Assessment of service quality dimensions: a study in a vehicle repair service chain

Paulo A. Cauchick Miguel¹, ², Márcia Terra da Silva², Elias L. Chiosini¹, and Klaus Schützer¹

Abstract
Competitiveness and search for profits have called more attention towards customers satisfaction and increased researcher’s interest on the topic of service quality. In this context, this study applies SERVQUAL for assessing service quality in a chain of car repair shops. The main objective is to assess quality service dimensions that is delivered through the perspectives of managers and customers. This work was performed in a multinational company service chain including one hundred shops located throughout the country. The studied company manufactures brake system, steering wheel system, suspension and seat belts. The service chain involves automotive services concerning suspension, brake systems, clutch and tires, among others, for 20,000 customer per month with revenue over US$ 20 million a year. A questionnaire was developed based on the service quality dimensions and sent to the shops and customers for gathering data (with a 21% of response rate), from which results was analysed. The results of this study show the quality dimensions and characteristics that call managerial attention. Responsiveness and assurance were found the most relevant to shop managers and customers, respectively. Quality improvement initiatives were proposed to enhance the service rendered by the car repair shops. The paper concludes that there are differences among the perspectives of shop owners and customers with regard to quality dimensions and suggests further work to continue this research.

Keywords: service quality; SERVQUAL; quality dimensions; car repair business.

1. Introduction
Since the 90’s many service companies have pursued to enhance their performance and effectiveness in search of achieving differentiation in the market. An example of that is the attempt to convince customers that their quality are superior to the competitors. In addition, the importance of service sector has sharply increased at both developed and developing countries. Over 75% of all US jobs now reside in services industries. Further, the services sector generates over 85% of all new jobs and 66% of the GNP of the US. In developing countries like Brazil, where this work was developed; services correspond to 54.5% of the GNP (Cauchick Miguel and Salomi, 2004).

Research on services has grown correspondingly. In particular, academics and practitioners alike have exhibited considerable interest in the issues that surround the measurement of service quality. Service quality is one of the major issues facing operations managers (Gupta and Chen, 1995) but it is an area characterised by debate concerning the need for assessing customer expectations and service quality assessment (Parasuraman et al., 1994).

In this sense, the objective is to identify which quality dimensions as most important to customers of a vehicle repair chain. In addition, it also assesses the service that is delivered to them. In order to accomplish to these objectives, the paper is structured as follows. Section 2 contains the theoretical background related to service quality models. Section 3 describes the research methodology, including company profile, the sample, and data collection procedures. Section 4 presents the

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results based on a statistical analysis as well as discusses the findings and section 5 draws the conclusions and implications of this work.

2. Theoretical Background

The emergence of service quality and its assessment has attracted the attention of numerous researchers in the past two decades or so. In this sense, there are two main lines of thoughts on measuring service quality (Kang and James, 2004): an American and an European perspective. Brady and Cronin (2001) suggest that the researchers generally adopt one of the two conceptualisations in their work. The focus on functional quality attributes is referred to as the American perspective of service quality while the European perspective suggests that service quality considers two more components.

The European perspective considers additional aspects other than the process of service delivery. Grönroos (1984), for instance, noted that the quality of a service as perceived by customers consists of three dimensions: functional (the process of service delivery to customers), technical (the outcomes generated by the service to the customers), and image (how the customers view the company). Considering those dimensions, the quality of the service is dependent upon two variables: the expected service and the perceived service. More details of the previous argument are provided by Grönroos (1984).

Functional quality of a service is often assessed by measures of customers’ attitudes, as in customer satisfaction questionnaires. As described by Hayes (1997), the process of identifying customers’ attitudes begins with determining customers’ requirements or quality dimensions. Parasuraman et al. (1985) identified in a first study 10 quality dimensions based on a series of focus group sessions. From this study, the authors concluded that customers use the same criteria to assess service quality independently of the type of service.

For Hayes (1997), however, some quality dimensions are generalised across many services, but some will apply only to specific types of services, and it is necessary to understand quality dimensions to be able to develop measures to assess them. The author explains then two ways of identifying important quality dimensions of services: quality dimension development approach and critical incident approach. The first one uses different sources of information, such as opinions of providers and literature. The other one is a process to obtain information from customers.

