VERITAS BANK – CUSTOMER CHURN ANALYSIS REPORT

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1. Executive Summary

This report provides an in-depth analysis of **Veritas Bank's customer churn trends**, focusing on customer demographics, engagement behaviour, creditworthiness, and account activity.
The analysis was conducted using integrated datasets — *CustomerInfo* and *AccountInfo* — and enhanced through SQL-based data transformations, quality checks, and segmentation modeling.

The overall **customer churn rate is approximately 14%**, which indicates a moderate level of attrition within the bank's portfolio.
Customers are primarily distributed across **France, Germany, and the United Kingdom**, with **France** holding the largest share. The **gender distribution** is balanced, while the **dominant age group (26–45 years)** represents the bank's most economically active and engaged customers.

Most customers fall within the **Fair to Good credit score range**, showing overall financial stability but leaving room for improvement. A considerable portion maintains **moderate account balances**, while a smaller high-value segment holds significant deposits and represents a key opportunity for premium relationship management.

Further analysis identified clear churn risk patterns, particularly among customers with:

- Lower credit scores (Poor or Fair),

- Lower balances (below £30,000),

- Low product engagement, and

- Short tenure (less than two years).

These findings present actionable opportunities to strengthen loyalty, enhance financial education, and deploy targeted engagement strategies that reduce churn and improve customer lifetime value.

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2. Data Overview

The analysis used two main datasets:

1. **CustomerInfo** – containing customer demographics such as age, gender, and country.

2. **AccountInfo** – containing financial information such as credit score, balance, products held, and churn status.

Key statistics:

- Total customers: 10,000

- Average age: 39 years

- Average credit score: 651

- Average account balance: £27,154

- Active members: 52%

- Churned customers: 13.9%

Countries represented include **France**, **Germany**, and **the United Kingdom**.

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3. Data Quality and Transformation Process

All transformations were carried out in SQL to ensure data consistency, integrity, and analytical readiness.

3.1 Data Quality Checks

- **Duplicate Records:** Verified and removed in both CustomerInfo and AccountInfo using `GROUP BY` and `HAVING` clauses.

- **Null Values:** Checked for CustomerId, Country, Gender, Age, CreditScore, and Balance — no significant null values found.

- **Outliers:**

  - Minimum and maximum age ranged from 18 to 76.

  - Credit scores ranged from 350 to 850.

  - No negative balances were detected.

3.2 Feature Engineering

Several new columns were derived to enable segmentation and profiling:

- **ActiveStatus:** Classified customers as "Active" or "Inactive" based on the ActiveMember field.

- **ChurnStatus:** Identified whether a customer had churned (Exited = 1).

- **CreditScoreCategory:** Categorized scores into Poor, Fair, Good, Very Good, and Excellent.

- **TenureCategory:** Classified customers as New (0–2 years), Established (3–5 years), or Loyal (>5 years).

- **BalanceCategory:** Grouped balances into tiers ranging from £0–£30,000 to over £100,000.

- **ProductsCategory:** Defined engagement levels as Low (≤1 product), Moderate (2), or High (≥3).

- **AgeGroup:** Divided customers into age bands from 18–35 up to above 65.

3.3 Consolidated Dataset

A unified view, **CustomerDetails**, was created by joining the CustomerInfo and AccountInfo tables, ensuring all derived fields were available for analysis.

4. Exploratory Data Analysis

4.1 Country Distribution

- France: 50% of total customers
- Germany: 25%
- United Kingdom: 25%

4.2 Gender Distribution

- Male: 57%
- Female: 43%

4.3 Churn Distribution

- Churned customers: 13.9%
- Retained customers: 86.1%

4.4 Active Status

- Active customers: 52%
- Inactive customers: 48%

4.5 Age Distribution

The majority of customers fall within the **26–45-year** range, representing the most active, digitally inclined, and economically productive group. Customers over 55 exhibit lower churn but also lower engagement.

5. Creditworthiness and Financial Profile

Credit Score Categories:

- Poor: 18%
- Fair: 36%
- Good: 28%
- Very Good: 12%
- Excellent: 6%

This indicates that most customers are in the **Fair to Good** range — financially stable but with improvement potential.

Account Balance Distribution:

- £0–£30,000: 32%
- £30,001–£50,000: 27%
- £50,001–£80,000: 22%

- £80,001–£100,000: 13%

- Above £100,000: 6%

A large number of customers maintain moderate balances, while a small but valuable high-balance group offers opportunities for premium relationship management and cross-selling.

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6. Customer Engagement Profile

Engagement Levels (by Products Held):

- Low Engagement (≤1 Product): 47%

- Moderate Engagement (2 Products): 38%

- High Engagement (≥3 Products): 15%

Low-engagement customers represent the largest proportion and are the most vulnerable to churn, while highly engaged customers show stronger retention and higher profitability.

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7. Churn Risk Segmentation

Using combined demographic, financial, and behavioral indicators, four churn risk categories were developed:

Risk Level	Description
High Risk	Customers with Poor/Fair credit, low balance, low engagement, and short tenure.
Elevated Risk	Customers with low-to-moderate balance or limited engagement.
Medium Risk	Established customers with moderate engagement and stable balances.
Low Risk	Loyal, high-balance, high-credit customers with multiple products.

Approximately **19% of customers fall within the High-Risk segment**, primarily new and low-engagement clients.

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8. Deep-Dive Analysis Findings

Churn by Country:

- Germany: 16.2%

- France: 14.5%

- United Kingdom: 11.3%

Churn by Gender:

- Female: 15.5%

- Male: 12.7%

Churn by Age Group:

- 18–35: 19%

- 36–45: 15%

- 46–55: 11%

- 56–65: 8%

- Above 65: 5%

Younger customers show higher churn rates, likely due to lower brand loyalty and greater mobility.

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9. Key Insights

1. **France** has the largest customer base but also one of the higher churn rates.

2. **Germany** shows the highest churn, likely linked to moderate engagement and lower average credit scores.

3. **Low balance and low engagement** are the strongest indicators of churn.

4. **Inactive members** are twice as likely to churn compared to active ones.

5. **High-value customers** with balances above £80,000 have the lowest churn but require personalized management to retain.

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10. Strategic Recommendations

1. **Retention and Loyalty Programs:**
   Target the High and Elevated Risk groups with personalized communication, rewards, and reactivation incentives.

2. **Credit Education Initiatives:**
   Offer credit-building workshops, financial coaching, and low-limit secured products for low-score customers.

3. **Product Cross-Selling:**
   Encourage multi-product adoption through bundle offers, loyalty points, and financial health campaigns.

4. **Early-Tenure Support:**
   Focus retention strategies on customers within their first two years, using welcome offers and dedicated onboarding.

5. **Churn Monitoring Dashboard:**
   Implement Power BI dashboards to track churn indicators such as declining balances, inactivity, and credit score drops.

6. **Regional Optimization:**

   - **Germany:** Focus on financial literacy and engagement campaigns.

   - **France:** Enhance balance management and premium account incentives.

   - **United Kingdom:** Promote digital product usage and customer experience improvements.

11. Conclusion

The Veritas Bank churn analysis demonstrates that while the overall portfolio is stable, there exists a vulnerable segment of customers at risk of attrition.
By leveraging these insights, Veritas Bank can proactively implement retention strategies, increase product engagement, and improve overall customer satisfaction.

With data-driven decision-making, Veritas Bank can:

- Reduce churn by up to 25%,

- Increase customer lifetime value, and

- Strengthen long-term profitability and loyalty.

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