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Chapter

Building on eWOM to Understand Service Quality in Hotel Services

Marlene Amorim and Mário Rodrigues

Abstract

In recent years the volume and the reach of available online content in the form of electronic word-of-mouth (eWOM) has grown at an unprecedented pace. eWOM exerts an important influence for consumption decisions of consumers, and is acknowledged to be more accessible and trustworthy than other commercial information provided by companies by means of advertising and sales. The sophistication and widespread of communication technologies is making the volume of information released online by customers to become overwhelming. For consumers and for business managers alike, making sense of the available information is a challenge that needs to be met urgently in order to keep the pace with the expectations of consumers whom, as engaged providers of feedback require their observations to be taken into account. This advances with a contribution to support the development of methods for the analysis and visualization information from online sources, by adapting an importance-performance analysis for identifying salient quality attributes from eWOM, offering an efficient approach for extracting information and identifying priorities for service improvement.

Keywords: eWOM, information extraction, service quality, importance performance analysis, service attributes

1. Introduction

Consumers increasingly use online means to share their experiences and perceptions about the quality of services they use. Every day overwhelming volumes of information are produced and published online, and these seem to exert a critical influence on service choices and purchase decisions. This context is very much facilitated by the dissemination of technologies that encourage the production and sharing of user crated content. Likewise, there is a growing familiarity of customers with Internet technologies that is fueling this trend. Service providers, by their turn are keeping the pace by implementing and adhering to online tools that offer efficient ways for users to make their ideas available to vast audiences in a fast manner [1]. The importance of such form of communication, known as electronic word-of-mouth (eWOM) or word-of-mouse, has been extensively acknowledged in the literature, often being referred as a more effective means to influence customers' consumption decisions than other tools, such as personal sales or advertising, because it can be perceived by costumers as a rather reliable source of information. Whereas customer reviews are now a common feature in many company websites, and platforms, research is still necessary to gain knowledge about how to effectively use eWOM data as a valued adding tool to inform customer decision making, as well

as to guide managerial actions towards service improvement and innovation. This study proposes a contribution in this direction.

The study describes the development of a methodology to support the analysis of eWOM, in order to facilitate the systematic analysis and visualization of insights from online reviews concerning service quality. The proposed methodology is useful to both academics and managers as it proposes a concise display of the data analysis results, allowing for a quick identification and debate about priorities and concerns for quality management, while building on a frame of reference for quality attributes that is derived from service management literature. The study was developed in the particular context of the hotel industry in Portugal, as a representative business sector for the volume and reach of online consumer reviews. The development of the proposed data analysis and display method was built on a selected sample of customer reviews extracted from a prevalent online service for hotel bookings. The hotel industry offers an adequate and rich context for the nature of this study for the fact that the travel and tourism industry is known for being a pioneer for the growing trends of promotion and distribution of services over the Internet [2].

The chapter offers an approach for making sense of customer reviews, by identifying relevant service quality dimensions embedded in the voices of hotel customers, while offering a concise tool for the visualization of the results. To this end, the study employed the principles of importance-performance analysis (IPA), a marketing research technique acknowledged for offering a concise graphical representation of results, to develop a framework for identifying salient hotel service attributes from the available and uncategorized information provided by customer reviews. The study offers a timely approach for assisting managers in the task of sense making from growing volumes of user generated information from a key source of information for the identification of priorities for service improvement and innovation.

Following this introduction, this chapter offers in Section 2 an overview of the conceptual background of the study, namely addressing on the topics of service quality and service quality assessment approaches while discussing some of the key challenges in measuring service results. In Section 3 is devoted to describe the application of the importance-performance analysis (IPA) approach to the context of eWOM in hotel services, and to presented and discuss some representative results of the application of this methodology to extract meaning from user generated context. The chapter closes with a presentation of key contributions and conclusions in the last section.

