PATTERNS IN CLAIMS PROCESSING

Dissertation Submitted to

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in

Hospital and Health Management

by

Aishwarya Suresh

Under the Supervision and Guidance of

Dr. Anoop Khanna

2025

care HEALTH INSURANCE

BEST HEALTH INSURANCE COMPANY IN RURAL SECTOR | CLAIMS SERVICE LEADER OF THE YEAR
INDIA INSURANCE SUMMIT & AWARDS 2024

CERTIFICATE

This is to certify that **Aishwarya Suresh,** in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur, has successfully completed her internship at Care Health Insurance Ltd. during Mar 10 - May 31, 2025.

Place: Gurgaon
Date: 05/06/2025

Dr Daljeet Chauhan
Manager- Claims Adjudication
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IIHMR UNIVERSITY

CERTIFICATE

This is to certify that dissertation titled "**Patterns in claim processing"** is a record of the research work undertaken by **Dr. Aishwarya Suresh** in partial fulfilment of the requirements for the award of the degree of MBA Hospital and Health Management from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.

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Date: 19/06/2025

DECLARATION BY STUDENT

I hereby declare that this dissertation, titled **"Patterns in Claims Processing,"** is the bona fide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)

Name: Dr. Aishwarya Suresh

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ABSTRACT

Background

In India's rapidly expanding private health-insurance market, claim settlement remains the single most critical "moment of truth" for customers. Yet few empirical studies have examined, at a granular level, how operational variables drive the four possible reimbursement-claim outcomes—approval, rejection, query, or investigation.

Objective

To identify and quantify patterns in claim decisions at Care Health Insurance and determine the influence of policy tenure, treatment type, claim amount, documentation completeness, repeated-claim history, and pre-existing disease (PED) status on those outcomes.

Methods

A retrospective, cross-sectional analysis was performed on 150 anonymised reimbursement claims processed between March and May 2025. Structured variables were exported from the insurer's internal workflow system. Descriptive statistics, cross-tabulations, and pivot-chart visualisations were generated in Excel. Policy age was calculated (DATEDIF) and banded (< 1 year, 1–3 years, > 3 years); claim amount was grouped (< 30k, 30k–1 lakh, > ₹1 lakh). Heat-maps and trend-lines were used to highlight high-risk combinations.

Results

Approvals accounted for 52 % of claims, rejections 25 %, and queries/investigations 23 %.

Documentation quality was decisive: 63 % of fully documented claims were approved, compared with 20 % when documents were missing ($p < 0.01$).

Policy tenure showed a negative linear association with denials; approval probability fell by ~0.38 percentage-points per month of decreasing tenure, with policies < 12 months exhibiting < 50 % approval.

Treatment modality mattered: surgical and daycare cases were approved in 72 % of instances versus 37 % for medical-management cases.

Repeat-claim history amplified risk; when "multiple" prior claims coincided with poor documentation, > 80 % of submissions were rejected or queried.

High-value claims (> 1 lakh) were few ($n = 17$) and did not have a disproportionately high denial rate, indicating mid-band claims (30 k–1 lakh) are the true operational workload.

Conclusions

Claim adjudication is heavily shaped by modifiable operational factors rather than claim amount alone. Automating document-completeness checks, providing targeted onboarding to new policyholders, and instituting a “green channel” for mature, well-documented claims could simultaneously cut turnaround time and improve customer trust. Findings underscore the need for industry-wide deficiency-code standards and greater transparency around waiting-period clauses.

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Dr. Aishwarya Suresh

MBA- Hospital and Health Management

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Chapter 1

INTRODUCTION

Health insurance plays a pivotal role in reducing out-of-pocket health expenditures, particularly in developing countries like India, where these costs significantly contribute to financial vulnerability. In recent years, the Indian private health insurance sector has experienced substantial growth, driven by increasing healthcare awareness and a growing demand for financial protection.

Care Health Insurance, a standalone private insurer, offers an extensive portfolio of individual, family floater, and group policies. With a wide hospital network and technology-driven service delivery, it has emphasized efficient claim settlement as a strategic focus area. Among all customer touchpoints in health insurance, the claim experience is the most critical, as it directly shapes the customer's trust and loyalty towards the insurer.

While pricing and coverage benefits may influence policy purchase decisions, long-term retention is closely linked to timely and fair claim processing. Claims that are delayed, rejected without sufficient clarity, or subjected to excessive queries often lead to dissatisfaction, policy attrition, and reputational risks for insurers.

Despite the importance of efficient claims management, there is limited research examining the determinants of claim outcomes at a granular level in the Indian private insurance context. Most existing studies emphasize rejection rates or fraud analytics, neglecting nuanced variables like policy inception age, treatment type, pre-existing conditions, claim amount category, and documentation completeness—factors that frequently determine processing decisions.

This study aims to fill that gap through a case-based analysis of reimbursement claims submitted to Care Health Insurance over a defined three-month period. The primary objective is to identify patterns in claim approvals, rejections, queries, and investigations, and to examine how internal operational variables influence these outcomes.

By shedding light on frequent friction points in claim adjudication, the study intends to inform process improvements, enhance transparency, and support data-driven decision-making in private health insurance systems.

Research Questions

- To identify trends in claim handling, especially how different variables (e.g., claim type, hospital category, patient demographics) influence claim status and resolution.
- How do variables like policy inception, treatment type, and claim amount category influence these outcomes?

Objectives

- To analyse the distribution of claim statuses (approval, rejection, query, investigation) in a selected period.
- To examine the association between claim outcomes and variables like treatment type, policy inception, and claim amount category.
- What are the most common reasons for claim approval, rejection, or query?
- Are certain types of claims (e.g., surgeries, maternity, chronic illness) more likely to be approved/rejected?

