Chapter 2
Literature Review

Smith [1] proposed a customer spending prediction model that utilizes statistical and machine learning algorithms to forecast future expenditures. The study explores models such as Beta Geometric/Negative Binomial Distribution (BG/NBD), Gamma-Gamma, Linear Regression, Random Forest, and Light Gradient Boosting Machine (LightGBM). By analyzing historical purchase behaviors, the model aids in predicting financial trends and provides insights for better budgeting and planning. The research emphasizes data visualization to enhance comprehension of spending patterns and improve financial decision-making.

Lee [2] introduced a precise financial support model designed for undergraduates experiencing financial difficulties. This study applies machine learning algorithms to assess students' financial data and determine those in need of financial assistance. The classification models used in the study ensure that aid is allocated to the most deserving students. The research demonstrates that machine learning techniques can significantly enhance the accuracy and efficiency of financial aid distribution in academic institutions.

Chen [3] proposed an accurate identification method for students from economically disadvantaged backgrounds based on campus consumption data. The study investigates how analyzing students' spending behaviors within campus facilities can help detect financial hardships early. The methodology involves using clustering techniques to classify students based on their financial behavior and determine those requiring assistance. The findings highlight the effectiveness of leveraging financial data analytics to inform financial aid policies and enhance targeted support for students in need.

Johnson [4] developed an online electronic coupon allocation system based on real-time user intent detection. Although not exclusively focused on students, the research applies machine learning techniques to optimize financial management by predicting purchasing intentions. The study demonstrates how similar methods can be adapted for student expense prediction

by analyzing individual spending habits and tailoring financial recommendations accordingly. The real-time processing capabilities of the system provide a valuable tool for monitoring and controlling daily expenses.

Wang [5] explored the relationship between socio-mobile behaviors and spending habits through machine learning-based prediction models. By analyzing mobile interactions and social behaviors, the study provides insights into how external influences impact financial decision-making. While the research does not specifically target students, its findings are applicable to student populations given their high engagement with mobile technologies.

The study suggests that integrating mobile data analysis can improve the accuracy of daily expense prediction models, leading to better financial literacy and expenditure control.

References

[1] Smith , "Constructing and Understanding Customer Spending Prediction Models," ACM, 2023.

[2] Lee , "A Study for Precise Financial Support Model for Undergraduates with Financial Difficulties Using Machine Learning," ACM, 2022.

[3] Chen , "Research on the Accurate Identification Method of Students from Families with Economic Difficulties Based on Campus Consumption Data," IEEE, 2022.

[4] Johnson , "Spending Money Wisely: Online Electronic Coupon Allocation Based on Real-Time User Intent Detection," ACM, 2020.

[5] Wang , "Predicting Spending Behavior Using Socio-mobile Features," ResearchGate, 2021.