

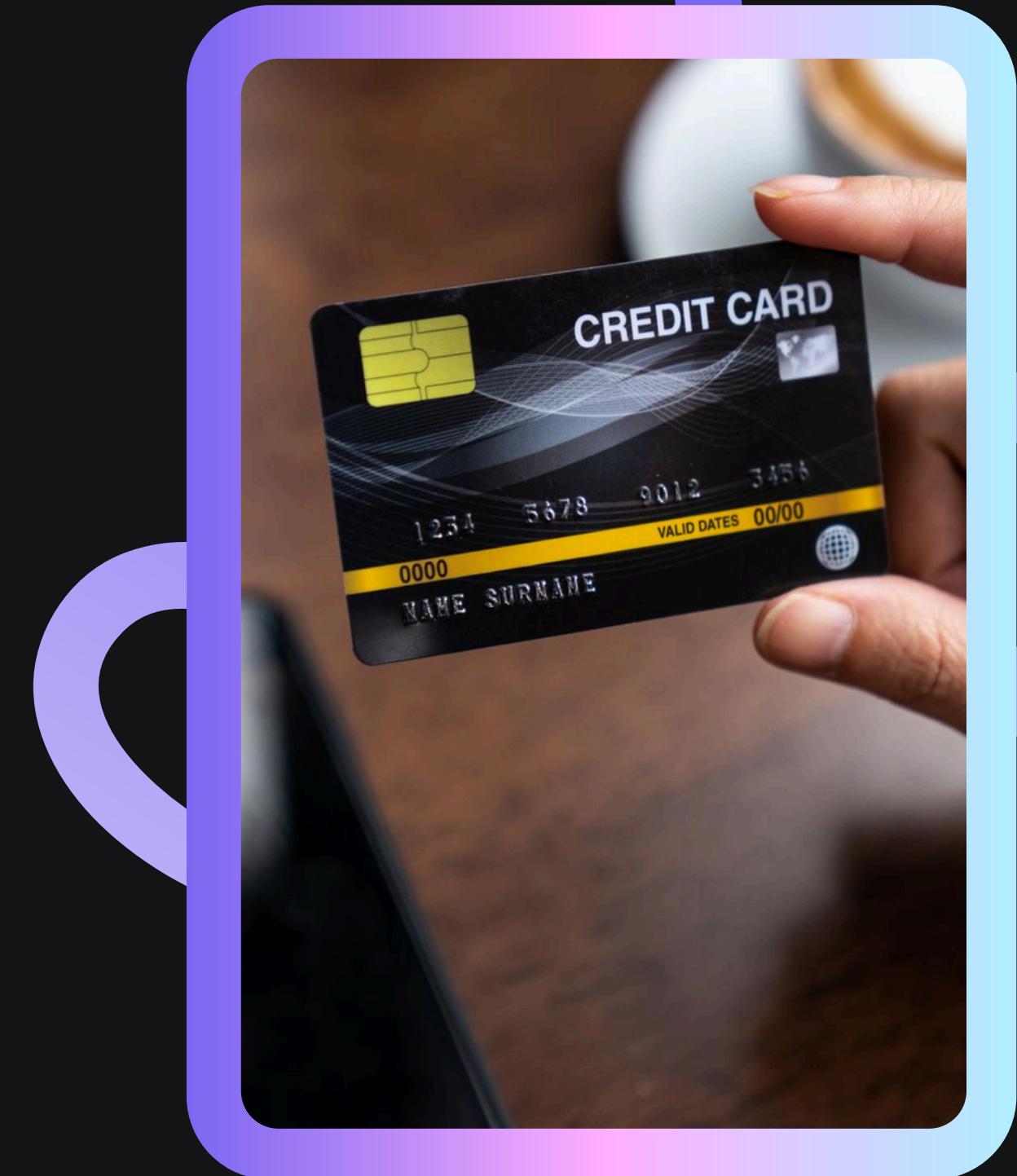
Credit Portfolio Analysis

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Business Opportunity

Understanding what drives customer value and credit risk

- Current Challenge: Traditional credit models rely heavily on income, but our portfolio shows mixed results in predicting customer behavior and account balances
- Revenue Impact: Higher-value customers maintain significantly larger balances, but we're not optimally identifying and serving them



Objectives

- Which factors truly predict financial stability and account balance? (Income? Age? Behavior?)
- Are there distinct customer segments we should serve differently?
- How do demographics relate to spending patterns and credit utilization?
- Where are our highest-risk and highest-value customer segments?

These insights will inform credit limit policies, product design, risk pricing, and marketing allocation.



Data Source

- Dataset: 50,000 customer credit profiles with comprehensive financial and demographic information
- Key Variables: Age, income level, monthly account balance, credit utilization, payment behavior
- Coverage: Cross-sectional snapshot representing our current customer base across age groups (15-56) and income brackets
- Data Quality: Reliable for pattern analysis; some extreme values in income ranges required careful interpretation
- Limitations: Single point in time (not tracking changes over years); income data shows some data collection inconsistencies at extreme values

