**OECD, 2009**).

In the selection of the mobile phone operator not only monetary criteria but also quality factors such as the quality of the signal or coverage are important (**Vranakis et al., 2012**). Nevertheless, the higher degree of competition achieved in certain countries have displaced the relevance of this factors whereas other, such as the customer-provider relationship, play a more important role. Indeed, most Swedish customers take network coverage for granted (**SKI, 2014**).

Additionally, customer behavioural differences among European countries can be identified. For example, regarding the preference between text messages or phone calls (**Smoreda & Thomas, 2001**).

3.2.- The Spanish market

The Spanish mobile telephony sector, with a high penetration rate, has undergone significant change during the last decades. Nevertheless, a high level of competition in this market is still unachieved, there is a considerable gap remaining with its European neighbours (**Calzada & Estruch, 2011**).

The origins of the Spanish mobile telephony services can be traced back in 1976. The market was governed by *Telefónica* during more than twenty years under a monopoly regimen. In 1994, the pressure from the European Commission urged the Spanish government to open up the market, allowing the entrance of new competitors (**Royal Decree 1486/94 of 1 July**). In that year, *Airtel*, the current *Vodafone*, burst on to the market by acquiring a licence, resulting in a duopolistic market structure. Subsequently, several

operators entered the market, promoting the gradual liberalization of the sector: *Amena*, the current *Orange* in 1998 and *Xfera*, the current *Yoigo* in 2000 (Ramirez et al., 2008). In 2007, with the arrival of the virtual mobile phone operators, the sector achieved the highest growth rate.

Nowadays, the Spanish mobile phone operators sector has an oligopolistic structure, characterised by a small number of suppliers, mainly four. More specifically, the price competition is defined by the Bertrand model. The main idea behind this economic model is that the price is set by the suppliers, letting the customers decide the quantity (Bertrand, 1883). Differences in the price level are justified by differentiation of the service offered.

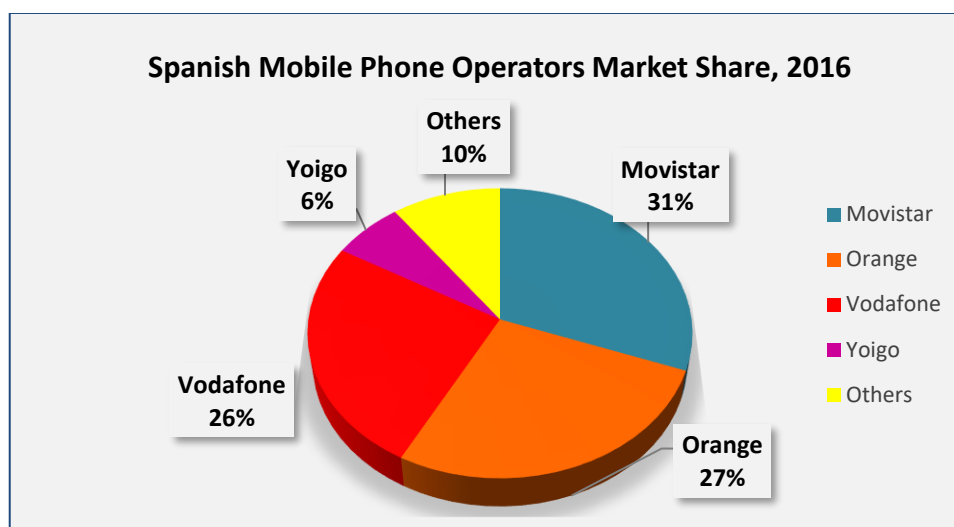


Figure 6. Spanish Mobile Phone Operators Market Share. Source: Own elaboration based on the data from CNMC (*Comisión Nacional de los Mercados y la Competencia*)

In the figure below, the results from the EPSI rating group are presented regarding the Spanish customer's perceptions of their mobile phone operator, based on more than 1100 phone interviews. The results are presented in a 100-point scale.

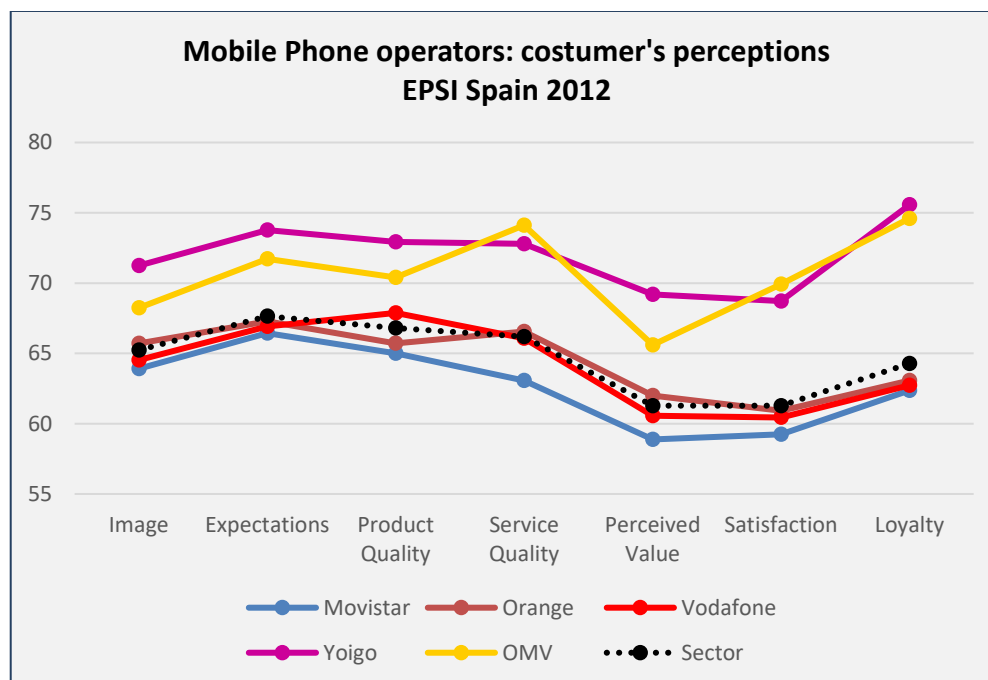


Figure 7. Customer evaluations of their mobile phone operator. Source: Own elaboration based on the data provided by the EPSI Rating, 2012 study.

The study performed by Kelisto in 2014, who interviewed 4626 mobile phone users, shows that despite the fact that 19% of the users are not satisfied with its operator, only 1 out of 4 has changed operator in the last year (**Kelisto, 2014**). The underlying reason behind might be the laziness of the customers, the impossibility to change operator due to contractual agreements or the low level of differentiation among the operators. Indeed, the prices in the Spanish territory have always been among the highest ones in the European zone (**OECD, 2009**).

This argument is supported by the study carried out by Spanish Government Department for Telecommunications and the Information Society in collaboration with the Sociological Research Center (CIS), where the price has always achieved the higher levels of dissatisfaction in the customer rankings. As in the EPSI results, the service quality is one of the highest-scoring aspects. Regarding customer complaints, whereas only less than a quarter are related to intrinsic characteristics of the service, such as mobile coverage; a large percentage is associated with administrative issues (**Calzada & Estruch, 2011**).

3.3.- The Swedish market

In the telecommunications industry, the Scandinavian country has commonly been recognized as a pioneer. This can be attributed to the early collaboration between *Ericsson* and *Telia*, resulting in the establishment of a highly developed telephony infrastructure.

Sweden was the first country to employ a commercially available automated mobile telephone system (MTA), the service was launched in 1956 and was available in Gothenburg and Stockholm (**Dunnewijk & Hultén, 2006**).

Additionally, in 1993 Sweden formally implemented a deregulated telecom market, concluding the lengthy and gradually changing process which started in 1980s (**Hultkrantz, 2002**). The formally liberalization of the market coincided with the establishment of the National Post and Telecom Authority (PTS), regulatory body that is still in force.

The deregulation process ended the market domination held by *Televerket*, the current *Telia*, during a long period. Indeed, in the 1990s, three GSM operators were active in the national mobile phone industry (**Mölleryd, 1999**): *Telia*, *Comviq* and *NordicTel*. The exploitation licences were not given on general auctions but by determining the most suitable candidates.

The mobile virtual network operators (MVNOs) entered the market in 2000, five years earlier than in the case of the Mediterranean country. The increased competition inside the market lead to a reduction in the domestic prices. Nevertheless, the mobile phone market has not still yet achieved a proper degree of competition, mainly due to the high switching costs. In the following illustration, the main mobile operators and their corresponding market share, expressed in percentage, are shown.

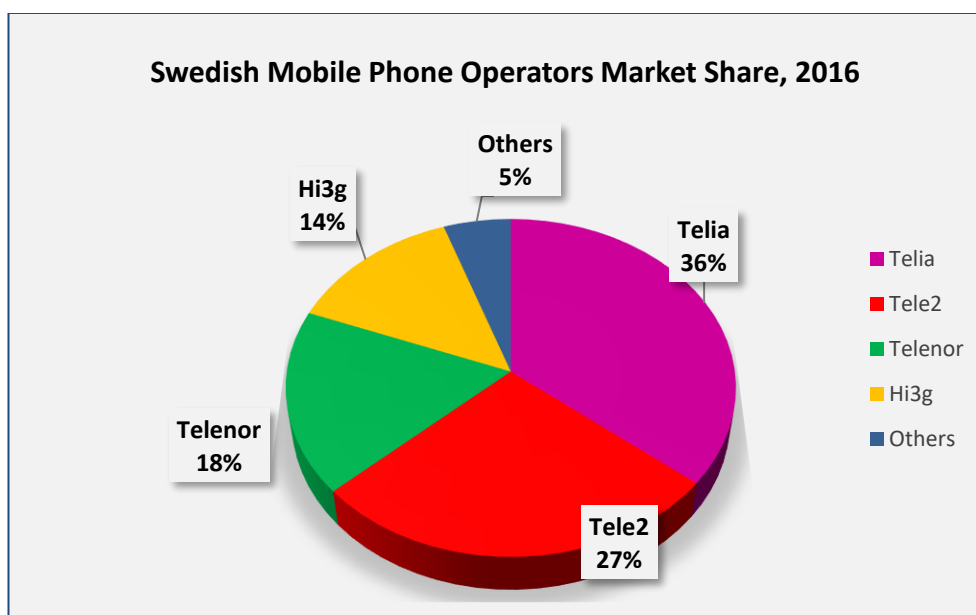


Figure 8. Swedish Mobile Phone Operators Market Share. Source: Own elaboration based on the data from PTS (*Post-och Telestyrelse*)

The results provided by the SKI (*Svenskt Kvalitetsindex*) regarding the satisfaction of the customers with their mobile phone operator are summarised in the figure below. In 2016, Tele2 is the operator which achieves higher results in the complaint handling system and loyalty constructs. The SKI results show that there is a general unrest among the customers, they claim their operators dedicate more effort to attract new customers than to retain the loyal ones.

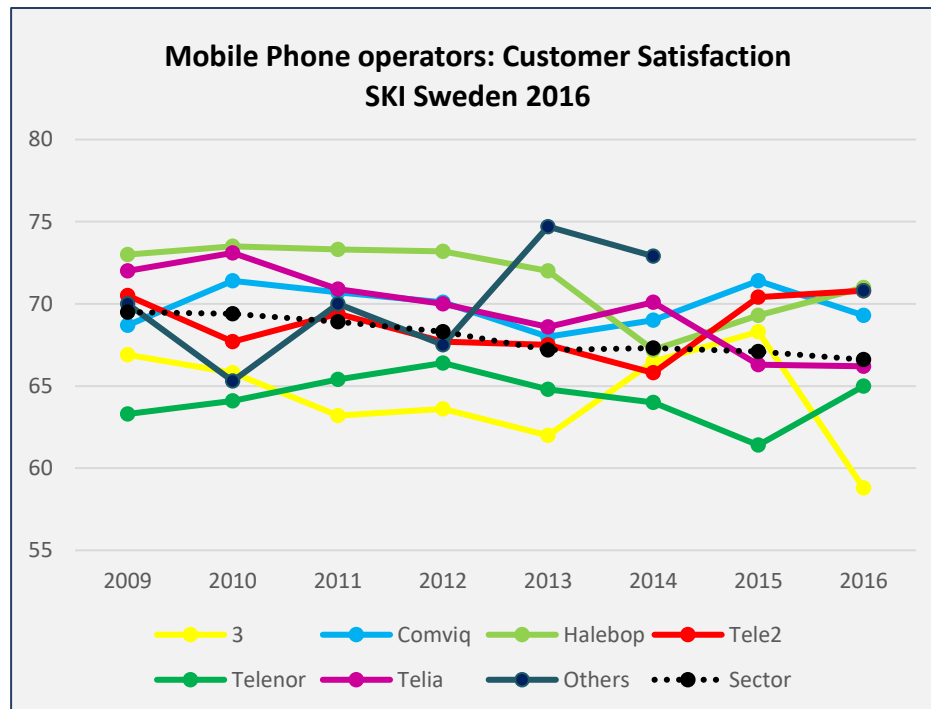


Figure 9. Customer satisfaction of the Swedish mobile phone operator. Source: Own elaboration based on the data provided by SKI (*Svenskt Kvalitetsindex*), 2016 study.

4.- RESEARCH METHODOLOGY

This chapter describe the design of the mobile phone service operator's vignettes used in this study and how they were tested in practise.