2. Approaching quality and quality assessment in service settings

The understanding of service quality and the deployment of robust and replicable methods to conduct its assessment have been in the core of the agendas of service management scholars and practitioners for many years. Despite an early consensus about the relevance of service quality for customer satisfaction, loyalty and company's profitability [3, 4], the operationalization of methods and tools to measure service quality and inform managerial practice and consumer decision making has generated extensive debate and challenges. Many of the results of service experiences lack tangibility and for this reason many approaches for service quality assessment rely on information from customers' "perceived" experiences [5, 6].

Many of the prevalent approaches to capture consumers quality perceptions build on the development of survey methods for data collection, consisting of multi-item scales. Such multidimensionality is aligned with the conceptualization

of services as experiences that enact perceptions about multiple attributes and dimensions that affect customer value such as service responsiveness, reliability, and even elements such as the characteristics of the tangible elements such as service facilities, equipment, etc., and the performance and empathy of service professionals. In service experiences customers receive a combination of outcomes including direct process results (e.g., availability of required items in a retail store, on-time arrival to a flight destination in transportation services, etc.) along with other results related to the process experience resulting from customers' contact and involvement in the service process (e.g., store atmosphere in retail services, comfort in a flight, etc.). Service quality is therefore conceptualized as a construct, featuring distinct dimensions that correspond to the diverse benefits that a customer can derive from a service. These dimensions of service quality are present across the prevalent service quality models and mirrored in the generalized generic scales such as SERVQUAL, SERVPERF, along with other sector specific scales where items are adapted to business particularities, such as in retail, health or hospitality and tourism services. Prevalent models account for the recognized dual nature of service quality determinants, i.e. the quality of service outputs as well as the quality of the experience with the delivery processes [4].

Overall service quality models, and the derived methods for its assessment, analysis and interpretation are built on customers' perceptions about the performance of service delivery, rather than on objective assessments of quality items [7, 8]. Perceived service quality is defined as the customer's evaluation of the overall excellence of a service and has been persistently distinguished from objective quality measurements, which were typically associated to the quality assessment of manufacturing products. The use of perceived service quality models is motivated by the specific nature of service outputs, which involves both tangible and intangible components and, as such, are often hard to assess and can result into very heterogeneous evaluations across customers.

Despite of the popularity of the [quantitative] multi-attribute type of measurement that has prevailed in the service quality domain along the years, several debates have highlighted the limits of such instruments. Among these are the difficulties of interpreting and using the standardized results of multi-attribute measurements. Data collected in this form offers only limited information about the richness, and the details, that contextualize customer perceptions about a service. More importantly, survey data fails from capture information about contradictions in service experiences as the respondents are forced to aggregate their quality experiences into ratings for a limited number of items. Any comprehensive listing of all quality aspects would result into lengthy questionnaires that would exceed customer's willingness to answer and therefore hurt the validity of the information collected. A customer of an accommodation service of asked to evaluate the friendliness contact employees is forced to choose a single point on a scale despite the number of contacts and different staff met whose behavior and friendliness might vary considerably.

Overall the standard attribute-based quality and satisfaction surveys are not perfect when it comes to capturing all relevant managerial information, and for this reason other complementary approaches have been advanced, such as focus groups studies, analysis of critical incidents, among others, in order to capture richer consumer insights. In this context, word-of-mouth, i.e. the expressions about the service experiences as expressed in the words of the consumers have always been acknowledged as an important source of information, and a key determinant for consumer choice. Generally, it is referred to as an informal and personal form of communication [9] that has been acknowledged by its influence for customers 'decisions [10], being source of trusted information [11].

In recent years, the advent of electronic-word of-mouth (eWOM) has created a rich field of data for deepening the understating about consumer experiences. Differently from traditional WOM, the its electronic version eWOM offers the advantage of being preserved, and accessible, over time in a written format that can be revisited and analyzed in detail, with distinct lenses.

