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Entitled

INTEGRATING KANO MODEL WITH DATA MINING TECHNIQUES TO ENHANCE CUSTOMER SATISFACTION

by

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Date & Venue

Defense Time:

11:00 AM

Wednesday, 30 November 2022

CIT Building, UAEU, Room , E1

Abstract

The business world is becoming more competitive from time to time; therefore, businesses are forced to improve their strategies in every single aspect. So, determining the elements that contribute to the clients' contentment is one of the critical needs of businesses to develop successful products in the market. The Kano model is one of the models that help determine which features must be included in a product or service to improve customer satisfaction. The model focuses on highlighting the most relevant attributes of a product or service along with customers' estimation of how these attributes can be used to predict satisfaction with specific services or products. This research aims at developing a method to integrate the Kano model and data mining approaches to select relevant attributes that drive customer satisfaction, with a specific focus on higher education. The significant contribution of this research is to improve the quality of United Arab Emirates University academic support and development services provided to their students by solving the problem of selecting features that are not methodically correlated to customer satisfaction, which could reduce the risk of investing in features that could ultimately be irrelevant to enhancing customer satisfaction. Questionnaire data were collected from 646 students from United Arab Emirates University. The experiment suggests that Extreme Gradient Boosting Regression can produce the best results for this kind of problem. Based on the integration of the Kano model and the feature selection method, the number of features used to predict customer satisfaction is minimized to four features. It was found that either Chi-Square or Analysis of Variance (ANOVA) features selection model's integration with the Kano model giving higher values of Pearson correlation coefficient and R^2 . Moreover, the prediction was made using union features between the Kano model's most important features and the most frequent features among 8 clusters. It shows high-performance results.

Keywords: customer satisfaction; data mining; feature selection; The Kano model.