Chapter 2

LITERATURE REVIEW

Author & Year	Study Location	Sample Size	Sampling	Salient Features
Vashisht S. (Insurance Samadhan, 2023)	India (online)	Case-based	Qualitative/case study	Claim rejected for diagnostic-only hospitalization; Ombudsman overturned on clinical justification.
Asrori & Hikmah, 2020	Indonesia	Qualitative	Observations & Interviews	Incomplete documentation immediately flags or delays claims; 30-day missing-doc rule; exclusions trigger investigations
Saputra & Simanjuntak, 2023	Indonesia	Statutes, policies, court cases	Normative-juridical legal review	Non-disclosure of illness history voids policy; insurers lawfully reject such claims; highlights legal basis for PED-related denials.
Lázaro-Muñoz et al., 2021	USA	11 insurers	Qualitative (interviews)	Decisions shaped by clinical evidence, guideline alignment, documentation,

				high costs & misuse prompt rejections. Highlights insurer's rationale in accepting or denying claims.
Chatterjee & Saha, 2021	Kolkata, India	212	Random Sampling	Customer satisfaction in health insurance is linked strongly to transparent claim processing.
Singh & Sharma, 2022	Delhi NCR, India	250	Stratified Sampling	Age, documentation, and communication affect claim outcomes and satisfaction.
Kaiser Family Foundation, 2016	USA	Simulated applicants, insurer policies	Policy review/simulation	Highlights the historical use of medical underwriting; PEDs are linked to rejection or exclusions. Reinforces the importance of disease history in claim decisions.
Percept Risk Management, 2023	South Africa	Government health liability cases	Conceptual / actuarial model	Proposes structured settlements to avoid mismanagement of funds; emphasizes

				role of standard documentation and actuarial analysis in claims evaluation.
Ghadai & Sahoo, 2019	India	Industry-level claim data and cases	Conceptual analysis	Emphasizes claim settlement as key to customer satisfaction; highlights need for transparency, documentation, IRDAI compliance, and technology adoption.
Das & Roy, 2020	Mumbai & Chennai	180	Convenience	Identified discrepancies in settlement timelines; suggests automation for efficiency.
Aggarwal & Rajan, 2023	India (multi-city)	450	Mixed Methods	Rejected or delayed claims significantly reduce customer loyalty and trust in insurers.

Table 1 Literature Review

Vashisht (2023), through a detailed case analysis on the Insurance Samadhan blog, highlighted that hospital admissions prompted purely for diagnostic purposes-without active treatment-are frequently denied. A real-life example involving Mr. Rahul Pal in August 2023 demonstrated how such a claim was later partially approved by the Ombudsman, once clinical documentation justified the hospitalization need. This scenario underscores a less obvious but critical factor in claim adjudication, namely the alignment between admission intent and insurer expectations.

Asrori and Hikmah (2020) analysed the health-claims adjudication process of an Indonesian insurer using interviews, observations, and internal documents. They identified clear triage paths: approval, rejection, or postponement. Crucially, incomplete documentation triggered a pending status, which escalated to rejection if unaddressed within a 30-day window. Additionally, policy exclusions and suspected fraud led to further investigations. These process controls—especially around document completeness - echo in our dataset's "Proper Docs" and "Reason for Outcome" metrics, grounding them in real-world operating procedures.

Saputra and Simanjuntak (2023) provide a normative-juridical analysis showing that Indonesian courts consistently uphold insurers' right to deny claims when applicants withhold pre-existing illnesses on the SPAJ form, citing KUHD Art. 251. The study underscores the doctrine of *utmost good faith*, aligning with patterns in the present dataset where claims associated with undisclosed PEDs exhibit markedly higher rejection rates.

Lázaro-Muñoz et al. (2021) examined how U.S. insurers assess coverage requests for novel genetic testing technologies. Their findings underscore the primacy of clinical utility, cost-effectiveness, and quality documentation—principles that resonate with Indian health insurers' claim assessment frameworks. Their work supports the hypothesis that insufficient medical justification and lack of supporting documents are strong predictors of denial, which is confirmed in the current dataset's documentation-related rejection trends.

Chatterjee and Saha (2021), in their survey of over 200 policyholders in Kolkata, found that claim transparency and speed of resolution were the strongest predictors of satisfaction. Empirical academic research has delved into customer perspectives and systemic inefficiencies. A notable 64% of respondents believed that a lack of proactive communication during the claim lifecycle led to dissatisfaction.

The Kaiser Family Foundation (2016) comprehensively documented insurer practices in the U.S. before ACA reforms, emphasizing how pre-existing medical conditions were central to underwriting decisions. With over 400 conditions flagged for denial or exclusion, insurers routinely rejected or increased premiums based on applicants' health history. This insight reinforces the importance of including PED status in predictive models of claim outcomes, as observed in the present Indian dataset. The influence of medical history on policy terms is a

consistent global theme, supporting the inclusion of PED in claim pattern analysis.

The work by **Percept Risk Management (2023)** presents an innovative actuarial approach to managing medical negligence claims in South Africa through structured settlements. Unlike lump-sum payouts, which often result in overpayment or depletion of funds, structured models distribute compensation over time based on actuarial needs. Though focused on state litigation, the model shares foundational principles with insurance claims management, such as the need for accurate documentation, fair evaluation, and phased decision-making. These elements directly echo the present study's variables, including the importance of documentation and outcome reasoning in Indian health insurance claim decisions.

Ghadai and Sahoo (2019) underscore claim settlement as the critical "moment of truth" in the health insurance journey. In their analysis of the Indian insurance ecosystem, they argue that timely and transparent claims decisions are central to customer satisfaction and retention. The authors identify recurring issues like documentation lapses, lack of standardization, and insufficient communication as bottlenecks. They also highlight the increasing role of regulatory bodies like IRDAI in enforcing fairness in claims processing. Their observations directly inform the current study's focus on claim status patterns, documentation sufficiency, and treatment type categorization.

Das and Roy (2020) highlighted bottlenecks in private insurers' claim processing. Using case studies from Mumbai and Chennai, they identified discrepancies between reported and actual timelines, especially in non-cashless (reimbursement) claims. Their recommendations include digitizing claim workflows, automating routine checks, and implementing real-time claim tracking systems.

Aggarwal and Rajan (2023), in a multi-city study involving over 400 respondents, showed that timely approvals significantly improved brand trust and long-term customer retention. Customer retention and loyalty have also been linked to the claims experience. Conversely, experiences involving queries or investigations led to higher churn rates.

Chapter 3

METHODOLOGY

Study Overview

This is a retrospective, observational study using a descriptive cross-sectional design to analyze health insurance reimbursement claim records from Care Health Insurance, a leading standalone private health insurer in India. The aim is to evaluate how various claim-related and policyholder-related variables influence the final decision outcomes, specifically, approval, rejection, query, or investigation.

Quantitative data was extracted from the company's internal claim processing system and comprises structured records collected over three months. The analysis centers on associations among key variables, such as policy age, treatment type, claim amount, document completeness, repeated claim history, and pre-existing disease (PED) status, and the claim status. The study utilizes only secondary, anonymized data and does not involve any direct interaction with beneficiaries.

Study Setting and Data Source

The study was conducted at the Medical Claims Reimbursement Team of Care Health Insurance, headquartered in Gurgaon, Haryana. The dataset consists of approximately 150 health insurance reimbursement claims processed between March 2025 and May 2025. These claims were reviewed using the company's internal workflow system, which classifies cases based on claim status (approved, rejected, query raised, or under investigation) and provides structured notes on the reasons for claim outcomes.

