



Data-Driven Banking Insights: Loan & Deposit Portfolio Management

Tools used Python, SQL and Power BI



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INTRODUCTION

Banks manage two major aspects of their business: **loans (assets) and deposits (liabilities)**. However, analyzing these two areas together is often difficult because data is stored in separate systems and not easily integrated. Without a unified view, management struggles to monitor overall performance, identify risks, and understand customer behavior.

This project focuses on building a comprehensive analytics solution that combines data from both loans and deposits.

MAIN OBJECTIVE

- To monitor and analyze key lending
- Funding indicators in a consolidated manner.
- To enable multi-dimensional analysis based on customer attributes .
- To assess profitability and concentration risks across different customer segments.
- To provide insights into the overall financial health of the customer base.



PROBLEM STATEMENT

Banks generate large amounts of data from their **loan portfolios (assets)** and **deposit portfolios (liabilities)**. However, this data is often scattered across different systems, making it difficult for management to view both areas together. As a result, the bank faces challenges in:

- Tracking overall performance of loans and deposits in a unified way.
- Identifying profitable customer segments and high-risk areas.
- Assessing concentration risks across lending and funding.
- Understanding the financial health of its customer base for better planning.

ABOUT DATA

- Size: 3,000 customer records with 25 columns
- Coverage: Includes customer demographics, banking relationships, and complete financial portfolios
- Key Metrics: Bank loans, deposits, checking/savings accounts, business lending, and credit card data
- Segmentation: 5 nationalities, 195 occupations, 4 loyalty tiers, and 3 fee structures
- Purpose: Comprehensive dataset for analyzing banking performance across customer segments

