

Clustering and Forecasting Financial Activities at Emprise Bank

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Understanding customers' activities and preferences allows companies to better allocate their resources and streamline services. On this collaborative project, we focus on identifying and extracting useful patterns of patrons' financial transactions and behaviors in the Wichita metropolitan area using a randomly encrypted data sample provided by Emprise Bank. Starting with a preliminary visualization of Wichita-specific geographic, weather, and urbanization details, we further investigate their impacts on customers' preferences to banking services via the Pearson's chi-squared test of independence. Knowledge of such relationships provides us a framework to cluster clients into different groups and observe customer segmentation using K-Means clustering. Finally, we performed time series analysis with the TBATS models to forecast future transactions based on historical information. Our work directly responds to our partner's interests in advancing current and forthcoming branch analytics based on their clientele records.