The volume and reach of eWOM content have expended enormously, and are increasingly calling for the development of methods and tools that can assist consumers and managers to filter and make sense, in a timely manner of such large and rich amount of information. Consumers are expressing their opinions using multiple sources that include blogs, online reviews, and social networking websites, while interacting virtually to share information about their experiences with all sorts of goods, services, and brands [12]. eWOM has been defined as "any positive or negative statement made by potential, actual or former customers about a product or company, that is made available to a multitude of people and institutions via the internet" ([1], p. 39).

The tourism sector is a prominent example of a setting where eWOM has grown in volume and popularity, notably by means of online reviews that are the concrete examples of electronic versions of traditional WOM and result in a volume of comments from travelers about their experiences, the products, and the services they find along their journeys [13]. eWOM is available for other tourist to read and revisit, as well as for service managers to learn about their experiences. In fact many of the tourism service providers actively encourage their consumers to post reviews on their sites, social media platforms and other sources of reference [14]. The growth in eWOM is motivating increased research attention in several fronts, such as the investigation of the impacts of eWOM on sales, on consumer behavior. In tourism industry the results support that eWOM is considered credible [15], reducing consumers resistance to booking [16] and affects the sales of hotel rooms [17] and the motivations to visit some specific destinations [18]. Despite the growing number of studies that cover, the field is still far from being fully covered, and is still very much concentrated in exploring the behavioral implications of eWOM on travelers [19]. In this study we take a different approach aimed at developing approaches to make sense of the rich information contained in the reviews' texts with the purpose of advancing in the creation of tools to support data analysis and visualization that can assist managers and consumers in extracting valuable information from eWOM sources.

Importance-performance analysis is a popular approach for interpreting customer satisfaction and for setting up priorities for upgrading service quality proposed by [20]. IPA builds on customers' assessments concerning the importance and the performance of quality attributes in order to diagnose areas for improvement—typically using data collected by means of questionnaires employing service scales. IPA offers a plot representation for the measurements for importance-performance, declared by customers, consisting of a four quadrants matrix. The IPA matrix plots these values against two axes: a vertical axis—for the values of performance of service attributes; and an horizontal axis—for the values of attribute importance (see **Figure 1**).

Such concise display enables the quick visual identification of what elements demand for managerial improvement actions (i.e. attributes ranked in the quadrant for high importance vs. low performance) as well as others where the providers efforts are potentially misplaced (i.e. attributes ranked in the quadrant for low (customer) importance vs. high (provider) performance).

Subsequent studies have proposed modified approaches building on the principles of the IPA framework, extending its scope of application. For example CIPA, that stands for "Competitive Importance Performance Analysis", is focused on the gaps of the performance of a given service company and that of its competitors,

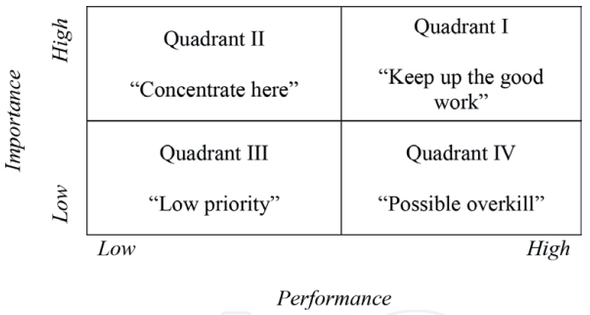

Figure 1.
Quad chart illustrating the breakdown of traditional importance-performance analysis approach. Desirable re-allocation of resources would go from the lower right quadrant to the upper left quadrant. Source: Adapted from Martilla and James [20].

offering a tool to diagnose which competitive attributes demand for improvement. In this adaptation the horizontal axis represents the differences between a company's performance towards the other market players.

