

Healthcare Claims Analysis Report

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Model Trained on: 2025-05-25

Group Analysis Scope:

Employers: Tech Innovators Ltd

Departments: General

Benefit Categories: Gold, Silver, Platinum

Executive Summary

Time Period	Total Claims	Unique Members	Total Claim Amount	Average Claim	Model R ²
2024-01-04 to 2024-12-30	200	200	KES 9,805,951.00	KES 49,029.75	0.999

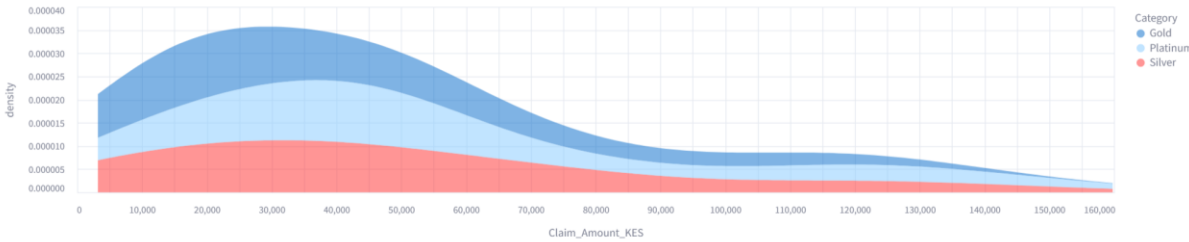
Key Insights

- 1 providers show above-average costs relative to patient age: Coptic Hospital
- Potential fraud detected in 2 claims (1.0% of total)