MAIN KPI'S

Banking Insights: Loan & Deposit Portfolio Management



LOAN ANALYSIS

DEPOSIT ANALYSIS

SUMMARY

GenderId

All

Joining Year

All

Total No. of Customers

3000

Checking Accounts

963.28M

Total Loan

4.38bn

Business Lending

2.60bn

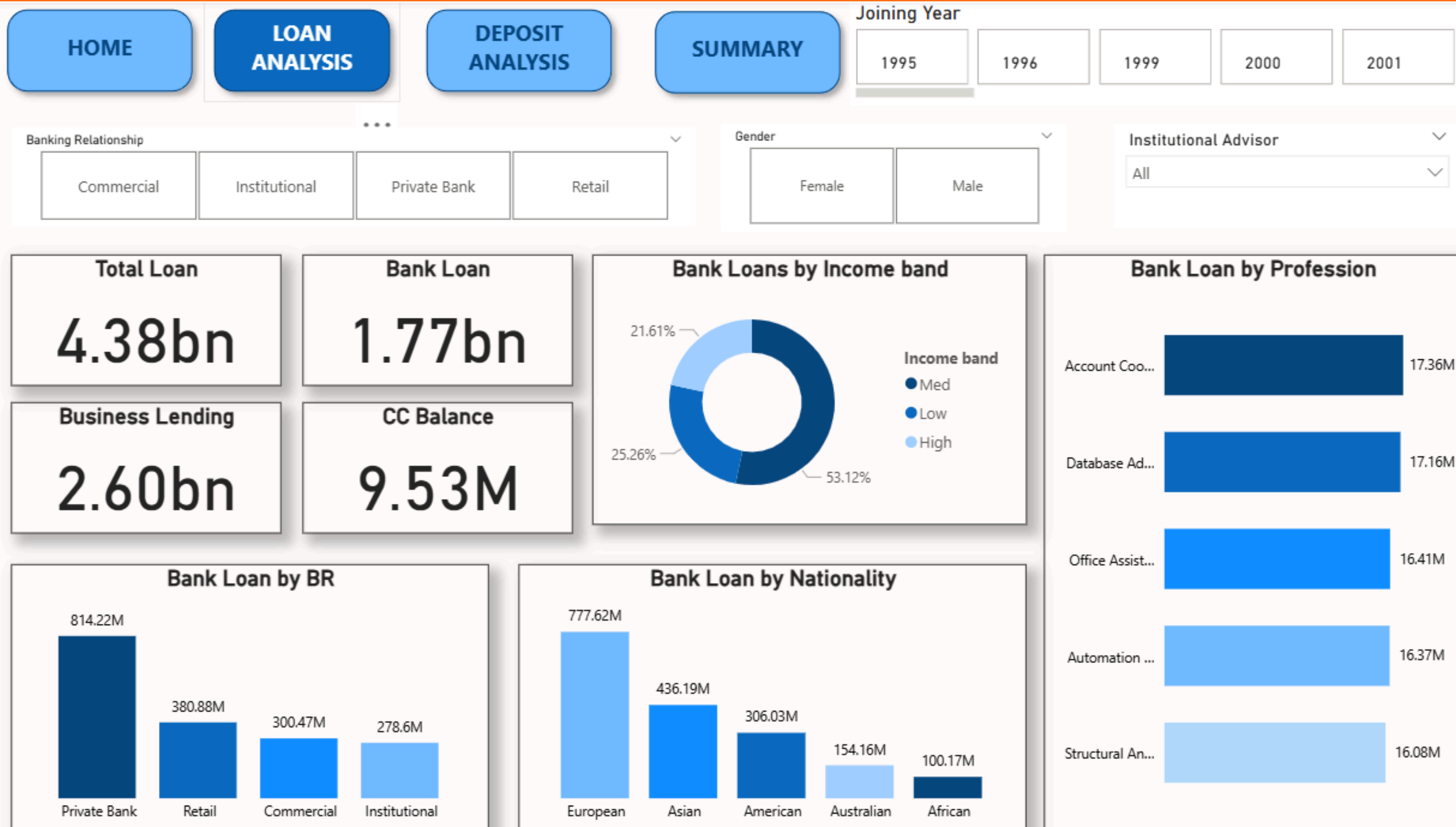
Total Deposit

3.77bn