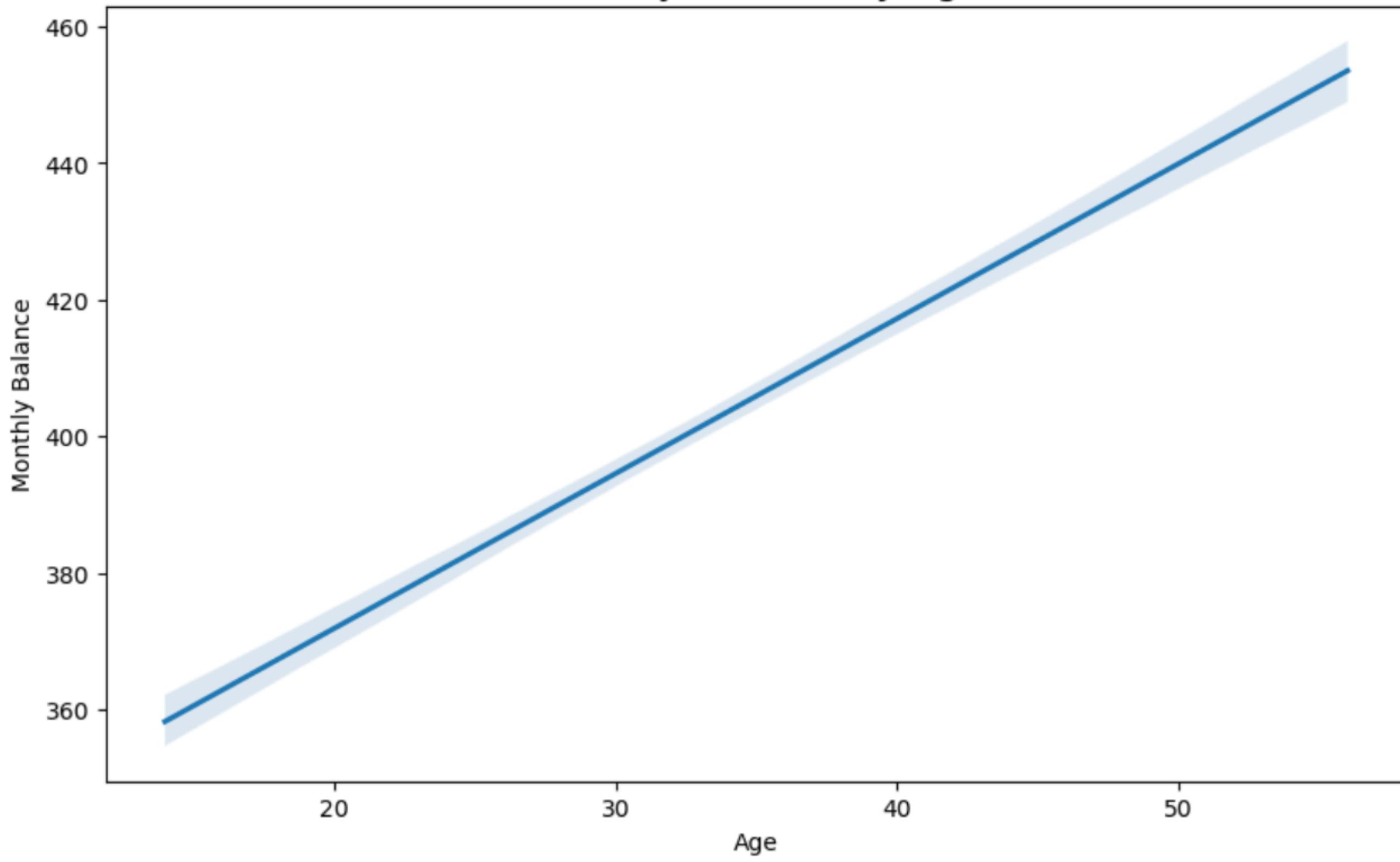


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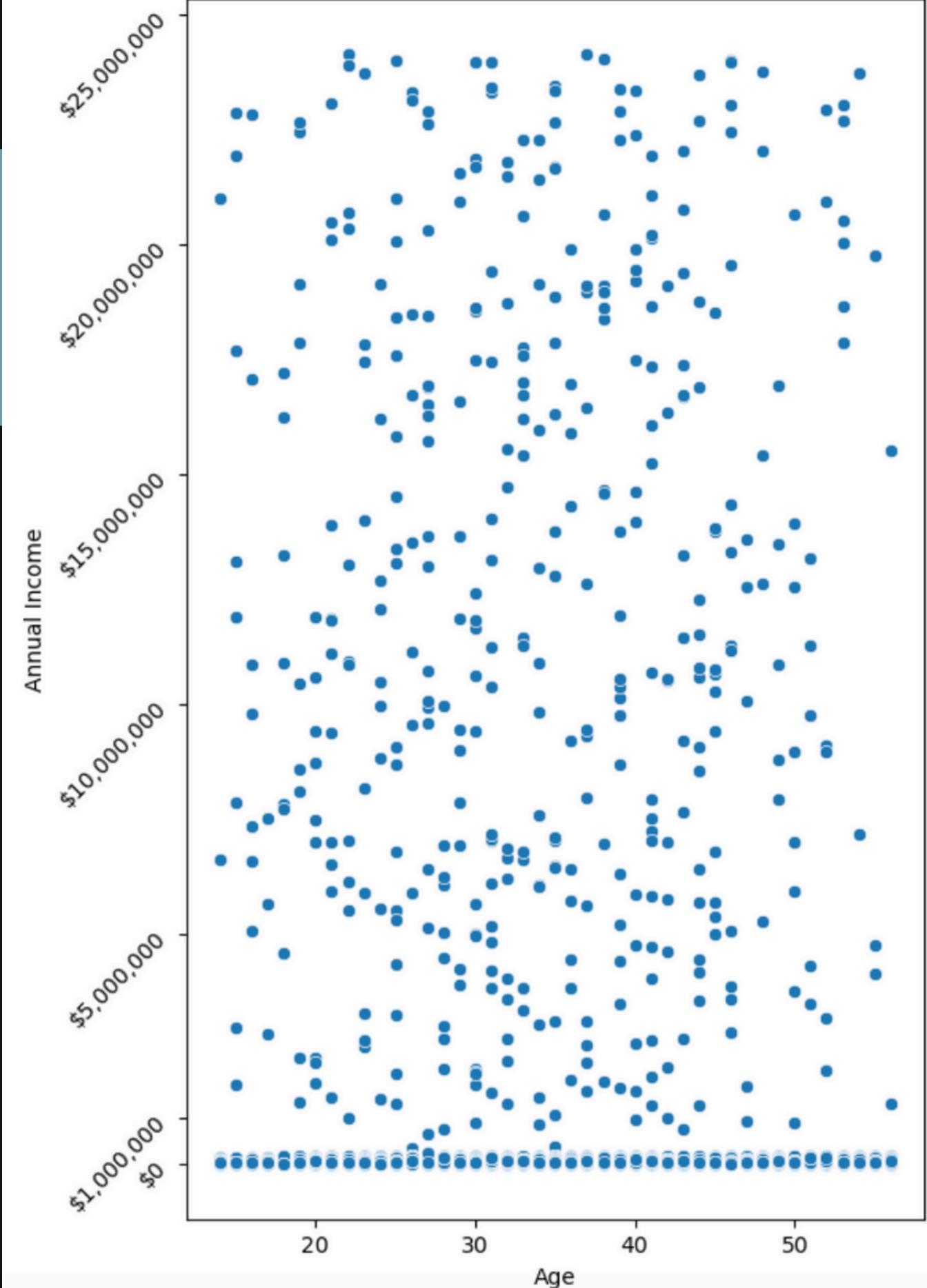
Age Drives Financial Stability

Monthly balance increases steadily with age, regardless of income.