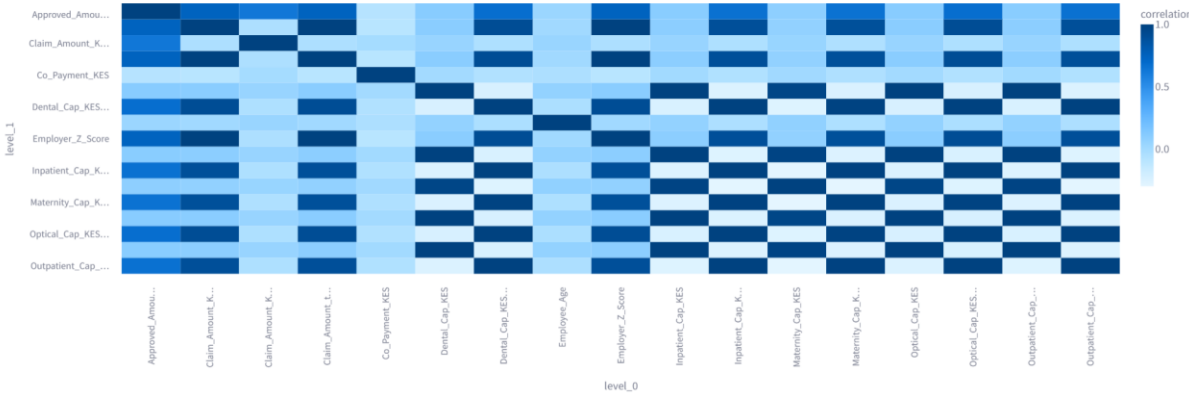
Advanced Analysis

1.1 Claim Amount Distribution by Category

Distribution of Claim Amounts by Category

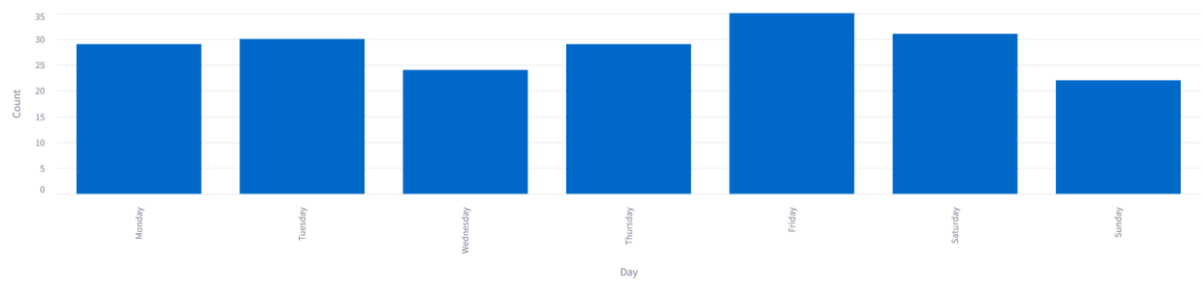


Interactive Correlation Matrix

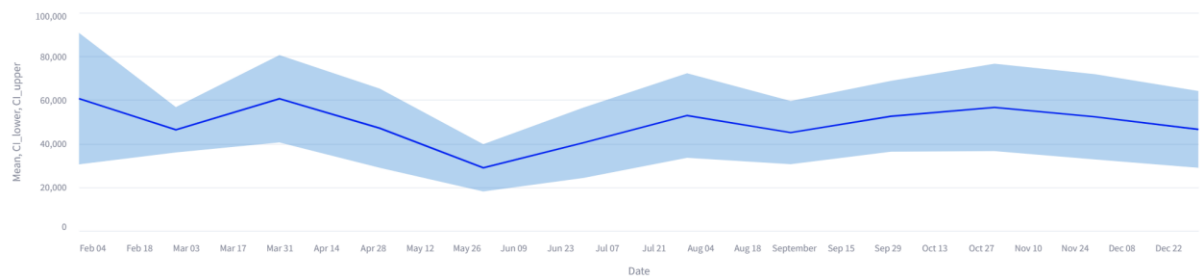


1.2 Temporal Analysis

Claims by Day of Week



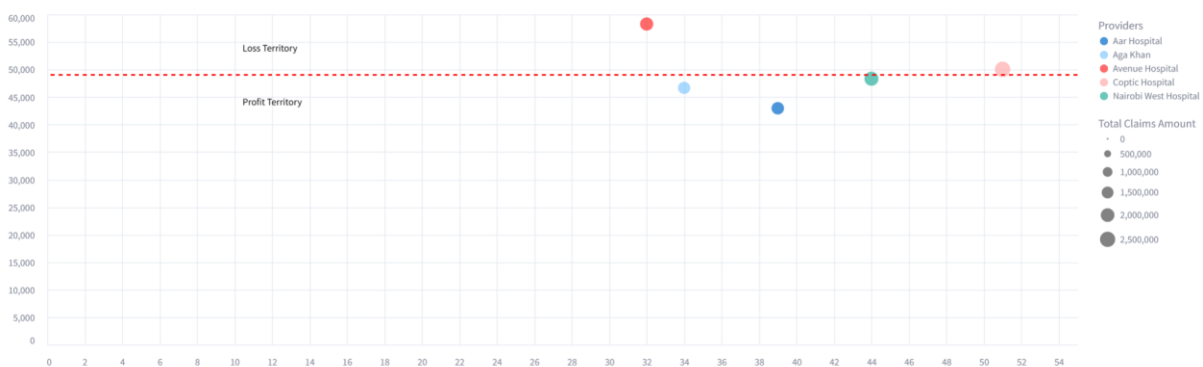
Monthly Trends with Confidence Intervals



1.3 Provider Analysis

Provider Cost Efficiency Analysis

Provider Cost Efficiency Analysis (Break-even at KES 49,029.75 - average claim amount)



How to interpret this chart:

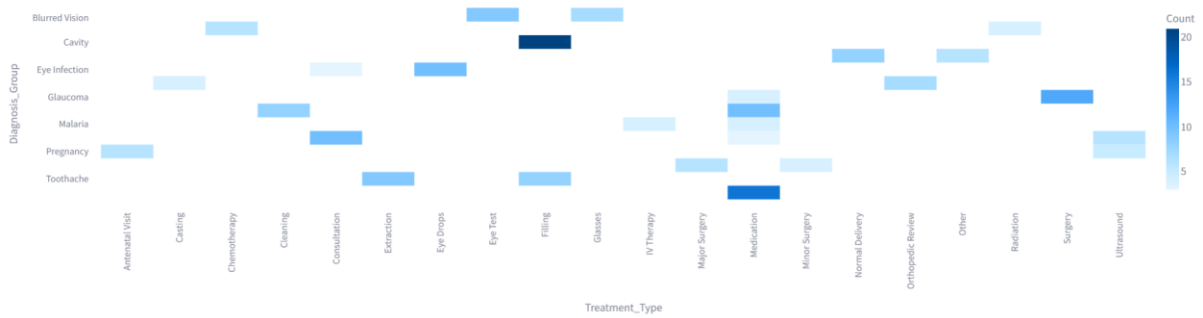
- Each bubble represents a healthcare provider
- X-axis shows the number of claims from each provider
- Y-axis shows the average claim amount
- Bubble size represents total claims amount
- The red dashed line shows the break-even point (KES 49,029.75)
 - Providers below the line are in **profit territory**
 - Providers above the line are in **loss territory**
- Break-even source: average claim amount
- Hover over bubbles to see detailed provider metrics

Provider Performance Summary

	Provider	Avg_Claim	Claim_Count	Performance
2	Avenue Hospital	KES 58,275.06	32	Loss
3	Coptic Hospital	KES 50,042.80	51	Loss
4	Nairobi West Hospital	KES 48,334.64	44	Profit
1	Aga Khan	KES 46,667.91	34	Profit
0	Aar Hospital	KES 42,962.38	39	Profit

1.3 Diagnostic Patterns

Diagnosis-Treatment Patterns



🏠 Claim Prediction

Prediction Type

☐ Individual Claim ☒ Group Claims

Group Claims Prediction

Upload employee group data (CSV or Excel)

Drag and drop file here
Limit 200MB per file • CSV, XLSX

Browse files

☒ Use existing cleaned data with filters

Filter Existing Data

Employers

Tech Innovators ...