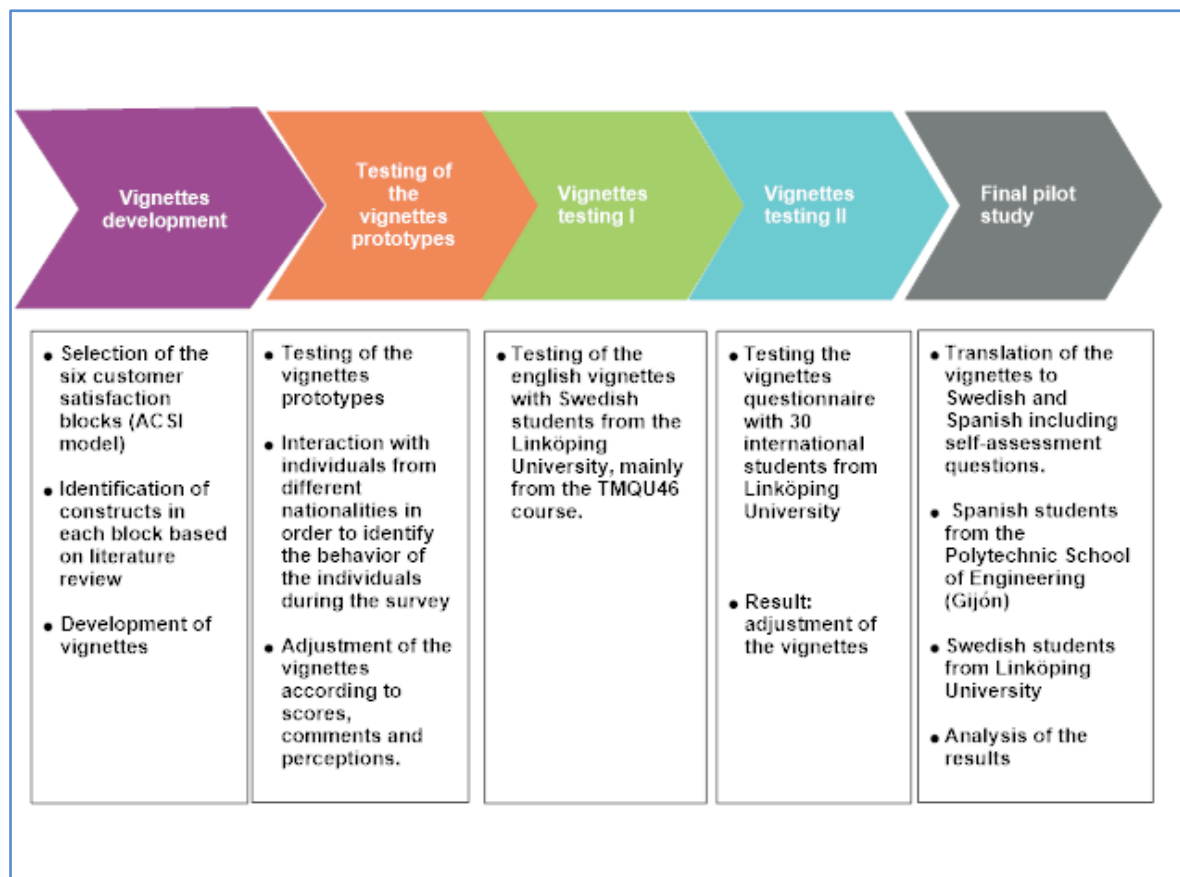


Figure 10. Process of developing, testing and evaluating the vignette method.

The analysis of self-assessment customer satisfaction results constitutes a challenge. Customers might have differing expectations regarding the service and product provided. Therefore, the difficulty lies in identifying the variability in the data originated by actual mobile phone operator's disparities and the one caused by user expectations. Consequently, the anchoring vignettes methodology is developed as a new survey instrument in order to eliminate the DIF of the self-assessment results, enabling comparison between respondents.

The different stages of the research process are summarised in the illustration above. As mentioned in previous chapters, the development of the vignettes is essential to achieve reliable results. Therefore, the research methodology of this study constitutes an iterative process of different phases of design, test, data analysis and revision before the final pilot

study can be carried out. More specifically, the development of vignettes is crucial since minor changes might have a great impact on the data results. Therefore, high degree of accuracy and testing process are required.

The subjects of this study are university students from both nationalities. Previous research studies in Sweden, concerning the vignettes methodology, have addressed different target groups. The results from a Swedish study in the quality measurement in the elderly care industry (**Poksinska & Cronemyr, 2017**) show some limitations of the potential application of this methodology applied to elderly generations. The combination of the complexity and unfamiliarity of the vignette method and the cognitive difficulties related to ageing might not be the optimal combination. Therefore, college students are defined as the target group of this study in order to study and analyse the potential of this methodology among healthier and younger respondents. Moreover, several studies using anchoring vignettes have shown that respondents usually fail to identify themselves with the vignette characters in terms of age and background, even if the corresponding instructions are explicitly given (**Grol-Prokopczyk et al., 2011; Datta Gupta et al., 2010**). This can result in a non-realisation of the key assumption of response consistency. By focusing this study research on university students, the risk of implausible results due to this problem is avoided. Other studies in the literature, such as **Roccato and Ricolfi (2005)** and **Church et al. (2003)** have been using university students as a target group to conduct cross-cultural research, measuring both individual and cultural differences.

The initial phase of the study focuses on the development of a model for applying anchoring vignettes in customer satisfaction measurement, in the context of mobile phone operators. The seven blocks from the ACSI model were chosen, i.e. *Product Quality (PQ)*, *Service Quality (SQ)*, *Customer Expectations (CE)*, *Perceived Value (PV)*, *Customer Satisfaction (CS)*, *Customer Complaints (CC)* and *Customer Loyalty (CL)*. For each block, several dimensions were selected as the constructs to investigate the effectiveness of the vignette methodology. The dimensions are based on previous customer satisfaction studies in the mobile industry context. After a thorough analysis of the literature review, the categories were defined from the 13 selected articles.

After the design of the vignettes, several testing phases are performed as an iterative process in order to improve the questionnaire and the quality of the results. The testing phases are performed not only with Swedish and Spanish respondents but also university students from other nationalities. Once a passing rate is achieved, guaranteeing the stability of the vignettes, the final stage of the study is carried out among Spanish and Swedish students. The data of the final pilot test is later transformed into a DIF-free parameter (C) according to **King et al. (2004)**, by comparing between the ranking of the vignettes (z_1, z_2) and the self-assessment scores (y). A comparative analysis between the Swedish and the Spanish students is performed as well as the suitability of the methodology.

4.1.- Vignettes development

During the first phase of the project, the design of the vignettes was developed. As previously mentioned, the design of vignettes should be done carefully to achieve the appropriate results. It is important to stress the fact that the main objective of survey design is to ensure both *response consistency* and *vignette equivalence* (King et al., 2004) instead of formulating vignettes without the presence of the DIF factor.

Consequently, the development of vignettes should strive to achieve a uniform understanding by culturally different respondents. To the extent possible, the description of the vignettes should contain nothing but essential information concerning the target variable. Respondents are expected to identify themselves with the person described in the vignette but special attention needs to be devoted to the contextual details, avoiding the introduction of extra dimensions which might influence respondent's answers.

Therefore, the main goal when writing the vignette's description is to maintain the actual level of the target attribute, while adapting the contextual information to each respondent's profile. Respondents should identify themselves with the vignettes characters. By avoiding unnecessary and misleading information, such as the sex or the age, the Differential Item Functioning (DIF) remains unchanged because respondents would find it easier to response in the same way to both the vignettes and the self-assessment questions, i.e. response consistency.

As a consequence, the sex of the vignettes' characters constitutes a conflictive point when writing the description of the vignettes. Indeed, previous studies have shown that the gender of the vignettes character might influence the rating results (Jürges & Winter, 2013). In theory, it is suggested that the gender should be identical to the one of the respondent. This might be done in future research by dynamically adjusting vignettes to the attributes of the respondents. In other words, each respondent is given customized vignettes based on the personal information they provide. For practical reasons, in this research study adaptive vignettes are avoided. Nevertheless, to not influence the ranking of the vignettes, the sex of the persons described in each of the dimensions measured remains equal in both vignettes. Additionally, the names are adjusted in the final pilot study to suit the context of each country. Previous surveys have already used the same vignettes to all respondents (Grol-Prokopczyk, 2014), without adjusting the sex of the vignettes characters to be the same as the respondent.

In attempt to positively influence the response consistency, the names of the characters described in the vignettes were culturally adapted. The name selection was made on the basis of the top-100 most common names list on 2016, extracted from the Spanish (National Institute of Statistic, 2016) and Swedish census (Statistiska Centralbyrån, 2016), respectively.

The number of vignettes selected for this research study is two in each block. Including more vignettes could have provided additional information but it also increases the likelihood of obtaining inconsistencies in the ranking results (King & Wand, 2007). Using only one vignette was discarded because it requires a tedious design process of the self-assessment question. In an attempt to enhance the response rate, the final decision was to use two vignettes per block, avoiding further exacerbation of the lengthy and demanding questionnaire. This choice is consistent with the main purpose of the research, i.e. the analysis of the vignette methodology itself. Whereas one of the vignettes attempts to represent a “good scenario”, the other one refers to a “bad scenario” (Cronemeyr & Poksinska, 2017).

The non-parametric method (King, 2004) is selected in this study research due to its simplicity. The underlying idea of this approach is to mathematically convert the self-assessment results into a comparable parameter based on the relative rating between the self-assessment questions and the vignettes. The mathematical procedure of the non-parametric method is explained in the previous section, *table 2*.

The ACSI model framework constitutes the starting point for selecting the customer satisfaction dimensions. Therefore, *customer expectations*, *perceived quality*, *perceived value*, *customer satisfaction*, *customer complaints* and *customer loyalty* are the six blocks analysed in this research study. From the literature review of studies regarding customer satisfaction in the context of mobile phone service operators (Gerpott et al., 2001; Lim et al., 2006; Cheng & Cheng, 2012), different dimensions were identified, in each of the ACSI blocks, as the constructs for the vignette development. In the table below, the customer satisfaction ACSI blocks and their related selected constructs are shown.

ACSI block	Constructs
Product Quality (PQ)	Pricing structure Billing system Network quality Additional services
Service Quality (SQ)	Customer service availability Staff skills Staff attitude
Customer Expectations (CE)	Quality Customer service Personal requirements Reliability

Perceived Value (PV)	Relationship between prices and the received quality-service
Customer Satisfaction (CS)	Overall satisfaction Exceeding vs not meeting customer's expectations Comparability with the ideal mobile service operator
Customer Complaints (CC)	Frequency of complaints Ease of processing Handling of complaints
Customer Loyalty (CL)	Intention to stay vs intention to terminate the contract Positive feelings Intention to recommend Price tolerance

Table 3. ACSI blocks and the constructs selected from literature review for the vignettes development

Consequently, the development of vignettes is a very important step to achieve a reliable survey method. Nevertheless, the initial design of the vignettes is not definitive, testing and revision procedures are essential to ensure the stability of the vignettes (**Kind & Wand, 2007**). Indeed, the development of the vignettes in this research study was done iteratively and it took several versions before the final vignettes were designed.

In the context of customer satisfaction surveys, it has been claimed that point scales are more suitable than Likert-type scales since they allow respondents to make a more accurate judgment (**Fornell et al., 1996**). Specifically, a continuous scale from 0 (*very poor*) to 100 (*excellent*) was selected for the assessment of the vignettes in this study. This allows respondents to freely position themselves on the scale, although results are collected as natural numbers.

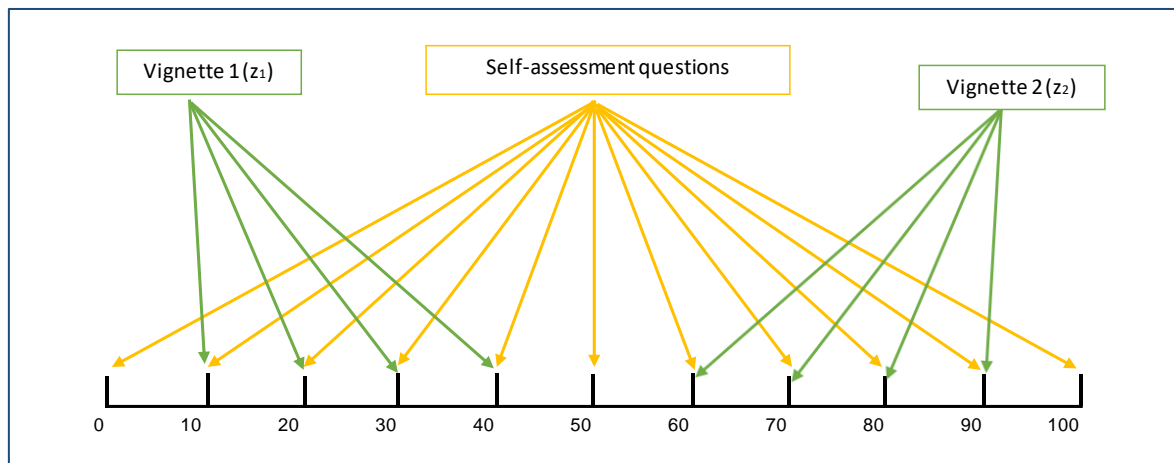


Figure 11. Rating of vignettes and self-assessment questions on the continuous scale

Positioning the vignettes at the ends of the scale should be avoided, i.e. vignettes should neither be extremely bad neither extremely good. The reason behind is to give respondents the option to place themselves either higher or lower than both vignettes.

Response equivalence is measured in this research study by calculating the percentage of respondents rating the set of vignettes in the right order. A pass rate higher than 90% is established to ensure response equivalence assumption (**Poksinska & Cronemeyr, 2017**).

In this stage of the research, it is necessary to observe and assess in detail how respondents react to the methodology as well as collect comments from the individuals to improve the design of the vignettes before testing them out. In this early stage, difficulties were already identified regarding the unfamiliarity with the methodology and the more demanding effort from the respondent. The questionnaire was perceived as uncommon and strange as well as many respondents complained about its length. Rewording of the stories described in the vignettes as well as structural modifications were made based on both the experimental observation of the respondent's interaction and the results obtained.

4.2.- Testing of the vignettes

One of the most challenging aspects regarding the development of the vignettes is to capture the essence of the target attribute while keeping the vignette description short (**Van Soest et al., 2007**). High accuracy is required due to the sensitivity of the results to minor changes. Therefore, the descriptions must be complete, guaranteeing vignette equivalence. In other words, the text descriptions should not give rise to doubts concerning different possible interpretations. Since achieving both clarity and concision is a tedious task, an experimental environment is required (**Kapteyn et al., 2011**) before their practical usage. Therefore, several testing phases were required before the pilot test was carried out.

The employment of an online platform was selected to conduct the testing phases, where invitations for the survey were sent via e-mail. The purpose of this stage is to guarantee stable vignettes for the final comparative study between the two countries. Therefore, only the English version of the vignettes were included in the questionnaire. Moreover, respondents were given the possibility to give additional comments in each of the blocks to collect feedback information for the posterior adjustment of the vignettes.

The two vignettes are displayed in random order. Ordering the vignettes according to the “good scenario” followed by the “bad scenario”, might lead the respondents to repeat the same pattern through the survey, affecting negatively the results.

4.2.1.- Vignettes testing I

The testing of the vignettes was done in two different stages. Initially, only Swedish students from the University of Linköping were asked to test the vignettes from March to April 2017. The vignettes were first developed and tested in English. In the first testing phase, 20 students completed the questionnaire, mainly students from the course “*Quality Management*” (TMQU46). Half of the students were female and only 22% of the respondents lived abroad longer than one year. The total response rate of this stage was very low. Despite the questionnaire was sent out to 95 students, only 24% answered the survey, being 3 incomplete responses. The results from the testing phase I, corresponding to the 20 complete responses, are summarised in the table below. The data provided is based on a 0-100 scale.