Other formulations of IPA aim to address criticisms about its assumptions, namely the independence between the importance and performance measures and the linear relationship between the attributes and the performance. The so-called IPA with the three factor theory employs also a matrix representation for the measurements but takes into account the fact that not all service attributes are equally important for customer satisfaction [21–23]. This approach distinguishes three types of factors: (i) basic factors, i.e. minimum requirements that cause dissatisfaction if not fulfilled while not leading to customer satisfaction if fulfilled; (ii) performance factors, i.e. elements that cause satisfaction or dissatisfaction, depending on their performance level and (iii) excitement factors that can increase customer satisfaction if delivered but do not cause dissatisfaction if not delivered [24]. The modified IPA approach employs this three factor theory [25] and uses estimations of the relative importance of the quality attributes, instead of using customer declared information. The importance-performance lens of analysis therefore offers a versatile methodology for approaching the prioritization of service attributes.

This study builds on prevalent approaches of extending the applications of IPA by developing a modified version of IPA for identifying areas for service improvement building on qualitative data in the context of hotel experiences.

3. Developing an IPA analysis for eWOM in hotel services

The main purpose of this work is to develop a flexible and concise methodology to make sense for the ever growing online customer reviews that are available for a wide diversity of service business, in an abundant and unstructured manner. Despite the volume and richness of data available, the ability of both customers and providers to summarize and interpret customer generated content is still very limited and often done ad hoc by managers, therefore hurting its utility and value for customer decision and company improvements. Yet recent research results confirm that such sources of information are increasingly accessed by customers to support purchase decisions [26]. To this end, the study focuses on customer online reviews in the context of the hotel industry for several reasons. Tourism and hospitality services are experiential in nature which makes pre-purchase quality assessments rather difficult, leading customers to search for various clues and information to support their choices. In this context the opinions of other customers assume a critical role. In addition this service industry has a pioneering record in the utilization of online means for customer service interactions (e.g. travel reservations), and for the abundance of eWOM behavior.

Hotel	Star rating	Rooms	Location*	Available services	Average price**
Moliceiro	4	49	0	16	€ 99
Aveiro palace	4	49	0	13	€ 62
Melia Ria	4	128	10 min	22	€ 94
Américas	4	70	5	16	€ 79
Imperial	3	107	0	8	€ 63
Jardim	3	48	0	11	€ 56
Afonso V	3	78	5	6	€ 49
Veneza	3	49	0	7	€ 68
Aveiro center	2	24	0	8	€ 58
J. Estevão	2	12	1	6	€ 57
Salinas	2	18	0	7	€ 58

*Walking time to the city center (minutes).
**Standard double room, average.
The first column contains the hotel name, the second column the official star rating at the time of the study, the third contains the number of rooms and the fourth the estimated walking time to the city center. The fifth and sixth columns present the number of services available at the hotel and the average price per night, respectively.

Table 1.
Characterization of the hotel sample.

The study addresses a sample of customer reviews for a selected number of hotels in a medium sized tourist destination city in Portugal available in the online reservation website Booking.com. The choice of using Booking.com as a source is justified for being the website offering the largest volume of reviews and diversity of customer profiles, and for offering a significant volume of data for all the units in the selected sample of hotels. Data extraction returned a volume of over 5.600 customer reviews, for a set of 11 hotel units (described in **Table 1**), for a period of 1 year.

The chosen hotel reservation Website exhibits written online customer reviews, organized into groups—positive and negative reviews—as well as a rating obtained from customer scoring. In order to guarantee reliability, i.e. that the reviews resort from individual experiences, the Website only allows for reviews from customer who have effectively made a reservation.

The IPA addresses the data from the sample of extracted customer reviews. The first step in the analysis involves the identification of the most frequent terms and expressions about the hotel experience as stated by customers, for which text mining tools were employed, including a preliminary cleaning of symbols and words with no relevant meaning, and the standardization of terms, whenever synonyms are used to refer to a same hotel service element. The terms and expressions with higher frequency were retained for inclusion in the IPA analysis. A second step involves the identification of dimensions of affinity for the service quality attributes present in customers' statements. This process leads to the identification of three dominant service quality elements, motivating the expression of (positive or negative) customer opinions: room, location and staff. Whereas a more detailed list if attributes can be retained the choice is for the use of a more aggregated level of analysis given the exploratory nature of the study.

