

Customer Analytics Using Sentiment Analysis and Net Promoter Score

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INTRODUCTION

Providing the best experience for customers through products and services provided by businesses is a crucial and critical task during each company's operation. This means that the products and services that companies offer satisfy and meet customers' needs: the right products and services, at the right place, and at the right time. The first step is listening to customers through the information conveyed in customer feedback on the business's sales channels and finding ways to improve and overcome the extraordinary things necessary steps of firms in the digital age. Today, with the strong development of technology and the intense application of interactive technologies on e-commerce sites, a large amount of data is collected from customer comments and feedback. The presence of technologies built on artificial intelligence and machine learning methods, and data analysis tools make it possible to analyze and extract meaningful data from textual data like comments or customer feedback is more accessible and more practical. This approach can be considered as the customer analytics method that is to gain customer insight necessary as well as customer satisfaction that are anticipated, timely, and relevant.

Besides, the digital transformation has helped businesses monitor their processes, including branding, promotion, advertising, production, channel distribution, based on collected data and interaction. Business managers analyze customer experience and can make more accurate and data-driven decisions (Marda, 2018; Ludbrook, 2019). In the transition and adaptation to the digital economy, it is necessary to have a new approach to analyzing user experience and emotions to predict and take advantage of disruptive technologies effectively. Advances in information technology have changed how communication makes it easier for customers to access information and exchange ideas about products and services on a large scale in real-time (Ghani et al., 2019). The advent of social networks and online review websites allows customers to give their opinions through reviews of products and services. From an e-commerce point of view, detecting the right user sentiment will help us display better advertising content. (Sarkar & Palit, 2020).

Customer analytics is critical for extracting insights from massive data in order to improve service innovation, product development, personalisation, and management decision-making (Hossain et al., 2022). Businesses utilize this data in particular for very direct marketing, location selection, and customer relationship management in a subtle way. There are many different definitions of customer satisfaction, and much debate is about this definition. Many researchers believe that satisfaction is between customer expectations and feeling practically received. According to Philip Kotler, customer satisfaction is the

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level of sensory status of a person derived from comparing the results obtained from the consumption of products or services with their expectations. The level of satisfaction depends on the difference between the results received and the expectation. If the actual results are lower than the expectation, the customer is not satisfied; if the actual results are commensurate with the expectation will be satisfied; if the actual results are higher than expectations, customers are delighted. Customer expectations are formed from the shopping experience, friends, colleagues, and the information of sellers and competitors. In order to improve customer satisfaction, businesses need additional investments and at least invest in more marketing programs.

This research aims to review the opinion mining research and propose a method exploiting customers' reviews in natural languages based on the machine learning method. This research applies the knowledge mining method from data collected by automatic programs, including reviews from customers on online ordering services, and eating places review channels. Then, data preprocessing will be conducted and machine learning methods will be applied to find the best model and predict sentiment scores for the rest of the corpus (Mishra & Tiruwa, 2017; Rao & Kakkar, 2017). In addition, the study is also going to calculate and analyze the Net Promoter Score (NPS) (Reichheld, 2003; Mandal, 2014) from customer rating scores and used data visualization tech NPS on an overview dashboard.

BACKGROUND

This section concentrates on exploring related research in the field of customer opinion mining, sentiment analysis, especially in the online service sector. The machine learning and lexicon-oriented approaches are also utilized to form the basis of this research. The method of NPS will be surveyed to measure customer satisfaction in the food service industry.

Customer Analytics: Customer Satisfaction, Customer Opinion and Sentiment Analytics

Currently, satisfied customers have many different definitions as well as many controversies about this definition. According to Philip Kotler (2017), satisfaction is a person's feeling of satisfaction or disappointment due to comparing the actual received product (or outcome) concerning their expectations. It can be understood that satisfaction is the customer base on his understanding of a product or service (Singh & Verma, 2020). Satisfaction is a psychological state of feeling after a customer's needs and expectations are satisfied. Customer satisfaction is formed based on experience, especially when purchasing and using products or services (Ahmed et al., 2021). After trying to buy and use, customers will have a comparison between reality and expectations.

The study by El-Adly (2019) uses structural equation modeling (SEM) to study the relationship between aspects of customer perceived value, customer satisfaction, and customer loyalty in the hotel context. Research results show that four aspects of hotel perceived value (hedonistic, price, quality, transactional) indirectly influence customer loyalty through satisfaction as intermediaries. Finally, customer satisfaction was found to have a direct positive influence on customer loyalty.

Customer experience is one of the critical concerns for the airline industry. To understand the customer experience, Kumar and Zymbler (2019) proposed a machine learning-based approach to analyze customer tweets on social network Twitter to gain insights and improve their experience. The author used the Glove dictionary approach and the n-gram approach in this study. SVM (support vector machine) and

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