Customer Satisfaction Block	Pass rate	Vignette	Mean	SD	Extreme values
Product Quality (PQ)	89%	GV	42,06	17,21	0%
		BV	24,28	7,75	0%
Service Quality (SQ)	100%	GV2	83,39	12,31	15%
		BV2	13,56	14,13	35%
Perceived Value (PV)	100%	GV3	58,28	11,60	0%
		BV3	33,50	15,14	5%
Customer Satisfaction (CS)	100%	GV4	66,61	15,15	5%
		BV4	23,00	13,49	15%
Customer Complaints (CC)	100%	GV5	57,94	16,46	0%
		BV5	12,67	10,54	40%
Customer Loyalty (CL)	84%	GV6	79,56	16,87	25%
		BV6	37,72	21,44	5%

Table 4. Results from vignette testing I

The results were statistically analysed and changes were done accordingly. A pass rate of 90% was achieved in the SQ, PV, CS and CC blocks. Nevertheless, the pass rate in both the Product Quality and the Customer Loyalty was lower than the target value.

Simple summary statistics were generated to mathematically analysed the results of this stage. The mean provides a quick description of the results. The arithmetic mean indicates the average of all responses, giving an indication of the general score in each vignette block.

In general, the mean values of the good vignettes seem to be quite low, half of the good vignettes have average values lower than 60. The target values are situated in the interval of 60-70. Furthermore, the mean differences between the two vignettes were considered too narrow.

The standard deviation is a statistical measure of dispersion. It shows the spread of the variation of the responses, i.e. how widely dispersed the data are around the average. The higher the standard deviation, the greater the variance, i.e. the responses are spread out. Therefore, high standard deviation values are not desired since they might represent that some vignette constructs are understood differently among the respondents, requiring further revision.

It is also worth mentioning that extreme values are not wanted. As previously mentioned, it is not aimed that vignettes are rated at the end of the score since respondents might be able to rate their own customer experiences either higher or lower than both vignettes. Values higher than 90 or lower than 10 are considered as outliers and therefore are intended to be avoided. In addition, extreme values might affect considerably the statistical results, i.e. the pass rate, mean and standard deviation; especially in small samplings of data like the ones of this study.

Consequently, small changes were made in order to increase the stability of the results and avoid extreme values. Due to the low mean value and the high standard deviation, the good vignette of Product Quality is modified to aim for higher scores. In the Service Quality block, both vignettes were rated close to the ends of the scale. Therefore, adjustments to worsen the good vignette scenario and to enhance the bad scenario are implemented before the next testing stage. The vignette describing the bad customer complaints scenario is also reformulated to both increase the average scores and to avoid extreme low values in the following phases. Similarly, the good vignette scenario of the perceived value block is reworded to increase the mean value.

As an illustrative example, the rewording of the bad vignette of the Service Quality block is shown below:

Original vignette	<i>Mike is a tourism student who works part-time as a trip organizer. His work requires that he travels abroad from time to time with the tourgroups. Mike pays for one of the most expensive mobile subscriptions but he gets free roaming inside Europe. The call quality is good, though sometimes he gets problems with network connection. The customer service is helpful but the waiting time for the call center is long.</i>
Vignette after testing I	<i>Mike studies tourism and works part-time as a trip organizer. Mike's work requires that he travels abroad from time to time with the tour groups. Mike selected an expensive subscription but he gets free roaming inside Europe. The call quality is good but sometimes the internet connection is slightly slower. The customer service is very helpful but the waiting time can be long.</i>

Figure 12. Bad Vignette scenario of the Service Quality Block. Updated version after testing phase I

4.2.2.- Vignettes testing II

After the revision of the vignettes a second testing phase was carried out. In this stage of the study, the vignettes were tested by international students from the University of Linköping, mainly from the courses “Six Sigma” (TMQU04) and “Swedish for foreign students” (THSV09).

Nationality	Percentage
Canada	3%
Austria	3%
France	8%
Germany	13%
India	15%
Italy	5%
Spain	38%
Sweden	10%
Switzerland	3%
United Kingdom	5%

Table 5. Nationalities of survey respondents. Testing phase II

Due to the low response rate from the previous phase, the questionnaire was sent to 127 students. Despite 48 % of the students undertook the study, only 31% of the responses were complete. The length of the questionnaire combined with the complexity and unfamiliarity with this methodology might be the reasons behind such a big amount of incomplete responses. Nevertheless, the lack of comments and feedback from the respondents inhibits to verify the validity of this assumption.

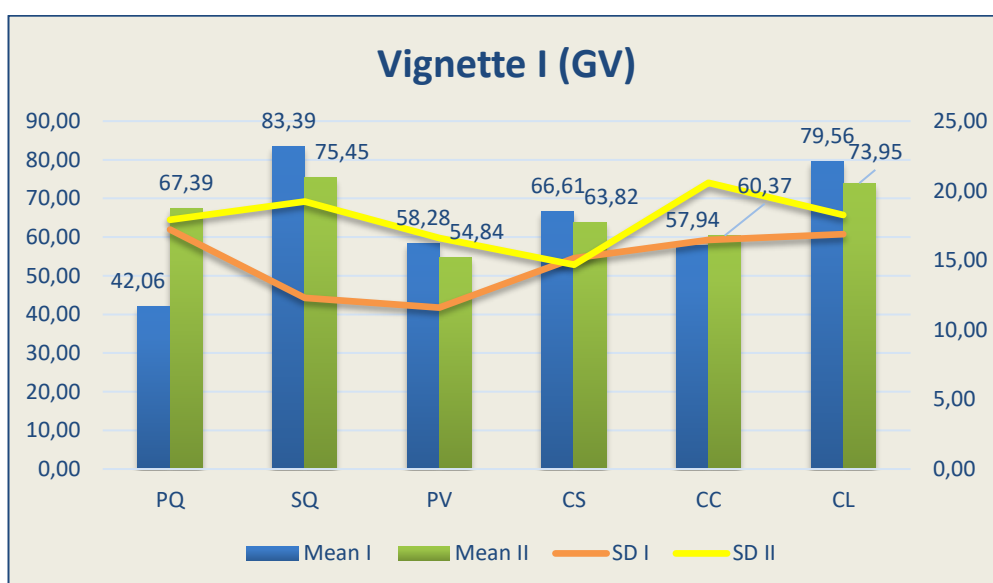
As shown in the table below, respondents from ten different nationalities ranked the vignettes during this testing phase. The Spanish nationality has the greater influence on the statistical results, with a participation percentage larger than one third of the sampling.

The statistical results from this testing phase are summarised in the table below. In this stage, the pass rates for the vignettes in Product Quality (PQ) and Customer Loyalty (CL) improved, achieving in all the categories the target value of 90%.

Customer Satisfaction Block	Pass rate	Vignette	Mean	SD	Extreme values
Product Quality (PQ)	97%	GV	67,39	17,92	0%
		BV	22,61	14,36	8%
Service Quality (SQ)	97%	GV2	75,45	19,23	18%
		BV2	19,63	17,44	34%
Perceived Value (PV)	97%	GV3	54,84	16,61	0%
		BV3	28,42	15,05	11%
Customer Satisfaction (CS)	95%	GV4	63,82	14,68	0%
		BV4	21,61	15,52	26%
Customer Complaints (CC)	95%	GV5	60,37	20,57	11%
		BV5	20,42	15,86	29%
Customer Loyalty (CL)	90%	GV6	73,95	18,26	18%
		BV6	40,76	22,63	5%

Table 6. Results from vignettes testing II

In the following graphs, a comparative analysis between the two testing phases is illustrated. The mean values are displayed on a bar chart whereas the standard deviation of the two tests are presented as a line chart.



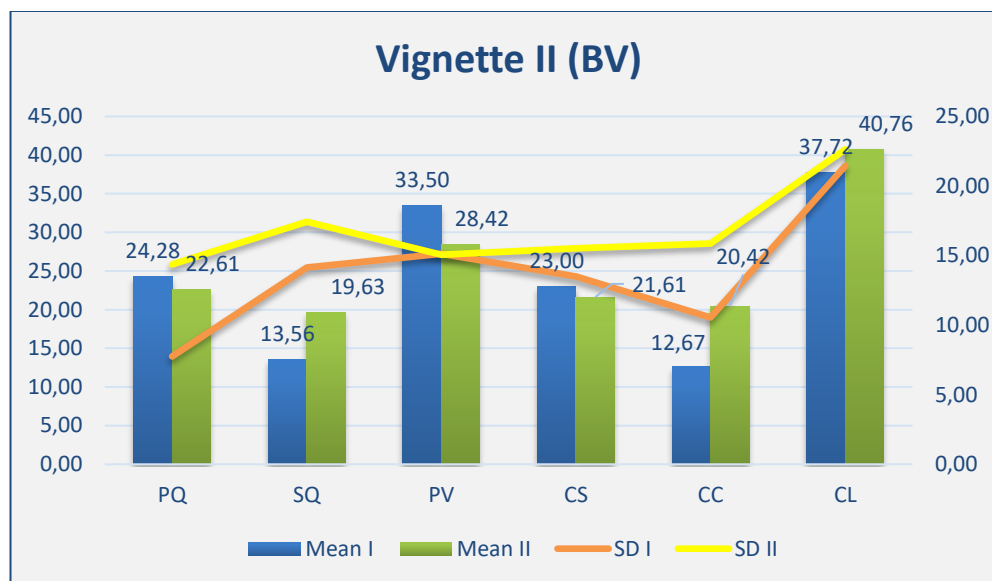


Figure 13. Comparative analysis of the testing phases. Results separated by vignettes

It can be seen from the numerical results, that the adjustments made after the first testing phase improved the rating of the vignettes. A higher average value of the good vignettes scenario in the Product Quality can be observed. In addition, the narrow gap between the two vignettes in the Service Quality dimension is widened. However, a slightly lower average value resulted in the good vignette scenario of the Perceived Value dimension. It can be inferred that the rewording made in this category lead the respondents to give a worse score to the bad vignette scenario instead of ranking the vignette I higher.

On the other hand, the standard deviation in almost all the categories increased. Since respondents from different nationalities took part in this testing phase, the dispersion and variation of the responses might be due to cultural factors. By analysing the responses of only Swedish students, the standard deviation either decreases or remains unaffected. Nevertheless, comparing the results of different sample sizes should be done carefully.

Consequently, a degree of caution is required for the final pilot test since *vignette equivalence* might be violated, increasing the probability of obtaining unreliable results. If this is indeed the case, the variability in the results is caused by different understanding of the actual level of the variable represented in each block.

Due to the fact that the vignettes are quite stable, no modifications previous to the final pilot test are undertaken.

4.3.- Final Test

The final test is the most critical stage of the project. Cross-cultural research commonly encounters hindrances such as low response rates or survey equivalence (**Harzing, 2001; Rao, 2009**).

The final test was carried out during the month of May. In this stage of the study, students from the Polytechnic School of Engineering in Gijón and the University of Linköping were selected to perform the comparative analysis. In an attempt to achieve a similar profile among the respondents, avoiding adding variability in the results, only students from the Engineering program were invited to participate in the Swedish questionnaire.

One of the decisions to be taken by the researcher, prior the final test, is the order of the questions in the survey. Indeed, the interpretation, and therefore the corresponding response, of a certain survey question is highly influenced by the previous ones (**Schwarz, 1999**). There is no clear consensus in the literature on what the optimal order should be.

On the one hand, some researchers in the field of anchoring vignettes have suggested to ask the self-assessment questions prior the rating of the vignettes (**King, 2004**). The underlying reason supporting this argument is to avoid enhancing survey priming (**Buckley, 2008**). Another argument in favour of this question order is that although theoretically, individuals are meant to having internalised the vignettes information before answering the self-assessment question, this might be unrealistic in practise.

On the other hand, presenting the vignettes to the respondents prior the self-assessment questions has lately been proposed as a way to increase the efficiency of this methodology. Indeed, previous studies have achieved improvements in the obtained results when placing the vignettes first (**Hopkins & King, 2008**). By introducing the vignettes first, the respondents are given a reference frame, helping them to position themselves on the scale. Moreover, it might assist with the understanding of the concepts asked (**Gerber et al., 1996; Hopkins & King, 2010**). This option is the one chosen in this research study, the self-assessment questions are placed immediately after the corresponding vignettes. Respondents were asked to make their evaluations on a point scale between 0 and 100.

The questionnaire, both the vignettes and the self-assessment questions, was first developed in English and then translated accordingly into Spanish and Swedish by the researcher. To ensure the accuracy of the translations the help of a Swedish student was required. Regarding the Spanish questionnaire, a final review from another Spanish student was carried out in order to ensure the most accurate translation possible to avoid a negative influence in the results of this cross-cultural study.

For the Spanish study, the researcher requested the Director of the Polytechnic School of Engineering in Gijón to invite the respondents directly via e-mail. The support of an influential figure might be the reason for enhancing the response rate, achieving 50 completed responses within a period of five days. Moreover, the fact that the researcher of the study belongs to that university might have also had a positive impact on the response rate. Since Spain has a IDV index equal to 51, it can be regarded as a quite collectivist society; individuals might be more willing to contribute in the research of someone from their own group.

On the other hand, achieving a decent response rate among the Swedish students constituted an issue. To achieve an acceptable number of answers, the target group was broadened. Therefore, students from the following courses were asked to participate in the study: “*Logistik och kvalitetsutveckling*” (TETS44), “*Ekonomisk analys:besluts-och finansiell metodik*” (TPPE24), “*Logistik och kvalitet inom vården*” (TETS56), “*Process och implementering*” (TDEI21).

5.- FINDINGS

This chapter describes the findings obtained from the statistical analysis of the results, regarding the vignette methodology and the linkages between the dimensions of the ACSI model.

The statistical results from the final testing study are summarised in the tables below. A total number of 51 completed responses was achieved in the Spanish study whereas 42 completed responses were collected in the Swedish questionnaire. The average time to complete the questionnaire is similar in both countries, 8-9 minutes. The majority of the respondents were aged between 21 and 25, at a rate of 75% and 93%, respectively. The predominant sex group is the male one in both studies. Nevertheless, a more equitable participation is observed in the Mediterranean country, with a female participation equal to 47%. Additionally, only 10% and 18% of the respondents state having living abroad during a period longer than one year.

The collected results are summarised in the tables below, distinguishing between the Spanish and the Swedish questionnaire. The data provided is based on a 0-100 scale.