The 10 determinants of service quality established by Parasuraman et al. (1985) provide a list that can guide investigation on the first approach. The authors subsequently developed SERVQUAL (Parasuraman et al., 1988), a two-part instrument for measuring service quality that was refined later (Parasuraman et al., 1991). Much of the research to date has focused on measuring service quality using this approach and its use has become quite widespread (Brown et al., 1993; Kang and James, 2004).

SERVQUAL instrument consists of a 22-item instrument for assessing service quality based on customer’s perceptions, which is, by his turn, the difference between the customer’s perceived quality and his/her expectation. The perceived quality is assessed based on service quality dimensions that correspond to the criteria used by consumers when assessing service quality. There are 10 potentially overlapping dimensions: tangibles, reliability, responsiveness, communication, credibility, assurance, competence, courtesy, understanding/knowing the customer, and access. A more detailed description of those dimensions can be found in Zeithan et al. (1990). Afterwards, these dimensions were reduced to five, namely: tangibles, reliability, responsiveness, assurance, empathy. Using those 10 or 5 dimensions as the evaluation criteria the specification of service quality becomes the gap between customers’ expectations and their perceptions (Parasuraman et al,
1985). This performance-expectation model was also adopted by other authors (e.g. Brown and Swartz, 1989).

However, there has been an extensive debate whether the perception-minus-expectations specification would be appropriate or assessing perception alone would be sufficient. Some concerns about the SERVQUAL instrument were raised by Cronin and Taylor (1992; 1994) and Teas (1993; 1994). The authors argue that there are serious conceptual and operational drawbacks associated with the SERVQUAL model, inducing Cronin and Taylor (1992) to propose a perceived quality model called SERVPERF. The perceived quality model postulates that an individual's perception of the quality is only a function of its performance. Considering that the 22 performance items adequately define the domain of service quality, Cronin and Taylor (1992) proposed the SERVPERF instrument, which is a more concise performance-based scale; an alternative to the SERVQUAL model. In addition, they compared the SERVPERF model with SERVQUAL and two other alternatives: the weighted SERVQUAL and the weighted SERVFERF models. Those weighted versions consider the importance of a quality attribute as a determinant of perceived quality. In response to the criticisms, Parasuraman et al. (1994) claimed that many of those concerns are questionable and offered a set of research directions for addressing unresolved issues.

2.1 Literature analysis

As can be seen, models for measuring service quality is either viewed as a measure of the degree of discrepancy between consumers’ perceptions and expectations (e.g. Parasuraman et al., 1985) or a tool for assessing the perceived quality (Teas, 1993). Yet, further alternative models have been offered by other authors (Cronin and Taylor, 1992; Bolton and Drew, 1991). A literature review those models can be found in Cauchick Miguel and Salomi (2004), from which the Table 1 summarises their main characteristics.

<table>
<thead>
<tr>
<th>Author</th>
<th>Model</th>
<th>Main Characteristics</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grönroos (1984)</td>
<td>There is no mathematical representation</td>
<td>Quality is a function of expectations, outcome and image</td>
<td>Different types of services</td>
</tr>
<tr>
<td>Parasuraman et al. (1985, 1988)</td>
<td>SERVQUAL $Q_i = P_i - E_i$</td>
<td>22-item scale using 5 quality dimensions</td>
<td>Different types of services</td>
</tr>
<tr>
<td>Brown and Swartz (1989)</td>
<td>$Q_i = E_i - D_i$</td>
<td>Use 10 quality dimensions defined by Parasuraman et al. (1985)</td>
<td>Medical surgery</td>
</tr>
<tr>
<td>Bolton and Drew (1991)</td>
<td>Assessment model of service and value. There are many equations representing the model</td>
<td>Use four dimensions developed by Parasuraman et al. (1988) and introduce the concept of value for quality assessment</td>
<td>Telephone services</td>
</tr>
<tr>
<td>Cronin and Taylor (1992)</td>
<td>SERVPERF $Q_i = P_i$</td>
<td>Use 5 quality dimensions defined by Parasuraman et al. (1988)</td>
<td>Different types of services</td>
</tr>
<tr>
<td>Teas (1993)</td>
<td>$Q_i = \sum_{I}^{n} \left[ P_i - I_i \right]$</td>
<td>Use 5 quality dimensions defined by Parasuraman et al. (1988)</td>
<td>Retail stores</td>
</tr>
</tbody>
</table>

When examining the literature, it becomes clear that there is no consensus on which model is more appropriate in a general sense. SERVQUAL heightened the interest of many researchers but there are some arguments against its validity. Criticisms include the use of different scores, applicability, dimensionality, lack of validity, etc. Critical reviews of SERVQUAL are offered by Asubonteng et al. (1996) and Buttle (1996).

