



Westmark Credit Union Balance Changes Over Time Case Study

The Customer

Westmark Credit Union is a non-profit financial institution based in Idaho, USA. Established in 1954, Westmark Credit Union currently serves over 60,000 members across the state. With over \$700 million in assets, Westmark Credit Union offers its members a wide range of financial products and services, including loans, checking and savings accounts, credit cards, and insurance services.

The Situation

With increasing competition in the marketplace, Westmark Credit Union wants to better understand its customers' behavior regarding depositing and withdrawing money. The company wants to identify patterns and trends in the way customers move their money in and out of their accounts, particularly when they do so due to changes in interest rates.

The Solution

The client requested assistance from the Research and Business Development Center (RBDC) and BYU-Idaho, who put together a data science student consulting team to analyze their data. As a final deliverable, the team created a Flexdashboard, using the R programming language, displaying the results of the analysis, including the percentage of customers who completely moved their money in and out repetitively, and what percentage of their money those customers moved in or out.



Focus

Analysis

- Behavior Analysis
- Balance Trends
- Interest Rate Impact

Deliverables

- Percentage of Customers Moving Money
- Amount of Money moved in/out
- Branch-specific Results
- Results by Age Group

Value Added to Client

- Better understanding of customer behavior
- Refined business strategies
- Increased competitiveness

Future impact

- Improved customer acquisition and retention
- Increased revenue
- Enhanced decision-making

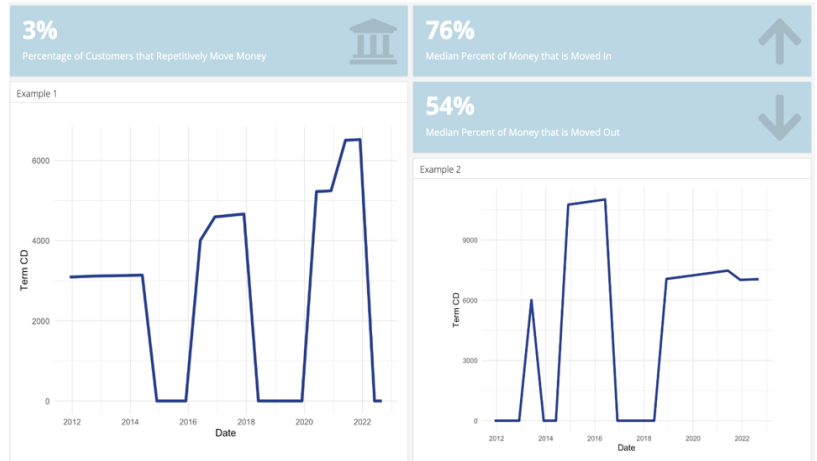
Identifying Repetitive Transactions

The data science consulting team analyzed a series of account balances and determined how frequently each client's balance deviated from their own standard deviation. The percentage of clients who have crossed their standard deviation more than twice is also calculated by the model. Another method used was an algorithm that identified changes in specific data columns and filtered rows of the data based on a list of IDs, then grouped the data by IDs, narrowed the selection to satisfy a particular set of requirements, and generated a new list of IDs.

Identifying How Much Money Is Moved

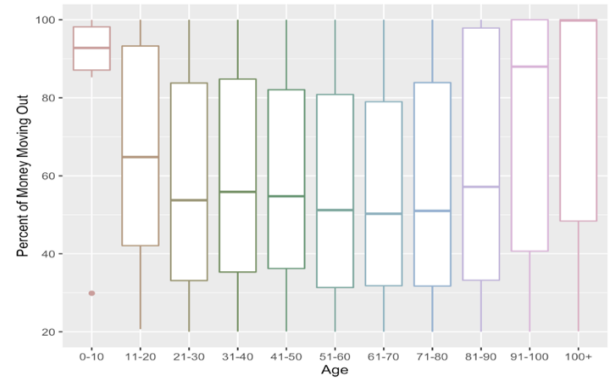
The team analyzed the amount of money that was moved in or moved out for every transaction. Then, they divided this number by the current balance to get a percentage of how much they were moving. The results were filtered to include only people who moved over 20% of their money. The results were as follows:

- When customers move money in, the median is 76% of their money.
- When customers move money out, the median is 54% of their money.



Results by Age Group Screen

The final dashboard also includes an analysis by age group, showing the percentage of money moved in and out for each age group. The graphs display the percentage of money moved in/out, the percentage of money moved in/out for transactions over 20% of the total balance, as well as for all other transactions.



Results by Branch Screen

This screen includes an interactive map showing each of Westmark Credit Union's branches and their respective information:

- Median money moved in
- Median money moved out
- Percentage of clients that move money in and out
- Count of customers