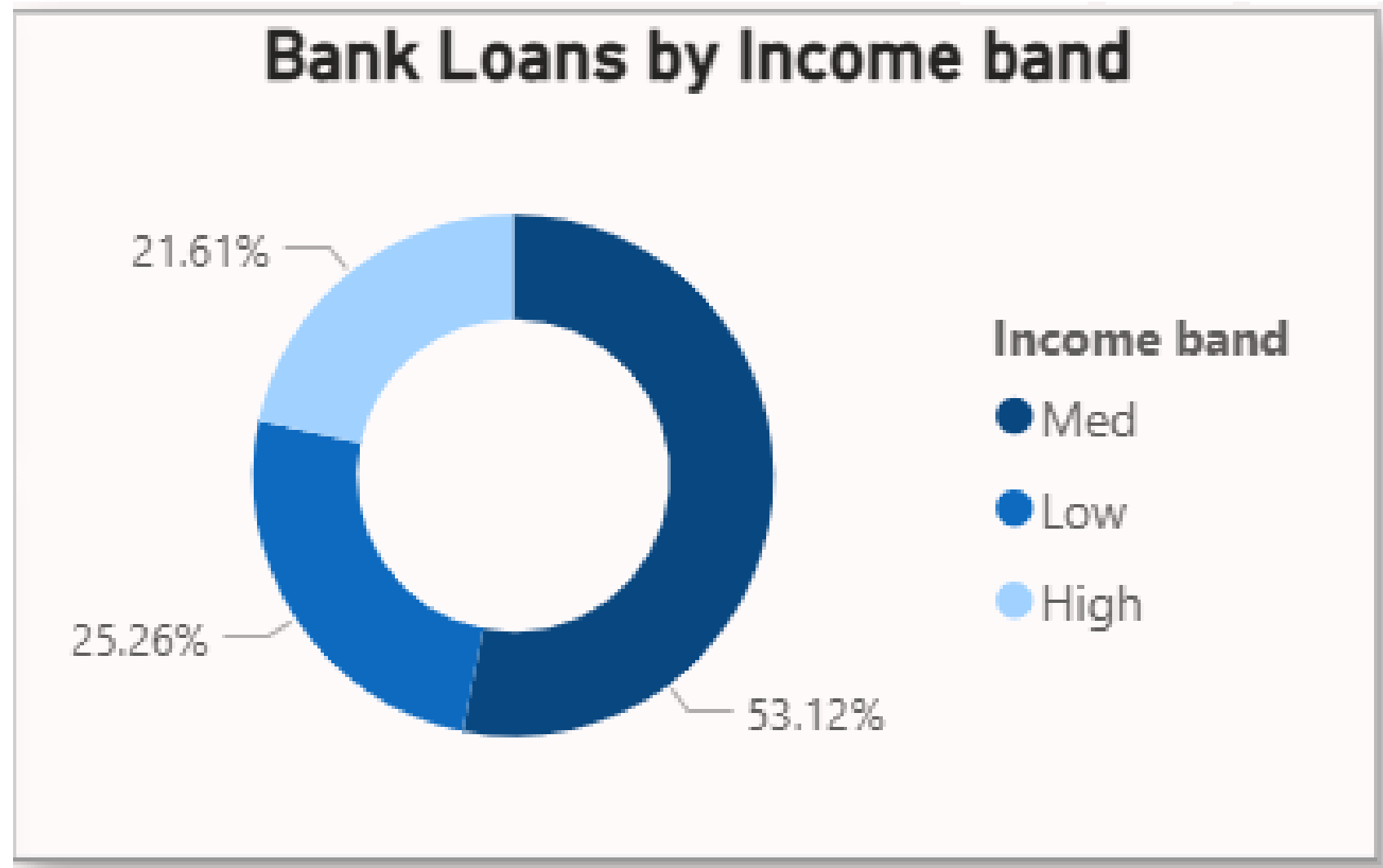
Savings Accounts

698.73M

LOAN ANALYSIS-OVERVIEW



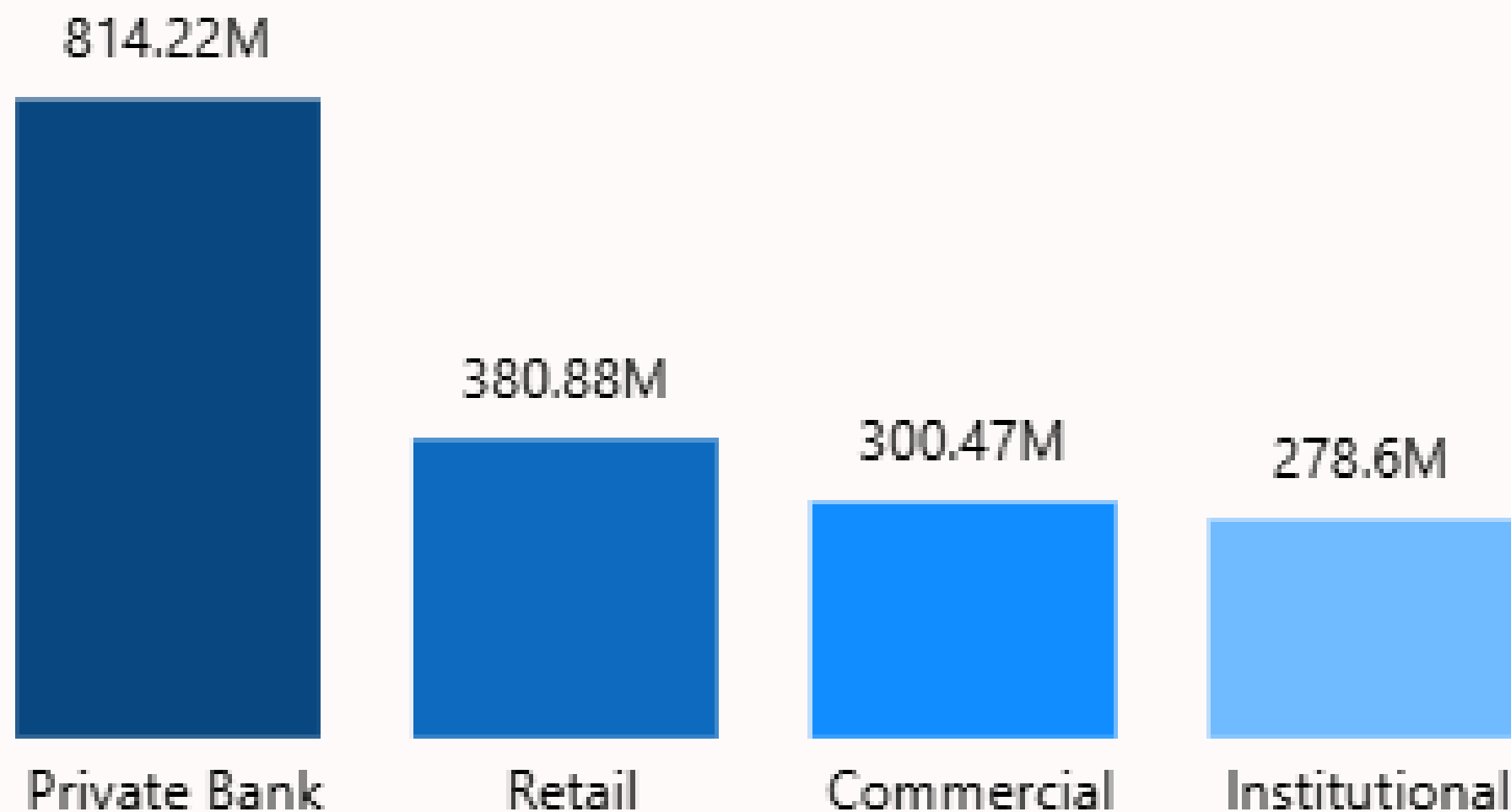
LOAN ANALYSIS



- Medium-income customers contribute the largest share of deposits (54.17%).
- Low-income customers hold 24.79% of total deposits.
- High-income customers account for 21.05% of deposits.