Customer Satisfaction Block	Pass rate	Vignette	Mean	SD	Extreme values
Product Quality (PQ)	98%	GV	68,51	17,40	0%
		BV	27,33	16,73	13%
		SA	65,45	17,08	
Service Quality (SQ)	100%	GV2	80,04	13,69	15%
		BV2	18,33	13,42	25%
		SA2	60,96	21,73	
Perceived Value (PV)	98%	GV3	54,22	16,69	0%
		BV3	21,63	15,03	19%
		SA3	64,33	19,37	
Customer Satisfaction (CS)	100%	GV4	64,39	15,38	8%
		BV4	18,49	12,95	19%
		SA4	67,10	16,32	
Customer Complaints (CC)	100%	GV5	50,12	19,53	0%
		BV5	19,92	15,65	27%
		SA5	47,08	16,62	
Customer Loyalty (CL)	96%	GV6	75,10	13,15	12%
		BV6	39,90	18,35	6%
		SA6	56,00	20,76	

Table 7. Results from the Spanish questionnaire

Customer Satisfaction Block	Pass rate	Vignette	Mean	SD	Extreme values
Product Quality (PQ)	95%	GV	63,55	21,08	0%
		BV	27,50	15,40	7%
		SA	70,90	14,45	
Service Quality (SQ)	95%	GV2	74,83	24,22	24%
		BV2	22,25	17,90	26%
		SA2	55,08	15,41	
Perceived Value (PV)	98%	GV3	55,40	17,48	0%
		BV3	26,55	14,23	14%
		SA3	63,53	20,23	
Customer Satisfaction (CS)	98%	GV4	65,03	18,73	7%
		BV4	21,68	11,24	14%
		SA4	71,03	16,81	
Customer Complaints (CC)	98%	GV5	52,63	21,64	2%
		BV5	17,15	14,20	31%
		SA5	50,13	15,23	
Customer Loyalty (CL)	93%	GV6	78,95	17,98	24%
		BV6	44,10	21,99	5%
		SA6	59,80	25,46	

Table 8. Results from the Swedish questionnaire.

The target pass rate value of 90% is achieved in all the categories in both studies. Nevertheless, it is important to highlight the presence, in both studies, of a high percentage of extreme values in the bad vignette of the Service Quality and Customer Complaints block. This might indicate that the design of those vignettes is not very robust and reliable. Better results could have been achieved if a rewording was performed after the testing phase II, describing a slightly better bad scenario.

5.1.- Data transformation

A mathematical procedure is carried out to transform the self-assessment responses into DIF-free parameters C . A comparison analysis between both distributions is performed to evaluate the reliability of the vignette methodology.

It is important to highlight that the comparison analysis is performed in relative terms, i.e. percentages, since the number of the responses is unequal in the two distributions.

The mathematical procedure is based on the methodology developed by Gary King (King & Wand, 2007). Nevertheless, the methodology is adjusted according to the features of this study, i.e. a 100-point scale.

In the following paragraphs a more exhaustive analysis of each of the ACSI blocks is performed. The figures show both the absolute self-assessment results (X) obtained directly

from the questionnaires and the relative responses (C), free of the interpersonal factor. Whereas the customers' evaluations are reported on a 100-point scale, the results are presented on a 5-point scale to enable comparisons with the DIF-free parameter C.

Regarding the Product Quality (PQ) dimension, most respondents from both countries have a positive image of the PQ provided by their mobile phone operators. The average scores from the absolute responses are $PQ_{x_{sw}}=4,02$ and $PQ_{x_{sp}}=3,76$.

Evaluating the Swedish results, 35% of the responses were upgraded after the data transformation ($C>X$) whereas only 25% was worsen ($C<X$).

On the contrary, in the case of Spain, the amount of self-assessment responses that are placed closer to the right end of the scale equals the percentage of those ones that are shifted towards lower scores. The large majority of the responses, 53% do not experience any variation after the transformation process ($C=X$).

In both cases, the average values for the relative responses are slightly higher than the mean values for the absolute responses; $PQ_{c_{sw}}=4,17$ and $PQ_{c_{sp}}=3,84$. Therefore, it can be inferred that the transformation provides a slightly more positive perception of the Product Quality.

The two distributions of the Service Quality (SQ) dimension results show a central tendency, more pronounced in the Swedish study. The average scores from the absolute responses are $SQ_{x_{sw}}=3,24$ and $SQ_{x_{sp}}=3,51$.

In the case of Sweden, this central tendency is enhanced by the transformation process. The average value for the relative responses is slightly lower; $SQ_{c_{sw}}=3,11$ while the degree of dispersion is significantly increased, from a value of 0,69 to 0,86. In this dimension, only 23% of the responses were upgraded after the data transformation ($C>X$)

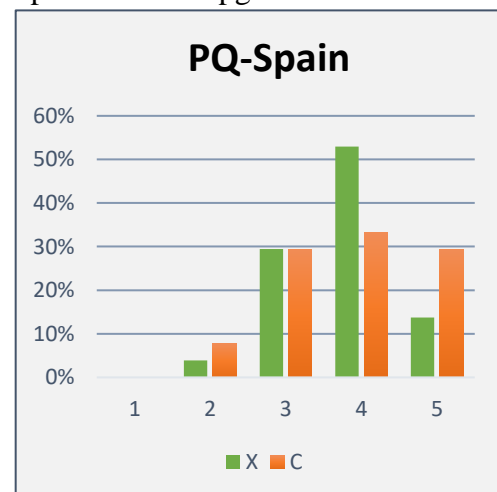
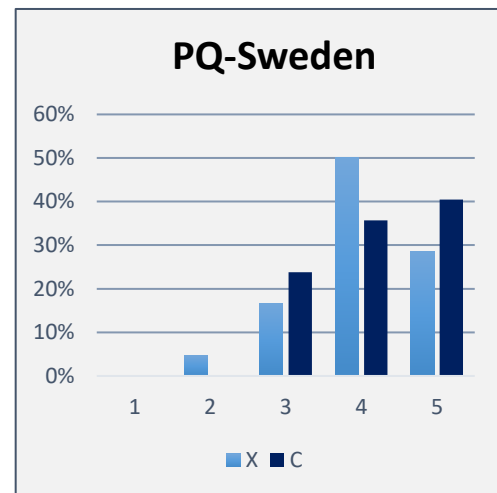


Figure 15. Absolute (X) and relative responses (C): Spain, Product Quality

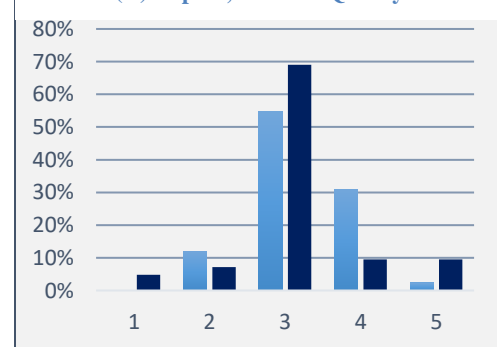


Figure 16. Absolute (X) and relative responses (C): Sweden, Service Quality

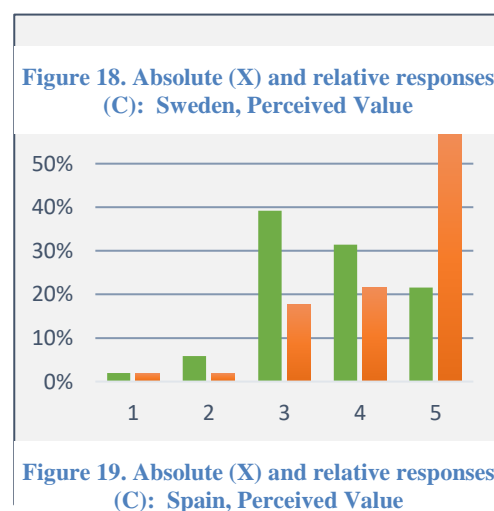
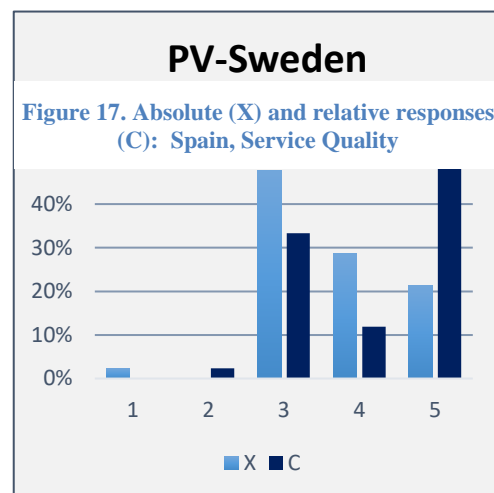
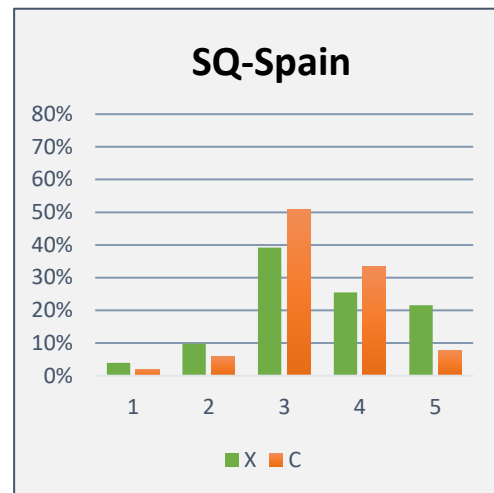
whereas 30% was worsen ($C < X$). It is important to highlight that 10% of the Swedish students who rated the Service Quality of their operator as average ($X=3$) perceive the SQ of their operator lower than the scenario described in the bad vignette ($C=1$).

On the contrary, evaluating the Spanish results, the transformation process does not affect 59% of the data ($C=X$); only 14% of the responses have been increased ($C > X$). This results in a slightly lower average value $SQ_{C_{sp}}=3,39$. In the opposite manner to the Swedish study, the transformation process decreases the degree of data dispersion, from a value of 1,1 to 0,80. Therefore, the average value is more representative in the distribution of the transformed data.

More distinguishable variations after the transformation process are observable in the Perceived Value (PV) block.

Among the Swedish students, 40% of the responses have been increased ($C > X$) whereas 60% do not experience any variation. Therefore, no response has been decreased by the DIF correction. More than half of the answers received the highest relative value ($C=5$). This implies that most of the Swedish respondents consider that the value for money ratio offer by their mobile phone operator is better than the situation described in the good vignette scenario included in the questionnaire.

Analysing the Spanish results, the mean value of the absolute self-assessment responses is similar to the value obtained in the Swedish questionnaire ($PV_{X_{sw}}=3,67 > PV_{X_{sp}}=3,65$). Nevertheless, after the transformation process, a higher mean value is obtained among the Spanish respondents ($PV_{C_{sw}}=4,14 < PV_{C_{sp}}=4,29$). Indeed, 51% of the responses have been increased, 69% of which receive the highest DIF-free value ($C=5$).



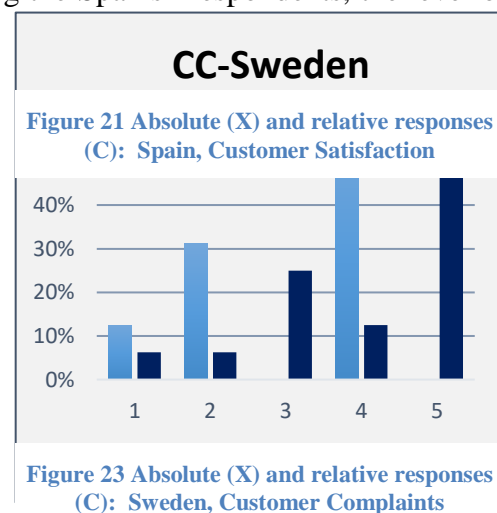
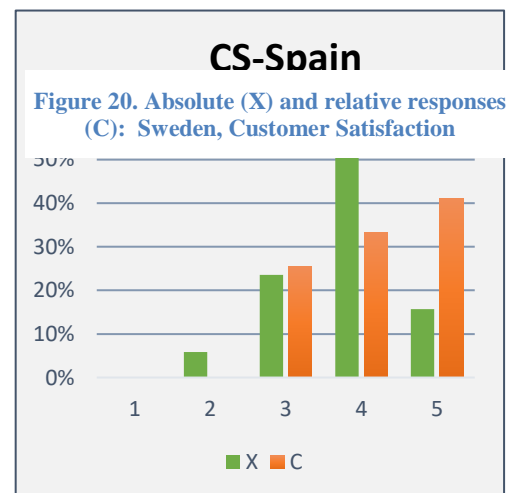
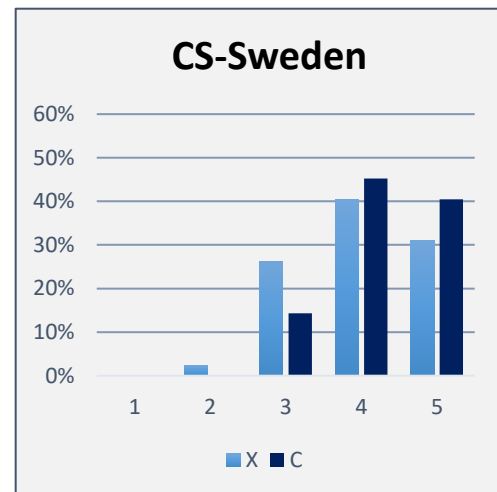
This implies that 35% of the respondents who evaluate the quality-price ratio of their operators in the central area of the scale ($X=2, 3, 4$), have a better perception of their operator regarding this dimension than the good vignette scenario. Caution is required in the interpretation of the results of this dimension since the gap between the rating of the two vignettes, i.e. bad vignette and good vignette, is narrow.

The Customer Satisfaction (CS) block is the centrepiece of the study. The ACSI dimensions explained above are regarded as the antecedents of this construct. The mean averages of the absolute responses ($CS_{X_{sw}} = 4$ and $CS_{X_{sp}} = 3,80$) are increased after the transformation process ($CS_{C_{sw}} = 4,26$ and $CS_{C_{sp}} = 4,16$). Therefore, it can be said that this data correction enhances the positive attitude of the customers in both countries, resulting in higher levels of satisfaction. Most self-assessment responses fall into the 4 and 5 categories, in both absolute and relative scales. Indeed, it is remarkable that after the data correction, the poor levels of customer satisfaction disappear from the distribution ($C=1$ or 2). Consequently, it seems like customers from both countries tend to rate their level of satisfaction lower than the actual level.

In the case of Sweden, 85% of the absolute responses correspond to the higher categories of the DIF-free scale ($C=4$ or 5). Among the Spanish respondents, the level of satisfaction with the mobile phone operators is lower, 74% ($C=4$ or 5).

Following the ACSI model, the consequences of Customer Satisfaction are reflected in Customer Complaints and Customer Loyalty.

