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POLQUAL – measuring service quality in police traffic services

Abstract

Purpose – The purpose of the paper is to build a customer quality assessment scale for use in the field of policing - POLQUAL. It adapts and applies a modified SERVQUAL approach to police traffic services in Portugal.

Design/ methodology/ approach – Original data was collected by means of telephone interviews over a three-month period. The proposed scale's reliability and validity are assessed.

Findings – The study shows how it is possible to implement a SERVQUAL-based approach in police traffic services. The adapted scale – POLQUAL – includes all five original dimensions plus another new dimension 'Promptitude'. The most negative gaps found are for the dimensions of reliability and tangibles. There was evidence that perceived quality of service decreases as the level of education of the driver increases. We did not find a difference between perceived quality of service provided between requested services and imposed services, respectively represented by the accident service and radar service.

Research limitations/ implications – The results are based on a specific police services context – that of out of office traffic services in Portugal.

Practical implications – The study provides the police traffic services with a tool for measuring quality of service which can provide information for focusing improvement efforts.

Social implications – Often the user cannot choose to interact with police services. However, in a democratic society good quality of service is essential for maintaining trust in the police services.

Originality/ value – The study provides police traffic services with a valid and reliable tool to assess quality of service from the user's perspective.

Keywords: Police, service quality, user satisfaction, SERVQUAL, Portugal

Paper type Research paper

1 Introduction

There are numerous statements regarding service characteristics; however, three core characteristics are highlighted. First, a service is intangible – it is a process. Second, with services, production and consumption occur simultaneously. Third, for services the consumer is also the co-producer. This means that understanding and influencing the customer's perceptions of a service is fundamental to their experience of and satisfaction with that service (Fitzsimmons & Fitzsimmons, 2005).

The implications of this are of the utmost importance: the performance of a service is an essentially subjective construct of the consumers, made up of the confluence of their expectations of the service and their perceptions of the process, and that this process experience is created when the service user and a specific staff member of the service organization interact. Normann (2002) has called this the “moment of truth”.

Due to these characteristics “service quality has proved to be a difficult concept to grasp” (Brady & Cronin Jr, 2001). A popular generic instrument for evaluating service quality is the SERVQUAL scale; which has been conceived to measure service quality as perceived by the consumer (Parasuraman et al., 1985, 1988).

Osborne (2010), discussing public services, argues that the key role for successful service management lies both in governing and responding to the service expectations of consumers, and in training and motivating the service workforce to interact positively with the consumer. In light of the frequent conflicts between citizens and the Police, studying the quality of police services thus seemed to be an interesting challenge. Mendes (2005) presents evidence of that conflict in traffic services in Portugal. Citizens today are better informed of their duties and rights, and are thus more demanding relative to the quality of public services in general and the police in particular.

This study develops and explores an adapted SERVQUAL approach to assess the quality of services provided by the police. It uses original data obtained from two police traffic services of the Portuguese National Police. The service experience for police traffic services happens in a context that can be considered different from traditional settings because of the ‘out-of-office’ context in which these services are delivered and the vulnerable relation of the citizen-user before the police. Additionally, the service is neither solicited by the user, nor, frequently, is it wanted by the user. These difficulties emphasise the importance of ensuring a clear user focus in this type of public service, which makes it important to know the user’s expectations and perceptions concerning the delivered service. These reasons provided the motivation to build an adapted SERVQUAL approach to police traffic services – POLQUAL.

Ladhari (2008) performed a comprehensive review of alternative industry-specific measurement scales of service quality inspired by SERVQUAL. This review identified frequent deficiencies in the measurement scales, namely in their reliability but moreover in their validity. He suggests that in building industry-specific scales, the context, for example economic and cultural factors, should be taken into account. Accordingly, this paper seeks to take into account such factors.

Hence, the study has two main objectives: (1) to construct an adequate and validated instrument to measure service quality for police traffic services; and (2) to measure perceived quality of service in two such ‘out-of-office’ context services provided by the Portuguese National Police, and assess its association to a selection of independent variables related to the sociographic characteristics of the respondents: sex, age, time in possession of a driving license, recipient of a fine or not, educational level, and previous contact with police traffic services.