Cronin et al. (1994) continue the debate between the effectiveness of SERVQUAL and SERVPERF for assessing service quality. The authors remained unconvinced of both, that including customer
expectations in measures of service quality is a position to be supported, and that SERVPERF scale provides a useful tool for measuring overall service quality. Moreover, Lee et al. (2000) empirically compare SERVQUAL (performance minus expectations) with performance-only model (SERVPERF). The authors also conclude that the results from the latter appeared to be superior to the former.

Despite those criticisms, a large number of applications of SERVQUAL have become available. In addition to the applications listed in Table 1, different types of services have been investigated using SERVQUAL. Examples of service are fast-food, airlines and long distance telephone calls (Gupta and Chen, 1995), banking (Newman, 2001; Cui et al., 2003), physiotherapy (Curry and Sinclair, 2002), web sites (Iwaarden et al., 2003), health care (Wong, 2002; Kilbourne et al., 2004) to name but a few. The investigations on SERVPERF applications have also been intense but not as much as SERVQUAL. Nevertheless, instances of service types include public services (Bigné et al., 2003) and hotels (Nadiri and Hussain, 2005). Kang and James (2004) presented the application of Grönroos’ model (Grönroos, 1984) to explore the European perspective of measuring quality of cell phone services considering other dimensions (technical and image) besides the functional ones.

A comprehensive and more recent review of other models, besides SERVQUAL and SERVPERF, is provided by Seth and Deshmukh (2005). The authors critically examine 19 different service quality models reported in the literature. A relevant deliverable from that work is a set of research streams in the field of service quality assessment.

3. Research Design

The work was performed in a multinational company service chain including one hundred shops located throughout the country. The studied company manufactures brake system, steering wheel system, suspension and seat belts. The service chain involves automotive services concerning suspension, brake systems, clutch and tires, among others, for 20,000 customer per month with revenue over US$ 20 million a year.

SERVQUAL was adopted as the instrument to assess service quality according to the literature (Parasuraman et al., 1985; 1988). Although there is no consensus in the literature of which instrument is most effective, SERVQUAL was chosen because it was tested in a similar work conducted by Zeithaml et al. (1990) and it is useful to provide evidence of service quality for further service operation improvement (Page Jr. and Spreng, 2002).

Data were collected through an instrument developed using ten service quality dimensions (tangibles, reliability, responsiveness, competence, courtesy, credibility, assurance, access, communication, and customer understanding) with 10 questions aiming at reducing questionnaire size and then improving the response rate. The answers were offered using a 9-point Lickert-type scale anchored by “1 – extremely poor” to “9 – extremely high” based on Parasuraman et al. (1994). Moreover, previous study (Parasuraman et al., 1994) suggested that customers have a range of expectations (named zone of tolerance) bounded by desired service – the service level customer believe companies can and should deliver – and adequate service, i.e. the minimum service level customers consider acceptable. Hence, three-column format questionnaire that generates separate ratings of “expected” (E), “perceived” (P), and “minimal acceptable” (M) with three identical, side-by-side 9-point scales, mentioned earlier. This approach was carried out because it might be considered as diagnostically rich (Parasuraman et al., 1994). The assessment was targeted to managers and customers in two separate analyses. “Minimal acceptable” measures the importance of the dimension while P minus E assesses the service quality of a given dimension/question, calculated as:
\[ QS_k = \frac{1}{n} \sum_{j=1}^{n} (P_{jk} - E_{jk}) \]  

(1)

Where:
- \( QS_k \) - service quality in the dimension \( k \)
- \( P_{jk} \) - performance perception in the dimension \( k \) to customer \( j \)
- \( E_{jk} \) - expected performance in the dimension \( k \) to customer \( j \)

This work is quantitative in nature and uses a probabilistic sample, determined according to Rea and Parker (2002). Considering a population of 20,000 customers per month and a level of confidence of 95% and ±5% confidence interval, the minimal sample was calculated as 377. Questionnaires to the managers were sent to all of them (100) spread all over the country.

