A PROPOSAL OF NEW EVALUATION MODEL OF COMPLIANCE FOR QUALITY CERTIFICATION IN THE TOURISM SECTOR

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ABSTRACT
The goal of this paper is to evaluate a set of variables related with quality management to propose an evaluation model of compliance capable of discriminating the most deserving organizations and increase credibility of the international standard.

Keywords: compliance for quality certification, compliance, multivariate statistical techniques.

INTRODUCTION
In recent years, a significant number of Italian companies have adopted the ISO 9001 international standard (www.accredia.it). This international standard in Italy and other European nations (Alonso-Almeida et al, 2013) has been adopted by a limited number of companies in the tourism sector. In Sardinia, an Italian region particularly suited to tourism, the certified accommodation facilities are less than ten and the trend has been negative since 2000 (www.accredia.it). In the services sector, studies on the relationship between quality elements and performance are currently limited and the relationship between the quality perceived by customers and financial results has rarely been analysed (Aznar et al., 2015).

The low infiltration of the standard is mainly due to the high cost of the certification process and to the lack of objectivity and non-manipulability of the criteria used in delivering certification (Franceschini et al., 2010). To promote the diffusion of the standard in the tourism sector it is important to reduce the costs of certification and enable organisations that adopt the standard to distinguish themselves from those of the same category. In order to assess service quality great importance is given to customer satisfaction. Generally speaking, high quality has a positive impact on economic results, but the economic and financial indices are not taken into consideration to obtain and maintain certification. In this work, after assessing if high values of quality perceived by the consumer correspond to better economic performance by tourist companies, an attempt was made to define an incentives/penalties system based on data related to perceived quality and financial results.

METHODS
As a first approach to the problem a sample of 30 hotels, 12 3-star and 18 4-star, was considered. The hotels were of different sizes, with a number of rooms ranging from 12 to
253. They were divided into classes based on size: A (from 1 to 25 rooms), B (from 26 to 55 rooms), C (from 56 to 80 rooms), D (from 81 to 110 rooms) and D (≥ 111 rooms). All the hotels were located in Sardinia. In the survey the public domain assessment elements were examined that efficiently represented the interests of stakeholders (namely customers and tourism entrepreneurs).

To obtain the values regarding quality perceived by the hotel customers we took into account the public reviews reported by the hotel internet portal Trivago. Unlike other portals considered in a previous work (Aznar et al. 2015), this portal shows the average rating and extensive reviews on other booking sites, e.g. Hotels.com, Expedia, Agoda, leading hotels, etc. In addition, it gives users the ability to publish a review only after having stayed in the hotel. In order to have a guarantee of reliability of customer opinions, only the hotels that obtained at least 100 reviews were considered. The financial indicators were taken from the balance sheet published on the AIDA database for the year 2016. The data from the survey were analysed by univariate (ANOVA) and multivariate (Principal Component Analysis, PCA) statistical techniques, using the SPSS 14.0 software package (SPSS Inc., Chicago, IL).

RESULTS

In this study, the perceived quality factors considered were service, comfort and quality/price. These, rather than structural ones, were the factors most closely linked to quality of service and efficiency of the organisation (Lockyer, 2005 - Sainaghi, 2011). The financial indices chosen were those of profitability, ROS (return on sales) and ROI (return on investment). Profitability ratios are used to measure the operating efficiency of a business. Other indices used in a previous work (Claver-Cortes et al. 2007), such as income per room and total gross profit, were not considered because they were liable to be influenced by the context, or because they might include extraordinary items. The ANOVA analysis, applied to determine the differences between hotels with three or four stars, showed no significant differences between the mean values of all the variables considered. To visualise the data better and analyse the information derived from consumer rating, on the basis of the average values of perceived quality (mean of the scores awarded to the three variables service, comfort and quality/price), the tourist companies were divided into three groups: high quality (average between 90:84, comprising 6 hotels), medium quality (average between 83:77, comprising 18 hotels) and low quality (average ≤ 76 comprising 6 hotels). The ANOVA univariate statistical technique was applied to find out the significant difference between the hotels based on their dimension and average values of perceived quality. In both cases the test did not show significant differences between the mean values of the variables considered. The sample was therefore considered quite homogeneous as there were no differences, either in terms of dimension or category.