2 Literature Review

2.1 Overview of SERVQUAL

The concept of quality is complex and wide-ranging (Zeithaml & Bitner, 2002; Christiansen, 2011). Nonetheless, the quality of a product or service is associated with the level of satisfaction it elicits from its recipients, being those clients or users, as is the case in the public services.

Although, operational quality can be interpreted in the sense of respecting some norms or standards, in this study we are interested in quality of service as the adequacy of service delivery to the expectations of the client. Thus quality of service is not the same but is directly related to client satisfaction. Parasuraman et al. (1988) distinguish the concepts by stating that perceived quality is related, but not equivalent, to satisfaction, in that incidents of satisfaction, which are transaction specific, over time result in perceptions of service quality. Iacobucci et al. (1995) further distinguish the two concepts, and Sureshchandar et al. (2002) test for how they differ but relate to each other in the context of the banking industry in India.

The two primary conceptualisations of service quality see this concept in different ways. The 'Nordic' perspective (Grönroos, 1984, 2007) defines the dimensions of service quality in global terms, consisting of process and outcome quality. Process quality refers to the quality of the service process, or how the service is delivered to customers. Outcome quality refers to the quality of service outcomes, or what customers receive as a result of the service transaction. The second conceptualisation of service quality is the 'American' perspective (Parasuraman et al., 1985, 1988), which describes the service encounter characteristics. However, the scales from both perspectives use the disconfirmation paradigm, in which service quality is measured in terms of the gap between customer service quality perceptions and expectations.

The construct behind the SERVQUAL scale is that of customer perceived quality, where the client is the main judge of the quality of service (Berry et al., 1990). A distinction between perceived quality and objective quality must be made. The first relates to the comparison the client makes between the service received (perceived level of service) and the service the client wished for (expected level of service). The latter relates to the objective items and specific characteristics of a certain object, and is more consistent with tangible goods (Parasuraman et al., 1988). Notwithstanding these differences, Vargo & Lusch (2004) put forward the case for the convergence of the two in a service-dominant logic pervading modern economies.

Thus service quality emerges from the conformity between expectations and perceptions of clients. When a gap between expectation and perception arises, that will say something about the quality of service provided. Fitzsimmons and Fitzsimmons (2005) and Johnston and Clark (2008) synthesise the Service Quality Model behind the SERVQUAL scale in the following manner:

- Perceptions > expectations: perceived quality of service is more than satisfactory (exceptional), resulting in delighted customers;
- Perceptions = expectations: perceived quality of service is satisfactory (acceptable), resulting in satisfied clients;
- Perceptions < expectations: perceived quality of service is less than satisfactory (unacceptable), resulting in dissatisfied clients.

A shortcoming of this model is that it does not give us an objective measure of quality. Thus the service can be 'good' and be judged 'poor', or more possibly and more worryingly, the service can be 'poor' and be judged 'good'. That is, given low expectations from the client of the service, a bad performance from the service provider can be perceived as being of satisfactory quality, just because expectations were

exceeded (Johnston & Clark, 2008). This is more of a problem where there is a significant asymmetry of information between the service provider and the client, such as professional services like health and education, and not so much of a problem in other services.

The original SERVQUAL scale includes five dimensions:

- Tangibles: the appearance of facilities, equipment and service personnel;
- Reliability: the capability to deliver the service in line with what is promised, in a precise, trusted and safe way;
- Responsiveness: availability to help the client and deliver the service promptly;
- Assurance: the knowledge, courtesy of the service provider and their capacity to transmit safety, security and trustworthiness;
- Empathy: the ease of contact, attention and understanding provided to the client.

The SERVQUAL scale has been widely used in different services and contexts, despite the fact that it has not been immune to criticisms (Cronin Jr & Taylor, 1992; Teas, 1993). Several researchers have criticised the scale for its use of gap scores, measurement of expectations, positively and negatively worded items, the generalizability of its dimensions, and the defining of a baseline standard for good quality (Cronin Jr & Taylor, 1992; Brown et al., 1993; Oliver, 1993).

However, despite the well-known criticisms of SERVQUAL, this scale continues to be a most useful model for measuring service quality. We side with Ladhari (2008), who argues that the methodological approach used by Parasuraman et al. (1985, 1988; 1991) in developing and refining the SERVQUAL was, in general, more rigorous than those used by the authors of alternative scales.

