Identifying Anomalies in Customer Satisfaction for Strategic Customer Retention

Muhammet Furkan Özara[1] , Emrah Sezer[1] ,Teoman Berkay Ayaz[1]

[1]*R&D Center of Next4biz, Sahrayicedit Mah, Pakpen Plaza, No:40/4, 34734 Istanbul, Turkey*

Email: furkan.ozara@next4biz.com,

Abstract

In today's highly competitive marketplaces, organizations are required to prioritize and enhance their efforts to retain customers. The increasing expenses associated with advertising and the rising difficulty in locating suitable potential clients have emphasized the importance of implementing efficient customer retention tactics. Out of all these techniques, the act of measuring and closely monitoring customer satisfaction stands out as the most important factor. Customer satisfaction measurements are effective triggers for launching and optimizing client retention initiatives. Variations in satisfaction levels serve as vital indicators, perhaps revealing consumer discontent or unforeseen circumstances experienced by customers. However, it is not always possible to reveal these subtle distinctions using simplistic statistical studies. This study examines the detailed analysis of customer satisfaction scores in a business that operates on a subscription basis. The objective is to detect and recognize clients displaying abnormal behavior or straying from anticipated trends. The research seeks to gain detailed insights into customer behavior by closely examining regularly assessed satisfaction levels. This will help develop a more proactive and sophisticated strategy for customer retention in response to changing market difficulties. By employing the Isolation Forest and KNN algorithms for anomaly detection, in conjunction with the T-SNE dimensionality reduction method for visualization, we successfully identified clients exhibiting atypical satisfaction levels. We suggest that the customer relations department conduct a proactive examination of these anomalies, in light of their considerable importance. With the objectives of retaining customers who demonstrate atypical behavior as identified in this research, we intend to execute customer retention campaigns in the future, substantiating our conclusions via A/B tests.

Keywords: Anomaly Detection, Customer Relationship Management, Customer Satisfaction, Customer Retention