An explanatory examination of the data was performed using the Principal Component Analysis (PCA), a well-known technique to extract and visualise all useful information from the data set. PCA applied to the data set of 5 variables (ratio quality/price, service, comfort, ROS and ROI) and 30 objects showed that the first two components were responsible for 83% of total variance. Correlation loading plot (Fig. 1) revealed that the variables quality/price, service and comfort of the room were positively correlated with the first component (loading values were 0.973, 0.893 and 0.941 respectively) whereas the second component was positively correlated with the variables ROS and ROI (loading values were 0.867 and 0.877 respectively).
The score plot of the two principal components showed that hotels with high or good quality service did not always have good economic performances. By considering the hotels with high and medium value of perceived quality, the multivariate analysis (PCA) highlighted the presence of groups with different economic performances.

The values of ROS and ROI in the first group (samples N°s 6, 10, 12 and 22) were always positive (ranging from 14.2 to 22.6 and from 3.96 to 12.38 respectively); in the second (samples N°s 2, 7, 8, 14, 15, 16, 17 and 20) always negative (ranging from -13.9 to -0.9 and from -16.9 to -1.7 respectively).

In the third group, comprising 13 samples, the values of the economic indices were always positive, with the exception of two samples that had negative values for one of the two indicators. In the fourth group the samples (26, 11 and 30) had low values of perceived quality and high economic performances. In addition, it is noted that one sample (N° 25) had excellent and one (N° 9) bad results.

In order to verify whether the use of only two indicators would confirm, with sufficient approximation, the PCA results, and evaluate the possibility to distinguish the area of reward or penalty, the 85th and 15th percentiles of the distribution were calculated. For this purpose the variables average values of quality perceived and ROS were considered. As shown in Fig. 2, the hotels were distributed in four areas, to each of which a different performance corresponded:
- Area A (excellence) - both variables showed values above the 85th percentile (sample N° 25),

- Area B (positivity) - one of the variables showed a value above the 85th percentile (sample N°s 10, 22 and 28),

- Area C (deficiency) - one of the variables showed a value below the 15th percentile (sample N°s 8 and 14),

- Area D (negativity) - both variables showed values below the 15th percentile (sample N° 9).

- Area E (anomalous) one of the variables showed an excellent value, the other a very negative value (sample N°s 2, 16, 13).

The rest of the quadrants represented the area of compliance. By comparing these results with those provided by the PCA, it can be noted that complete correspondence was not found. It is, however, useful to point out that organisations with high perceived quality did not always show good economic performance. Probably these are the companies that most require an efficient quality management system backup. The results nevertheless show that the variables selected can give a contribution to the creation of an incentives/penalty system. This system of incentives/penalties results in a lower/higher frequency of audits, with lower costs for virtuous companies and greater for those with a lower performance. The premium is expressed as a reduction from 25 to 50% of the surveillance audit time for excellent and very good companies. This involves a reduction from 15 to 30% of the audit costs in the three years of the certification contract (thus organisations of up to 15 employees would be saving about €1000 in the three years). The introduction of penalties may act as a deterrent for those companies that adopt the standards but do not effectively implement the quality. If tolerated, this situation would bring disrepute to the entire certification system. It is clear that a system
of incentives like this does not meet the requisites of the IAF MD05 regulation relating to the determination of audit times and its adoption would therefore require a specific standard recognised by a public institute to be defined (see Q Calidad in Spain) or a stakeholder organisation. The sample size considered is a limit of this study but the results obtained are encouraging for taking the research for further.

CONCLUSION

The study considered the possibility of using perceived quality factors and economic indices (ROS and ROI) to create an innovative model of quality compliance for tourist companies. The results showed that the high values of quality perceived by the consumer did not always correspond to better economic performance by tourist companies. By means of statistical techniques it was possible, on the basis of the indicators considered, to differentiate the worthier organisations from those whose performance was not positive. The indicators chosen can be used as criteria of creating a compliance model based on objective parameters, producing a model that responds to both tourist company requirements: the need for virtuous organisations to distinguish themselves from those with poor performance and the reduction in the costs of certification.

REFERENCES