The final version of SERVQUAL contains 22 items relating to expectations and 22 items relating to perceptions of service. For the measurement, a 7-point Likert scale is

used. Despite the fact that it has mostly been used in the private sector, it is also applicable to public services (Wisniewski & Donnelly, 1996; Wisniewski, 2001; Ladhari, 2008), although some adaptations to the items might be needed: a decrease or increase in the number of items and reformulation of the language in order to correspond to the characteristics of the organisation under analysis.

The evaluation of the quality of service is calculated by measuring the difference – gap (Q) – between the values for perceptions (P) and expectations (E) for each of the 22 items. In this way, it is possible to obtain individual gaps for each item, and also for each of the five dimensions that constitutes the scale.

2.2 Measuring service quality in police services

Ladhari (2008), in a detailed review of 30 studies of service quality scales, describes how they have been adapted to suit specific service settings. This type of scale has also been applied in the public sector context, namely in the police services (Bryslan & Curry, 2001; Wisniewski & Dickson, 2001; Donnelly et al., 2006).

Quality is no longer a novelty, both for private as well as public services. However, particularly in public services, it is sometimes more of a rhetoric device than a concept rooted into management practices. Whereas private commercial enterprises see quality as a strategic tool in a competitive environment, public services normally operate in monopolistic positions, in a bureaucratic Weberian culture, where the retention of clients is not an aim. Nonetheless, with the ‘new public management’ movement and consequent public sector reforms, the importance of quality, especially as perceived quality by the user, emerges in full force (Wisniewski & Donnelly, 1996; Bryslan & Curry, 2001; Donnelly et al., 2006; Rhee & Rha, 2009; Barabino et al., 2012).

There are doubts whether we can transfer the concept of the client from the private to the public sector. Can the recipients of public services always be considered clients,

especially, as is the case of this study, where police services are concerned? Often the term is used for simplicity and analogy with the functional relationship of other services. However, regarding public administration, as is the case of police services, it may be more appropriate to talk about citizens with both rights and duties (Reisig & Chandek, 2001; Cassia & Magno, 2009). Thus the tax-paying citizen is entitled to good quality services and good management of the resources given to public administration via taxation. If one thinks of the prison service and police services, the citizens in these services are referred to as subjects (Mintzberg, 1996).

The police intervene in different situations regarding the citizen: when the citizen-user requests the service (accidents, for instance), or by initiative of the police (speed radar, for instance). In the first case, the user is almost a client, in the sense that they request the service to meet a need. They are not completely a client given that they do not have a higher or even similar status compared to the police, stressed further by the fact that the police hold a monopolistic position. In the second case, the citizen is clearly detached from a client status, as they do not request the service, and often do not want it (nobody has the choice of not being fined or imprisoned...). Here the supreme interest is that of the collective interest of society at large. If we move the focus of the client relationship from the citizen-user to society at large, i.e. the collective body of citizens, then clearly the argument for good quality services is supported, and the case is made for measuring the quality of police services.

Another specific characteristic of the services under study is the fact that traffic services operate in an 'out-of-office' context. Not only can the service result from involuntary police-citizen encounters (Reisig & Chandek, 2001), the service happens in a service environment, a 'servicescape' (Bitner, 1992), that is not controllable by the service provider, contrary to what is common in most service provision encounters. The

importance of the servicescape in service delivery is well known. The servicescape affects the client's experience of service delivery and can influence both the client and the provider's behaviour (Pareigis et al., 2011; Walter & Edvardsson, 2012). The fact that traffic services operate in an 'out-of-office' environment may pose additional complexity to the analysis of these services.

3 Methodology

3.1 Questionnaire design

We designed a questionnaire in several steps in light of the previous literature.

The SERVQUAL and police services' quality dimensions were taken into consideration drawing on the inspiration of previous studies (Galloway, 1994; Selen & Schepers, 2001; Donnelly et al., 2006; Tarí, 2006). Even though SERVQUAL presents general quality dimensions for service industries, it does not include specific dimensions for each service branch. Chang and Yeh (2002) assert that "service quality attributes are context dependent and should be selected to reflect the service environment investigated". Therefore, the new questionnaire employed is composed of 40 items and includes police service quality dimensions consistent with the SERVQUAL dimensions. The 20 questions, relating either to expectations or perceptions, were initially distributed by the original five SERVQUAL dimensions in the following way: Tangibility – 5; Reliability – 3; Responsiveness – 5; Assurance – 4 and Empathy – 4. The questions addressing expectations and perceptions were rated using a 7-point Likert scale, ranging from 1 ("strongly disagree") to 7 ("strongly agree").

