IntelliStore: A Retail Artificial intelligence-based system Analyzing Products and Brands through NLP-based Search and Social Media Analysis by integrating Logistic Regression and Convolutional Neural Network Algorithms.

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Abstract

Customer and Business interaction or the relationship is a tedious operation when it comes to dealing to obtain trust, friendship, and functionality Retail facilities always strive to best provide opportunities for the consumer to satisfy their wants and needs, and the sales force of a business model and the ultimate goal of a retail transaction and by the recognition of customer or business requirement on how they can achieve the 100% satisfaction.

Based on the customer-related problems in the retail industry we try to research and have a gap of comparing the analytical stage which is known as the product dissonance from customer problem to the solution which serves the purpose of customer satisfaction.

Beginning of an era early 1980's the customer satisfaction rate was measured using Information success models to test and evaluate and generate solutions based on the customers, The information system success model is to identify 'System Quality', 'Information Quality', 'Use', 'User Satisfaction', 'Individual Impact' and 'Organizational Impact' based on a comprehensive review, according to the information system model retail environment is mainly targeting on providing accurate reliable and usability solutions for the market and reducing the consumer churning rate.

In this era, instead of using older methodologies such as Information Success Models machines or simple algorithms that can understand and predict the consumer churn rate, we can utilize the ability to integrate various/federated techniques to analyze the consumer churn rate and recommend the desired output, based on the field of interest only consumer churn prediction past researches are found instead evaluating solutions of recommendations are predicted for the customer open for options to choose from.

However, this study aims to develop federated techniques and an integrated cluster model to Analyze consumer brand loyalty, predict consumer churn based on the Net promoter score (customer satisfaction rate) and recommend sequential products,

services, or shops for the retail industry. For this purpose, the research focuses on implementing federated techniques and an integrated cluster model using Natural Language Processing (NLP) for sentiment analysis of social media content, Logistic Regression Model to predict consumer churn using the results of sentiment analysis, and Net Promoter Score (NPS) as the brand loyalty score, Convolutional Neural Network (CNN) to generate sequential products or services based on the user's preference to mitigate the risk of consumer churn.

Keywords: Artificial Intelligence, Retail Environment, Enterprise System, Brand Loyalty, Consumer churn, Recommendation, Machine Learning, Natural Language Processing, Logistic Regression, Deep Learning, Convolutional Neural Network