LOAN ANALYSIS

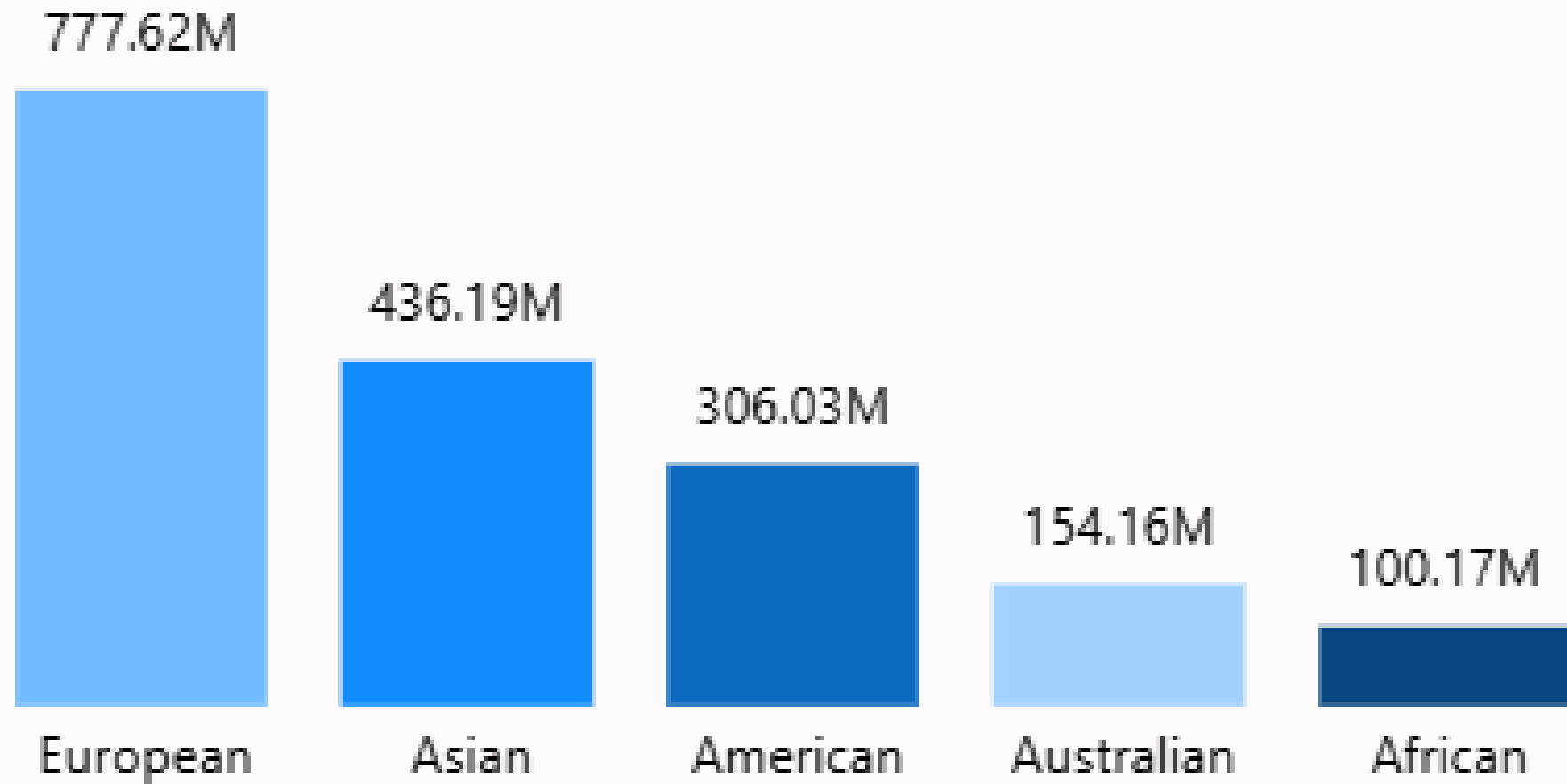
Bank Loan by BR



- **Private Bank (814.22M):** This is the largest category, showing that high-net-worth clients hold the most significant loan amounts.
- **Retail (380.88M):** This represents the general consumer base.
- **Commercial (300.47M) & Institutional (278.6M):** These segments represent business and organizational clients.