In the next step, the questionnaire was examined by 16 police officers and their contributions were incorporated into a final version. The questionnaire was initially tested in a pilot with several 'clients', drivers who had had previous contact with police

services, to test how comprehensible the questionnaire was. This action was intended to achieve the following objectives: create an interview routine, check the main difficulties of administering the questionnaire to drivers; assess the degree of understanding of the items, and difficulties in responding; and the duration of the interview. After these procedures, minor changes were incorporated into the final version. At that point, the content validity of the questionnaire was deemed adequate.

3.2 Sampling and survey procedure

Following questionnaire design, the questionnaires were administered by telephone to all drivers that had had contact with the two police traffic services during a period of three months. The two services were: the radar team (mainly tasked with the enforcement of speed limits) and the accidents team (a team which is called in response to a traffic accident). There are two reasons driving the choice of these two services for field research: (1) the accident service is the closest to the classic relationship between a client and a service provider (even though we acknowledge that that relationship never truly exists here), (2) the radar service is of a very different nature, with a particular feature that distinguishes it from other inspection services – the human action is conditioned by means of documented evidence of the offense (in this case a tangible photo). On the one hand, this feature eliminates the discretion of the police officers in their decision to act; a known problem in such actions (Paoline III & Terrill, 2005). On the other hand, drivers are convinced that the police action is inevitable, removing any judgements of injustice, which could be a confounding factor when evaluating the quality of the service provided.

The telephone interviews were scheduled to take place no less than 8 and no more than 30 days after the date of the encounter between the driver and the police. In the

case of the accident service an assurance was made that the ‘accident participation’ paperwork was already ready for the driver to pick up from the police station.

Prior to the interview a telephone contact was attempted. This contact occurred, as a rule, during work hours and work days. When the driver did not answer, the date and time of the contact attempt was recorded and a new appointment planned for the same day at a different time or the following day, with no set time (according to the availability of interviewers). If the second attempt to contact was not successful, the questionnaire for this contact was immediately deemed ‘unviable’, and no longer considered for the study. The same happened if after a new schedule, arranged with the interviewee, it was not fulfilled the second time round, or the interviewee demonstrated unwillingness to answer the questionnaire. Whenever possible a new schedule was made when the respondent was willing to be interviewed but was momentarily unavailable.

From this sample 170 answers were considered valid.

The sample is described in Table I.

----- Insert Table I here -----

Exclusions from the sample included (1) all drivers that had been in accidents with victims (injuries and deaths); (2) all that had committed a crime; (3) all that after being informed about the study declined to participate in the phone interview at a later date. Groups (1) and (2) were excluded because, given their circumstances, they would not in all likelihood give a dispassionate answer, and could thus bias the results. After excluding (1) and (2), there were 313 drivers, 17 of which declined to participate from the start. Out of the remaining 296, 170 questionnaires were answered correctly and in

full, 86 from the radar team, and 84 from the accidents team. All data collected regarding respondents' characteristics, along with perception and expectations scores, was stored and codified, from which the gap scores were calculated and later analysed using SPSS (v.15).

4 Results

4.1 Reliability

Reliability can be estimated by means of a reliability coefficient, such as Cronbach's Alpha, measuring the internal consistency of multidimensional scales (Cronbach, 1951). This is the most widely used reliability estimate in empirical research. In this respect, the minimum advisable level is 0.7 (Nunnally & Berstein, 1994). The first research question was to determine, by means of reliability analysis, whether the scale used to compute the gap scores between perceptions and expectations produced reliable results. For the study in question, Cronbach's Alpha was found to be 0.908, and thus the scale was considered to have adequate reliability.

4.2 Validity

The questionnaire was constructed with an acceptance of the general validity of the SERVQUAL instrument (Zeithaml et al., 1990). A pilot test, as mentioned above, was conducted and police officers' opinions regarding the questionnaire confirmed content validity.

