Improving Motor Vehicle Insurance Claim Efficiency Using Value Stream Mapping

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ABSTRACT: This study aims to evaluate and improve the efficiency of the motor vehicle insurance claim process at PT Asuransi Jasaraharja Putera (JRP) through the implementation of Lean Management using Value Stream Mapping (VSM). Data were collected through field observations, in-depth interviews, and analysis of claim documentation from 2021 to 2024. The Current State Map revealed that the average claim completion time was 86 days, significantly exceeding the company's Service Level Agreement (SLA) of 14 working days. By applying seven VSM tools such as Process Activity Mapping (PAM), Quality Filter Mapping (QFM), and Decision Point Analysis (DPA), the study found that 46% of total activities were non-value-added (NVA). Major inefficiencies were identified in redundant data entry, prolonged approval processes, and manual document handling. The redesigned Future State Map proposes digital process integration and automation to eliminate waste and reduce cycle time. A Fishbone analysis identified six key sources of inefficiency related to human factors, methods, machines, materials, environment, and measurement. The optimized process is projected to reduce claim processing time by approximately 40% and improve customer satisfaction. Overall, this research highlights the novelty of applying VSM for digital process optimization in Indonesia's insurance industry, demonstrating its effectiveness in enhancing operational efficiency and supporting digital transformation.

Keywords: Insurance Claim Process, Lean Management, Process Digitalization, Service Level Agreement, Value Stream Mapping.

INTRODUCTION

The rapid growth of Indonesia's insurance industry has been driven by rising public awareness of financial protection and risk management. However, operational inefficiencies especially in claim handling remain a major challenge. Motor vehicle insurance claims often require long processing times, which negatively affect both customer satisfaction and corporate reputation. According to the Financial Services Authority (Keuangan, 2023), customer complaints related to delayed claim

settlements have continued to increase, indicating the need for substantial process improvement across the insurance sector.

In 2022, OJK recorded 1,291 insurance-related complaints, most of which concerned claim rejections by insurance providers. These cases frequently arose due to misinterpretation of policy terms or inaccurate information provided by policyholders (Hidayat et al., 2025). Such issues highlight the urgency for insurers to enhance their claims management systems to ensure faster and more reliable service delivery. Process improvement initiatives can reduce inefficiencies, improve response time, and restore public trust in the industry.

PT Asuransi Jasaraharja Putera (JRP), one of Indonesia's leading general insurance companies, has faced persistent difficulties in meeting its Service Level Agreement (SLA). Between 2020 and 2024, the average claim completion time reached 86 days far exceeding the company's SLA of 14 working days. Delays were primarily caused by redundant data entry, multiple approval layers, and manual documentation processes. These inefficiencies weaken customer trust and hinder competitiveness in an increasingly digital market (Nellutla, 2025).

Globally, insurance firms have adopted digital automation and Artificial Intelligence (AI) to accelerate claim processing. In the United Kingdom and Japan, for example, AI-assisted claim verification has reduced average handling time by up to 70% while minimizing errors (Pingili, 2025). Such developments demonstrate the transformative potential of digital integration in insurance operations. Yet, in Indonesia, process-oriented approaches such as Lean Management and Value Stream Mapping (VSM) remain underutilized in insurance claim management, leaving a significant research and implementation gap.

Value Stream Mapping (VSM) is a Lean Management technique used to visualize workflows and identify non-value-added (NVA) activities. It enables organizations to map current processes, detect inefficiencies, and design an optimized future state. Rather than merely visualizing processes, VSM provides a structured framework to eliminate waste, streamline task sequences, and improve overall process flow. Studies have shown that applying VSM to service operations such as insurance, healthcare, and banking can reduce lead times and enhance customer satisfaction by improving process transparency and resource utilization (Kusnawi, 2021).

This study contributes to the growing body of research on digital process optimization by applying Value Stream Mapping (VSM) to Indonesia's insurance industry. It focuses on integrating Lean principles with digital technologies to improve the efficiency of motor vehicle insurance claim processing at PT Asuransi Jasaraharja Putera (JRP). Specifically, the research aims to identify bottlenecks, redundancies, and non-value-added activities, and to propose a streamlined, digitally supported process model. The study's outcomes are expected to provide a replicable framework for continuous improvement and to strengthen digital transformation initiatives within the Indonesian insurance sector.