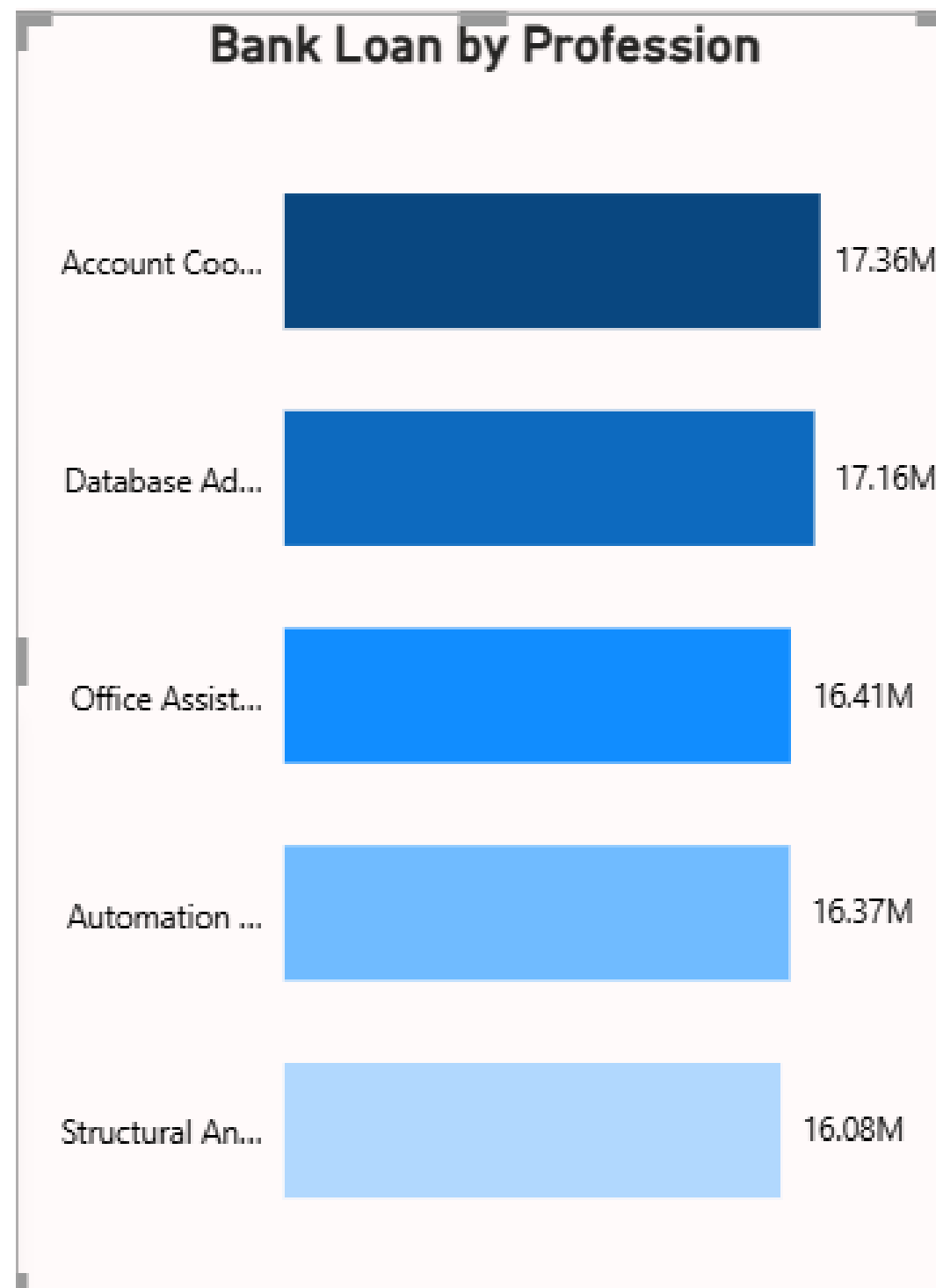
LOAN ANALYSIS

Bank Loan by Nationality



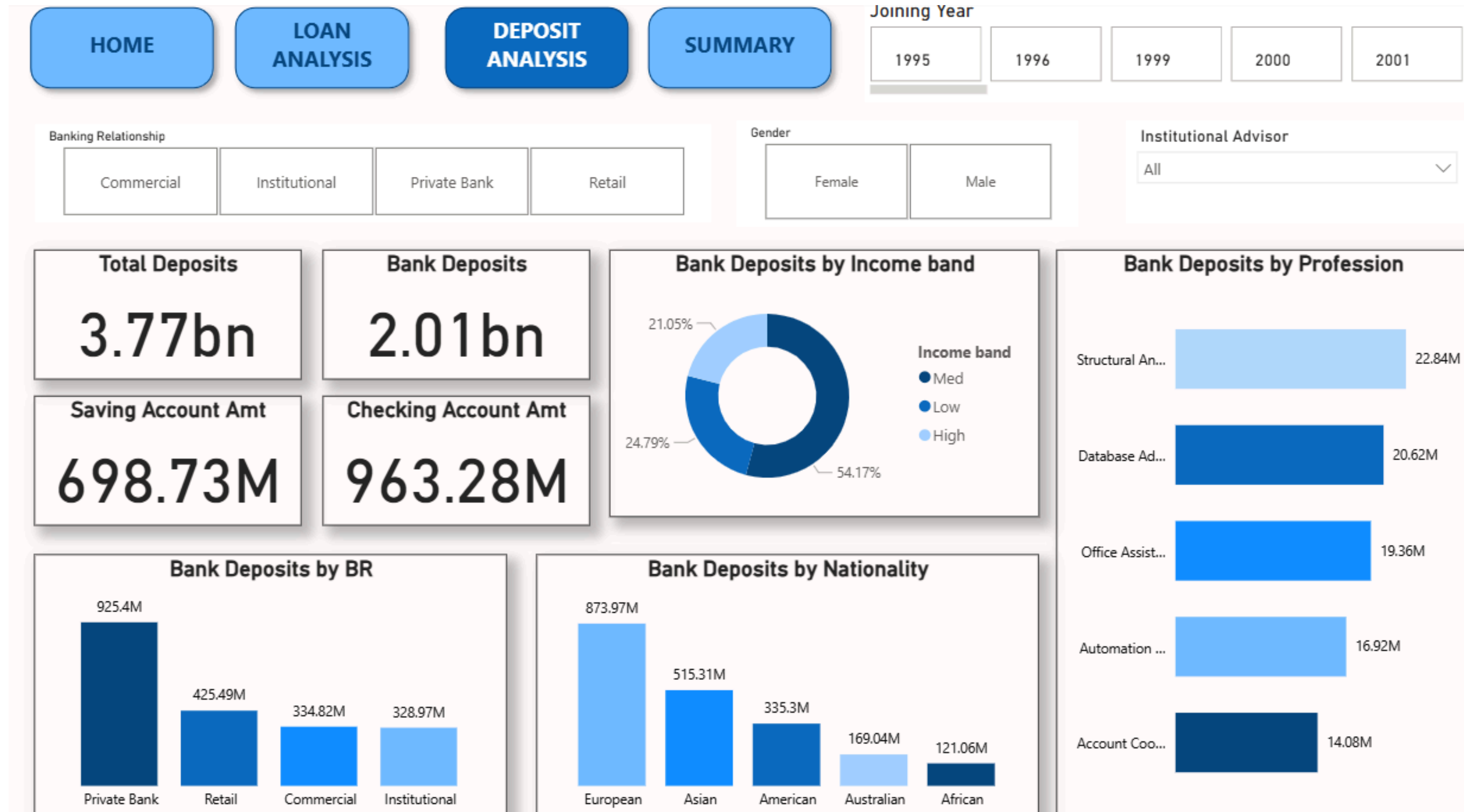
- The most significant finding is that European customers hold the largest amount of loan debt, indicating a strong concentration of the bank's lending activities within this group: **\$777.62 million**
- **Asian: \$436.19 million**
- **American: \$306.03 million**
- **Australian: \$154.16 million**
- **African: \$100.17 million**