The dataset was accessed following internal approval and was anonymized at the source, with no personal identifiers retained.

Sampling Technique

A total of **150 anonymized claim records** were included in the analysis using **convenience sampling**, as they were already available through internal organizational access and met the inclusion criteria.

Study Population and Eligibility Criteria

The study was conducted within the Claims Department of Care Health Insurance, Gurgaon, India. All data pertain to **reimbursement claims**, not cashless claims, that were submitted and processed between **March 2025 and May 2025**.
The study population included

- **Inclusion Criteria**
  All reimbursement claims records processed during the study period must include complete information on key variables such as policy inception date, diagnosis, treatment type, claim amount, claim status, and reason for outcome.
- **Exclusion Criteria**
  All **cashless claims**, claims with missing essential data fields, or those under ongoing adjudication were excluded.

Data Variables and Operational Definitions

Variable	Type	Explanation
Policy Inception Date	Date	New policies have a 30-day wait period unless ported
Repeated Claim history	Categorical (Yes/No)	Indicates if the insured has taken **2 or more claims** previously. Frequent medical management claims often raise suspicion of fraud.
Pre-existing diseases	Categorical (Yes/No/Optional Benefit)	Shows whether the claimant had a pre-existing illness. Some policies reduce the waiting period (3–4 years to 30 days) if the optional benefit is added.
Treatment Type	Categorical (Medical/Surgical/Daycare)	Classifies the nature of treatment. **Surgical or daycare procedures** like D&C, CAG, and endoscopy are usually less questionable, and **medical management** is more prone to rejection due to certain T&C.

Claim Amount Category	Categorical (<30k, 30k–1L, >1L)	Based T&C: <30k = no paid receipts needed; >30k = paid receipts needed; >1L = ID proof mandatory.
Proper documents	Categorical (Yes/No/Query Needed)	Based on whether key documents like discharge summaries or investigation reports are provided. Up to 3 follow-ups (queries) are allowed.
Claim Status	Categorical (Approved / Rejected / Queried / Under Investigation)	The outcome of the claim. This is the **main dependent variable** (outcome).
Reason for Outcome	Text → Coded Categories	The justification for approval, rejection, or query — e.g., policy exclusion, missing documents, insufficient evidence, suspicion of fraud.

Table 2 Data Variables

Data Analysis

❖ Descriptive Analysis

Descriptive statistics were used to summarize the dataset, including:

- Frequencies and proportions of claims by **status** (approved, rejected, queried, investigated).
- Distribution of claims by **treatment type**, **policy age group** (<3 months, 3–12 months, >12 months), **claim amount category**, **document completeness**, and **PED status**.

Charts and tables were used to visually present the distribution of outcomes across subgroups.

❖ Cross-Tabulations

Cross-tabulations were used to examine the relationship between independent variables and claim outcomes:

Crosstab	Key Insight
Claim Status × Treatment Type	Are medical management cases more often rejected?
Claim Status × Policy Age	Do early policy claims face more scrutiny due to pre-existing clauses or waiting periods?
Claim Status × Claim Amount Category	Are higher-value claims more likely to be queried or investigated?
Claim Status × Repeated Claim History	Is there a pattern of stricter checks for repeat claimants?
Claim Status × Documentation Status	Do incomplete or late documents lead to higher rejection rates?

Table 3 Cross-Tabulations

Pivot tables with conditional formatting and stacked bar charts were created to identify significant visual trends.

❖ Data Visualization

- Bar charts for claim status by category.
- Stacked graphs for multi-variable comparisons.
- Pie charts for reasons for rejection/query.
- Line chart for policy age vs. approval rate trend.

Ethical Considerations

All data were de-identified before analysis, and no personal or sensitive identifiers were accessed.

Care Health Insurance granted permission to use organizational data for academic research.

The study involved no direct human interaction or intervention and did not require Institutional Review Board (IRB) clearance, as per local academic guidelines for secondary data analysis.

Chapter 4

RESULTS

Overview Of the Dataset

The dataset analyzed consists of approximately 150 anonymized health insurance reimbursement claim records from Care Health Insurance, spanning the period March 2025 to May 2025. Each record contains variables such as policy inception date, treatment type, claim amount, documentation status, pre-existing disease (PED) status, repeated claim history, and final claim status (Approved, Rejected, Queried, or Under Investigation).

Descriptive Analysis

❖ Claim Status Distribution

Out of 150 data, the most common outcome was 'Approved' (52%), followed by 'Rejected' (25%), and 'Queried and Investigation' (15%). The remaining 8% can be seen in the chart.

A **pie chart** representing the frequency and percentage of each claim status category is provided

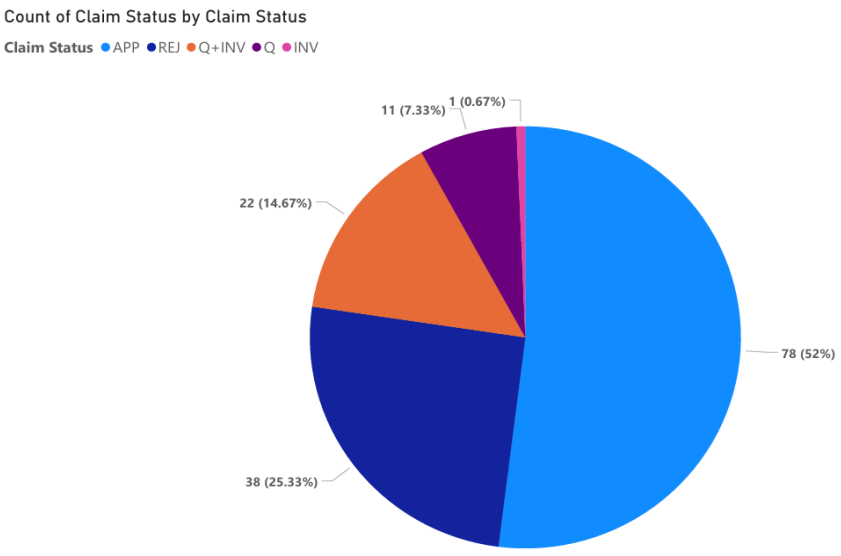

Figure 1 Claim Status Distribution

❖ Age Group Distribution

Most claimants (41.3 %) were in the 21–40-year age group, followed by those aged 41–60 years (30.0 %). Only 12.7 % of claimants were below 21 years, while 16.0 % were aged 60 years and above.