To evaluate the dimensionality of the scale an exploratory factorial analysis was performed. Exploratory factor analysis can be used to investigate the possible underlying structure of a set of interrelated variables without imposing any preconceived structure on the outcome (Child, 2006). By performing exploratory factor analysis, the number of constructs and the possible underlying factor structure can be

identified (Child, 2006). Hurley et al. (1997) argue that exploratory factor analysis is appropriate for scale development, which is in line with the purpose of this paper: the construction of a customer quality assessment scale for use in the field of policing.

The suitability of the factorial analysis was tested. The Kaiser-Meyer-Olkin statistic, which measures the sampling adequacy, is 0.861, a value sufficiently close to 1 to indicate that factorial analysis should yield distinct and reliable factors. Bartlett's test of sphericity, which tests the null hypothesis that there are no relationships between the variables to be included in the analysis, is highly significant, 1627.34 ($p < 0.001$), and therefore factor analysis is appropriate.

Exploratory factor analysis was then performed with direct Oblimin with Kaiser Normalization as the rotation method, via principal component analysis. For deciding how many factors to retain we considered the original 5 SERVQUAL factors, applying the criterion for the Eigenvalue to be equal to or greater than 1, with retention of those factors that explain at least 50% of total variance, whilst also consulting the scree plot.

In the end, it was decided to retain 6 components, explaining 69.32% of total variance, which were labelled as (1) Empathy, (2) Assurance, (3) Tangibles, (4) Responsiveness, (5) Reliability, as in the traditional SERVQUAL, and (6) Promptitude.

This new dimension, Promptitude, is characterised by serving the citizen promptly, speedy delivery, and clearly informing the citizen about procedures is an important result of this study. Although, this characterization usually comes under the original SERVQUAL Responsiveness dimension, the fact that it emerges as a separate dimension in our study is worth some reflection. The original Responsiveness dimension is characterised by two parts: "Willingness to help customers AND provide prompt service" (Parasuraman et al., 1988). In this study, the latter part 'emancipated' itself, as Promptitude. The Promptitude dimension assumes special relevance in the

context of the nature of the service provided in this instance. The circumstances that determine the contact with the police services, be it because of a traffic accident or because of speed control, result in the interruption of a journey by the driver. In this situation, it is understandable that the driver sees prompt execution of the service as a relevant dimension in order that the journey may be resumed in a timely fashion. The dimension Promptitude identified in this study is in line with the findings presented by Iacobucci et al. (1995), which refers to the importance of “the quickness of response during the service encounter” and the impact it has on the perception of service quality. Sureshchandar et al. (2002) also argue that the five factors relating to service quality that they identified include the following: “Customers would always like and expect the service delivery processes to be perfectly standardized, streamlined, and simplified so that they could receive the service without any hassles, hiccups or undesired / inordinate questioning by the service providers”. In Table II we present the final factor solution for POLQUAL, based on gap scores, with details of factor loadings. Thus, POLQUAL includes the five original dimensions of SERVQUAL (Tangibles: Q1, Q2 and Q3, Reliability: Q5, Q6 and Q8, Responsiveness: Q4, Q12 and Q13, Assurance Q7, Q14, Q15 and Q17, Empathy Q16, Q18, Q19 and Q20) and our additional Promptitude dimension (Q9, Q10 and Q11).

----- Insert Table II here -----

They were perceived as service quality dimensions for the purposes of our study and are compatible with previous research, indicative of the validity of the study.

4.3 Findings

Previous studies assessing the quality of police services (Donnelly et al., 2006; Chu et al., 2010) concluded that the overall SERVQUAL scores tend to be negative. This is also the case in the present study; the overall quality of the service gap is negative (-0.367), and this gap is negative for all dimensions of the scale. In Table III we present the mean gap and standard deviation (SD) for each of the six dimensions of POLQUAL. The most negative gaps are for the reliability and tangibles dimensions.

----- *Insert Table III here* -----

The differences between the means for expectation and perception scores are all statistically significant and different from zero, apart from two items. This indicates that gaps occurring in these dimensions highlight particular factors causing dissatisfaction among drivers, since negative values reflect higher expectations than perceptions in SERVQUAL models.