LOAN ANALYSIS

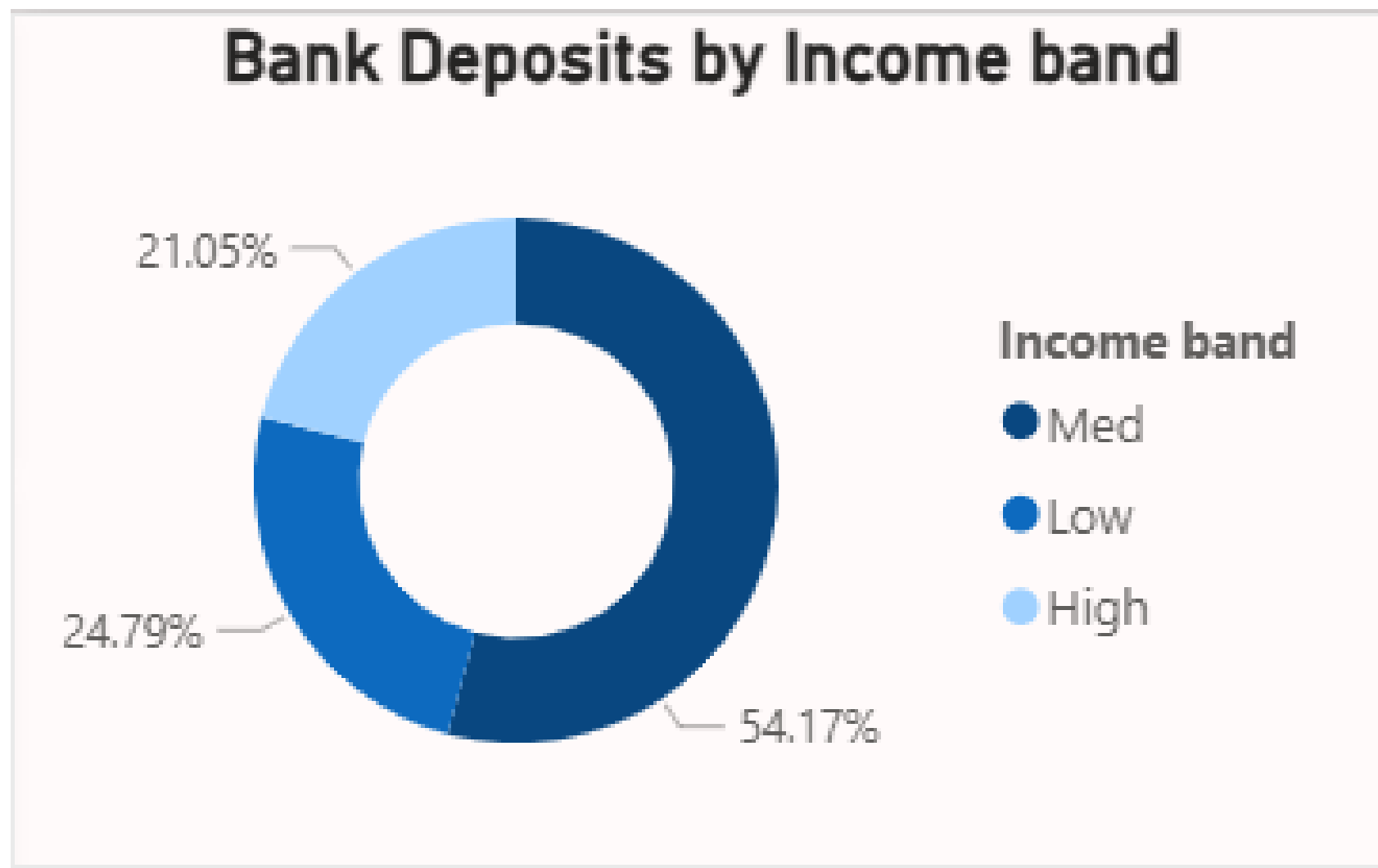


- The chart shows the top five professions by the amount of money they have borrowed:
- **Account Coordinator:** \$17.36 Million
- **Database Administrator:** \$17.16 Million
- **Office Assistant:** \$16.41 Million
- **Automation [Specialist/Engineer]:** \$16.37 Million
- **Structural Analyst:** \$16.08 Million

