Developing Competences for Making Sense of Online Citizen Reviews in Public Services: An Active Learning Experience with Higher Education Students

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Abstract

This paper describes a pilot project to implement an active learning approach to develop online content analysis competences, targeted to post graduate students in the field of Public Administration. Citizens are increasingly resorting to online media to express their sentiments concerning the quality of their interactions and their experiences with Public Administration Services, and are generating unprecedented volumes of information that have the potential to provide insightful managerial information. The increasing ease of access and familiarity of individuals with Internet technologies has positioned the Web as an efficient outlet for citizens to make their ideas available to vast audiences in a fast manner [1]. This online communication has been labelled as electronic word-of-mouth, also referred as word-of-mouse, has been extensively documented in the literature, and has been acknowledged as trustworthy and effective means to influence individuals' decisions [2]. Such outstanding availability of data is calling for the development of specific knowledge, tools and competencies. This study proposes a contribution in this direction. The reported higher education project served the twofold purpose of familiarizing students with the concepts and constructs of service quality, while offering them the opportunity to get acquainted with online user generated content, and with elementary tools to analyze and extract meaning from such content in a structured manner. Students were involved in the collection, analysis and categorization, of users' online reviews about Public Administration Services in Portugal. This work offers a timely contribution for the development of competences for making sense of online content, engaging students in a learning project rooted in up-to-date empirical data, therefore allowing for important gains in students' motivation, engagement and learning. The reported learning experience shared in this paper is aligned with the increasing calls for the development of transversal competences, including problem-solving and analytical skills [3], while meeting also the demands for the qualification of individuals for making sense of data that is enabled by the proliferation of digital technologies.

Keywords: *Online content, active learning, user generated content, higher education.*

1. Introduction

Online reviews offer a rich universe of information that is shared by customers in a spontaneous manner [1]. Consumers are increasingly going online to express their sentiments concerning the quality of service experiences, generating unprecedented volumes of information that are extremely influential for service choices and purchase decisions. The increasing familiarity of customers with Internet technologies together with the ease of access to technologies has positioned the Web as an efficient outlet for customers to make their ideas available to vast audiences in a fast manner [2]. This online communication has been labelled as electronic word-of-mouth (eWOM), also referred as word-of-mouse, has been extensively acknowledged in the literature, and has been acknowledged as trustworthy and effective means to influence customers' decisions, overcoming the power of other tools, namely those informed or managed by companies, such as personal sales or advertising [3,4].
The analysis and sense making of the outstanding volumes of eWOM that are available is calling for the development competencies for the effective use of 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.

2. Methods and tools

This study reports a teaching and learning experience developed with post-graduate students, in the field of Public Administration during year of 2019, in a Portuguese public university. For the project

development students were organized into groups and asked to select a Municipality of their preference, from which one would be selected as a case to access, select and categorize existing online customer reviews. The described project was included as an element of the curricular work, in the course on Management of Public Services that is offered as a mandatory course for students of the Master in Public Administration.

Students engaged in the course were organized into groups and received some prior training and information about good practices for collecting, cleaning and analyzing data from user reviews, available in social media platforms. They were also exposed to the model, the scale and the quality constructs of the SERVQUAL approach, through preliminary readings and class presentations and discussions of applications, and adaptations of the SERVQUAL scale to a number of different public service contexts [5]. The purpose of this was twofold. On the one hand it was important to familiarize the students with key details and challenges associated with the analysis of customer generated data, while providing them with examples and key references sources in this domain that could serve as a basis for reference and study latter in their work. On the other hand it was important to focus the content analysis exercise in the course topics, notably in service quality, while providing the students with a common framework to guide the data analysis and classification, i.e, the SERVQUAL quality constructs. Overall, the protocol for the conduction, and orchestration, of the group project aiming at the attainment of its learning objectives can be structured into five stages: 1) specification of the project, including problem definition, objectives and theoretical background; 2) acquaintance with user generated content analysis, including sources, methods and challenges; 3) sample definition and data collection; 3) data analysis and reporting; 4) cross case analysis and discussion; 5) project discussion and feedback.

The first two steps, were conducted with support of class presentations; readings form the familiarization with key concepts, methods and references [6].