Monthly Balance by Age



Annual Income by Age

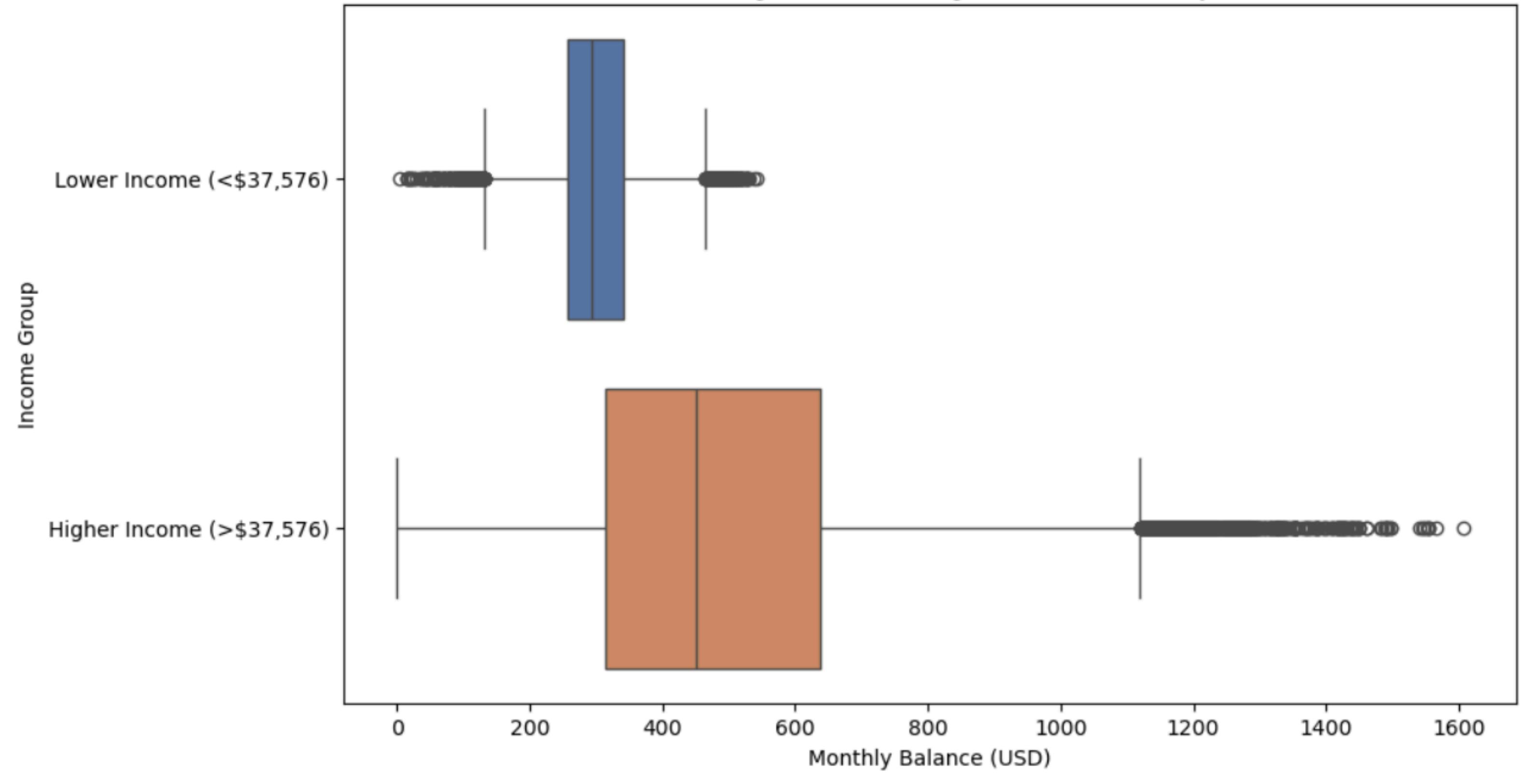


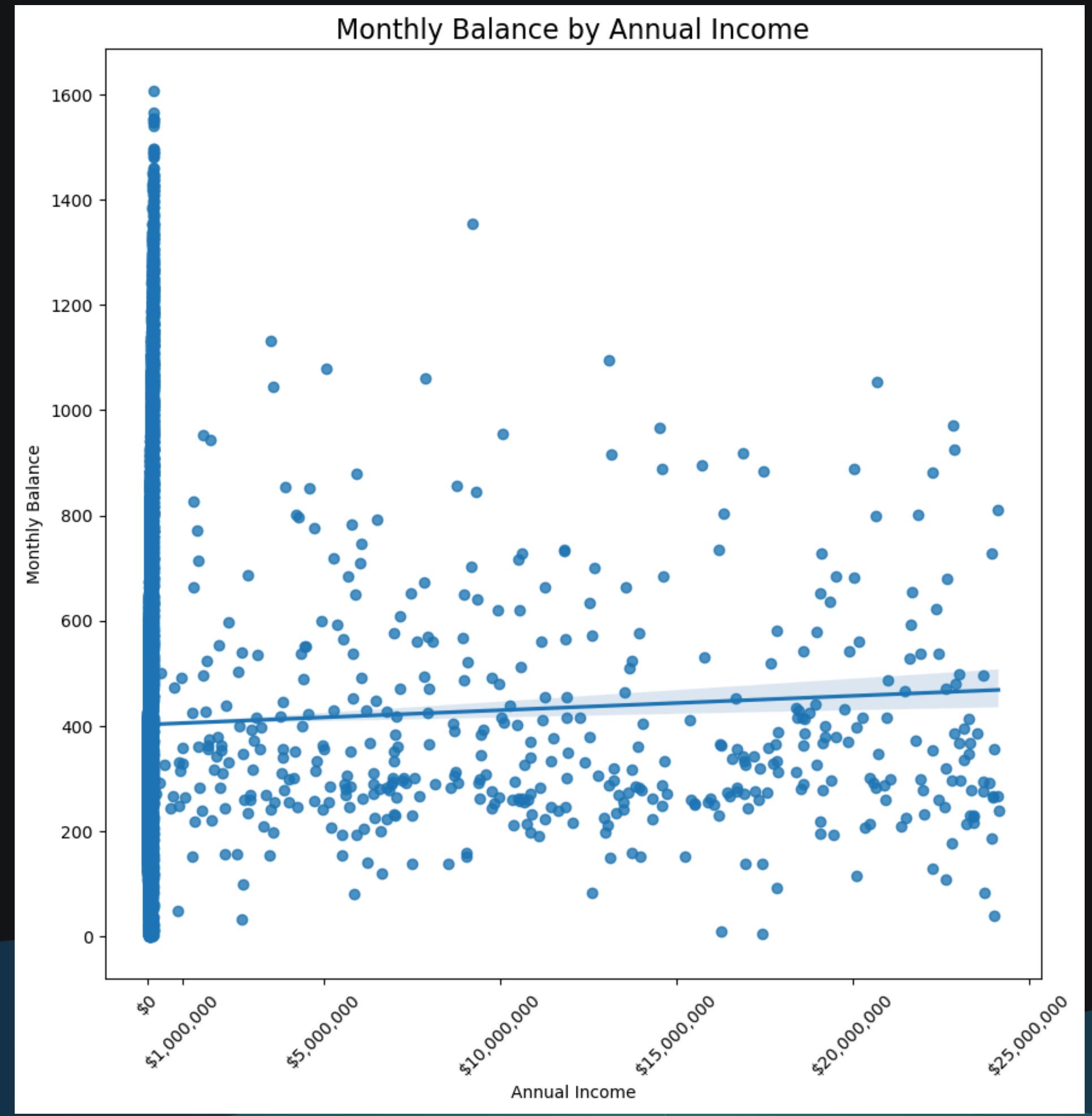
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Income Group Disparities

Higher-income customers
show greater value and
variability.