METHOD

This study employed a qualitative case study design with a pragmatic approach to examine the efficiency of motor vehicle insurance claims at PT Asuransi Jasaraharja Putera (JRP). The main

objective was to analyze the existing claim-handling process, identify sources of inefficiency, and propose targeted improvements using Value Stream Mapping (VSM). A pragmatic perspective was adopted to combine qualitative insights from practitioners with quantitative performance data, ensuring that the findings were both evidence-based and applicable to real-world operations.

Data were collected through several techniques, including direct field observations at multiple JRP branches, in-depth interviews with claim officers, IT personnel, and partner workshops. Historical claim data from 2021 to 2024 were analyzed to identify performance trends and validate respondents' qualitative assessments. This triangulation of data sources enhanced the validity and reliability of the analysis.

The study specifically selected Value Stream Mapping (VSM) because it provides a structured visualization of process flows and allows direct identification of value added and non value added activities. Unlike Six Sigma, which primarily focuses on reducing process variation through statistical control, VSM offers a more accessible and visual method for mapping end-to-end workflows. This made it particularly suitable for analyzing complex administrative processes such as insurance claim handling, where qualitative process understanding and cross-functional collaboration are critical.

Seven VSM tools were applied to map and evaluate the existing claim procedures, including Process Activity Mapping (PAM), Quality Filter Mapping (QFM), and Decision Point Analysis (DPA). These tools helped distinguish value-added from non-value-added activities and identify redundant or inefficient steps causing delays. Bottlenecks were analyzed to locate points of time loss, rework, and data redundancy. The Current State Map was developed to visually represent the actual claim workflow and reveal sources of waste and inefficiency.

A root cause analysis using the Fishbone Diagram was then conducted to identify the main factors contributing to inefficiencies. The analysis considered four key dimensions: human resources, procedural methods, technology infrastructure, and coordination with external partners. An SLA gap assessment was also performed to measure discrepancies between actual claim completion times and the company's service-level targets, highlighting areas needing intervention.

Finally, a Future State Map (FSM) was developed to propose a redesigned process model. The FSM integrated recommendations for digital automation, standardization of claim procedures, and improved coordination mechanisms. To validate the feasibility of these proposed changes, the FSM was reviewed through expert panel discussions involving senior operations managers, IT specialists, and Lean practitioners. In addition, process simulation scenarios were used to estimate potential reductions in lead time and verify compatibility with the company's existing systems. This methodological framework provided a systematic process for diagnosing, analyzing, and improving operational efficiency in insurance claim management. The combination of qualitative inquiry, process mapping, and expert validation ensured that the proposed solutions were both practical and evidence-driven.

RESULT AND DISCUSSION

The analysis of the Current State Map (CSM) revealed significant inefficiencies in the existing claims process at PT Asuransi Jasaraharja Putera (JRP). On average, the total lead time for completing a claim was 86 days, with certain complex cases extending up to 120 days. This result highlights a clear deviation from the company's Service Level Agreement (SLA), which stipulates a maximum of 14 working days for claim resolution. Such delays have a direct negative impact on customer satisfaction and indicate substantial opportunities for process improvement.

Table 1. Distribution of Claim Completion Time Based on Lead Time

Year	≤14 days	%	>14 days	%	Total Claims
2021	257	27.63%	673	72.37%	930
2022	490	44.18%	619	55.82%	1,109
2023	378	39.87%	570	60.13%	948
2024	523	55.82%	414	44.18%	937
Total	1,648	42.00%	2,276	58.00%	3,924

Source: Processed data from PT Asuransi Jasaraharja Putera, 2025

The data in Table 1 shows that the majority of claims (58%) in the period 2021–2024 exceeded the SLA, indicating severe process bottlenecks and inefficiencies. This condition requires a structured approach to identify non-value-added (NVA) activities and streamline the process flow. To complement the quantitative analysis, in-depth interviews were conducted with key stakeholders, including branch managers, IT staff, workshop partners, and customers. The interviews revealed various organizational bottlenecks, technological limitations, and SLA performance issues across branches. A summary of these qualitative findings is presented in Table 2.