Concerning the Customer Complaints block, 38% of the Swedish students expressed having complained to their corresponding mobile phone operator, a percentage which becomes higher among Spanish respondents, 47%. Therefore, it is



important to highlight that the reliability of the results in this dimension is weaker due to the lower amount of self-assessment responses.

Students from both countries assess their own complaint handling experiences more negatively than the other ACSI blocks. This is observable in the mean values of the absolute responses distributions ($CC_{X_{sw}} = 3$ and $CC_{X_{sp}} = 2,81$).

This can be easily observable in the Swedish results. Whereas no student gives their complaining experiences the highest absolute score ($X=5$), after the data correction, 50% of the responses fall into the highest category ($C=5$). Therefore, the data correction process provides a more positive point of view of their operator's handling systems, better than the one described in the good vignette. Moreover, the dispersion in the relative responses distributions is high. Consequently, it seems that the interpersonal differences have a bigger influence in this ACSI block.

The second consequence of the Customer Satisfaction is Customer Loyalty (L). As shown in the corresponding figures, a high degree of dispersion is observable in both the absolute responses (X) and the DIF-free data (C).

In the case of Sweden, 50% of the responses were worsen ($C < X$) whereas only a 3% was upgraded ($C > X$). This results in a lower mean value of the relative responses ($L_{C_{sw}} = 2,95$). Most Swedish respondents assess their loyalty between the two vignettes, i.e. poor loyalty scenario and strong loyalty scenario ($C=3$).

Focusing on the Spanish customers, the distribution of corrected data shows a high degree of dispersion ($SD=1,32$). Therefore, the interpersonal differences are more observable in this dimension. More than a half of the responses do not experience any variation due to the transformation process ($C=X$). Nevertheless, the mean value in the relative responses is lower ($2,88 = L_{C_{sp}} < L_{X_{sp}} = 3,22$) since 33% of the responses have been decreased ($C < X$).

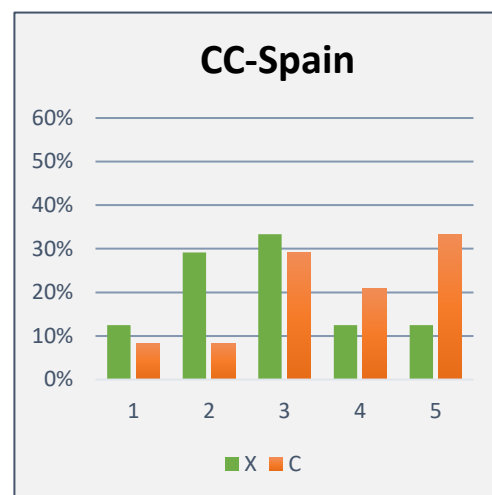


Figure 24. Absolute (X) and relative responses (C): Sweden, Customer Complaints

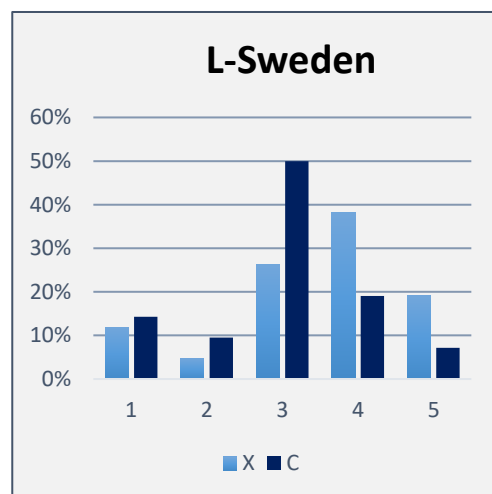


Figure 25. Absolute (X) and relative responses (C): Sweden, Customer Loyalty

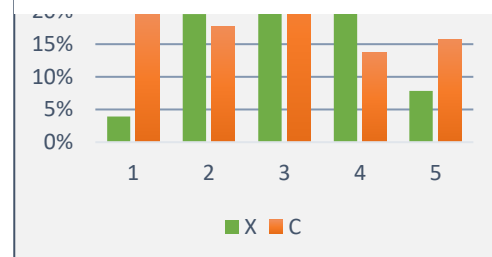


Figure 27. Absolute (X) and relative responses (C): Spain, Customer Loyalty

5.2.- Relationship between the ACSI variables

The ACSI framework is a cause and effect model where Customer Satisfaction is regarded as the centrepiece. In this section the relationship between the antecedents and this core component is statistically analysed.

5.2.1.- Antecedents of customer satisfaction

In the following graphs the relationship between Customer Satisfaction against Product Quality, Service Quality and Perceived Value is shown. The plotted data corresponds to the self-assessment responses, i.e. 100-point scale. Customer Satisfaction is represented in the y-axis as a function of each of the antecedents, represented in the x-axis. The analysis is performed separately, distinguishing between the Spanish and the Swedish studies.

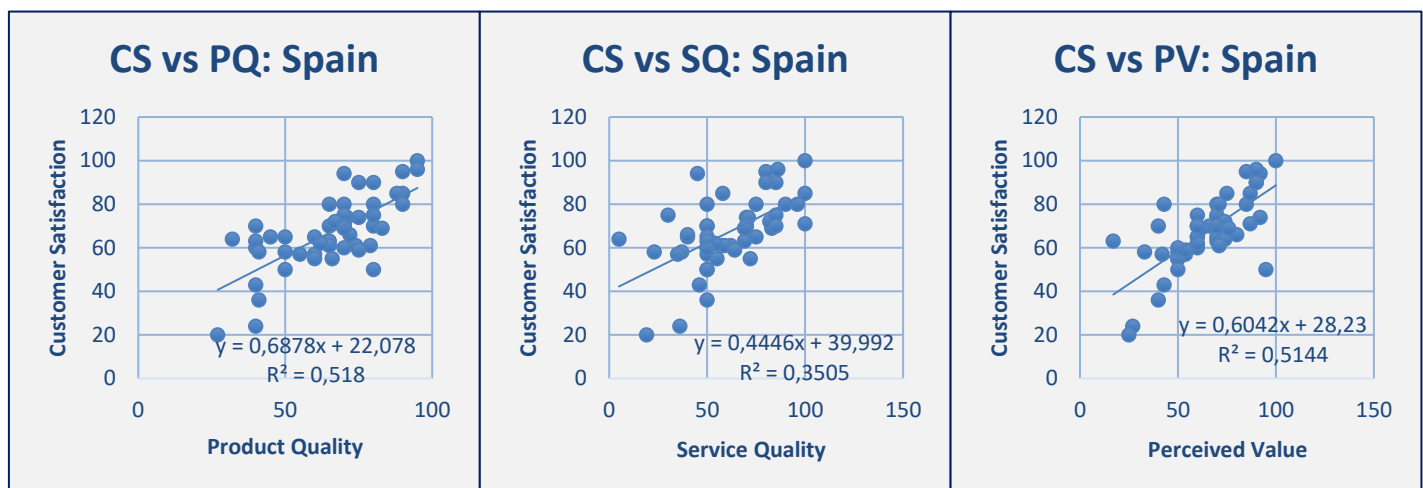


Figure 28 Customer Satisfaction as a function of the ACSI antecedents, Spain

As expected, a positive correlation between the three antecedents and Customer Satisfaction is observable. The strongest correlation is found between Product Quality and Customer Satisfaction, with a coefficient equal to 0,69. The mathematical meaning behind this coefficient is the variation experience by the dependent variable when the independent variable is modified one unit. In other words, a unit increment in the Product Quality

positively affects the Customer Satisfaction, which increases by 0,69. Nevertheless, it is important to highlight that the values of the coefficient of determination R^2 are low. Therefore, the regression models only account for 52%, 35% and 51%, respectively; of the variability in the total customer satisfaction.

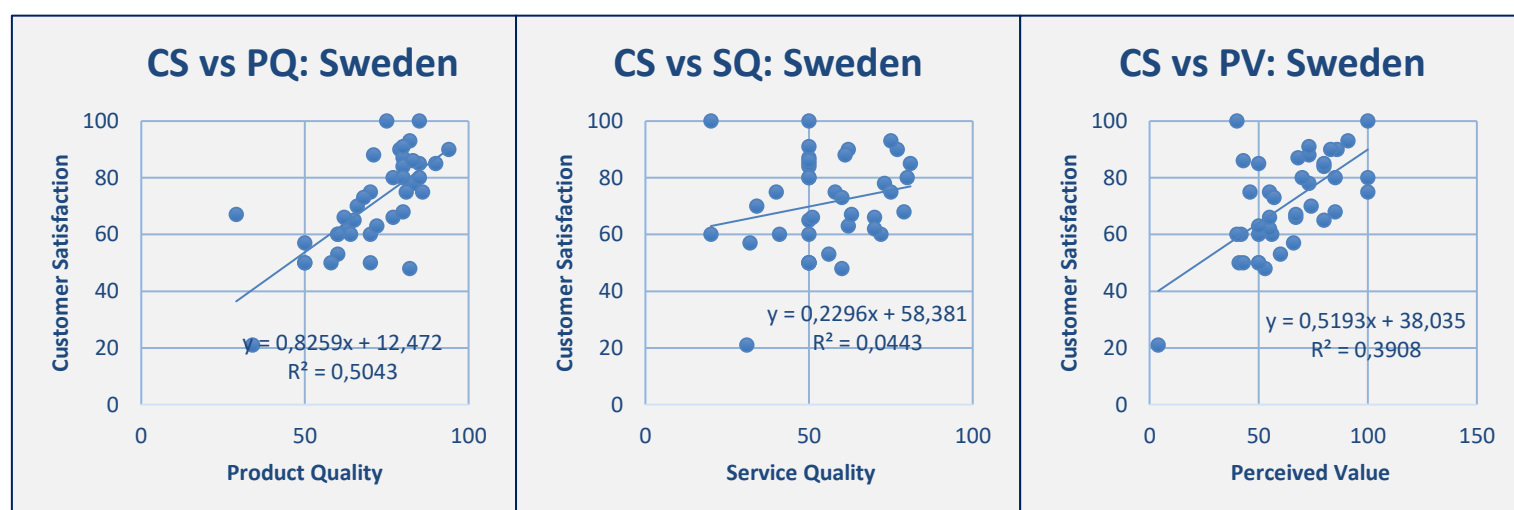


Figure 29 Customer Satisfaction as a function of the ACSI antecedents, Sweden

Regarding the Swedish results, the expected positive correlation between the three antecedents and Customer Satisfaction is observable. Similarly to the Spanish results, the strongest correlation is found between Product Quality and Customer Satisfaction. Nevertheless, the correlation coefficient is higher. A unit increase in the Product Quality has a larger effect on the Customer Satisfaction among the Swedish respondents, i.e. equal to 0,83. It is important to highlight that the regression model between Customer Satisfaction and Service Quality is not representative of the reality since the coefficient of determination R^2 is extremely low, i.e. very close to zero.

5.2.2.- Consequences of Customer Satisfaction

The benefits of achieving loyal customers are innumerable. Therefore, this section is dedicated to analyse the linkages between Customer Satisfaction and Customer Loyalty, a relationship that has attracted a lot of research attention. Moreover, the relationship between Customer Complaints and Loyalty is examined.

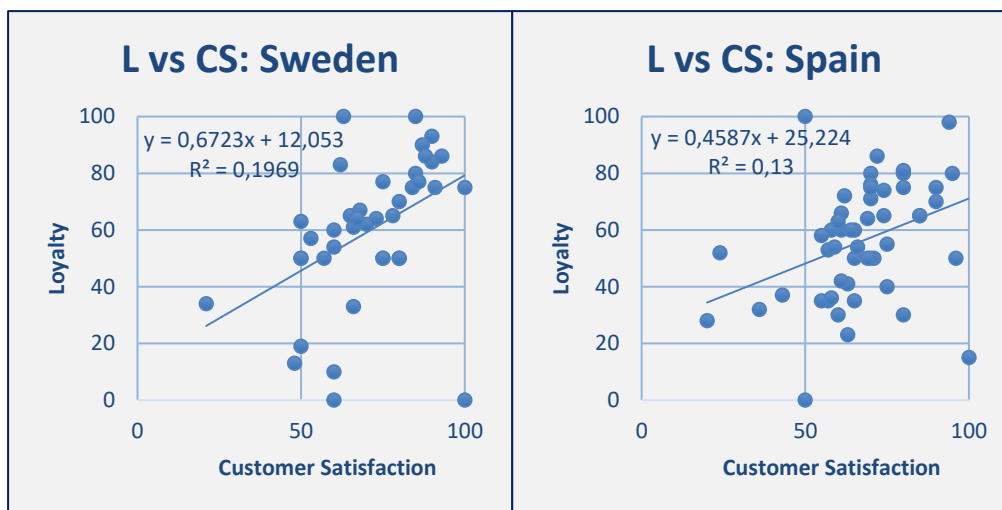
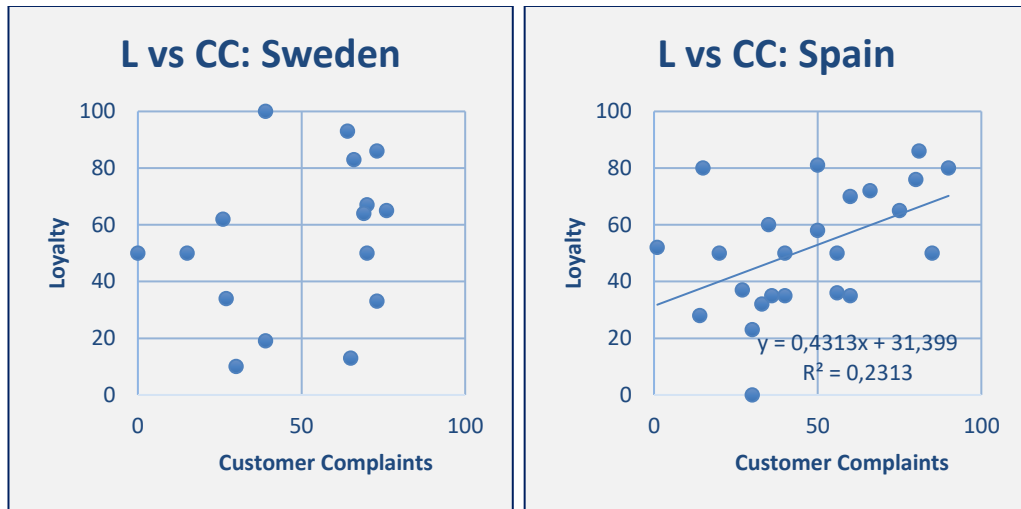


Figure 30 Loyalty against Customer Satisfaction, Sweden and Spain

As shown in the above graphs, a positive relationship between Customer Satisfaction and Loyalty can be drawn. Nevertheless, as some researchers have already pointed out, loyalty can be achieved without customer satisfaction. Indeed, some of the respondents who consider themselves as true loyal customers, i.e. they assessed their loyalty with the maximum score on the 100-point scale, expressed average levels of satisfaction. The opposite case is also observable in the survey sample, i.e. satisfied customers who do not consider themselves as loyal. Despite a number of such cases, the results of this study show that the general trend is that satisfied customers tend to consider themselves to be more loyal.