Monthly Balance by Income Group





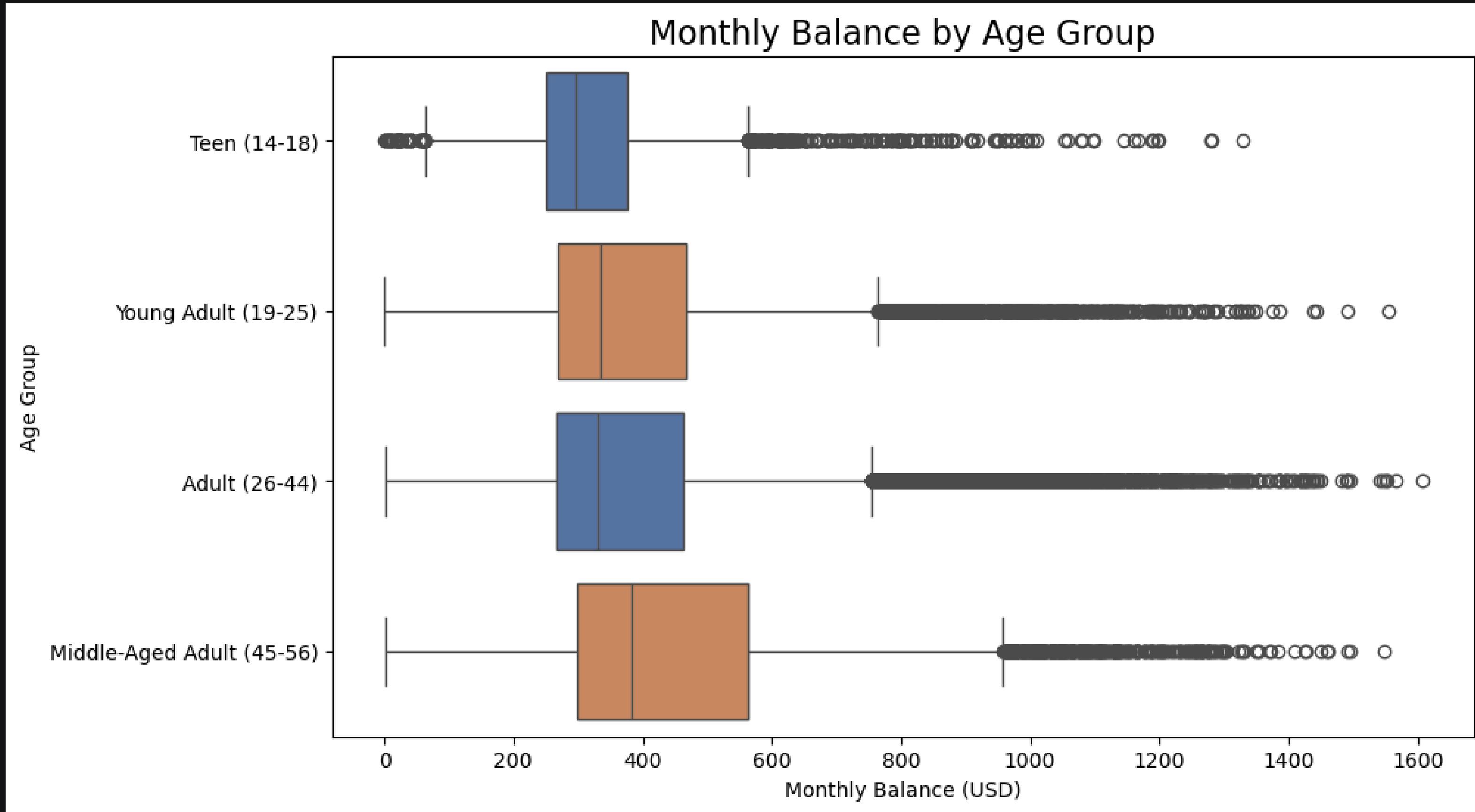
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Teen Segment Risk Profile

Younger customers require specialized risk management.

Income Category by Age Group

Income_Group	Higher Income (>\$37,576)	Lower Income (<\$37,576)
Age_Group		
Teen (14-18)	1468	1704
Young Adult (19-25)	4989	4200
Adult (26-44)	13271	12053
Middle-Aged Adult (45-56)	4994	3483