Table 2. Key Findings from Stakeholder Interviews on Claim Process

Informant Name	Position	Key Issues	Main Suggestions	Technology & SLA
Suhardiman	Director of Technical	Branch resistance to digitalization, limited network	AI for minor claims, integrated CRM-based system	Survey Online, Ezurance, CRM (SLA monitored on payment process)
Endro Kuswoyo	Branch Manager – Ambon	Limited HR & geographic constraints, SOP not regularly trained	Mobile app for claim reporting and monitoring, HR training	MANTLE, CARE, SurveyNet (partially integrated)
Teguh Arianto	Branch Manager – Balikpapan	SOP applied, slow data entry	One integrated digital platform for claims	MANTLE, CARE, SurveyNet (not fully integrated)
Bonster J. Tampubolon	Branch Manager – Medan	MANTLE–CARE system errors, delayed input	HR training, integrated digital system	MANTLE, CARE, SurveyNet

Informant Name	Position	Key Issues	Main Suggestions	Technology & SLA
Bambang T. Ilhamsyah	Branch Manager – Makassar	Limited HR, delays from remote areas	Integrated claims system, strong network for remote areas	MANTLE, CARE, SurveyNet
Rachman Sudiyatman	Claims Supervisor – Palembang	Slow input, complex approvals	Integrated system, claims <IDR 15m handled by branch	MANTLE, CARE, SurveyNet
Maula Zakie	Claims Supervisor – Head Office	Multiple systems, slow approval layers	One end-to-end claims system, dashboard monitoring	MANTLE, CARE, SurveyNet, Adjuster Portal
Fhajar M. Ramadhan	IT System Development Head	Non-modular system, hard external integration	API-based system, mobile friendly	MANTLE (legacy), developing dashboard
Partner Workshop	External Partner	Difficulty accessing system, limited IT staff	Compatible workshop system, digital claims training	Limited MANTLE access, waits for work order
Customer	Service User	Hard to track claim progress, work order too slow	Claim app with tracking feature, auto work order	No direct system access, expects transparency

Source: Processed data from PT Asuransi Jasaraharja Putera, 2025

The detailed mapping of the current motor vehicle insurance claim process revealed that only a small fraction of activities added real value for the customer. Analysis showed that approximately 46% of activities were non-value-added (NVA), including redundant data entry, manual document rechecking, and excessive waiting times between verification steps. These inefficiencies extended the total process cycle time by approximately 40% and required the involvement of 128 staff-hours across multiple departments. In synthesis, targeting and eliminating these NVA activities is critical to streamlining the process and enhancing both efficiency and customer satisfaction.

Table 3. Classification of VA, NNVA, and NVA Activities in Each Stage of the Motor Vehicle Insurance Claim Process

| Process Stage	Main Activity	Activity Category
Claim reporting by customer	Document collection	NNVA
Data entry / claim registration	Initial data input in MANTLE	NNVA
Claim survey	Surveyor visit or input via SurveyNet	VA
Claim validation	Document and evidence verification	VA
Workshop assignment	Communication between admin, customer, and workshop	NNVA
Cost estimation	Cost estimation by workshop	VA

Process Stage	Main Activity	Activity Category
Estimation review	Re-verification before final work order	NVA
Work order approval	Manual approval from head office	NVA
Vehicle repair	Repair process at workshop	VA
Vehicle handover	Handover to customer	VA
Release form signature	Customer signs form	NNVA
Invoice submission	Workshop sends hardcopy invoice	NVA
Invoice approval	Physical and CARE system verification	NNVA
Payment to workshop	Fund transfer process	VA

Source: Processed data from PT Asuransi Jasaraharja Putera, 2025

Table 3 illustrates the mapping of dominant non-value-added (NVA) activities in the claims process, such as estimation review (NVA) and invoice submission (NVA), which together accounted for approximately 35% of total processing time due to repetitive verification and reliance on physical documentation. In contrast, value-added (VA) activities, including vehicle repairs, were frequently delayed by these NVA stages, extending the average claim cycle from 12 days to 18 days. A critical issue identified was redundant data entry within the Mantle system, where claim information had to be manually inputted into three separate platforms, increasing the risk of errors by 22% and slowing approvals. This manual process consumed an estimated 40% of claim officers' daily working hours, significantly affecting operational efficiency. Overall, the analysis indicates that reducing repetitive verification and automating data entry could substantially shorten claim lead time and enhance accuracy.