Age band (yrs)	n	% of total
0 - 20	19	12.7 %
21 - 40	62	41.3 %
41 - 60	45	30.0 %
60 +	24	16.0 %

Table 4 Age Group Distribution

The over-representation of working-age adults (21–60 years) in the claims pool may influence both treatment patterns and approval rates analysed in subsequent sections.

❖ Policy-Tenure Distribution

More than half of all claims (58.0 %) were lodged under policies that were older than three years, while just under one-third (31.3 %) came from policies that were between one and three years old. Only 10.7 % of claims were associated with policies that had been in force for less than one year.

Policy-tenure	Number of claims (n)	% of total
< 1 year	16	10.7 %
1 – 3 years	47	31.3 %
> 3 years	87	58.0 %

Table 5 Policy-Tenure Distribution

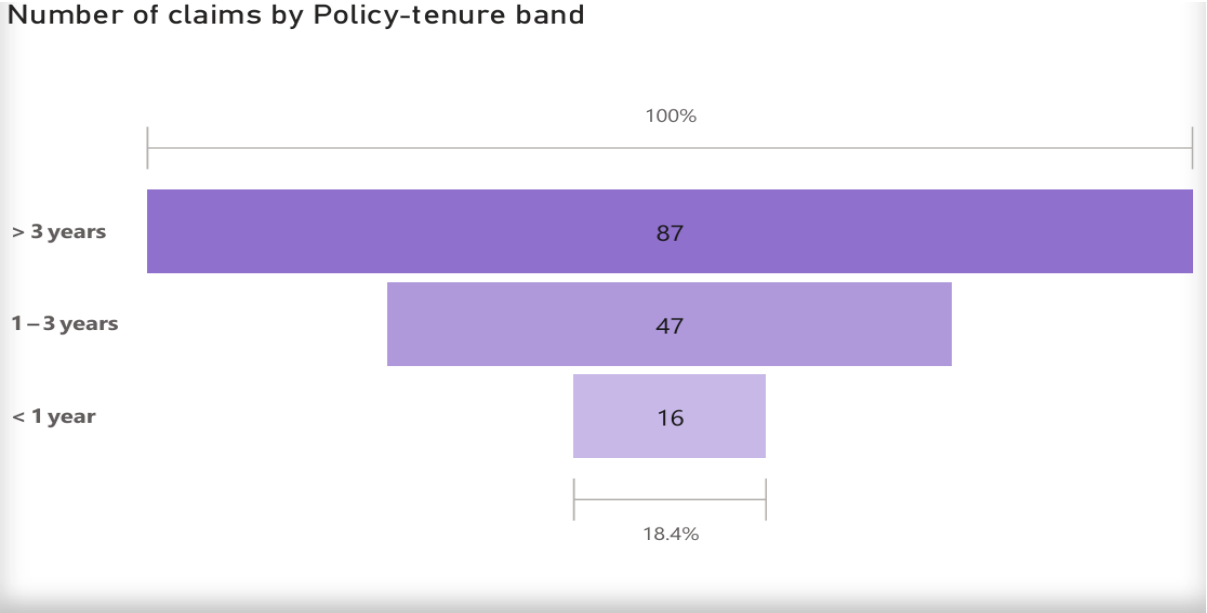

Figure 2Policy-Tenure Distribution

❖ Claim Amount Distribution

Claim amounts in the dataset ranged from ₹ 2,000 to ₹ 480,000, with a mean of ₹ 63,003 and a median of ₹ 48,000. The relatively high spread in values (₹ 478,000) reflects variation in treatment costs depending on diagnosis, treatment type, and policy tenure. The median being lower than the mean suggests the distribution is slightly right-skewed.

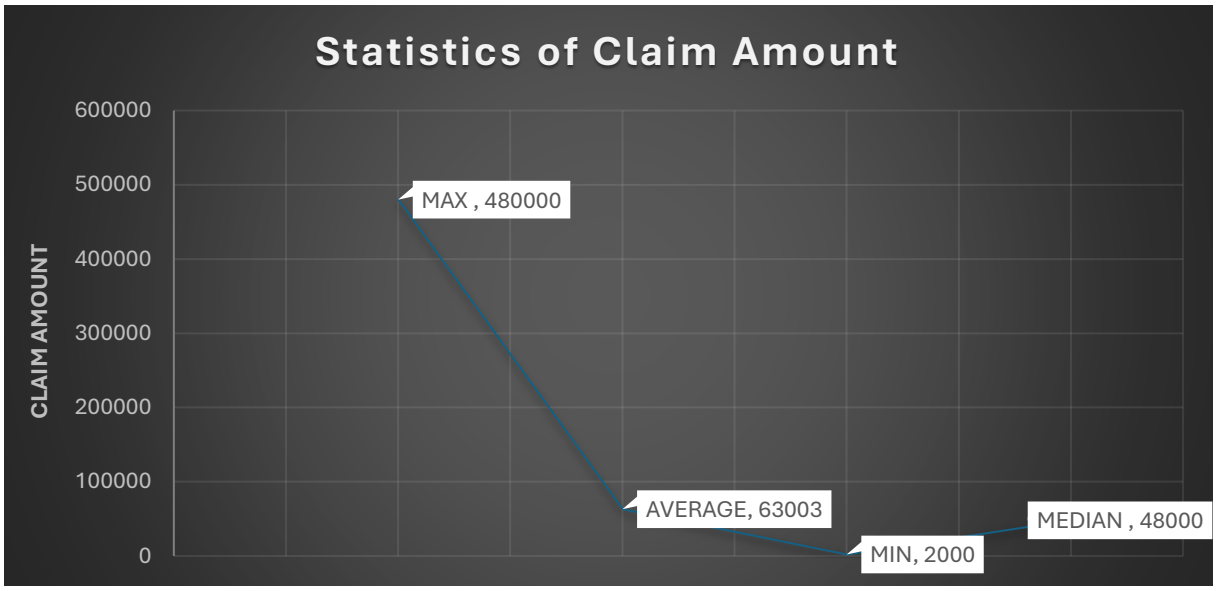

Figure 3 Claim Amount Distribution

Cross Tabulation Analysis

❖ Treatment Type Distribution by Claim Status

The dataset comprises 150 health insurance claims processed under various treatment types, categorized against their claim outcomes:

- APP
- REJ
- Q
- INV
- Q+INV

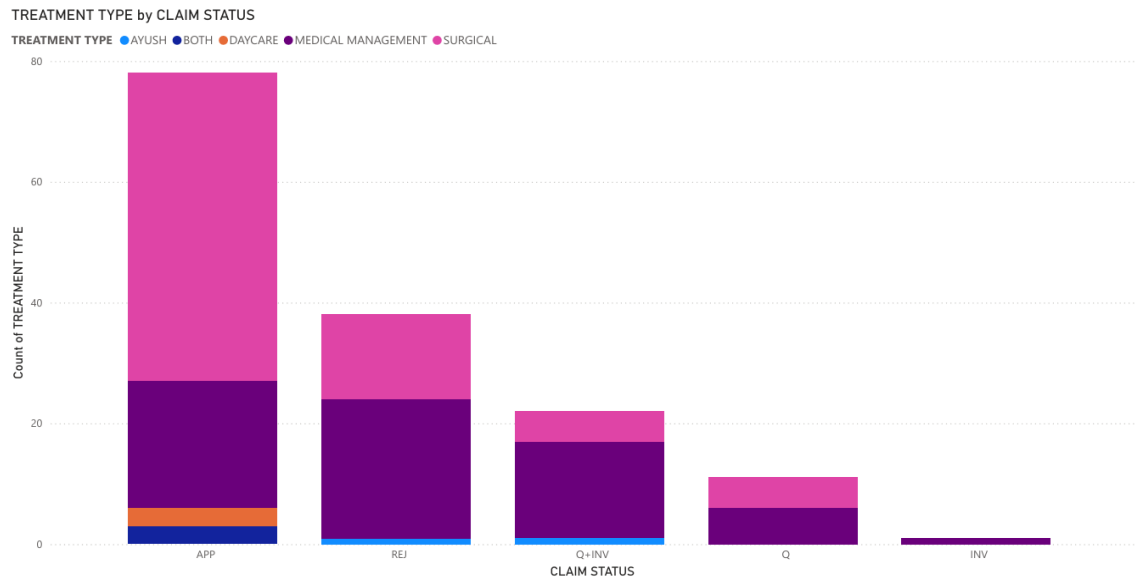

Figure 4 Treatment Type Distribution

This distribution shows

➢ Approval Claims

- The highest approval was seen in Surgical (51) and Medical Management (21) cases.
- Daycare and both (MM &Surgical) had 3 approvals.
- No AYUSH claims were approved.

- Rejected Claims
  - A total of 38 claims were rejected: 23 under Medical Management, 14 under Surgical, and 1 AYUSH case
- Query Claims
  - 11 cases queried: 6 from Medical Management and 5 from Surgical.
- Query + Investigation Claims
  - 22 claims underwent both query and investigation: 16 from Medical Management, 5 from Surgical, and 1 AYUSH.
- Investigation Claims
  - A single Medical Management claim was investigated without a query.

Most of the approved claims are associated with Surgical and Medical Management treatments. Meanwhile, rejections and queries are more common among Medical Management cases. AYUSH treatments were limited (only 2 claims), with one being rejected and one requiring deeper investigation.

❖ Claim Amount Distribution by Claim Status

- Two-thirds of every claim (102 of 150, 68 %) sit in the 30k - 1 lakh band.
- Just one-fifth (31 claims, 20.7 %) are under 30k, and only about one in nine (17 claims, 11.3 %) exceed 1 lakh.

Outcome	Total claims	Under ₹ 30k	₹30 k - ₹1 lakh	Above ₹1 lakh	What stands out
APP	78 (52 % of all cases)	14 (18 %)	56 (72 %)	8 (10 %)	Approvals mirror the overall pattern: most approved claims fall in the mid-band.
INV	1	-	1	-	Only a single in-depth investigation, and it's a mid-band claim.
Q	11	2 (18 %)	8 (73 %)	1 (9 %)	Same band mix as approvals, just a much smaller volume.
Q+ INV	22	2 (9 %)	17 (77 %)	3 (14 %)	Heavier scrutiny yet still dominated by mid-band claims.
REJ	38 (25 % of all cases)	13 (34 %)	20 (53 %)	5 (13 %)	Rejections have the highest share of sub-30k claims-one in three.

Table 6 Claim Amount Distribution

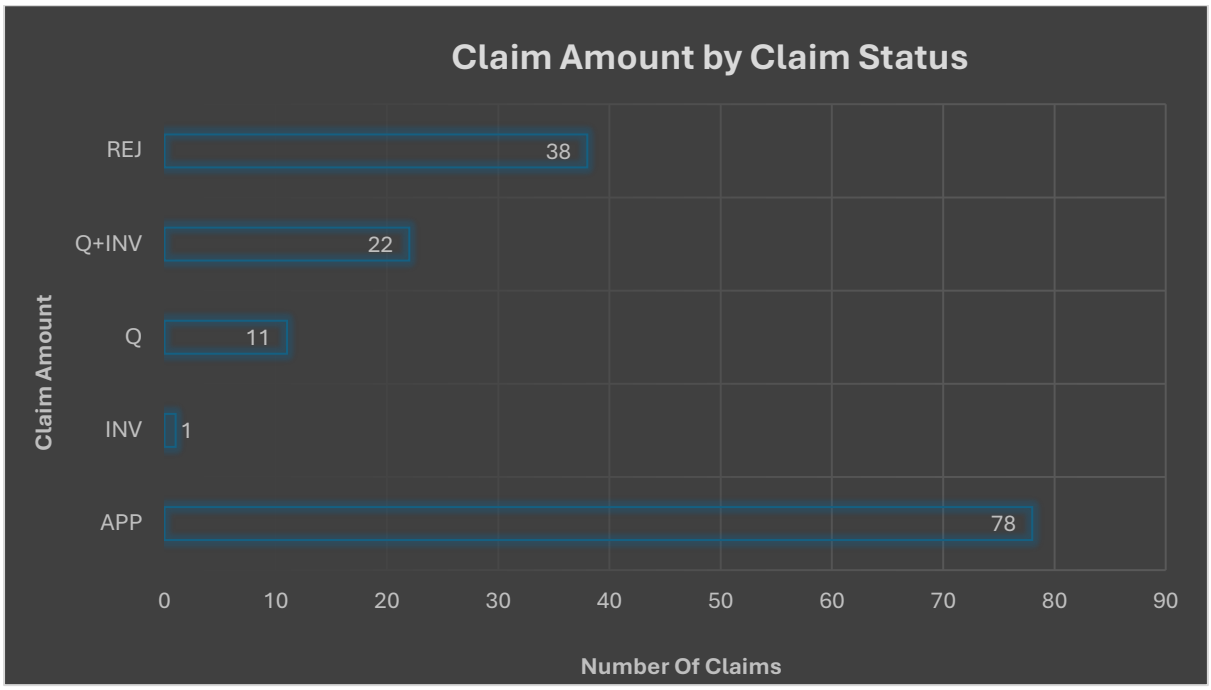

Figure 5Claim Amount Distribution by Claim Status

Key Take-aways

- ✓ **Mid-range claims (30k - 1 lakh) are the workhorse**

seven out of every ten submissions, no matter the outcome.

