Chapter 3
Behavioral Analytics of Consumer Complaints

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ABSTRACT

In the current study, the author implemented cohort analysis methodology of machine learning (ML) to assess the rate of consumers' complaint retention behavior toward firms. The author obtained a three-year range of data on customer complaints from the Consumer Financial Protection Bureau's website. After removing the missing data from the customer complaints dataset, the current study also uses the cohort analysis approach of ML to assess the rate of consumer complaints retained by businesses. According to the findings, organizations retain a significant portion of complaints. This study adds to the body of knowledge on consumer complaining behavior (CCB), especially by creating and deploying unsupervised machine learning-based technique to conceptualize consumers' complaint behavior in the financial service providers industry. Moreover, professionals will benefit greatly from this research.

INTRODUCTION

Similar to the manufacturing industrial revolution and the rise of the eighteenth century, the service area appears to be at a crossroads in terms of productivity increases and service industrialization. Virtually all service industries will be transformed by promptly developing technology that grows cheaper, faster, smarter, and better (Hossain and Rahman, 2021a; Hossain et al., 2021; Wirtz et al., 2018; Wirtz and

Zeithaml, 2018), such as the use of artificial intelligence (AI). Basically, AI is altering digital marketing techniques at a breakneck pace (Mogaji et al., 2020). In the financial services sector, AI is defined as a system aided by technology that evaluates real-time provision circumstances using data collected from physical and/or digital sources to deliver tailored recommendations, solutions, and alternatives to purchasers' problems or inquiries, even intricate ones (Xu et al., 2020). Machine learning (ML) is a subset of AI that involves the automatic recognition of significant patterns in large datasets (Hossain and Rahman, 2022b; Pashchenko et al., 2022). The goal of ML technologies is to make algorithms more efficient by assuring their capacity to learn and adapt based on massive data analytics. Many industries, including financials, will continue to be impacted by machine learning and omnipresent data (Hossain and Rahman, 2022a). When vast amounts of data are entered into the system, machine learning tends to be more accurate in gaining insights and producing predictions (Hossain et al., 2022). The financial services business deals with massive amounts of data from everyday transactions, invoices, payments, vendors, and consumers, all of which are ideal for machine learning. Also, it will be more advantageous for businesses to understand their customers' feelings continuously.

According to marketing philosophy, the growth of consumer pleasure is the lifeblood of marketing practice and theory (Agag and Eid, 2020). Consumers are looking for a positive experience rather than products (Hossain and Rahman, 2022b; Buonincontri et al., 2017). As a result, marketing and sales approaches are focused on increasing customers' satisfaction (Liu and Atuahene-Gima, 2018). Consumer satisfaction has been shown to have a beneficial impact on profitability, competitive advantage, and business performance at the company level (Lee & How, 2019; Agag and Eid, 2020). Consumer feedback indicators (such as customer satisfaction, customer complaints, customer reviews, etc.) are becoming increasingly important in the relationship marketing process since they may forecast customer retention and company performance (e.g., Hossain and Rahman, 2022b; Agag and Eid, 2020; De Haan et al., 2015). Marketing efforts that increase customer feedback metrics are frequently beneficial to businesses (De Haan et al., 2015; Venkatesan et al., 2019). As a result, businesses increasingly conduct frequent customer feedback metrics surveys in order to assess their marketing effectiveness and determine appropriate marketing strategies (De Haan et al., 2015; Agag and Eid, 2020). As a customer feedback tool, complaints should be seen as a positive tool for companies to develop (Istanbulluoglu et al., 2017). Additionally, customer complaint behavior and management are critical for businesses, especially as companies increasingly recognize the significance of establishing long-term customer relationships (Bell and Luddington, 2006). London (1980) mentioned that a customer's complaint is an expression of dissatisfaction on behalf of a customer to a responsible organization. Consumers' reactions to displeasure with any aspect of consumption involvement, which can include both

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