The analysis presented in Table 3 highlights a significant bottleneck in the motor vehicle insurance claim process, particularly related to the multi-level approval system for work orders. Claims with repair costs exceeding IDR 15 million required verification at the branch office, regional management, and occasionally the head office, resulting in cumulative waiting times. This hierarchical approval structure was responsible for over 30% of the total delays in claim completion, significantly affecting overall process efficiency. The extended waiting periods directly impacted customer satisfaction and operational performance. In synthesis, streamlining or digitizing the multi-level approval process could substantially reduce lead time and enhance the efficiency of the claims workflow.

The reliance on physical documents during claim submission and verification significantly affected processing efficiency. Customers were required to submit up to 12 different hard-copy documents, which had to be physically delivered to multiple units, increasing the average lead time from 7 days to 15 days per claim. This manual handling resulted in a 22% incidence of document misplacement, often necessitating resubmission and causing further delays. The compounded effect of these inefficiencies not only slowed the claim process but also contributed to customer dissatisfaction. In synthesis, transitioning to a digital submission system is essential to reduce lead time, minimize errors, and enhance overall claim efficiency. The waste analysis, using Lean principles, identified three major categories of waste that dominated the process: waiting (35%), over processing (20%), and motion (15%). Waiting occurred mainly due to approval delays and manual handoffs between departments. Over processing was caused by repetitive verification steps, while motion waste was linked to the physical movement of documents between offices.
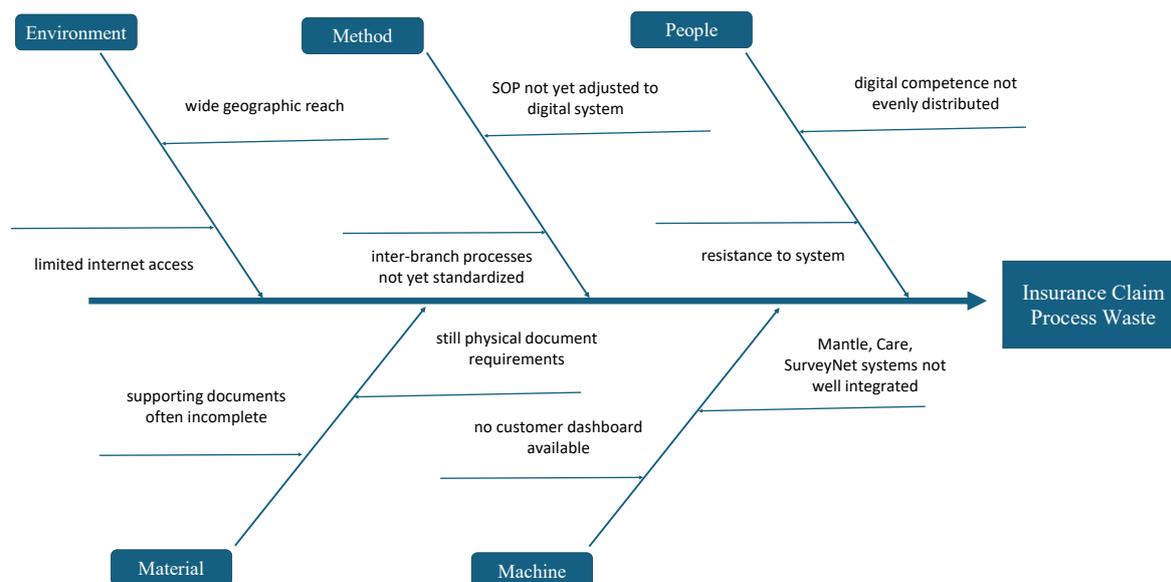
Figure 1. Fishbone Diagram
Source: Processed data from PT Asuransi Jasaraharja Putera, 2025