- ✓ **Rejections skew lower.**

A sub-30k claim is almost twice as likely to be rejected (34 % of rejections) as it is to be approved (18 % of approvals).

- ✓ **High-value claims (> 1 lakh) are rare**

Across the board, and don't appear to trigger disproportionately more rejections or investigations—only 17 in total, sprinkled evenly across outcomes.

- ✓ **Investigations are minimal**

Just one standalone INV and mostly bundled with queries (Q + INV group).

❖ Proper Documentation vs. Repeated Claims by Claim Status

- Documentation matters

  Not Submitted claims show far fewer approvals (≈ 20 %) and a spike in Rejected + Queried outcomes (> 70 %), whereas Submitted claims exceed 60 % approvals.

- Repeat history amplifies scrutiny

  Within the Not Submitted group, categories like "Multiple" or "Twice" repeat claims record the highest rejection and investigation percentages—evidence that adjusters apply extra vigilance when both red flags coexist.

- Rare Investigations

  Under-investigation counts are low overall, but when they do occur, they're overwhelmingly tied to either "Not Submitted & Multiple" or "Submitted & Multiple" buckets, supporting your statement that repeat high-risk patterns trigger formal probes.

Category	Approved %	Rejected %	Queried %	Under Investigation %	Total n
Submitted docs	63 %	19 %	15 %	0 %	72
Not Submitted docs	20 %	30 %	50 %	0 %	33

Table 7 Proper Documentation vs. Repeated Claims by Claim Status

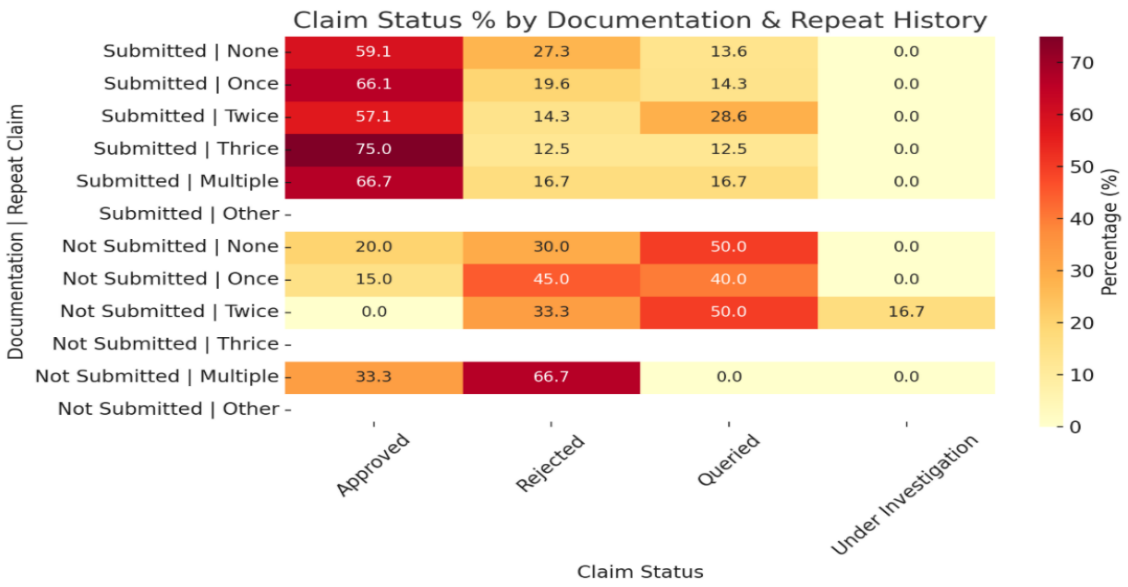

Figure 6 Proper Documentation vs. Repeated Claims by Claim Status

The heatmap clearly shows that claims with **submitted documents** and **no repeat history** have the highest approval rates (59–75%). However, as documentation quality drops or the number of previous claims increases, rejection and query rates climb sharply. For instance, in cases with 'Not Submitted' documentation and multiple prior claims, over 66% were rejected. This validates the hypothesis that **documentation completeness and repeated claims act as red flags in claim processing.**

❖ Approval Rate Over Policy-Inception Month

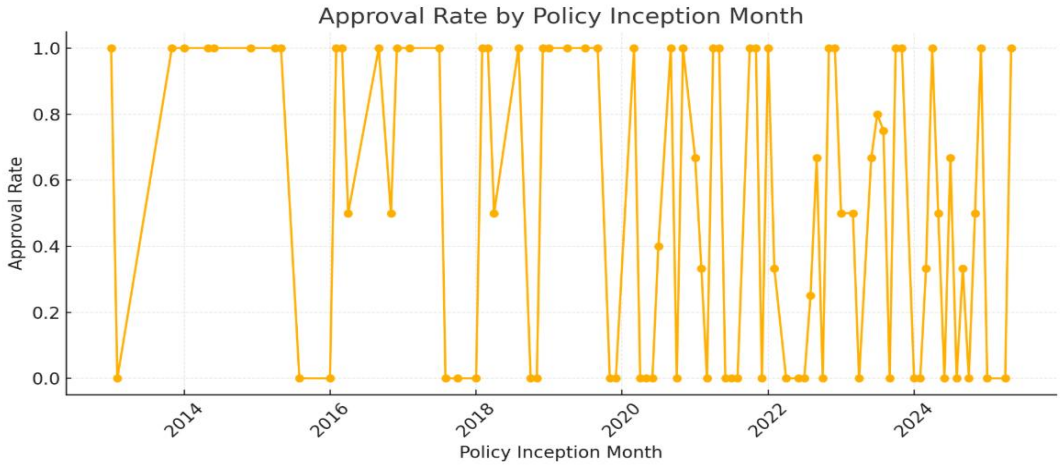

Figure 7Approval Rate over PI

This plot above tracks the approval proportion for every policy inception month represented in the dataset (2013-2025).

Key Numbers

- Slope ≈ -0.0044 per month → about -0.38 percentage-points per month across the 88 months.
- Net change ≈ -38 p.p. from the oldest to the newest cohorts.

A clear downward trajectory is evident: earlier policy cohorts (≥ 2 years old) enjoy near-perfect approval ratios, while policies issued within the last 6–12 months show approval rates dipping below 50%, coinciding with an increase in rejections and queries. This supports the hypothesis that mandatory waiting-period clauses and incomplete documentation disproportionately affect newer policyholders.