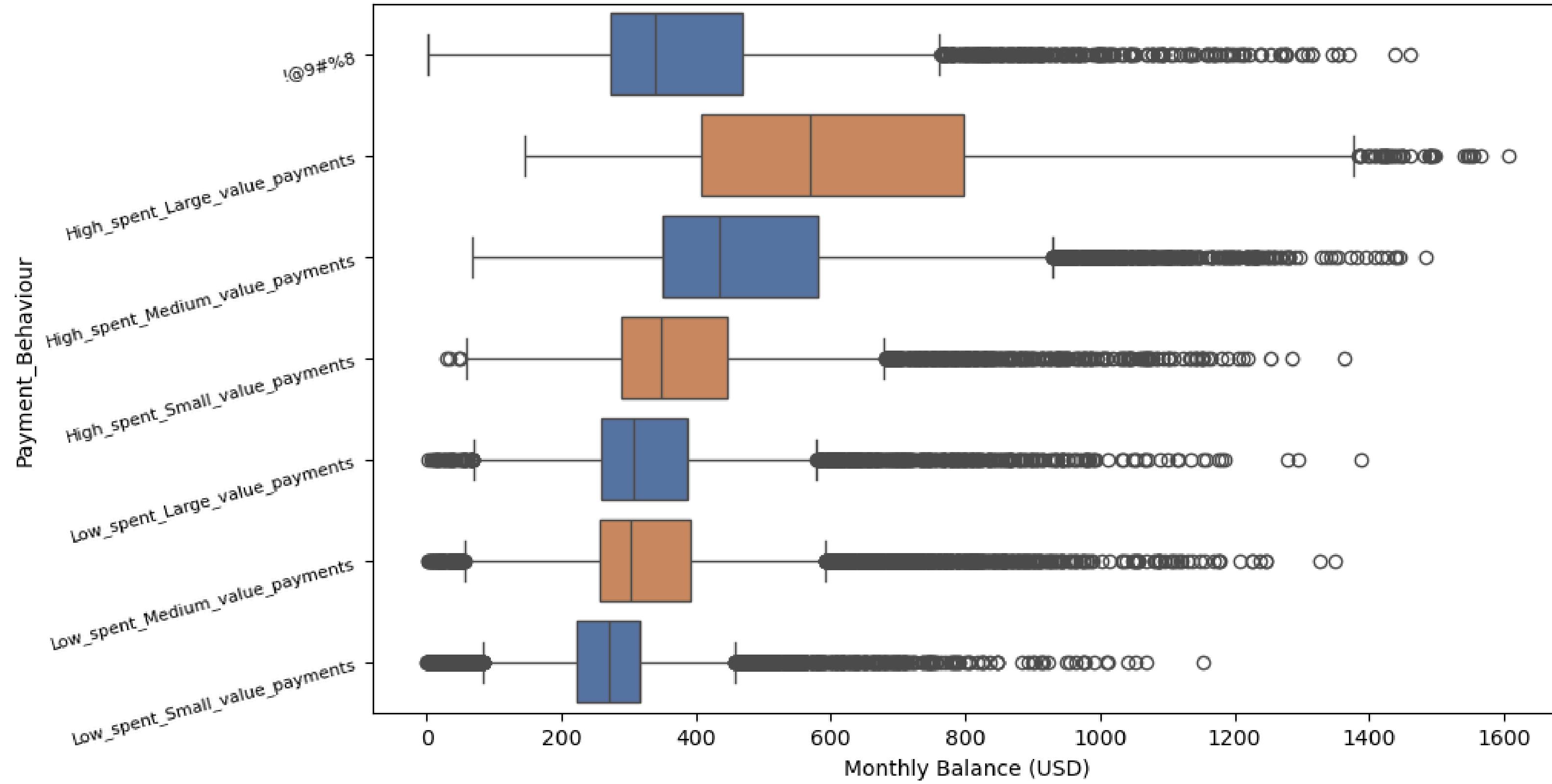


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Spending Behavior Insights

Customer spending patterns reveal actionable segments.