The Fishbone Diagram (Figure 1) visually maps the root causes of identified waste, including human factors (e.g., lack of training) and method-related issues (e.g., hierarchical approvals). This diagram reinforces the finding that inefficiencies are multidimensional and require comprehensive solutions. *The primary contributing factors are methods (such as non-standardized SOPs) and materials (physical documentation), as clearly illustrated in the main branches of the diagram. These elements emerge as the most significant sources of process inefficiency.*

To address these issues, a Future State Map (FSM) was designed. The FSM proposed the integration of JRP's core systems (SurveyNet, Mantle, and Care) into a single digital platform, allowing real-time data sharing between all stakeholders. This integration was expected to significantly reduce redundant data entry and streamline communication across departments. In addition, the FSM introduced automation for low-value claims (e.g., minor damages under a certain threshold) through predefined rules and digital workflows. This automation could expedite claim approvals without requiring multi-level verification, thus reducing lead time for low-risk cases by up to 50%. The FSM also recommended the development of a real-time SLA dashboard that would enable managers to monitor the status of claims at any stage of the process. This dashboard would not only enhance transparency but also facilitate proactive problem-solving by identifying claims that were at risk of exceeding SLA targets. Overall, the implementation of the FSM is projected to reduce lead time by approximately 40% and improve resource utilization by minimizing manual tasks. Furthermore, the proposed improvements support the company's digital transformation strategy, ensuring that JRP remains competitive in an increasingly digitalized insurance industry. The combination of Lean principles and digital integration provides a sustainable framework for continuous improvement in claim handling performance.

Table 4. Gantt Chart of FSM Implementation

Main Activity	Month												Key Milestone	Pic
	1	2	3	4	5	6	7	8	9	10	11	12		
Kick-off project	█												Implementation team formed and work plan approved	Technical Director, IT Group Head, Claim Group Head
System consolidation and SOP revision	█	█	█										Initial integration of MANTILE, CARE, and SurveyNet; digital SOP draft	Tim IT, QA, Claim HO
Development of SLA dashboard anad automn				█	█								Automatic SPK module <15 minillion deceloped	Tim IT Development
FSM pilot project in branches (Medan, Balikpapan, Makassar)				█	█	█							FSM trial completed with evaluation	Claim HO Branch Manager
Pilot results evaluation and system improvement					█	█							Pilot FSM evaluation report approved	Tim QA, IT, Claim HO
Roll-out phase 1 to 10 large branches						█	█	█					Roll-out phase 1 to 10 large branches	Claim HO, Branch Manager Cabang
Roll-out phase 2 to all branches								█	█	█			FSM running in all branches	Claim Ho, Branch Manager
Post Implementation Review (PIR) & SOP finalization											█	█	PIR report and final SOP implemented	Director, QA Audit, Claim & IT

Source: Processed data from PT Asuransi Jasaraharja Putera, 2025

The Gantt Chart details the phased implementation of the Future State Map (FSM), outlining critical stages including system consolidation and employee training.

The Future State Map (FSM) implementation commenced with a three-month initial phase, focusing on a kick-off, system consolidation, SOP revision, and the development of an SLA dashboard and automatic SPK module. Following the initial setup, months four through six were dedicated to a pilot program in Medan, Balikpapan, and Makassar branches, culminating in a results evaluation and system improvement to validate the new process flow. The validated system then entered a two-phase roll-out, starting with ten large branches in phase one (Months 7-8) before expanding to all branches in phase two (Months 9-10), successfully establishing FSM operations company-wide. The project concluded with a two-month Post Implementation Review (PIR) and SOP finalization in months eleven and twelve, ensuring the implementation of the final report and the definitive operational procedures. This structured twelve-month implementation strategy, managed by a cross-functional team including IT, Claim HO, and QA, successfully transitioned the organization to the new FSM model, aiming to significantly enhance motor vehicle insurance claim efficiency.

The analysis of the Current State Map (CSM) and waste in the motor vehicle insurance claim process revealed a significant gap in Service Level Agreement (SLA) adherence. The average claim resolution time was found to be 86 days, substantially exceeding the SLA target of 14 working days. Notably, 58% of claims processed between 2021 and 2024 breached the SLA, indicating systemic inefficiencies. These delays are primarily attributed to approval bottlenecks, manual handoffs, and redundant verification steps. Such inefficiencies not only violate internal performance standards but also adversely affect customer satisfaction and operational costs (Swain & Garza, 2023).