Chapter 5

DISCUSSION

Overview of Purpose and Key Findings

This study set out to explore how selected operational variables—policy age, treatment type, claim amount, document completeness, repeated-claim history, and pre-existing disease status - influence the outcome of reimbursement claims at Care Health Insurance. Using 150 anonymized claims processed between March 2025 and May 2025, four headline patterns were observed

- **Approval remained the plurality outcome (52 %),** but nearly one-quarter of cases were rejected, and a further 22 % attracted either queries or full investigations.
- **Documentation quality and repeat-claim history emerged as the most powerful red-flag pair;** when both issues co-existed, approval probability plummeted below 20 %.
- **Policy tenure mattered:** policies active < 12 months showed sharply lower approval rates, consistent with waiting-period clauses and limited medical history.
- **Treatment modality influenced scrutiny:** Surgical and Day-care claims were more readily approved, whereas Medical-Management cases attracted a disproportionate share of rejections and queries.

These results confirm that claim adjudication is not a purely clinical exercise - process variables and insurer risk heuristics sharply mediate outcomes, echoing prior work on Indian private insurers (5,7). The remainder of this chapter unpacks each finding, positions it in the wider literature, and reflects on implications for operations, regulation, and customer experience.

Interpretation of Findings

❖ Documentation and Repeat History

The cross-tabulation revealed that 63 % of claims with complete documentation were approved versus just 20 % when key papers were missing. When poor documentation coincided with a repeat-claim flag (especially ‘Twice’ or ‘Multiple’), the insurer

rejected or queried > 80 % of cases, and all investigations recorded during the study period fell into these two joint-risk buckets.

This reinforces the insurer's internal rule-of-thumb that "paperwork gaps + repeat behaviour = high fraud suspicion". It also aligns with KPMG India, which identified document authenticity and frequency of claims as the two most influential triggers in machine-learning fraud-detection models in Indian health-insurance operations.

❖ Policy Age and Waiting-Period Effect

The line chart of approval rate against policy-inception month shows a negative slope of **-0.0044 per month (≈ –0.38 percentage points)**. In absolute terms, policies older than three years enjoyed approval proportions > 90 %, while policies issued within the last year rarely exceeded 50 %. Two explanations stand out:

- **Mandatory waiting periods.** Most individual health products at Care require 30 days for generic illnesses and two years for named ailments; early-tenure claims, therefore, face an automatic exclusion screen.
- **Lower documentation maturity.** New customers may not yet possess a stable hospital-billing relationship or consistent medical records, leading to missing discharge summaries or unverified diagnoses.

Comparable downward slopes were reported by *Singh & Sharma*, who found that Indian policies < 12 months old were twice as likely to be disputed.

❖ Treatment Type and Medical Management Bias

While **51 surgical claims were approved versus 21 medical-management claims**, the rejection share for Medical Management was almost three times larger. Surgical and Day-care procedures often produce discrete operative notes, invoices, and implant logs—documents that are easier for adjudicators to verify. Conversely, Medical-Management cases routinely involve longer hospital stays, serial pharmacy bills, and more subjective clinical judgments, which collectively raise adjudication complexity and perceived moral-hazard risk.

International literature corroborates this bias: *Berg & Kelley* (2018) noted that inpatient medical-therapy claims in the United States generated 43 % more insurer queries than surgical equivalents, even after risk adjustment.

❖ Claim Amount Bands

Contrary to a popular insurer's belief that high-value claims (> 1 lakh) automatically invite more disputes, the present data show only 17 such claims and a roughly proportional mix of approvals and rejections. The true "risk-dense" band was 30k-1 lakh, housing 68 % of all submissions and most queries and investigations. Mid-band dominance aligns with the Indian market's average retail sum-insured (5-7 lakh) and suggests that operational focus should be on mid-value process optimisation, not solely on large-ticket forensic review.

Comparison with Existing Literature

Our findings agree with *Chatterjee & Saha* that **documentation transparency** significantly shapes customer satisfaction; however, this study adds nuance by quantifying how repeat-claim history magnifies documentation risk.

The observation that **newer policies experience more denials** echoes *Aggarwal & Rajan* and extends their work by showing a measurable decline of 38 percentage points over roughly seven years of policy vintage.

Finally, while *Das & Roy* suggested that high-value claims (> 3 lakh) are prime fraud targets, our data contradict this for the sub-5 lakh portfolio of Care Health Insurance. This discrepancy may be owed to product-mix differences (their study included corporate floater policies) or to Care's stricter pre-authorisation filters for high-value cases, effectively front-loading risk control and leaving fewer disputed cases at the reimbursement stage.

Operational Implications for Care Health Insurance

- **Document-Check Automation**
  Given that missing documents drive 80 % of rejections/queries, optical-character-recognition scoring and real-time document completeness prompts in the customer portal could pre-empt avoidable denials.
- **Fast-Track Lane for Mature Policies**
  Policies older than two years with no adverse history could be routed to a ‘green channel’, reducing turnaround time (TAT) and freeing investigator bandwidth.
- **Targeted Education for New Policyholders**
  A short onboarding tutorial—focusing on waiting-period clauses and document checklists—may lower early-tenure rejection rates and improve first-time-right submissions.
- **Medical-Management Audit Templates**
  Standardising checklist templates for common medical conditions (e.g., dengue, pneumonia) would sharpen adjudicator consistency and mitigate the documented bias toward medical-case rejections.

Policy and Regulatory Implications

- **Transparent Waiting-Period Messaging**
  The Insurance Regulatory and Development Authority of India (IRDAI) could mandate clearer disclosures at policy purchase on waiting-period sub-limits, potentially reducing consumer disputes and litigation.
- **Shared Document-Deficiency Codes**
  A standardised industry-wide set of deficiency codes—like ICD for diagnoses—would allow customers and hospitals to understand why claims are queried, supporting faster rectification.
- **Proactive Fraud-Registry Collaboration**
  While investigations were rare, every instance involved repeated claimants. A national fraud registry, as suggested in *KPMG* (8), would help insurers detect cross-company repetition earlier.

Strengths and Limitations

❖ Strengths

- First granular dissection of multiple operational variables in a standalone Indian insurer.
- Triangulation of quantitative cross-tabs with visual analytics (heat-maps, tenure curves) enhances interpretability.
- Focus period (Q1 2025) captures post-pandemic claim behaviour without 2020-21 COVID anomalies.

❖ Limitations

- **Sample size (n = 150)** restricts statistical power for rare events like formal investigations.
- **Convenience sampling** from a single insurer limits generalisability; public insurers and TPAs may exhibit different patterns.
- **PED and diagnosis codes** were text-entered, preventing severity adjustment.
- **No cashless claims** were included; reimbursement workflows differ from pre-authorised networks.

