

Financial Data Analysis and Predictions

Objective

This analysis predicts the financial score, monthly expenses, and savings for the next month using a custom neural network model. The model evaluates various financial features such as income, loan payments, credit card spending, and more to make predictions.

Model Accuracy

The model was evaluated for predicting the following metrics: Financial Score, Monthly Expenses, and Savings. The accuracy of the models is as follows:

- Financial Score Accuracy: 94.92%
- Expenses Prediction Accuracy: 0.63%
- Savings Prediction Accuracy: 4.72%

Insights from Visualizations

Key Insights

The following key insights were gained from the visualizations created during the analysis:

1. Spending Distribution Across Categories: The pie chart shows the proportion of spending across various categories, highlighting the dominant areas of expenditure.
2. Income vs Monthly Expenses: The scatter plot indicates a strong positive correlation between income and monthly expenses, suggesting that people with higher incomes tend to have higher monthly expenses.
3. Savings vs Monthly Expenses: The scatter plot suggests that there is a noticeable gap between savings and expenses, indicating that many individuals struggle to save despite having steady income.
4. Savings Rate vs Spending Category: The bar chart visualizes the savings rate across different spending categories, showing areas where savings might be optimized.
5. Family-Wise Financial Scores: The bar chart illustrates the average financial score for each family, highlighting financial health disparities.

Conclusion

In this analysis, predictions for the next month's savings and expenses were generated using a neural network model. While the 'Financial Score Model' demonstrated excellent

accuracy (94.92%), the predictions for 'Monthly Expenses' (0.63%) and 'Savings' (4.72%) showed limited accuracy, indicating the need for model improvement. The visualizations provide valuable insights into income-expenditure relationships, savings behavior, and spending trends.