The IPA matrix for the 11 hotels is displayed in **Figure 2**, where the data points for importance-performance for the three salient attributes, room, location and staff are, respectively ●, ▲ and *. In the traditional IPA the horizontal and vertical axis represent the coordinates for the values of importance, and the performance as perceived by the customers, usually resulting from structured questionnaire

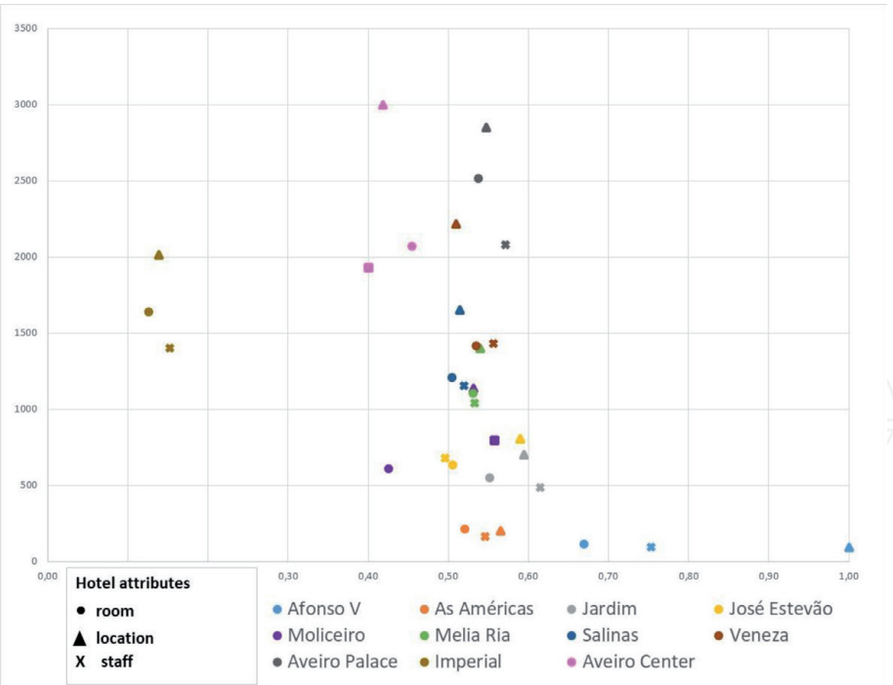

Figure 2.
Modified IPA graph for the hotel sample in the study.

answers, using ordinal scales (e.g. 1–7), where customers sate their expectations (i.e. interpreted as importance) and service perceptions (i.e. experienced performance). In the current study, and given the qualitative nature of the available data—the reviews—the values for the matrix coordinates are obtained as follows.

For each service attribute (room, location and staff) the total frequency (considering all the terms and expressions associated to a given service attribute) is employed as a proxy for the importance of the attribute, therefore assuming, that customers express more opinions for items that are more relevant for their experience. As for performance, the analysis employs the ratio of the number of positive reviews towards the sum of positive and negative comments, for a given service attribute. According to this logic a hotel for which the proportion of positive comments is higher than the negatives corresponds to a positive performance. This proxy measurement for performance therefore varies between 0 (when all comments are negative) and 1 (when all comments are positive). Also, the traditional IPA usually employs a central tendency measure (e.g. mean, median) to split each axis and identify the four quadrants. In the current study the value of the mean is employed to split the plot area.

The interpretation of the IPA graph offers a number of interesting insights. Overall, for each hotel unit, the three service attributes considered in the analysis are closely positioned next to each other. This suggests that when hotel customers are pleased with a hotel, or with the particular performance of one service attribute and they engage in offering positive comments, they tend to be positive about the remaining attributes. Whereas there's some natural dispersion in the points exhibited in **Figure 2** most service attributes, for the diverse hotels, is positioned in the quadrants II and IV pointing towards urgent action and resource underutilization, respectively.