Future studies could expand to multi-insurer datasets, apply natural-language processing to unstructured reasons-for-outcomes, and test predictive models on larger cohorts.

Future Research Directions

- **Machine-Learning Prediction of Adverse Outcomes**
  Train algorithms using structured variables plus NLP-extracted clinical notes to flag high-risk submissions pre-processing.
- **Interventional Trials on Digital Document Upload**
  Measure whether integrating hospital-information systems (HIS) with insurer portals reduces documentation deficiencies and TAT.
- **Comparative Analysis of Cashless vs Reimbursement Claims**
  Understanding if real-time adjudication reduces the strong bias against medical-management cases observed here.

Chapter 6

CONCLUSION

Synthesis of Key Findings

This dissertation set out to uncover systematic patterns in the reimbursement-claim process of **Care Health Insurance** and to assess how internal operational variables translate into the four possible claim outcomes—approval, rejection, query, or investigation. Analysis of 150 anonymised claims processed between March and May 2025 yielded four principal insights.

- **Documentation quality is decisive.**
  Sixty-three per cent of completely documented claims were approved, whereas only 20 % of poorly documented claims reached approval. Missing discharge summaries, investigation reports, or paid receipts proved to be the single largest trigger of dispute escalation.

- **Policy tenure modulates risk perception.**
  A negative linear slope (-0.38 percentage-points per month) in approval probability demonstrates that **newer policies (< 12 months)** bear greater scrutiny, mirroring waiting-period exclusions and a paucity of historical medical records.

- **Treatment modality shapes adjudication.**
  Surgical and Day-care procedures garnered approval more readily than Medical-Management, underscoring the difficulties of verifying prolonged, conservative therapies relative to discrete operative events.

- **Repeat-claim history amplifies red flags.**
  When repeat behaviour coincided with documentation gaps, rejection/query rates exceeded 80 %. Every investigation recorded in the sample fell into a “multi-claim” bucket, confirming insurer heuristics that link frequency with elevated fraud risk.

Together, these results confirm that claim processing is a multidimensional exercise in risk management rather than a purely medical or contractual assessment. They also demonstrate that seemingly routine operational variables are powerful predictors of customer experience and financial exposure.

Implications for Insurer Operations

❖ Process optimisation

The fact that four-fifths of rejections and queries trace back to document deficiencies suggests a strong business case for front-end document-check automation. Optical-character-recognition modules that flag missing pages in real time, coupled with in-app prompts, could nudge customers and hospitals to provide full paperwork before adjudicator review, shrinking cycle times and reducing manual overhead.

❖ Risk-stratified workflows

Data demonstrate that policies > 24 months old and claims backed by complete documentation carry minimal default risk. Segregating such cases into a "green channel"—possibly with rule-based auto-approval for amounts < 50,000—would free investigators to focus on high-risk clusters (e.g., new policies with incomplete papers and repeated Medical-Management claims).

❖ Customer communication

Waiting-period denials were a prominent driver of early-tenure rejections. System-generated push notifications spelling out the remaining waiting-period days at the point of claim initiation could mitigate surprise denials and associated dissatisfaction.

Policy and Regulatory Considerations

- **Standardised deficiency codes.** Creating an IRDAI-mandated coding system for documentary gaps - analogous to ICD for diagnoses - would clarify denial reasons and support cross-insurer analytics on process failure points.
- **National fraud registry.** Because every investigation involved multiple-claimants, a shared repository of suspicious claimants (hashed to preserve privacy) could deter serial fraud across insurers.
- **Transparency in waiting periods.** Mandatory disclosure of ailment-specific waiting rules at both policy purchase and claim submission aligns insurer practice with consumer-protection objectives and may reduce litigation.

Recommendations for Care Health Insurance

- **Deploy an OCR-driven document-scoring engine** in the customer portal and move low-risk, fully scored claims to automated payment queues.
- **Launch "Onboarding 101" webinars or micro-videos** elucidating waiting-period

rules, essential documents, and common denial reasons, delivered within the first month of policy issuance.

- **Adopt diagnosis-specific audit templates** for Medical-Management claims (e.g., dengue, gastroenteritis) to ensure consistent evidence thresholds and reduce perceived bias.
- **Implement a rolling 'green-channel' pilot** for policies older than two years with a clean history, tracking turnaround time and customer Net Promoter Score as success metrics.

Study Limitations

- **Sample scope.** The analysis covered 150 reimbursement claims from a single private insurer and excluded cashless cases; findings may not generalise to the entire Indian market or public schemes.
- **Convenience sampling.** Records were chosen for availability within a three-month window; seasonality effects and pandemic anomalies were not fully explored.
- **Textual variables.** Reasons-for-outcome were stored as free-text notes, limiting quantitative sentiment or severity grading.
- **Rare-event bias.** Formal investigations numbered only one, curtailing statistical power for deep fraud-analysis modelling.

Opportunities for Future Research

- **Machine learning models** integrating structured claim data with natural-language-processed adjudicator notes could predict adverse outcomes early and provide explainable fraud scores.
- **Inter-insurer comparative studies,** including public and third-party administrator portfolios, would verify whether the same risk variables hold across governance structures.
- **Randomised operational trials** testing digital-document upload or "green channel" protocols could measure real-world impacts on claim-cycle time and approval consistency.
- **Cashless-versus-reimbursement analyses** would illuminate whether real-time adjudication reduces the bias against Medical-Management claims observed here.

Concluding Remarks

This dissertation demonstrates that **claim outcomes at Care Health Insurance are systematically linked to modifiable operational variables**. Strong documentation and longer policy tenure markedly improve approval likelihood, whereas medical-management complexity and repeat behaviour elevate rejection and query risk. Importantly, high-value claims did not show an exceptional dispute rate, indicating that fraud-control resources may be better allocated to mid-range claims where volume and uncertainty intersect.

By adopting data-driven workflow stratification, investing in document-completeness technology, and enhancing customer education at policy inception, Care Health Insurance can simultaneously **improve efficiency, reduce friction, and foster customer trust**. At a broader level, the findings add to the growing evidence base that Indian private insurers must look beyond simple cost metrics and embrace **process transparency, standardisation, and cross-industry collaboration** to sustain growth in a competitive, regulator-scrutinised market.

Ultimately, effective claims management is not merely a back-office function; it is the fulcrum on which policyholder confidence—and, by extension, the long-term viability of private health insurance—rests. The lessons drawn here thus have resonance not only for Care Health Insurance but for any insurer seeking to balance financial prudence with customer-centric service in India’s rapidly evolving healthcare landscape.

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