Regarding the linkages between Customer Complaints and Loyalty, no clear pattern can be observed from the Swedish results. A slightly positive tendency can be inferred from the Spanish survey sample. Following the “Exit-voice theory”, those customers who were satisfied with the complaint-handling system, reinforced their relationship and attachment to their mobile phone operator, expressing higher levels of loyalty. Nevertheless, it is important to highlight that the small size of the sample complicate considerably this analysis as well as the reliability of the observations made.



6.- DISCUSSION AND CONCLUSION

This chapter includes a discussion of the findings obtained as well as potential improvements and suggestions for future research.

6.1.- Discussion

The aim of this section is to investigate the potential applicability of the vignette methodology in order to eliminate the cultural bias presented in cross-cultural customer satisfaction studies. In the following paragraphs, a comparison between Sweden and Spain is performed, both in term of absolute responses (X) and relative responses (C), i.e. the responses obtained after the DIF correction process.

It can be concluded that the vignette methodology enhances the comparability of the survey results between both countries. In both distributions, about half of the responses experience variation as a result of the DIF-correction procedure, they were either upgraded or worsened in the scale. Therefore, it seems that the interpersonal factor has a significant influence in the survey responses regarding the different categories of customer satisfaction. The way individuals understand survey questions and the attributes described in them is influenced by the unique and distinctive character of each respondent.

From the graphical and mathematical analysis of the results, it can be stated that the Swedish mobile phone operators sector achieves higher satisfaction results than the Spanish one, both in absolute and relative terms. Due to the fact that the actual level of the services provided by the Swedish operators is technically considered higher quality, the results achieved are not surprising. Moreover, this is consistent with the EPSI results, where Sweden and Spain ranked lowest in terms of the customer satisfaction evaluations in the telecom industry but the Scandinavian country is placed above the Mediterranean country.

It is remarkable, however, how the constructs of Service Quality and Perceived Value achieve higher results among the Spanish respondents, both in absolute and relative terms. Whereas the Service Quality have always achieved the highest-scores in the EPSI studies performed in the Mediterranean country, this country stands out for having high prices in relation to its European neighbours, although this tendency has lately been changed because of the liberalization of the sector. Nevertheless, in this study, the Spanish respondents ranked higher the Perceived Value than the Service Quality of their operators, in both scales.

	Sweden		Spain	
	X	C	X	C
PQ	4,02	4,17	3,76	3,84
SQ	3,24	3,12	3,51	3,39

PV	3,67	4,14	3,65	4,29
CS	4	4,26	3,8	4,16
CC	3	3,94	2,81	3,58
L	3,48	2,95	3,22	2,88

Table 9 Mean values of the absolute and relative responses, in each of the ACSI categories

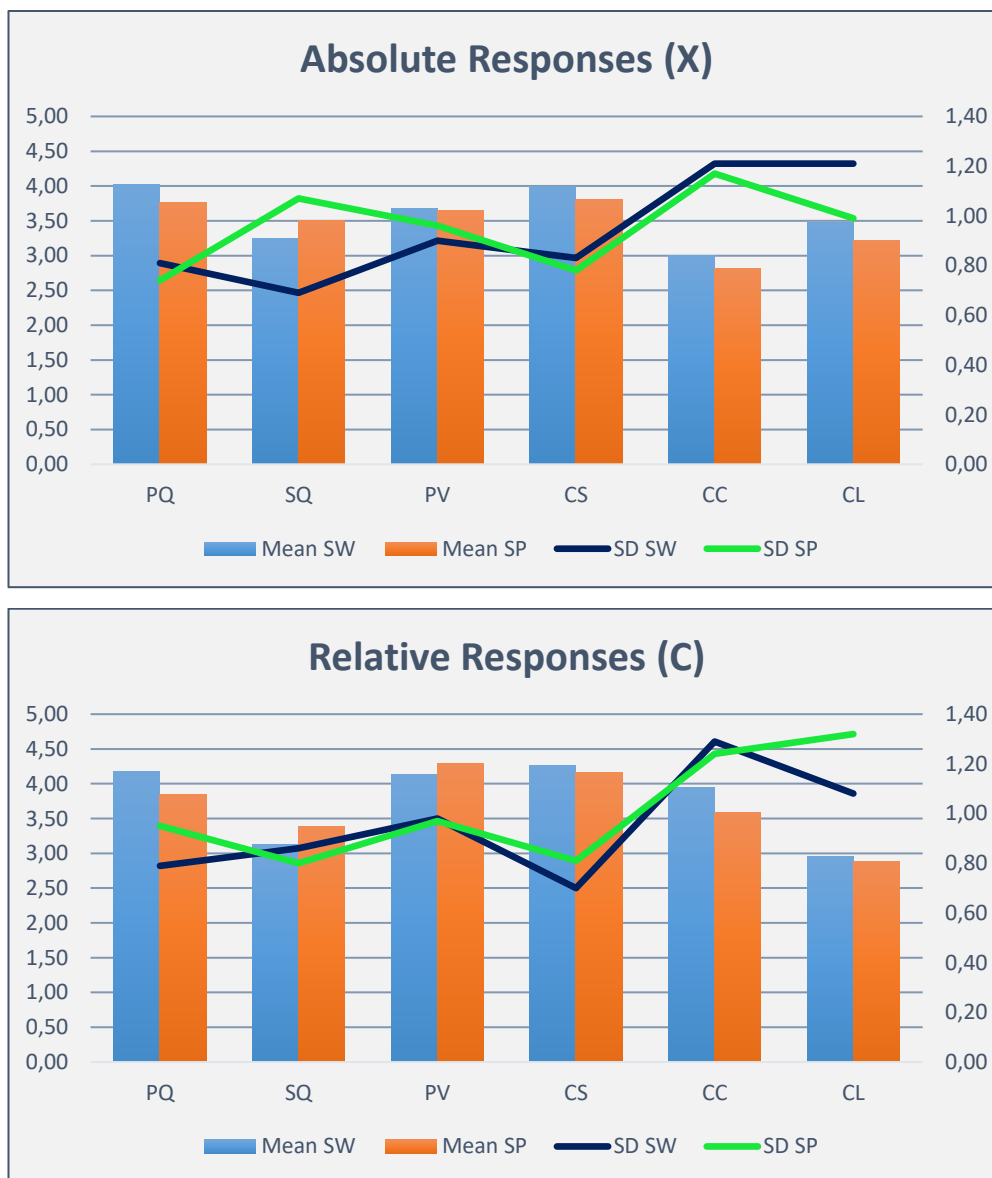


Figure 31. Comparative analysis between Sweden (sw) and Spain (sp). Absolute (X) and relative (C) responses

Loyalty is the only ACSI dimension which results in lower mean values in the relative responses distributions. Therefore, it can be concluded that, in both countries, customers are less attached to their operator than what the absolute self-assessment responses express. Nevertheless, this ACSI dimension constituted the most conflictive block during the whole testing process. The underlying reason behind might be either the placement of the construct

or the degree of abstraction related to this concept. Due to the length and complexity of the questionnaire, respondents could have lost their degree of concentration or their active attitude gradually through the survey, resulting in less attention paid to the last block, the loyalty one. On the other hand, the loyalty vignettes were perceived as strange from many respondents, who declared that evaluating someone's loyalty is subjective and therefore, complex.

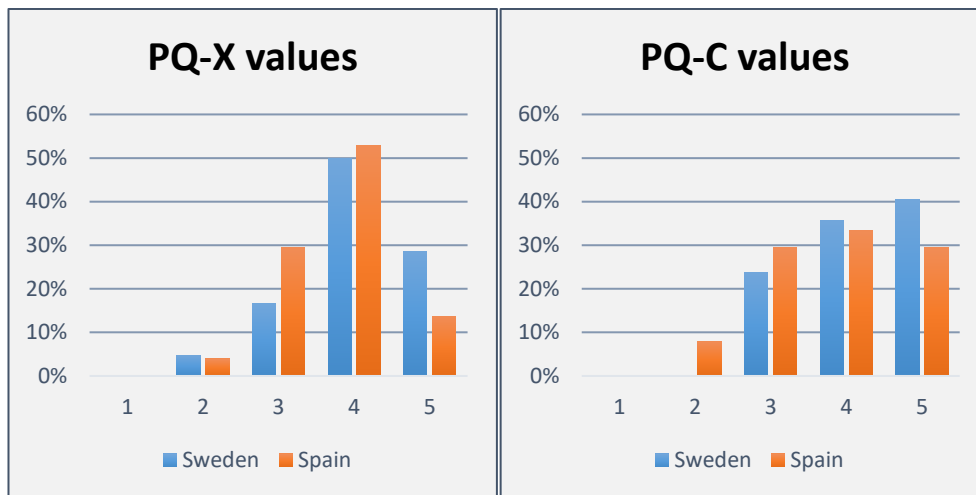


Figure 32. Absolute (X) and relative responses (C) regarding Product Quality.

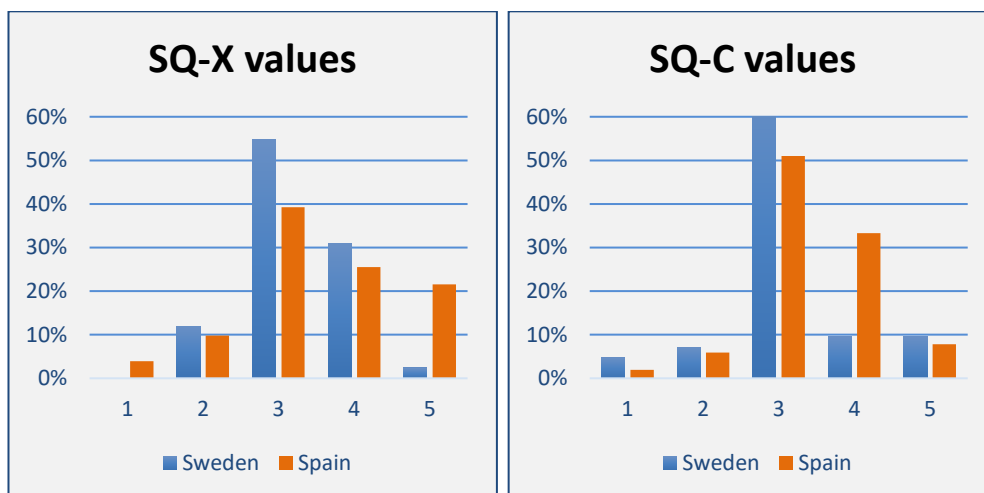


Figure 33. Absolute (X) and relative responses (C) regarding Service Quality.

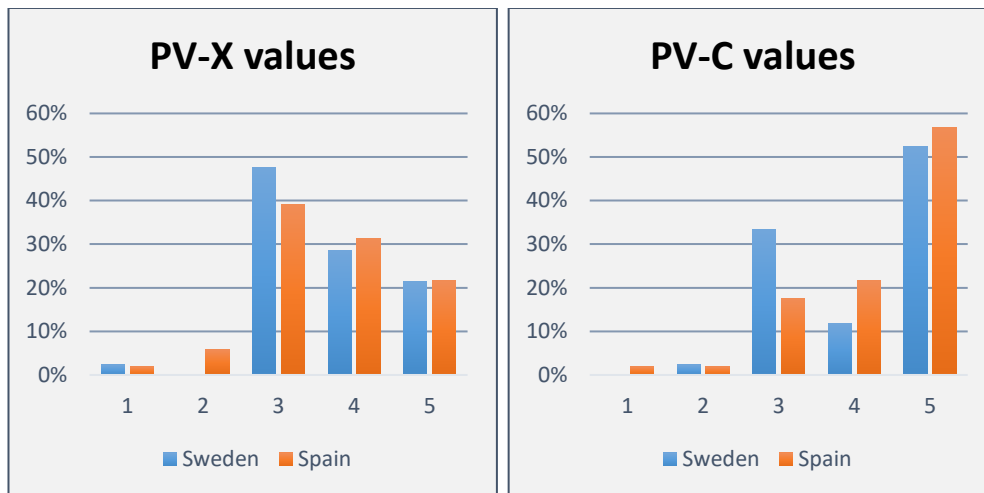


Figure 34. Absolute (X) and relative responses (C) regarding Perceived Value.

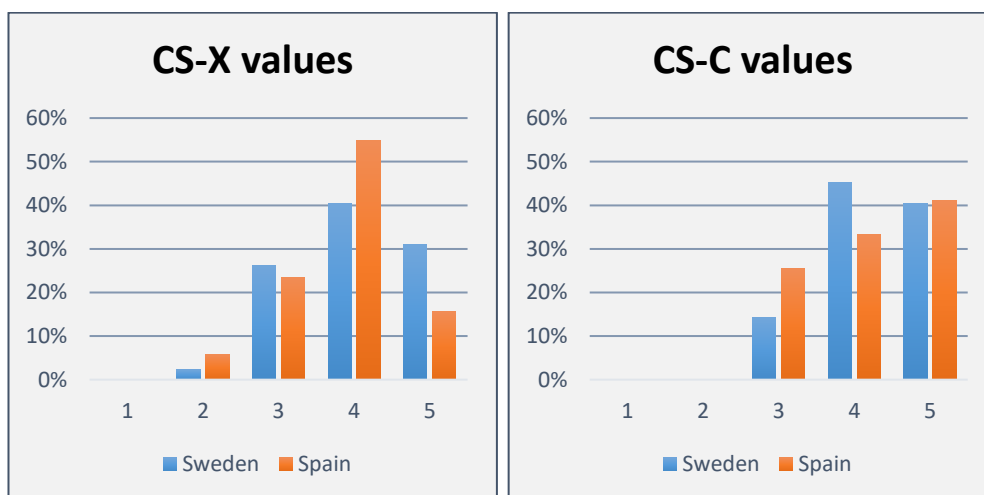


Figure 35. Absolute (X) and relative responses (C) regarding Customer Satisfaction.