Overall the service attributes for the various hotel units are positioned very closely in the IPA map. A look at the positioning of the service attributes (room, location and staff) the one with stronger consistency in customers' opinions is staff, as in 90% of cases appears as the most important attribute. An opposed pattern is shown for the attribute room, for which customers seem to hold more

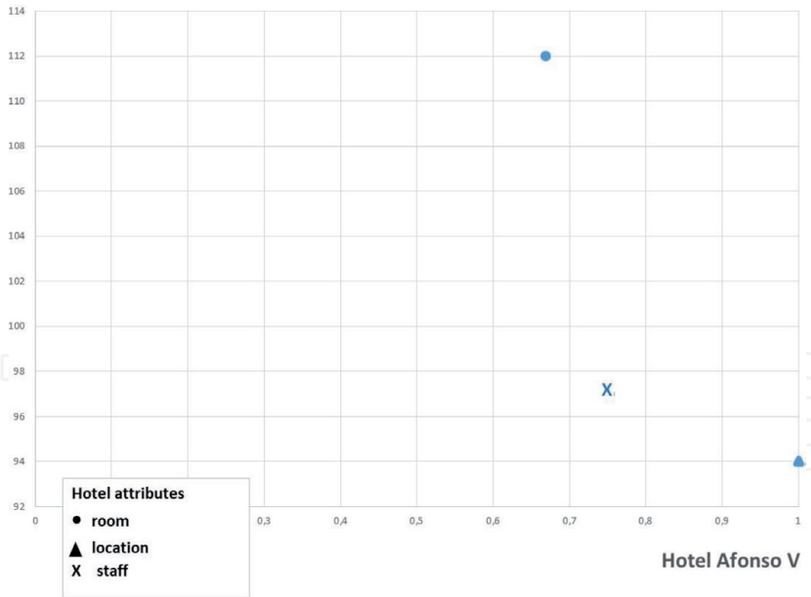

Figure 3.
Modified IPA displaying in detail the positioning of the three salient attributes [room, location and staff] for a single hotel unit (Hotel Afonso V).

heterogeneous opinions about its importance. Overall the data suggests some inconsistency in customers' perceptions about the importance of the service attributes. Of particular interest is the observation that there is a great variability in what regards the number of positive or negative comments. Most of the hotels exhibit a value for the performance measure (i.e. positive comments divided by the sum of positive and negative comments) not very distant from 0.5, therefore suggesting the existence of some level of service inconsistency across customers, a characteristic that is rather undesirable in service settings. The proposed analysis is susceptible of being conducted at a more fine grained level, i.e. in this case, for each hotel (see for example **Figure 3**).

4. Conclusions

This study, although exploratory and restricted to a small sample of service providers, from a specific service context—hotels—offers an illustrative insight of how existing managerial analytical tools can be adapted to help making sense of large volume of customer generated content. Whereas the study was applied in the context of hotel services, it is clear that the principles of the tool are applicable to any service industry, given that there is some kind of customer content to work with. Customer reviews are proliferating across service websites, platforms and social media contexts, therefore providing an ample and rich field for the development of new approaches to develop knowledge about service quality. The study illustrates that is possible to apply tools to offer a concise and structured view of the content generated by customers in their service reviews, and therefore to extract value from this abundant source of information. The extracted service attributes (room, location and staff) are particular to this study, its context and the limitations of sample selection, not meaning that they are the overall more important in the hotel industry. In order to do so, the study would have to be extended to a wider sample, and account for any conditioning variables (e.g. seasonality, weather, customer experience, etc.). As such this work suggested that there is a vast array of models and tools for assessing service quality that can be called to help make sense of the overwhelming volume of eWOM.

DOI: http://dx.doi.org/10.5772/intechopen.85403

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