The data collection was carried out in two stages. The first was a pilot test used to clarify the overall structure and approach to the project whilst validating the measuring instrument to be used. Problems of misinterpreting questions occurred in the pilot resulting in improving the questionnaire in both form and content (e.g. lay out of questions and alternatives, difficult to understand questions, improvement of instructions, etc.). Survey instrument was checked on validity and reliability (Cronbach alpha) according to Hayes (1997).

Five hundred questionnaires were randomly distributed to customers, though the shops, hence above the minimal sample. The mail included a covering letter detailing the objectives of the study as well as a statement of confidentiality and a self-addressed envelope for returning the questionnaire. In order to minimise the problem of a low response rate, previously to post the questionnaires, all shop managers were contacted by telephone. Additionally, the company call centre was used to contact the shops after sending the questionnaires to the managers (two contacts after 5 days and 30 days of mailing).

The data of the questionnaires were input in an electronic spreadsheet to organise data and for further analysis of results. Statistical analysis was conducted using Minitab™ software. Further analysis of the results from the assessment enable to identify the opportunities of improvement in the services provided.

4. Results

A total of 105 questionnaires from customers and 21 questionnaires from managers were returned, yielding an approximately 21% response rate for both, within Furtrell's (1994) expected range of 20 to 40%. Typically, responses rates for this type of surveys in Brazil vary from 18.7% (Xavier, 1995) to 32.6% (Mattos and Toledo, 1997).

4.1 Reliability and validity

As mentioned earlier, before assessing the service quality it was necessary to establish the validity and reliability of the instrument for data collection. Concerning the reliability of the instrument for the internal service quality scores, the Cronbach’s alpha resulted in the values indicated in Table 2. These results are similar as those found in the literature, e.g. 0.920 by Parasuraman et al. (1988), 0.900 by Croning and Taylor (1992), and 0.927 by Frost and Kumar (2001). Therefore, the results of total scale for the developed instrument could be considered reliable.

<table>
<thead>
<tr>
<th>Model</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers</td>
<td>0.867</td>
</tr>
<tr>
<td>Customers</td>
<td>0.916</td>
</tr>
</tbody>
</table>
In order to evaluate the validity a multiple linear regression analysis was conducted. However, data were not normally distributed. As a consequence, Pearson correlation was carried out. The results indicated that only questions 6 and 9 are valid for manager’s answers; so the results are limited to the sample and cannot be generalised to all repair shops. For customers, only question 8 is not valid (Pearson coefficient lesser than 0.3).

4.2 Quality service assessment
Two data sets had been created from the research – one for the managers’ and one for the customers’ answers. For each dimension, the averages of respondents answers were computed for each of the three columns: perception of performance (P), expected service level (E) and minimum service level (M). Service quality of a given dimension was assessed by P menus E and importance was assessed by M. Tables 3 and 4 summarise the results.