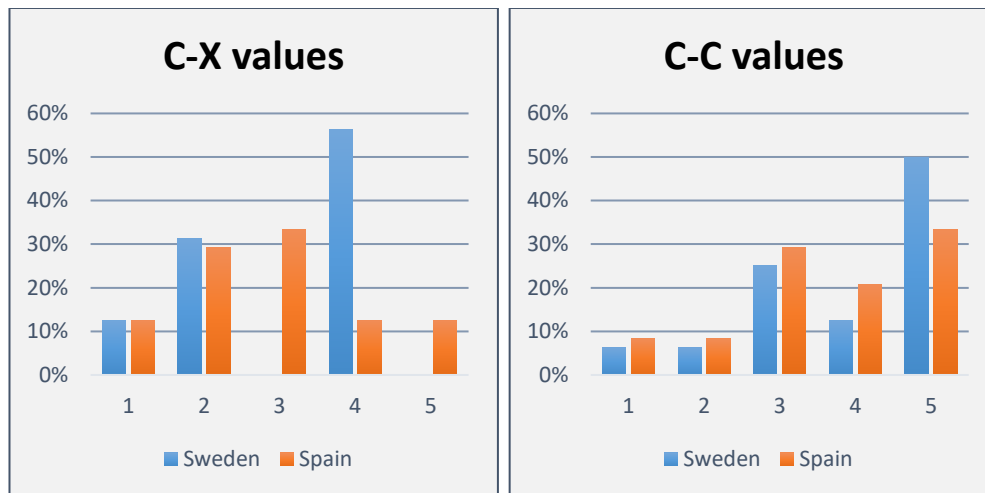


Figure 36. Absolute (X) and relative responses (C) regarding Customer Complaints.

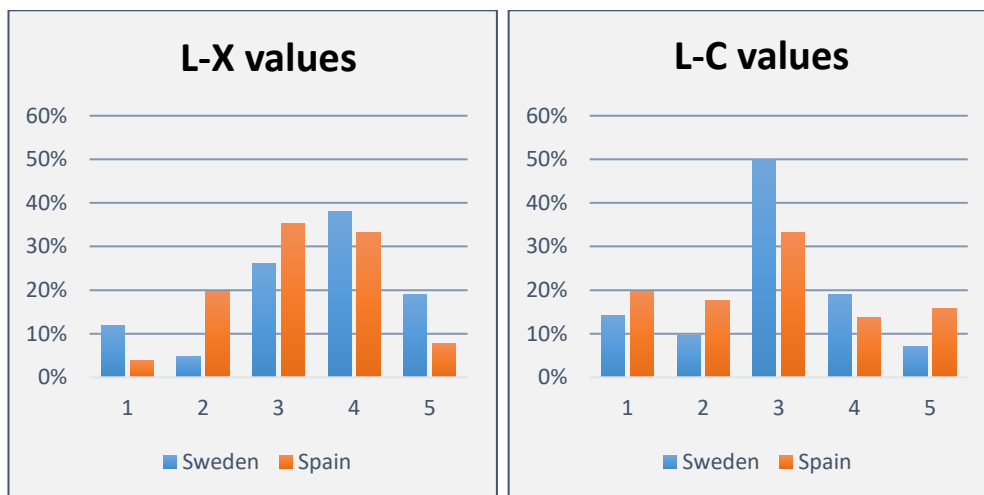


Figure 37. Absolute (X) and relative responses (C) regarding Customer Loyalty.

6.2.- Potential improvements

The sample size of this study is not large enough to draw representative conclusions about the whole population. Therefore, the potential applicability of this methodology to reduce the cultural bias in cross-cultural satisfaction studies needs to be confirmed by a larger -sample study before carrying out the full study.

The selection of the countries scope of the study might not have been the most suitable one. Spain was selected for this testing phase for convenience reasons, since it is the country of the nationality of the researcher. This facilitated both the translation and the data collection procedures. Nevertheless, the selection of a country whose customers unexpectedly express higher levels of satisfaction in the telecom industry, in comparison with Sweden, could have provided more definitive conclusions regarding the potential

applicability of the vignette methodology. In other words, drawing conclusions concerning the possibility of employing vignettes to reduce the cultural bias presented in the results.

To ensure a more accurate translation process, reducing the variability added by the researcher in the results, an iterative process of translations and reverse translations can be employed. Additionally, the accuracy of the translation process might need to be evaluated by linguistic experts.

One of the main issues addressed by the researcher during these testing phases is the low response rate from the respondents. The employment of vignettes in surveys leads to more demanding questionnaires, both in terms of length and complexity. Therefore, it is important to achieve a balance between the data aimed to be collected, the number of blocks or attributes under consideration, the number of vignette selected in each dimension and the simplicity of the questionnaire. Due to the fact that the target group of this study was university students, devoting some time to evaluate the better approach to enhance the response rate would have provided a larger amount of complete responses. The cultural background of the respondents needs to be considered when determining the most suitable approach.

6.3.- Future work

There is a potential use of the vignette methodology in the context of customer satisfaction. Nevertheless, further research is still required to draw reliable conclusions since the scope of this study is too narrow.

Regarding the European mobile phone market, a significant change in the market is expected in the near future as the result of the end of roaming charges inside the European zone, which came into force the 15th June. Consequently, cross-cultural studies would become essential in an increasingly homogeneous European market.

In order to match the attributes of the vignette characters to the profile of each respondent, vignettes could be dynamically customised. In other words, each respondent is given customised vignettes based on the personal information they provide at the beginning of the survey. Based on previous studies, this will enhance response consistency, leading to more reliable results.

The main disadvantage of the vignette methodology is the design of more demanding questionnaires because of the increase in both length and complexity. This might negatively influence the response rate and the results since respondents are not familiar with this methodology. This can be especially tedious among older respondents.



As a final conclusion, the potential applicability of the vignette methodology deserves further research attention since this survey method might enhance the comparability of the results, providing valuable information.

7.- REFERENCES

American Customer Satisfaction Index (ACSI), retrieved 22/06/2017 from <http://theacsi.org/>

Anderson, E. W., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing science*, 12(2), 125-143.

Anderson, E. W., Fornell, C., & Mazvancheryl, S. K. (2004). Customer satisfaction and shareholder value. *Journal of marketing*, 68(4), 172-185.

Anderson, E. W., Fornell, C., & Rust, R. T. (1997). Customer satisfaction, productivity, and profitability: Differences between goods and services. *Marketing science*, 16(2), 129-145.

Anderson, E., Fornell, C. and Lehmann, D. (1994). Customer Satisfaction, Market Share, and Profitability: Findings from Sweden. *Journal of Marketing*, 58(3), p.53.

Andreassen, T. W., & Lervik, L. (1999). Perceived relative attractiveness today and tomorrow as predictors of future repurchase intention. *Journal of Service Research*, 2, 164-172.

Andrews, F. M. (1984). Construct validity and error components of survey measures: A structural modeling approach. *Public opinion quarterly*, 48(2), 409-442.

Angelova, B., & Zekiri, J. (2011). Measuring customer satisfaction with service quality using American Customer Satisfaction Model (ACSI Model). *International Journal of Academic Research in Business and Social Sciences*, 1(3), 232.

Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: measuring hedonic and utilitarian shopping value. *Journal of consumer research*, 20(4), 644-656.

Balaji, M. S. (2009). Customer satisfaction with Indian mobile services. *IUP Journal of Management Research*, 8(10), 52

Bates, K. A., Amundson, S. D., Schroeder, R. G., & Morris, W. T. (1995). The crucial interrelationship between manufacturing strategy and organizational culture. *Management Science*, 41(10), 1565-1580.

Bearden, W. O., & Teel, J. E. (1983). Selected determinants of consumer satisfaction and complaint reports. *Journal of marketing Research*, 21-28.

Bergman, B., & Klefsjö, B. (2010). *Quality from customer needs to customer satisfaction*. Studentlitteratur AB.

Bertrand, J. (1988). Review of Walras's "Théorie Mathématique de la richesse sociale" and Cournot's "Recherches sur les principes mathématiques de la théorie des



richesses”, translated into English by James W. Friedman. Cambridge: Cambridge University Press.

Birren, F. (1961). *Colour, Form and Space*. Reinhold Publishing Corporation.

Bitner, M. J. (1990). Evaluating service encounters: the effects of physical surroundings and employee responses. *the Journal of Marketing*, 69-82.

Bonnie J. Knutson , Arjun J. Singh , Hung-Hsu Yen & Barbara Everitt Bryant (2004) Guest Satisfaction in the U.S. Lodging Industry Using the ACSI Model as a Service Quality. Scoreboard, *Journal of Quality Assurance in Hospitality & Tourism*, 4:3-4, 97-118

Boshoff, C., & Gray, B. (2004). The relationships between service quality, customer satisfaction and buying intentions in the private hospital industry. *South African journal of business management*, 35(4), 27-37.

Boulding, W., Kalra, A., Staelin, R., & Zeithaml, V. A. (1993). A dynamic process model of service quality: from expectations to behavioral intentions. *Journal of marketing research*, 30(1), 7.

Bowling, A. (2005). Just one question: If one question works, why ask several?.

Bruhn, M., & Grund, M. A. (2000). Theory, development and implementation of national customer satisfaction indices: the Swiss Index of Customer Satisfaction (SWICS). *Total Quality Management*, 11(7), 1017-1028.

Buckley, J. (2008). Survey context effects in anchoring vignettes. *Retrieved February, 10, 2010*.

Calleros, O. L., Rivera, H., Serrato, H., Delgado, M. A., León, C., Acevedo, A., ... & Ramírez, I. M. (2012). Development of the Mexican user satisfaction index (IMSU) to evaluate social government programs in Mexico: the case of the daycare social program. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 25, 118.

Calzada, J., & Estruch, A. (2011). Telefonía móvil en España: regulación y resultados. *Cuadernos Económicos de ICE*, 81, 39-70.

Cardozo, R. N. (1964). Customer satisfaction: laboratory study and marketing action. *Journal of Marketing Research*, 2, 244-249.

Chan, L. K., Hui, Y. V., Lo, H. P., Tse, S. K., Tso, G. K., & Wu, M. L. (2003). Consumer satisfaction index: new practice and findings. *European Journal of Marketing*, 37(5/6), 872-909.

Chen, C. F., & Cheng, L. T. (2012). A study on mobile phone service loyalty in Taiwan. *Total Quality Management & Business Excellence*, 23(7-8), 807-819.

Chevalier, A., & Fielding, A. (2011). An introduction to anchoring vignettes. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 174(3), 569-574.

Chiang, F. F., & Birtch, T. (2007). The transferability of management practices: Examining cross-national differences in reward preferences. *Human Relations*, 60(9), 1293-1330.

Christensen, K., Herskind, A. M., & Vaupel, J. W. (2006). Why Danes are smug: comparative study of life satisfaction in the European Union. *Bmj*, 333(7582), 1289-1291.

Church, A. T., Ortiz, F. A., Katigbak, M. S., Avdeyeva, T. V., Emerson, A. M., de Jesus Vargas Flores, J., & Reyes, J. I. (2003). Measuring individual and cultural differences in implicit trait theories. *Journal of personality and social psychology*, 85(2), 332-347.

Church, A. T., Ortiz, F. A., Katigbak, M. S., Avdeyeva, T. V., Emerson, A. M., de Jesus Vargas Flores, J., & Reyes, J. I. (2003). Measuring individual and cultural differences in implicit trait theories. *Journal of personality and social psychology*, 85(2), 332-347.

D'Uva, T. B., Lindeboom, M., O'Donnell, O., & Van Doorslaer, E. (2011). Slipping anchor? Testing the vignettes approach to identification and correction of reporting heterogeneity. *Journal of Human Resources*, 46(4), 875-906.

d'Uva, T. B., Lindeboom, M., O'Donnell, O., & Van Doorslaer, E. (2011). Slipping anchor? Testing the vignettes approach to identification and correction of reporting heterogeneity. *Journal of Human Resources*, 46(4), 875-906.

Damacena, G. N., Vasconcellos, M. T. L. D., & Szwarcwald, C. L. (2005). Perception of health state and the use of vignettes to calibrate for socioeconomic status: results of the World Health Survey in Brazil, 2003. *Cadernos de Saúde Pública*, 21, S65-S77.

Dawkins, P., & Reichheld, F. (1990). Customer retention as a competitive weapon. *Directors and Boards*, 14(4), 42-47.

Deming, W.E. (1981). *Management of Statistical Techniques for Quality and Productivity*. New York: New York University, Graduate School of Business.

Dunnewijk, T., & Hultén, S. (2007). A brief history of mobile communication in Europe. *Telematics and Informatics*, 24(3), 164-179.

Eklöf, J. A. (2000). European customer satisfaction index pan-European telecommunication sector report based on the pilot studies 1999. *European Organization for Quality and European Foundation for Quality Management, Stockholm, Sweden*.

Engel, J. F., & Blackwell, R. D. (1982). *Consumer behaviour*. Chicago, Dryden Press.

Engel, J. F., & Roger, D. (1982). Blackwell (1982). *Consumer behavior*, 4.

EPSI Rating (2011). International Benchmark trends for Customer Satisfaction and Consumer Sentiment monitoring, 2011 Report. Retrieved 22/06/2017 from <http://www.baltic-course.com/eng/analytics/?doc=36425>



Fornell, C. (1992). A national customer satisfaction barometer: The Swedish experience. *the Journal of Marketing*, 6-21.

Fornell, C., & Johnson, M. D. (1993). Differentiation as a basis for explaining customer satisfaction across industries. *Journal of Economic Psychology*, 14(4), 681-696.

Fornell, C., & Wernerfelt, B. (1988). A model for customer complaint management. *Marketing Science*, 7(3), 287-298.

Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American customer satisfaction index: nature, purpose, and findings. *the Journal of Marketing*, 7-18.

Furrer, O., Liu, B. S. C., & Sudharshan, D. (2000). The relationships between culture and service quality perceptions basis for cross-cultural market segmentation and resource allocation. *Journal of service research*, 2(4), 355-371.

Gerber, E., Wellens, T., & Keeley, C. (1996, May). 'Who Lives Here?': The Use of Vignettes in Household Roster Research. In *Proceedings of the Section on Survey Research Methods*, Alexandria, VA: American Statistical Association (pp. 962-967).

Gerpott, T. J., Rams, W., & Schindler, A. (2001). Customer retention, loyalty, and satisfaction in the German mobile cellular telecommunications market. *Telecommunications policy*, 25(4), 249-269.

González Menorca, L., Fernández-Ortiz, R., Fuentes Lombardo, G., & Clavel San Emeterio, M. (2016). The EPSI model as the main factor for identifying customer satisfaction: empirical research. *Total Quality Management & Business Excellence*, 27(3-4), 447-463.

Grigoroudis, E., & Siskos, Y. (2004). A survey of customer satisfaction barometers: Some results from the transportation-communications sector. *European Journal of Operational Research*, 152(2), 334-353.

Grol-Prokopczyk, H. (2014). Age and sex effects in anchoring vignette studies: Methodological and empirical contributions. In *Survey research methods* (Vol. 8, No. 1, p. 1). NIH Public Access.