Monthly Balance by Payment Behaviour



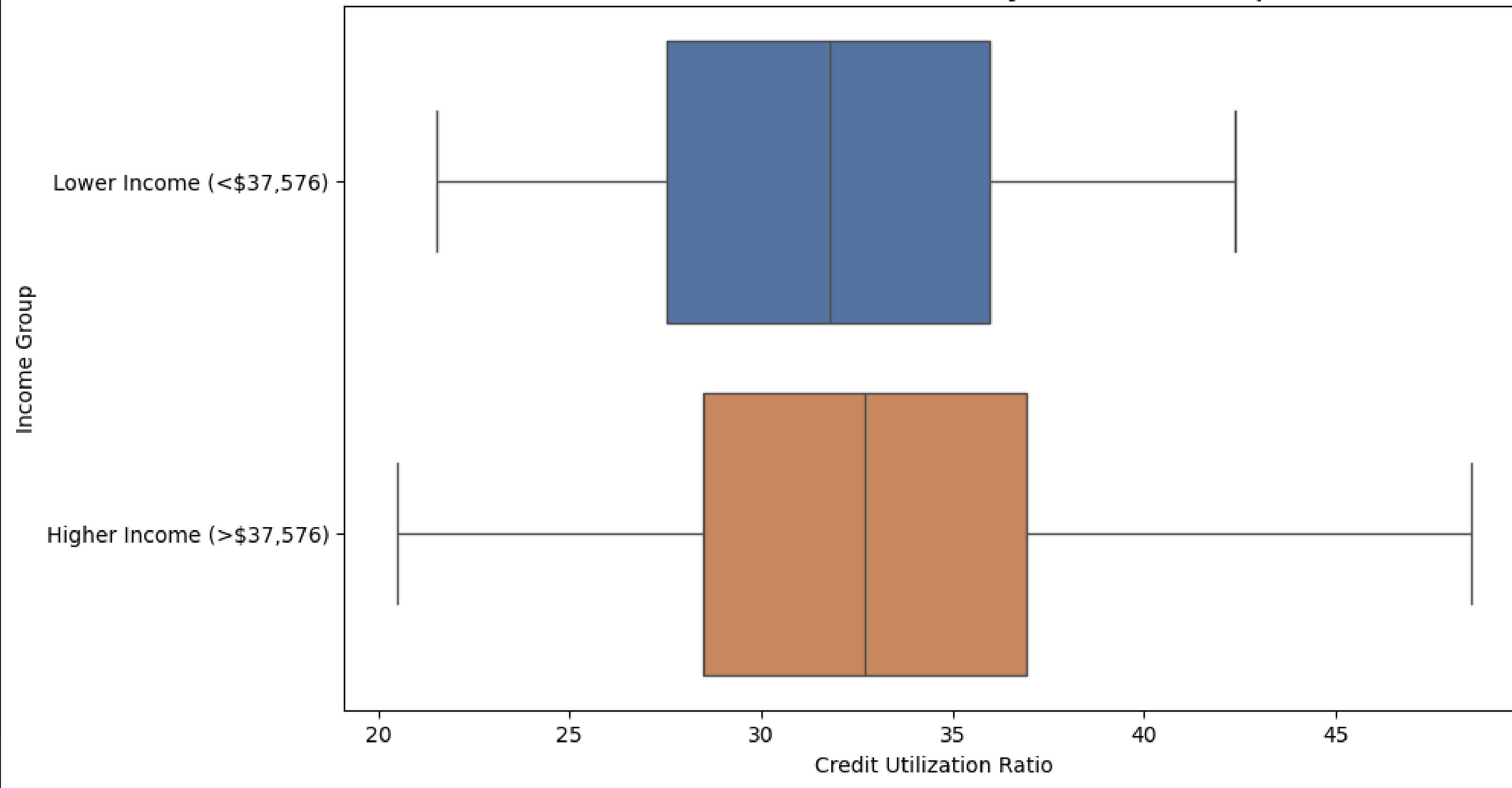
Spending Behavior by Income Group

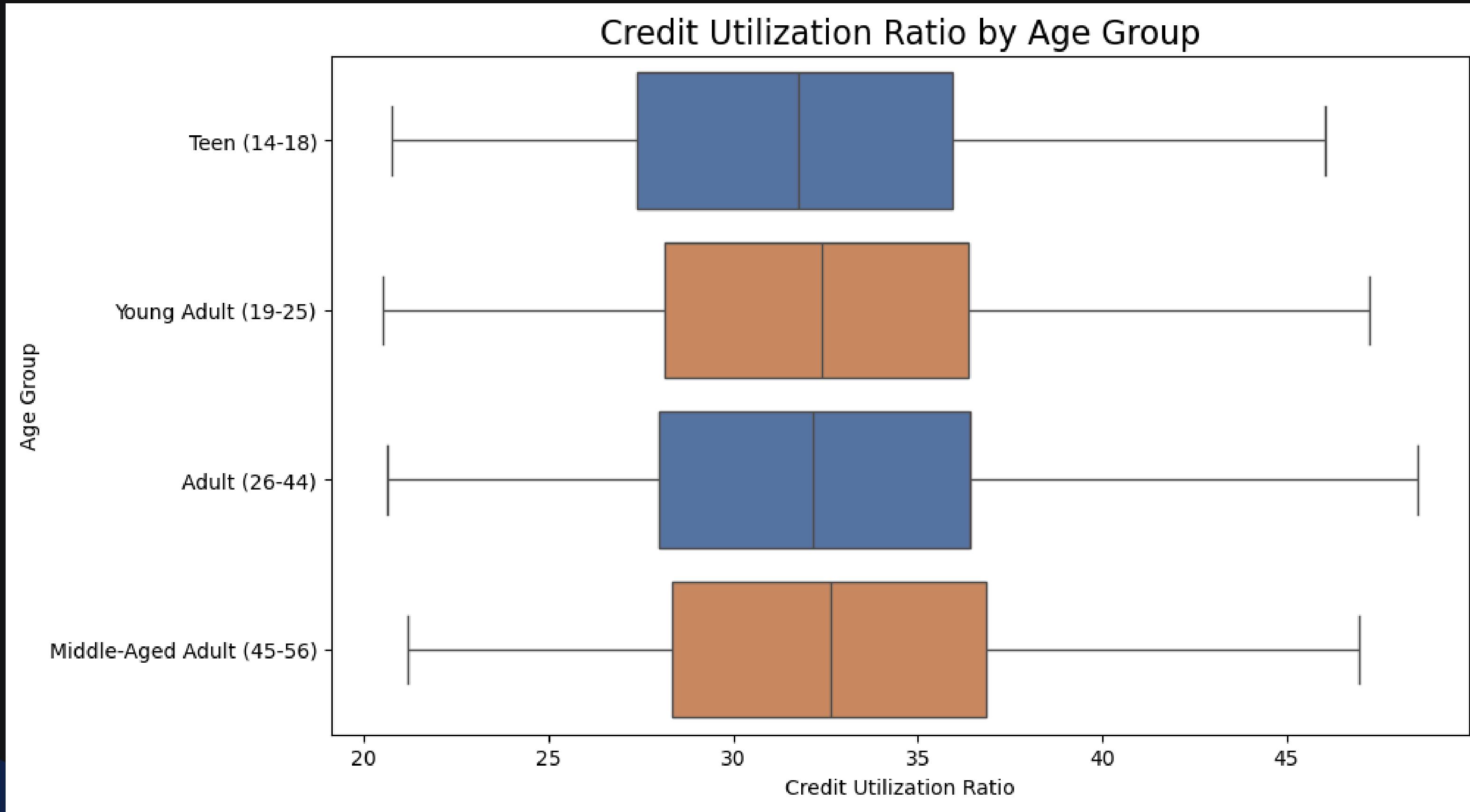
Income_Group	Higher Income (>\$37,576)	Lower Income (<\$37,576)
Payment_Behaviour_Code		
0	2012	1788
1	5297	1547
2	5985	2937
3	3003	2648
4	2552	2700
5	3713	3124
6	4198	8496

05 Credit Utilization Insights

Usage patterns similar across income groups.