<table>
<thead>
<tr>
<th>Questions</th>
<th>P</th>
<th>E</th>
<th>M</th>
<th>P-E</th>
<th>M</th>
<th>P-E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P-E (Ranking)</td>
<td>P-E (Ranking)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>7.05</td>
<td>8.57</td>
<td>6.43</td>
<td>-1.52</td>
<td>8th</td>
<td>10th</td>
</tr>
<tr>
<td>Q2</td>
<td>7.81</td>
<td>8.86</td>
<td>7.38</td>
<td>-1.05</td>
<td>5th</td>
<td>8th</td>
</tr>
<tr>
<td>Q3</td>
<td>8.48</td>
<td>8.76</td>
<td>7.86</td>
<td>-0.29</td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>Q4</td>
<td>8.10</td>
<td>8.57</td>
<td>7.38</td>
<td>-0.48</td>
<td>5th</td>
<td>3rd</td>
</tr>
<tr>
<td>Q5</td>
<td>7.62</td>
<td>8.90</td>
<td>7.62</td>
<td>-1.29</td>
<td>2nd</td>
<td>9th</td>
</tr>
<tr>
<td>Q6</td>
<td>8.38</td>
<td>8.62</td>
<td>7.57</td>
<td>-0.24</td>
<td>3rd</td>
<td>1st</td>
</tr>
<tr>
<td>Q7</td>
<td>8.10</td>
<td>8.90</td>
<td>7.52</td>
<td>-0.81</td>
<td>4th</td>
<td>6th</td>
</tr>
<tr>
<td>Q8</td>
<td>7.52</td>
<td>8.19</td>
<td>6.81</td>
<td>-0.67</td>
<td>7th</td>
<td>4th</td>
</tr>
<tr>
<td>Q9</td>
<td>7.62</td>
<td>8.38</td>
<td>6.86</td>
<td>-0.76</td>
<td>6th</td>
<td>5th</td>
</tr>
<tr>
<td>Q10</td>
<td>7.71</td>
<td>8.57</td>
<td>6.86</td>
<td>-0.86</td>
<td>6th</td>
<td>7th</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Questions</th>
<th>P</th>
<th>E</th>
<th>M</th>
<th>P-E</th>
<th>M</th>
<th>P-E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P-E (Ranking)</td>
<td>P-E (Ranking)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>7.58</td>
<td>8.04</td>
<td>6.81</td>
<td>-0.46</td>
<td>10th</td>
<td>2nd</td>
</tr>
<tr>
<td>Q2</td>
<td>7.90</td>
<td>8.46</td>
<td>7.32</td>
<td>-0.56</td>
<td>7th</td>
<td>1st</td>
</tr>
<tr>
<td>Q3</td>
<td>8.07</td>
<td>8.33</td>
<td>7.26</td>
<td>-0.26</td>
<td>8th</td>
<td>8th</td>
</tr>
<tr>
<td>Q4</td>
<td>7.99</td>
<td>8.43</td>
<td>7.53</td>
<td>-0.44</td>
<td>4th</td>
<td>3rd</td>
</tr>
<tr>
<td>Q5</td>
<td>8.25</td>
<td>8.56</td>
<td>7.59</td>
<td>-0.31</td>
<td>3rd</td>
<td>6th</td>
</tr>
<tr>
<td>Q6</td>
<td>8.09</td>
<td>8.41</td>
<td>7.65</td>
<td>-0.32</td>
<td>2nd</td>
<td>5th</td>
</tr>
<tr>
<td>Q7</td>
<td>8.20</td>
<td>8.49</td>
<td>7.85</td>
<td>-0.29</td>
<td>1st</td>
<td>7th</td>
</tr>
<tr>
<td>Q8</td>
<td>7.73</td>
<td>8.08</td>
<td>7.09</td>
<td>-0.34</td>
<td>9th</td>
<td>4th</td>
</tr>
<tr>
<td>Q9</td>
<td>8.12</td>
<td>8.35</td>
<td>7.40</td>
<td>-0.23</td>
<td>5th</td>
<td>9th</td>
</tr>
<tr>
<td>Q10</td>
<td>8.04</td>
<td>8.25</td>
<td>7.37</td>
<td>-0.21</td>
<td>6th</td>
<td>10th</td>
</tr>
</tbody>
</table>

As can be seen by results, service quality is negative for all dimensions in the opinion of managers and customers, that is, perception of performance is minor than the desired level. For managers, tangibles (dimension 1) are evaluated as the worst quality dimension of the service; however, it is also the least important of the ten dimensions. For the little importance attributed to this issue, confirmed by the customers’ data set, its correction would not be demanding. Dimension 3, responsiveness, is of higher importance for managers. Although it has a negative evaluation, it has the second minor gap among the ten dimensions, suggesting that it is relatively well evaluated, from the point of view of managers.
The evaluation of dimension 5, courtesy, was the worst of all: although it is very important for managers, its performance is mediocre. Courtesy is low-rated on the column P minus E, and still more, the perceived quality coincides with the minimum acceptable. All this together, it suggests high priority for managerial actions.