Grzymala-Busse, A. (2007). *Rebuilding Leviathan: Party competition and state exploitation in post-communist democracies*. Cambridge University Press.

Grzymala-Busse, A. (2007). *Rebuilding Leviathan: Party competition and state exploitation in post-communist democracies*. Cambridge University Press.

Gupta, N. D., Kristensen, N., & Pozzoli, D. (2010). External validation of the use of vignettes in cross-country health studies. *Economic Modelling*, 27(4), 854-865.



Hackl, P., Scharitzer, D., & Zuba, R. (1996). The Austrian Customer satisfaction barometer (ACSB)—A pilot study. *der markt*, 35(2), 86-94.

Hackl, P., Scharitzer, D., & Zuba, R. (2000). Customer satisfaction in the Austrian food retail market. *Total Quality Management*, 11(7), 999-1006.

Hall, E. (1977). *Beyond culture*. 1st ed. New York, NY: Anchor Books.

Harzing, A. W. (2001). Who's in charge? An empirical study of executive staffing practices in foreign subsidiaries. *Human Resource Management*, 40(2), 139-158.

Hirschman, A. O. (1970). Exit, voice, and loyalty: Responses to decline in firms, organizations, and states (Vol. 25). Harvard university press.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviours, institutions and organizations across nations*. 2nd Edition, Thousand Oaks CA: Sage Publications.

Hofstede, G., & Bond, M. H. (1984). Hofstede's culture dimensions an independent validation using Rokeach's value survey. *Journal of cross-cultural psychology*, 15(4), 417-433.

Hofstede, G., Hofstede G.J., Minkov M. (2010). *Cultures and Organizations: Software of the Mind*. 3rd Edition, McGraw-Hill USA.

Holland, P. W., & Wainer, H. (1995). Differential Item Functioning. *Psicothema*, 7(1), 237-242.

Hopkins, D. J., & King, G. (2010). Improving anchoring vignettes designing surveys to correct interpersonal incomparability. *Public Opinion Quarterly*, nq011.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (Eds.). (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Sage publications.

Houston, R., & Smith, R. (1982, October). A new approach to family history?. In *History Workshop Journal* (No. 14, p. 120). Oxford University Press.

Howard, J. A. (1977). *Consumer behavior: Application of theory*. New York: McGraw-Hill.

Howard, J. A., & Sheth, J. N. (1969). *The theory of buyer behavior* (Vol. 14). New York: Wiley.

Hultkrantz, L. (2002). Telecommunications liberalisation in Sweden: Is “intermediate” regulation viable?. *Swedish Economic Policy Review*, 9, 133-161.

Hunt, H. K. (1977). CS/D-overview and future research directions. Conceptualization and measurement of consumer satisfaction and dissatisfaction, 455-488.

Instituto Nacional de Estadística. Base de datos de nombres y apellidos año 2016. Retrieved 22/06/2017 from http://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177001&menu=resultados&idp=1254734710990

Jacoby, J., Chestnut, R. W., & Fisher, W. A. (1978). A behavioral process approach to information acquisition in nondurable purchasing. *Journal of Marketing Research*, 532-544.

Johnson, M. D. (1984). Consumer choice strategies for comparing noncomparable alternatives. *Journal of consumer research*, 11(3), 741-753.

Johnson, M. D., & Fornell, C. (1991). A framework for comparing customer satisfaction across individuals and product categories. *Journal of economic psychology*, 12(2), 267-286.

Johnson, M. D., Anderson, E. W., & Fornell, C. (1995). Rational and adaptive performance expectations in a customer satisfaction framework. *Journal of consumer research*, 21(4), 695-707.

Johnson, M. D., Gustafsson, A., Andreassen, T. W., Lervik, L., & Cha, J. (2001). The evolution and future of national customer satisfaction index models. *Journal of economic Psychology*, 22(2), 217-245.

Johnson, M. D., Gustafsson, A., Andreassen, T. W., Lervik, L., & Cha, J. (2001). The evolution and future of national customer satisfaction index models. *Journal of economic Psychology*, 22(2), 217-245.

José Vilares, M., & Simões Coelho, P. (2003). The employee-customer satisfaction chain in the ECSI model. *European Journal of Marketing*, 37(11/12), 1703-1722.

Juran, J., & Godfrey, A. B. (1999). *Quality handbook. Republished McGraw-Hill*.

Jürges, H., & Winter, J. (2013). Are anchoring vignettes ratings sensitive to vignette age and sex? *Health economics*, 22(1), 1-13.

Kanousi, A. (2005). An empirical investigation of the role of culture on service recovery expectations. *Managing Service Quality: An International Journal*, 15(1), 57-69.

Kapteyn, A., Smith, J. P., & Van Soest, A. (2007). Vignettes and self-reports of work disability in the United States and the Netherlands. *The American Economic Review*, 97(1), 461-473.

Kapteyn, A., Smith, J. P., Van Soest, A., & Vonkova, H. (2011). Anchoring vignettes and response consistency.

Kassim, N., & Asiah Abdullah, N. (2010). The effect of perceived service quality dimensions on customer satisfaction, trust, and loyalty in e-commerce settings: A cross cultural analysis. *Asia Pacific Journal of Marketing and Logistics*, 22(3), 351-371.

Kelisto (2014). Estudio de Satisfacción de Clientes de Operadoras Móviles. Retrieved 10/06/2017 from <https://www.kelisto.es/telefonía-móvil/premios-satisfacción-2014>

Kim, D., Pan, Y., & Park, H. S. (1998). High-versus low-context culture: A comparison of Chinese, Korean, and American cultures. *Psychology and Marketing*, 15(6), 507-521.

King, G. (2017). Anchoring Vignettes website. Retrieved 22/06/2017 from <https://gking.harvard.edu/vign>

King, G., & Wand, J. (2007). Comparing incomparable survey responses: Evaluating and selecting anchoring vignettes. *Political Analysis*, 46-66.

King, G., Murray, C. J., Salomon, J. A., & Tandon, A. (2004). Enhancing the validity and cross-cultural comparability of measurement in survey research. *American political science review*, 98(1), 191-207.

King, G., Murray, C.J., Salomon, J.A. and Tandon, A., 2004. Enhancing the validity and cross cultural comparability of measurement in survey research. *American political science review*, 98(01), pp.191-207.

Kristensen, N., & Johansson, E. (2008). New evidence on cross-country differences in job satisfaction using anchoring vignettes. *Labour Economics*, 15(1), 96-117.

Kull, T. J., & Wacker, J. G. (2010). Quality management effectiveness in Asia: The influence of culture. *Journal of operations management*, 28(3), 223-239.

Kull, T. J., & Wacker, J. G. (2010). Quality management effectiveness in Asia: The influence of culture. *Journal of operations management*, 28(3), 223-239.

Lam, S. Y., Shankar, V., Erramilli, M. K., & Murthy, B. (2004). Customer value, satisfaction, loyalty, and switching costs: an illustration from a business-to-business service context. *Journal of the academy of marketing science*, 32(3), 293-311.

Lim, H., Widdows, R., & Park, J. (2006). M-loyalty: winning strategies for mobile carriers. *Journal of Consumer Marketing*, 23(4), 208-218.

Liu, B. S. C., Furrer, O., & Sudharshan, D. (2001). The relationships between culture and behavioral intentions toward services. *Journal of service research*, 4(2), 118-129.

Liu, R. R., & McClure, P. (2001). Recognizing cross-cultural differences in consumer complaint behavior and intentions: an empirical examination. *Journal of consumer marketing*, 18(1), 54-75.

Mattila, A. S. (1999). The role of culture and purchase motivation in service encounter evaluations. *Journal of Services Marketing*, 13(4/5), 376-389.

McDougall, G. H., & Levesque, T. (2000). Customer satisfaction with services: putting perceived value into the equation. *Journal of services marketing*, 14(5), 392-410.

Merli, G. (1990). Total manufacturing management: production organization for the 1990s. Productivity Press.

Meyer, A. (1994). Das Deutsche Kundenbarometer, 1994. Ludwig-Maximilians-Universität München, Munich

Mölleryd, B. G. (1999). Entrepreneurship in technological systems: the development of mobile telephony in Sweden (Doctoral dissertation, Economic Research Institute, Stockholm School of Economics (EFI)).

Money, R. B., Gilly, M. C., & Graham, J. L. (1998). Explorations of national culture and word-of-mouth referral behavior in the purchase of industrial services in the United States and Japan. *The Journal of Marketing*, 76-87.

Morales Espinoza, M. (1999). Assessing the cross-cultural applicability of a service quality measure a comparative study between Quebec and Peru. *International Journal of Service Industry Management*, 10(5), 449-468.

Murray, C. J., Ozaltin, E., Tandon, A., Salomon, J., Sadana, R., & Chatterji, S. (2003). Empirical evaluation of the anchoring vignettes approach in health surveys. Health systems performance assessment: Debates, methods and empiricism, 369, 399.

Naor, M., Goldstein, S. M., Linderman, K. W., & Schroeder, R. G. (2008). The role of culture as driver of quality management and performance: infrastructure versus core quality practices. *Decision Sciences*, 39(4), 671-702.

Oliver, R. L. (1999). Whence consumer loyalty?. *the Journal of Marketing*, 33-44.

Oliver, R. L. (2014). Satisfaction: A behavioral perspective on the consumer. Routledge.

Oliver, R. L., & DeSarbo, W. S. (1988). Response determinants in satisfaction judgments. *Journal of consumer research*, 14(4), 495-507.

Oliver, R. L., & Swan, J. E. (1989). Equity and disconfirmation perceptions as influences on merchant and product satisfaction. *Journal of consumer research*, 16(3), 372-383.

Organisation for Economic Co-operation and Development (OECD). Annual Study 2009

Ospina Pinzón, S., & Gil Saura, I. (2011). Índices nacionales de satisfacción del consumidor: Una propuesta de revisión de la literatura. *Cuadernos de administración*, 24(43), 35-57.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *the Journal of Marketing*, 41-50.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of retailing*, 64(1), 12.

Patterson, P. G., & Mattila, A. S. (2008). An examination of the impact of cultural orientation and familiarity in service encounter evaluations. *International Journal of Service Industry Management*, 19(5), 662-681.

Poksinska, B. & Cronemyr, P. (2017). Measuring quality in elderly care: possibilities and limitations of the vignette method. *Total Quality Management & Business Excellence*

Powell, T. C. (1995). Total quality management as competitive advantage: a review and empirical study. *Strategic management journal*, 16(1), 15-37.

Ramírez Royo, S., Dioses Fernández, M.J., Ye, T.T, Castells Canales, J., Sanchez Ajo.,D. (2008). El mercado de la telefonía móvil en España. Universitat Autònoma de Barcelona

Rao, P. (2009). International survey research: Understanding national cultures to increase survey response rate. *Cross Cultural Management: An International Journal*, 16(2), 165-178.

Reichheld, F. F. (1996). Learning from customer defections.

Reichheld, F. F., & Sasser, W. E. (1990). Zero Defections: Quolliiy Comes To Services.

Rice, N., Robone, S., & Smith, P. (2011). Analysis of the validity of the vignette approach to correct for heterogeneity in reporting health system responsiveness. *The European Journal of Health Economics*, 12(2), 141-162.

Roccato, M., & Ricolfi, L. (2005). On the correlation between right-wing authoritarianism and social dominance orientation. *Basic and applied social psychology*, 27(3), 187-200.

Sajid Khan, M., Naumann, E., Bateman, R., & Haverila, M. (2009). Cross-cultural comparison of customer satisfaction research: USA vs Japan. *Asia Pacific Journal of Marketing and Logistics*, 21(3), 376-396.

Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American psychologist*, 54(2), 93.

Shoemaker, S., & Lewis, R. C. (1999). Customer loyalty: the future of hospitality marketing. *International Journal of Hospitality Management*, 18(4), 345-370.

Sirven, N., Santos-Eggimann, B., & Spagnoli, J. (2008). Comparability of Health Care Responsiveness in Europe.

Smoreda, Z., & Thomas, F. (2001, November). Social networks and residential ICT adoption and use. In Eurescom Summit (Vol. 2001, p. 3G).

Statistiska centralbyrån (2016). Name statistics. Retrieved 22/06/2017 from <http://www.scb.se/en/finding-statistics/statistics-by-subject-area/population/general-statistics/name-statistics/pong/tables-and-graphs/all-registered-persons-in-sweden---given-names-and-names-normally-used-top-10-and-top-100-lists/names-normally-used-women-top-100/>

Steenkamp, J. E. B. M. (1989). Product quality. An investigation into the concept and how it is perceived by consumers. Steenkamp.

Svenskt Kvalitetsindex (2014). Telekom report. Retrieved 22/06/2017 from <http://kvalitetsindex.mynewsdesk.com/pressreleases/svenskt-kvalitetsindex-om-telekom-och-digital-tv-sektorn-2014-1074728>

Tremblay, C. H., & Tremblay, V. J. (2011). The Cournot–Bertrand model and the degree of product differentiation. *Economics Letters*, 111(3), 233-235.

Tsoukatos, E., & Rand, G. K. (2007). Cultural influences on service quality and customer satisfaction: evidence from Greek insurance. *Managing Service Quality: An International Journal*, 17(4), 467-485.

Tung, F. (2010). Exploring customer satisfaction, perceived quality and image: An empirical study in the mobile services industry. *The Business Review*, 14(2), 63-69.

Ueltschy, L. C., Laroche, M., Eggert, A., & Bindl, U. (2007). Service quality and satisfaction: an international comparison of professional services perceptions. *Journal of Services Marketing*, 21(6), 410-423.

Van Raaij, W. F. (1989). Economic news, expectations and macro-economic behaviour. *Journal of Economic Psychology*, 10(4), 473-493.

Van Soest, A., Delaney, L., Harmon, C. P., Kapteyn, A., & Smith, J. P. (2007). Validating the use of vignettes for subjective threshold scales.

Vavra, T. (1997). Improving your measurement of customer satisfaction. 1st ed. Milwaukee, Wis.: ASQ Quality Press.

Vranakis, S., Chatzoglou, P., & Mpaloukas, A. (2012). Customer satisfaction of Greek mobile phone services. *International Journal of Managing Value and Supply Chains*, 3(4), 43.

Winsted, K. F. (1997). The service experience in two cultures: A behavioural perspective. *Journal of Retailing*, 73(3), 337-360.



Womack, J. P., & Jones, D. T. (1996). Beyond Toyota: how to root out waste and pursue perfection. *Harvard business review*, 74(5), 140.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *The Journal of marketing*, 2-22.

Zhang, D., & Wu, S. J. (2014). The focus of quality management practices: A national culture perspective. *International Journal of Business and Management*, 9(2), 91.

8.- APPENDIX