Credit Utilization Ratio by Income Group





Strategic Recommendations

Revise Risk Models

Incorporate age as primary stability indicator alongside income

Segment Products

Create age-appropriate offerings (teen starter cards, middle-age premium products)

Retention Focus

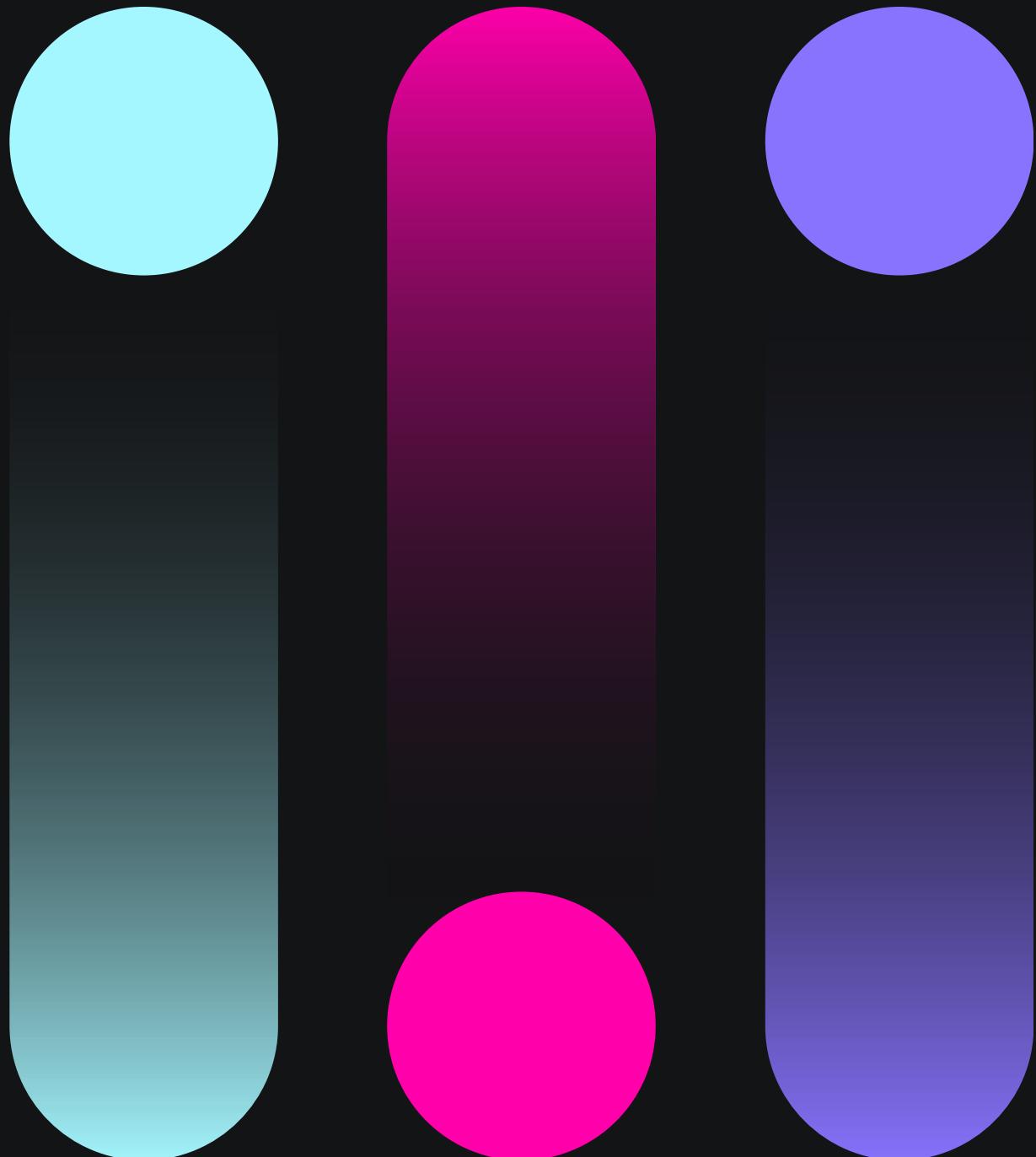
Build specialized relationship programs for high-balance customers (\$500+ monthly)

Spending-Based Rewards

Align rewards programs with customer spending behavior tiers

Domain Knowledge Acquired

1. Credit scoring methodologies and key performance indicators (utilization ratios, payment behavior patterns)
2. Regulatory considerations for age-based and income-based segmentation in lending
3. Industry benchmarks for credit utilization rates and account balance distributions
4. Customer lifecycle patterns in financial services (career progression impacts on creditworthiness)
5. Risk assessment frameworks balancing profitability with responsible lending



Difficulties & Challenges

1. Data Quality: Wide income ranges (0 to 1M+) required careful handling of outliers and data validation
2. Interpretation Complexity: Weak correlations between income and stability required deeper analysis to find actionable patterns
3. Sample Representation: Ensuring findings are generalizable across different customer populations and geographic regions



Future Work



- **Predictive Modeling**

Build machine learning models to predict customer lifetime value and default probability

- **Geographic Analysis**

Analyze regional variations in income, age, and spending patterns

- **Temporal Analysis**

Track how customers migrate between income and behavior segments over time

- **Product Performance**

Link customer segments to specific product usage and profitability metrics



The background features a large, dark gray circle centered on the page. Inside this circle, there are four sets of concentric arcs in different colors: purple, blue, magenta, and light blue. These arcs intersect at various points. Overlaid on the center of the circle is the text "Thank You" in a bold, white, sans-serif font.

Thank You