Dimension 7 (assurance) is the most important issue for customers; as for performance, it is among the 5 better evaluated. Dimension 10 was evaluated as best quality dimension and it is only the 6th in importance. The worst quality dimension, reliability was not considered important to customers, performing 7th in importance. That is a great difference between this research and Parasuraman et al. (1988), where this dimension appears as the most important.

From the managers’ point of view, as much as for the customers, all the dimensions need to be improved, since none presents a positive value from P minus E. Nevertheless, the priority of the corrective actions is slightly different for the groups. For the managers, questions 5 (courtesy), 2 (reliability) and 1 (tangibles) must be faced with priority. The other quality service issues must be improved following the classification of importance. For the customers, issues 6 (credibility) and 4 (competence) are high priority, the remaining could follow the importance order to introduce improvement changes. The five more important issues for each group are shown in Table 5.

<table>
<thead>
<tr>
<th>Managers</th>
<th>Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Q3 Responsiveness</td>
<td>1st Q7 Assurance</td>
</tr>
<tr>
<td>2nd Q5 Courtesy</td>
<td>2nd Q6 Credibility</td>
</tr>
<tr>
<td>3rd Q6 Credibility</td>
<td>3rd Q5 Courtesy</td>
</tr>
<tr>
<td>4th Q7 Assurance</td>
<td>4th Q4 Competence</td>
</tr>
<tr>
<td>5th Q2 Reliability</td>
<td>5th Q9 Communication</td>
</tr>
</tbody>
</table>

The perceived performance for managers and clients are ranked in a descend order showed in Table 6.

<table>
<thead>
<tr>
<th>Managers</th>
<th>Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Q1 Tangibles</td>
<td>1st Q2 Reliability</td>
</tr>
<tr>
<td>2nd Q5 Courtesy</td>
<td>2nd Q1 Tangibles</td>
</tr>
<tr>
<td>3rd Q2 Reliability</td>
<td>3rd Q4 Competence</td>
</tr>
<tr>
<td>4th Q10 Customer understanding</td>
<td>4th Q8 Access</td>
</tr>
<tr>
<td>5th Q7 Assurance</td>
<td>5th Q6 Credibility</td>
</tr>
</tbody>
</table>

The difference between customer and manager evaluations is significant and suggests an analogy with gap 1, as described by Zeithaml et al. (1990). In this case, it is not possible to segment data by repair shops, condition to compute the gap between what the customers of determined store expected and the opinion of the manager on what are customers’ desires. Although it cannot be confirmed by this research, new investigation may be carried through to investigate if in some repair shops the manager is unaware of the opinion of the customers in detail.

As it was already mentioned, the validity of the data was not confirmed, and the averages of evaluation of the service cannot be seen as representing the opinion of 100% of managers, but only of the (21%) respondents. The reliability was confirmed for customers in 95% for all the issues and the validity was not confirmed only for questions 1, 8 and 10.
In order to identify corrective and preventive actions, Table 7 presents the dimensions that demand high priority actions of improvement on the point of view of customers and managers and some suggested managerial actions.

Table 7 – Suggested managerial actions.

<table>
<thead>
<tr>
<th>High priority for customers (C) or managers (M)</th>
<th>Dimensions</th>
<th>Suggested actions</th>
</tr>
</thead>
</table>
| C                                             | Credibility| - practice a fair price  
- work on constructing a solid reputation |
| C                                             | Competence| - hire or qualify employees  
- restrain promises to customers on technical issues of his domain |
| M                                             | Courtesy   | - qualify employees to attend on customers |
| M                                             | Reliability| - define standards for each type of problem |
| M                                             | Tangibles  | - acquire new equipment, suited for technical activities |

5. Conclusions

Although there is no consensus in the literature of which instrument is most appropriate for assessing service quality SERVQUAL instrument was able to provide relevant results for the present study. Most important quality dimension for managers was responsiveness and assurance to customers. The best performance dimensions are tangibles and reliability, respectively, to managers and customers. Based on the current results, all the dimensions need to be improved either under managers or customer point of view. The difference between customer and manager assessment is significant and suggests an analogy with the literature. It is believed that the preliminary study’s findings justifies further research to address additional measurement-related issues such as: increasing the sample size aiming at external validity, investigating if in some repair shops the manager is unaware of the opinion of the customers in detail, conducting a more robust statistical analysis with the available data, which was not possible in this present study.

References


