Chapter 8

Revealing and Ranking Customer Groups From the Perspective of Their Experiences

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ABSTRACT

Customer segmentation is a process of dividing customers into groups based on particular criteria, often common characteristics, in order to efficiently develop and manage marketing activities. The availability of data in different types and structures generated in digital environments leads to the handling of this process within the scope of data mining. In addition, observing many different dimensions and qualifications in the segmentation process provides the possibility of sorting among the customer groups, and thus, this process leads to both clustering and multi-criteria decision-making problems. Recent applications in this context analyze customers' profiles and buying behaviors to obtain customer groups and develop scorecards for further use. However, there exist additional data sources reflecting customer experiences about services or products. In this context, this study presents a stepwise and holistic decision framework that includes customer segmentation and ranking of these segments through different dimensions that reflect customer experiences.

INTRODUCTION

In the era of information technology and digitalization, customer relationships are constantly changing and developing; these changes have been managed through large scale data sets and tools providing advanced analytics. The main reason for using large data sets and advanced analytics is to reveal facts and catch significant information about customer relationships before competitors to gain an advantage and transform the data insights into products or services. The rapid change in analysis environments and

technology have led to a variety of research on customer data in order to implement sophisticated data mining techniques and to develop relevant business intelligence platforms.

One of the common research opportunities regarding customer data is to reveal the customer groups by identifying customer segments using clustering algorithms and to score them via particular analytics. For example, RFM Scoring is an approach for finding customer clusters based on their purchasing characteristics as (r)ecency, (f)requecy, and (m)onetory (Wei, Lin, & Wu, 2010). The related clustering approaches have also been integrated with multi-criteria decision-making (MCDM) methods for ranking the scores and criteria. Various additional variables have been adopted to extend the scope of the research to gain significant insights about customer segments in terms of purchasing behaviors and loyalty (Cuadros & Domínguez, 2014).

RFM scoring and the related analyses for tracking customer loyalty are mostly based on the data collected by enterprises. However, customers leave many footprints in social media and other sharing environments in addition to their purchasing characteristics. Thus, customers announce their feedback regarding the products and services they purchase, either through comments or ratings. Therefore, the customer's experiences with the product or service affect both the customer and their followers in these environments. Analyzing the footprints left by customers in digital environments is seen as a proactive approach in terms of solving negative experiences without becoming a chronic problem that would lead to customer loss. This approach can be integrated into the RFM scoring process or used as a prior attempt. At the very least, these potential data sets contain large scale and even big data including customer experiences, and it can be analyzed by adopting a similar approach to RFM scoring and score ranking.

Inspired by existing studies, the aim of this study is to provide a systematic decision-making process that can help businesses group and rank customers in terms of product or service experiences. In the methodological context, this chapter presents the general framework of the decision-making process and demonstrates the process with an illustrative example. In this exemplary application, a public data set containing rating values obtained from Google reviews is used (Renjith, Sreekumar, & Jathavedan, 2018). In this data set, firstly, clustering analysis was performed with the k-means algorithm that was selected as an example to obtain the cluster representative values and then the rankings of clusters were calculated over the values by using three different MCDM techniques: Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), Multi-Attribute Utility Theory (MAUT), and Grey Relational Analysis (GRA).

One of the unique characteristics of the study is that it presents this process as a holistic perspective. It differs from similar studies in the literature by presenting the prominent cluster characteristics with the decision tree structure and revealing the practical equivalence of all findings.

BACKGROUND

The fact that customer segmentation is an important topic of marketing planning and the presence of large-scale data belonging to customers through the environments provided by today's information technologies has placed this subject at the centre of many types of scientific research both in theory and practice. In this context, both the data collected by the companies themselves and the data shared by customers on online platforms constitute the most important inputs of decision models developed for customer segmentation. Hoffman (2006) proposed a framework and gained a patent for customer scoring methods.

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