The two largest gaps refer to:

- Q1 – Has modern equipment;
- Q5 – The information and documentation provided is easy to understand.

In the opposite direction, the two smallest gaps refer to:

- Q3 – Is well uniformed and with well-kept appearance;
- Q18 – Gives individualized attention to the citizen.

In Table IV, we can see the quality gaps for all items:

----- *Insert Table IV here* -----

Since we are assessing the quality of two different police services we wanted to test if there was any difference between them. Since one of the services is normally solicited by the users and the other has an enforcement character, we thought that maybe the latter would garner less satisfaction. However, when we compared the service quality of the radar team with the accident team, we have found that both services present negative gaps (-0.342 for the accident team and -0.391 for the radar team) but there were no significant differences between the two groups. Unlike expectations, there does not seem to be a perceived difference in the quality of service provided between the requested service (accidents team) and the non-requested service (radar team).

From a different angle, we also questioned whether drivers' sex, age, time in possession of a driving licence and educational level might have an influence on their assessments. We have found that there are no significant differences in the quality gap in relation to all variables, with the exception of educational attainment. There was evidence that perceived quality of service decreases as the level of education of the driver increases. As a consequence, as levels of education in Portugal are rising, the citizens become more discerning and demanding of good service provision. These findings are in line with previous research (see for instance Pakdila & Aydın, 2007).

Finally, we also wanted to establish if the existence of previous contact with the police might have any impact on the drivers' assessments. We have found that there are no significant differences in perceived quality between those that had had previous contact with the police and those that had not. Thus, it seems that previous contact does not significantly alter expectations of the level of service provided by the police in these services.

5 Conclusion

This is a pioneering study of the adapted SERVQUAL scale in traffic services of the Portuguese National Police. This study provides a valuable tool, POLQUAL, to evaluate traffic services' quality and help police officers to measure and develop service quality. The 'out-of-office' context brings an important distinction from the traditional front-office settings, and previous police services that have been studied, by evaluating situations where the client is likely an involuntary recipient of the service. This work thus contributes toward helping police services in the now ubiquitous quest for excellence (Dahlgaard-Park, 2009).

The POLQUAL instrument was applied to a valid sample of 170 people, 86 for the radar service and 84 for the accident service. From the validation procedure, and relative to the original SERVQUAL instrument, a sixth dimension emerged, which we called 'Promptitude'. This is in all likelihood the result of the fact that users had not planned the service encounter and need to quickly resume their journeys.

Portuguese citizens seem to be the least satisfied with the modernity of police equipment (Q1 gap), which largely reflects the poor financial context of the country, but more importantly they find it difficult to understand the information and documentation provided by the officer (Q5 gap). Whereas the police are limited in their control over the resourcing of equipment, the communication of information and documentation is clearly within the remit of the police force, and thus an institutional effort should be developed to make this more comprehensible to the general user. This is especially the case because the effort of individual police officers to give individualised attention to the user is recognised by the respondents (Q18 gap), which points to institutional rather than individual police officers' shortcomings. In fact, citizens find the police officers'

effort towards presentation commendable, which means that police officers in general give a good image of their force (Q3 gap).

Nonetheless overall quality of the service gap is negative, and the gaps are negative for all dimensions of the scale. Although this is not an uncommon occurrence in public services, it should prompt managerial action for improvement in the police services. If some of the gaps (namely Q1 and Q2) are not under the control of the police services, others could be improved by managerial action, such as improved service design (Q5 for instance), training (for instance Q9, Q7, Q14, Q17), especially training regarding communication with the citizen (for instance Q8, Q6, Q11, Q12, Q20), and staff motivation (Q19). Indeed a number of measures would need to be combined to address most gaps.

It is also worth noting that, unlike what might be expected, we do not find a difference between the perceived quality of service provided between the requested services, i.e. the accident service, and the imposed services, i.e. the radar service. The police services seem to be evaluated consistently, regardless of the context of the service delivery. Neither have we found a relationship between having previous contact with police services and the satisfaction level of the citizens.

For further research we suggest comparing the results of the present study with a study of quality of service for the Portuguese National Police in normal front-office conditions, where the characteristics of the servicescape are better controlled.

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