DEPOSITS ANALYSIS- OVERVIEW

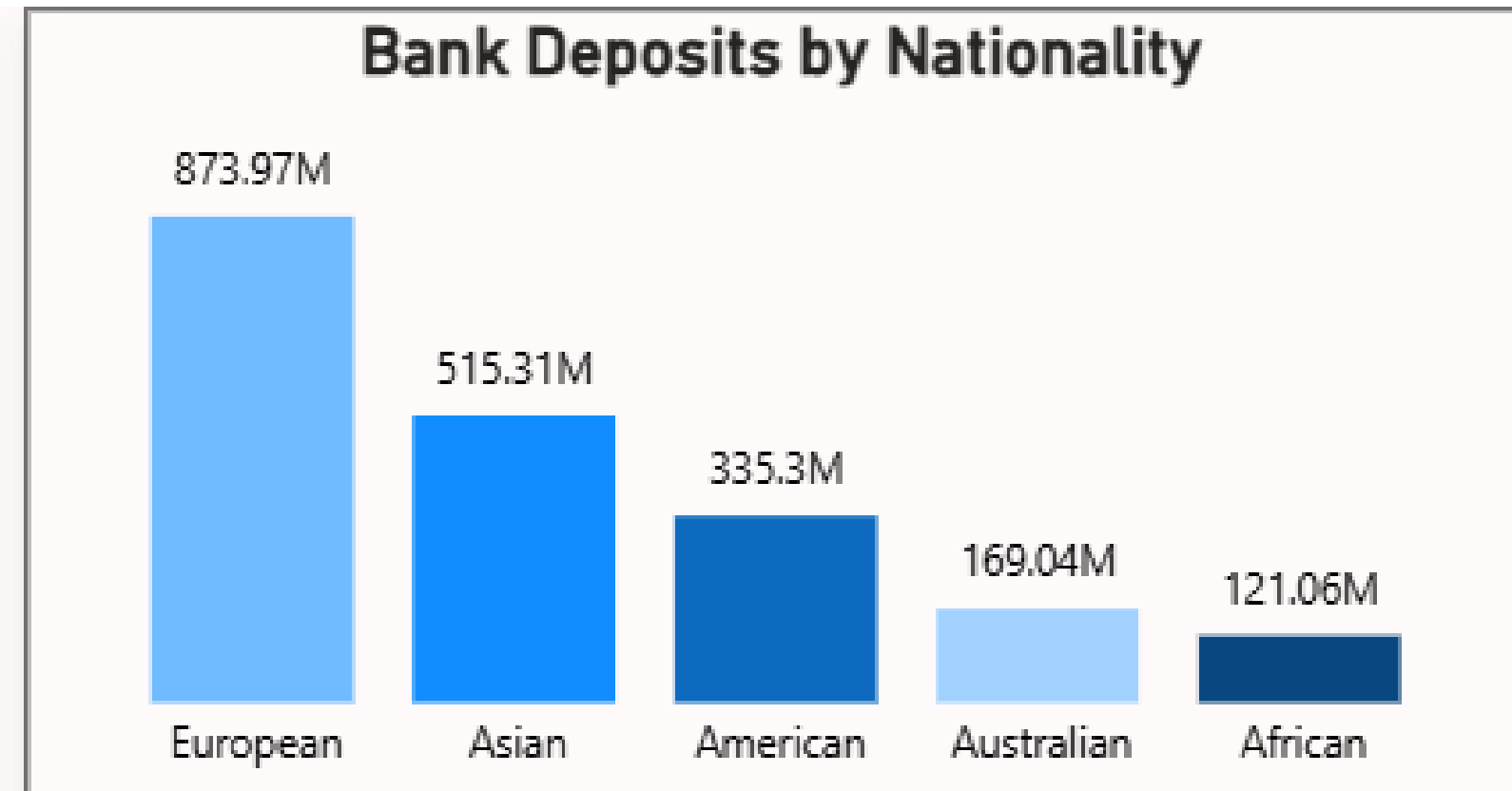
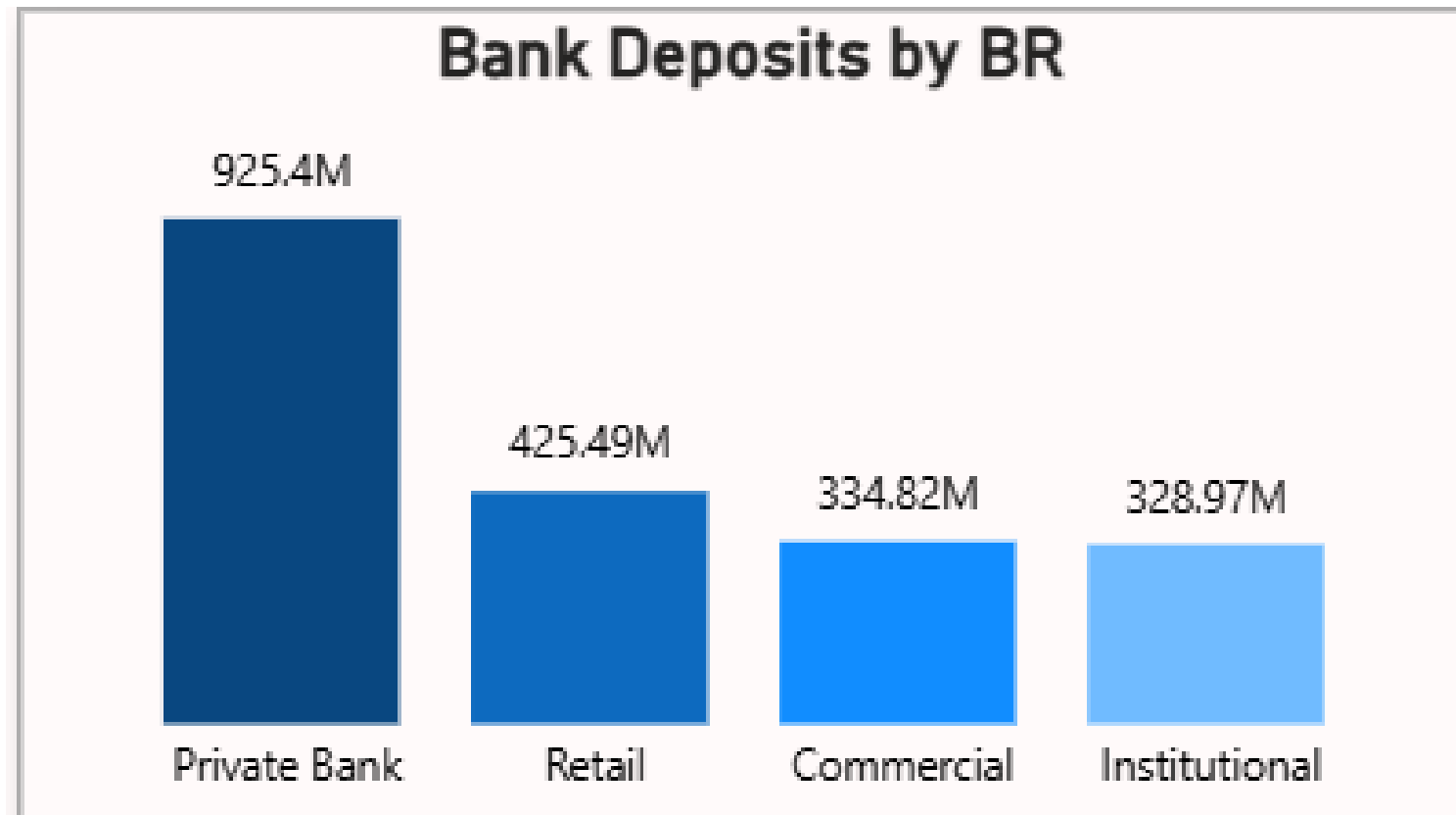


