

Insurance Risk & Claims Analysis

Domain Overview

This dataset provides comprehensive information about car insurance policyholders, their vehicles, and their claim history. It enables in-depth analysis of customer demographics, vehicle characteristics, and financial claim behavior to support data-driven decision-making.

Customer Demographics

- Birthdate – Used to calculate age for risk profiling.
- Gender – Helps analyze claim behavior differences.
- Marital Status – Supports stability-based risk comparison.
- Education – Correlates with income and behavior trends.
- Parent & Kids Driving – Indicates household risk exposure.
- Household Income – Enables income segmentation.

Vehicle Information

- Car Make & Model – Identify brand-level risk patterns.
- Car Year – Calculate vehicle age and depreciation impact.
- Car Color – Useful for exploratory and fraud analysis.
- Car Use – Personal, Commercial, or Commute risk exposure.
- Coverage Zone – Regional risk analysis (Urban vs Rural).

Claims & Financial Metrics

- Claim Amount – Measures total financial loss.
- Claim Frequency – Number of claims filed.
- Average Claim Severity – Cost per claim analysis.
- High-Risk Identification – Frequency vs Severity comparison.

Project Enhancements & Advanced Analytics

- Risk Segmentation Model using age, car use, and claim frequency.
- Loss Ratio Analysis for profitability tracking.
- Fraud Detection Indicators based on abnormal claim patterns.
- Premium Optimization Strategy using predictive modeling.
- Customer Lifetime Value (CLV) estimation.
- Predictive Claim Forecasting using Machine Learning integration.
- Interactive Power BI dashboard with KPI tracking and drill-down capability.

Conclusion

This dataset enables insurance companies to perform advanced risk profiling, customer segmentation, premium optimization, and fraud detection. The insights derived from this analysis help design fair pricing models and improve strategic decision-making.