Departments

General

Benefit Categories

Gold

Silver

Platinum

Filtered to 200 records

Predict Filtered Group Claims

Group predictions completed!

Total Predicted Claims

KES 9,805,287.04

Average Claim

KES 49,026.44

High Risk Claims

27

⚠️ Potential fraud detected in 2 claims totaling KES 286,477.66

🔄 Impact Analysis

Analysis Type

☐ Individual Analysis ☒ Group Analysis

Group Selection

Select Employers

Tech Innovators ...

Select Departments

General

Filter by Current Category

Gold

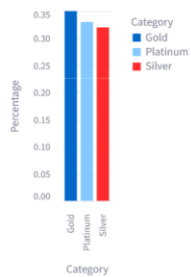
Silver

Platinum

Analyze Group Category Impact

Group Benefit Category Impact Analysis

Current Category Distribution



Group Benefit Category Impact Analysis

Highest Average Claim

KES 49,037.51

↑ Silver

Lowest Total Cost

KES 9,798,313.67

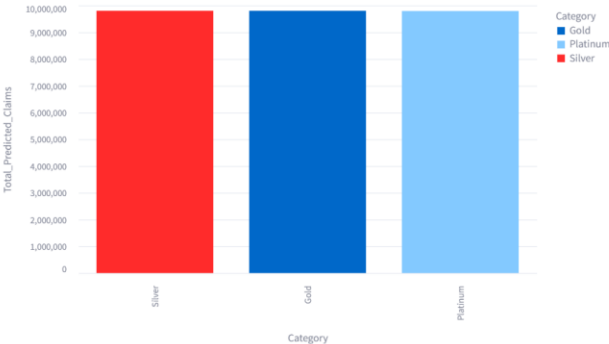
↑ Platinum

Best Fraud Prevention

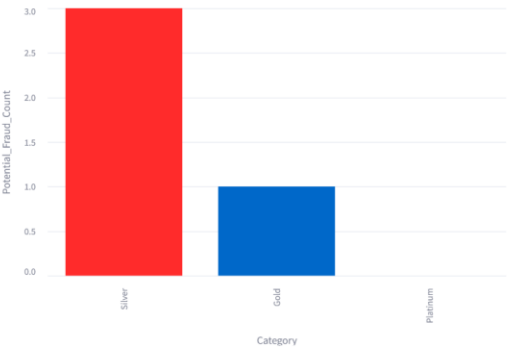
0 cases

↑ Platinum

Total Predicted Claims by Benefit Category



Potential Fraud Cases by Benefit Category



Detailed Comparison

Category	Avg_Predicted_Claim	Total_Predicted_Claims	Potential_Fraud_Count	Potential_Fraud_Amount	Inpatient_Cap	Outpatient_Cap	Optical_Cap	Dental_Cap	Maternity_Cap
Silver	KES 49,037.51	KES 9,807,501.84	3	446,183.045	750,000	75,000	40,000	40,000	50,000
Gold	KES 49,034.36	KES 9,806,872.88	1	159,719.3732	1,000,000	100,000	50,000	50,000	75,000
Platinum	KES 48,991.57	KES 9,798,313.67	0	0	1,500,000	150,000	75,000	75,000	100,000

Potential Cost Savings

Changing from Silver to Gold could save KES 628.96 annually

Changing from Silver to Platinum could save KES 9,188.17 annually

Actionable Recommendations

- Consider renegotiating contracts with high-cost providers: Avenue Hospital. Potential savings up to 288,592.09 KES annually
- Implement enhanced fraud detection measures focusing on: duplicate claims, unusually high-cost procedures, and providers with abnormal billing patterns
- Review benefit design to align with actual utilization patterns
- Implement member education programs for high-utilization members
- Conduct provider performance reviews quarterly
- Evaluate network adequacy based on geographic distribution of claims

Appendices

Model Details

Metric	Value
MAE	588.823
RMSE	1084.535
R2	0.999

Top 10 Features

	Feature	Importance
8	Claim_Amount_to_Mean	0.642559
10	Employer_Z_Score	0.357239
73	Claim_Month_January	0.000059
90	Claim_Size_Medium	0.000038
6	Dental_Cap_KES_Utilization	0.000021
89	Claim_Size_Large	0.000017
91	Claim_Size_Small	0.000017
3	Inpatient_Cap_KES_Utilization	0.000015
5	Optical_Cap_KES_Utilization	0.000010
58	Hospital_County_Mombasa	0.000007