The step 3), concerning the “sample definition and data collection” represent the first contact of the students with the empirical setting for the work. The purpose is to select a unit of analysis that is relevant for the domain of interests and purpose of qualification of the students, while guaranteeing that the select unit of analysis has online user reviews widely available in the web, i.e. the existence of a relevant volume and diversity of updated content in the web. Other management areas offer examples of organizational units for which the available online context is remarkably bigger. For example tourism is a field where customer reviews abound for accommodation, restaurants and many areas of travel and leisure. However but the option is to focus the project work on a domain that is tightly linked with the core area of education of the groups to be involved in the project, in order to maximize the learning outcomes and the motivation of the group.

The threshold for the selection of a given Municipality service, to be used as a case for the collection of online reviews resulted from several framing criteria, including the availability of a relevant number of online reviews that could support the execution and the meaningfulness of the proposed exercise. For some Municipalities, notably those that serve smaller territorial areas, with less population, the number of online reviews can be quite small.

The data collection was an iterative process with the data analysis process, as students could go back and select further examples of customer reviews during the content analysis path. This could happen because, given the unstructured nature of customer generated content, often some of the text extracted are very small, or with very little information. As such, only throughout the data analysis process one can assess if the volume of data collected is enough to achieve redundancy and saturation to guarantee that the data is representative. Therefore the script provided to students gave the preliminary indication for an extraction of the 50, most recent, user reviews that could be complemented, after their analysis, with additional data. The purpose was also not to overwhelm the students with a huge volume of data, but rather to allow them for contacting with the service quality management topic by means of an active learning methodology, and introducing them to relevant and timely sources of data and their corresponding data analysis methods. Table 1 offers an illustration of the proposed presentation of sample characterization asked from students.

Table 1. Table for sample characterization (example)

	Source 1: Facebook	Source 2: Google
Number of reviews available	150	49
Number of reviews collected 1st round)	50	25
Number of (additional) reviews collected	20	24
Gender distribution of reviews	M/F: 70%/30%	M/F: 63%/47%
Average classification of the available reviews	2,5/5	3/5
Average classification of the selected reviews	1,6/5	3/5

Following the Municipality selection and the data access and collection, steps. a data analysis process was proposed, following a structured content analysis method, in order to allow students to associate the elements and sentiments expressed in the reviews' to prevalent service quality constructs as documented in service quality literature, such as service responsiveness, reliability, assurance, among others. The script asked students to classify the comments, or extracts of comments along service quality dimensions – into one of the 5 proposed by SERVQUAL or by adding new ones - and to distinguish between positive, negative and neutral sentiments. The results were organized into tables, as suggested in the script – for the sake of facilitating the cross analysis across groups of students. Table 2 offers an illustration of the data classification results obtained from the groups work. Results were compared and discussed across groups and difficulties and decisions made during the analysis and classification of context were also discussed.

Table 2. Classification of reviews along service quality constructs (example)

	Positive reviews (n)	Negative reviews (n)	Quotes/Examples
Tangibles	5	20	"The transportation services are very neglected by the mayor."
Reliability	5	16	"The information provided was not the same in different occasions and by different staff."
Responsiveness	7	34	"I've been waiting on the phone for more than two hours…I'll try writing here maybe the answer is faster…"
Assurance	5	7	"There is a good team of people in the education services."
Empathy	50	2	"In this service staff have an exhausted face."

3. Results and conclusions

The development of students' competencies can be substantially improved by adopting approaches to education allow students to critically think and link learning with their own interests and motivations [5]. The attractiveness of designing projects that allow for the learning to take place in "real" examples, offers advantages for student motivation, that have been acknowledge in popular teaching strategies success ad project base learning [6]. The proposed methodology described in this study subscribes to the key principles of such approaches [7].

Overall the students completed the proposed steps in the methodology, allowing them to learn about service quality, having as a context real comments from service users, while experimenting new approaches in data collection and analysis, in the qualitative content analysis domain. The dimensions for which the comments were more numerous were the "tangibles" and the "responsiveness". These

findings are consistent with previous research results on quality in services [8]. On this regard the proposed group exercise met the goals of contributing to the attainment of learning goals in the domain of service quality.

In what concerns the objectives of exposing the students to the possibilities and the challenges of dealing with qualitative analysis regarding consumer reviews, the project offered a rich field for experimenting and debate. However it was interesting to observe, in the initial phase of the empirical work, the expressions of some degree of discomfort with the volume of data available and with is unstructured nature, as opposed to the traditional predictive data outcomes from questionnaires and structure interviews, among other popular tools.

The learning experience shared in this paper is aligned with the increasing calls for the development of active learning methodologies that allow for the promotion of problem-solving and analytical skills. Higher education curricula and teaching approaches are still evolving towards the full integration of such new resources into their practices.

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