DEPOSITS ANALYSIS



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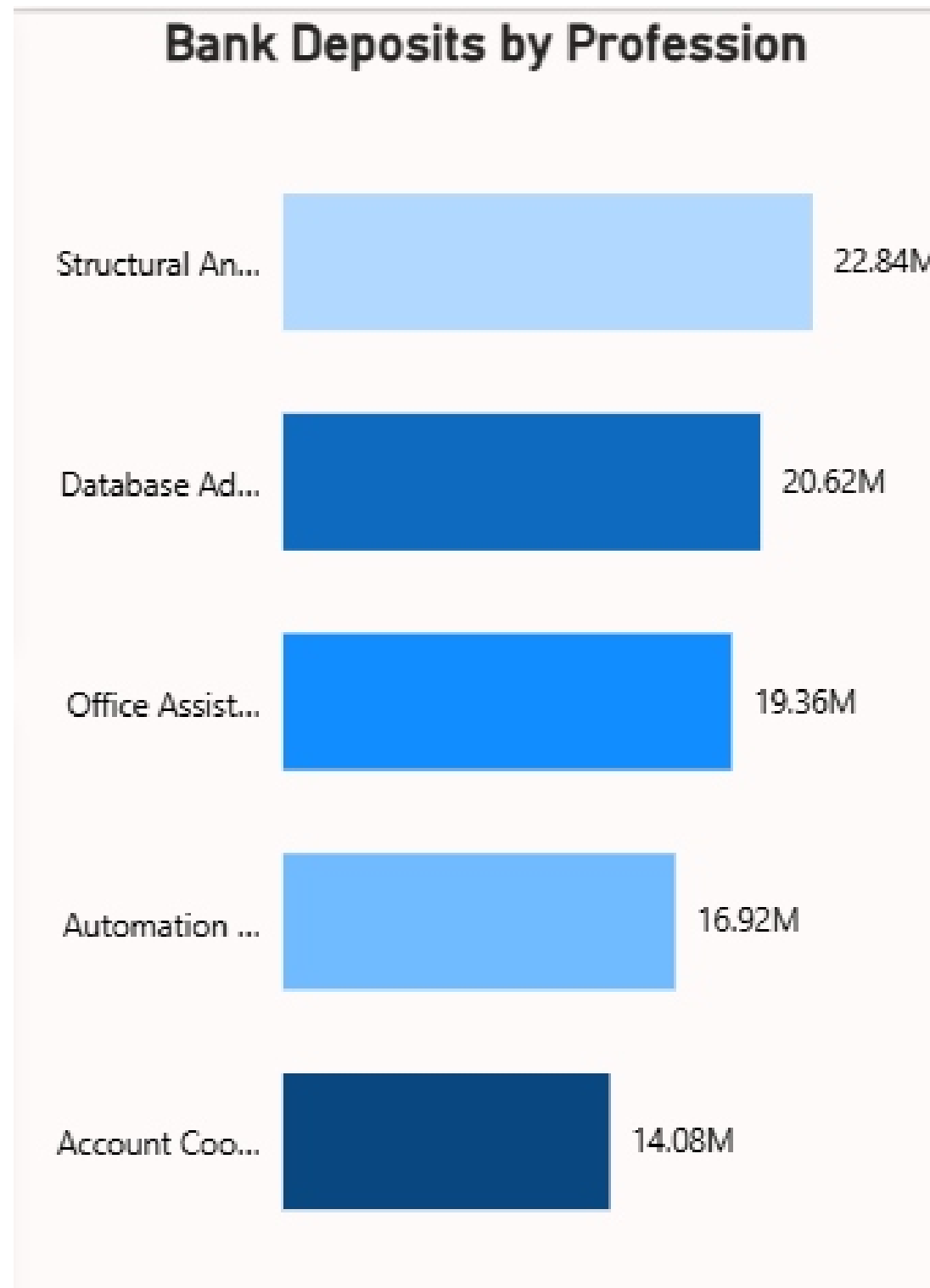
DEPOSITS ANALYSIS



- Bank Deposits by BR (Banking Relationship)
- Private Bank clients contribute the largest deposit amount (925.4M).
- Retail deposits are second highest, followed by Commercial and Institutional segments.
- Shows that high-net-worth customers (Private Bank) are the main source of deposits.

- Bank Deposits by Nationality
- European customers hold the highest bank deposits (873.97M).
- Asian and American customers follow as significant contributors.
- Australian and African customers have much lower deposit amounts, highlighting geographic differences in deposit patterns.

DEPOSITS ANALYSIS



- Here are the top five professions ranked by their total deposit amounts:
- Structural Analyst: \$22.84 Million
- Database Administrator: \$20.62 Million
- Office Assistant: \$19.36 Million
- Automation [Specialist/Engineer]: \$16.92 Million
- Account Coordinator: \$14.08 Million

CONCLUSION

- The dashboard provides clear, actionable insights into the bank's loan and deposit distribution by various demographics like income band, nationality, profession, and type of banking relationship.
- This allows management to easily monitor business concentration, segment performance, and risk exposure.
- Analysis shows that medium-income and European customer segments are the most significant contributors for both deposits and loans.
- Private Bank clients and certain professions (like Structural Analysts and Database Administrators) also play a crucial role in the bank's funding and lending activities.
- Integrating diverse customer and account data into a single analytic view enables the bank to make better decisions about targeting, risk management, and growth opportunities.

FUTURE SCOPE

- **Advanced Analytics:** Incorporate predictive analytics and machine learning to forecast deposit growth, loan defaults, or customer churn, helping the bank proactively manage risk and set business strategies.
- **Expanded Metrics:** Add new KPIs like Net Interest Margin, loan-to-deposit ratio, delinquency rates, and customer lifetime value for a more comprehensive financial performance view.
- **Real-time Updates & Automation:** Integrate real-time data streams and set up automated alert systems for anomalies or threshold breaches in deposits, lending, or risk exposure.
- **Customer Personalization:** Use insights from profession, income, and relationship data to develop personalized marketing campaigns, targeted product offerings, and improved customer retention strategies.
- **Geographical & Product Expansion:** Drill down further by geography or expand to other products (insurance, investments) to understand and promote cross-selling and regional performance.

THANK YOU