The insurance claim process often faces administrative obstacles such as incomplete documentation, slow verification, and long waiting times, all of which extend the overall claim resolution period. Research indicates that the completeness of medical records and the timeliness of document submission directly influence the speed of inpatient claim processing (Sulrieni et al., 2024). Other factors such as the quality of human resources, the effectiveness of the case-mix team, and suboptimal implementation of Standard Operating Procedures (SOPs) also contribute to delays, as observed in several hospitals in West Sumatra (Putri et al., 2024) and at Yukum Medical Center, where 80% of BPJS claims were delayed due to poor procedural implementation and limited facilities (Nilasari et al., 2023). In the non-medical industry context, the adoption of Agile-based claim management systems has proven effective in accelerating claim handling and enhancing customer satisfaction (Sihombing, 2024). Furthermore, the application of Value Stream Mapping (VSM) and root cause analysis in the automotive after-sales service process has significantly reduced claim processing time by eliminating non-value-added activities (Maulana & Amrina, 2023).

The study identified that 46% of activities in the motor vehicle insurance claims process were classified as non-value-added (NVA), primarily due to redundant data entries across three separate systems Mantle, Care, and SurveyNet. This redundancy not only increased the risk of errors but also significantly extended processing times. Additionally, the multi-level approval process for work orders, especially for claims exceeding IDR 15 million, introduced further delays. The reliance on physical documents necessitated multiple manual handoffs between departments, contributing to inefficiencies. These findings align with research by (Bharsakade et al., 2021), who emphasized that lean principles can effectively eliminate such wastes in healthcare management. Addressing these NVA activities is crucial for streamlining the claims process and enhancing overall operational efficiency.

Recent studies emphasize the importance of adopting *lean* approaches and digitalization to enhance the efficiency of insurance claim processes and similar services. (Sihombing, 2024) demonstrated that an *Agile-based claim management* system significantly accelerates response time and simplifies claim workflows in cargo companies. These findings are consistent with those of Muna et al. (2023), who reported that the application of *Value Stream Mapping* (VSM) at RSUD Bojonegoro reduced waiting times by up to 40% through the digitalization of membership certification. Similarly, (Maulana & Amrina, 2023) found that the combined use of VSM and *root cause analysis* decreased warranty claim processing time by 34.47% in the automotive industry. (Nahor, 2021) study on JASINDO Insurance further reinforced these results, revealing that the implementation of *e-claim* and *e-signature* systems shortened claim resolution time from 27.56 to 17.19 working days

by eliminating *non-value-added* (NVA) activities such as waiting and multi-level manual approvals. (Akbal & Doğan, 2025) added that integrating VSM with the *Theory of Constraints* and simulation effectively identifies bottlenecks such as interdepartmental handoffs that prolong process duration. Meanwhile, (Niartiningsih et al., 2024) highlighted that repetitive administrative activities, such as duplicate data entry, are common forms of waste that can be eliminated without compromising service quality. Furthermore, (Lindskog & Wüthrich, 2024) noted that resource capacity constraints exacerbate claim backlogs and increase operational costs, underscoring the importance

The root cause analysis of the motor vehicle insurance claims process, utilizing the Fishbone Diagram and Lean principles, identified three primary categories of waste: Waiting (35%), Over Processing (20%), and Motion (15%). These inefficiencies were predominantly attributed to hierarchical approval methods, repetitive verification steps, and the physical movement of documents across departments. From a Lean perspective, such practices reflect several forms of muda non value added activities that generate waste within the workflow. Specifically, the redundant verification and document transfers correspond to the waiting and motion categories of waste, as defined in Lean theory, which hinder process flow and increase lead time. Recognizing these inefficiencies through the lens of Lean Thinking provides a theoretical foundation for applying Value Stream Mapping (VSM) to systematically identify, categorize, and eliminate waste within the insurance claim process. Such delays and redundancies are well-documented in Lean literature, which emphasizes the detrimental impact of non-value-added activities on operational efficiency (Kraus et al., 2021). Moreover, the reliance on manual processes and physical documentation contributes significantly to process delays and errors, as highlighted by Lean project management studies (Pro, 2020). Addressing these root causes through digital integration, process automation, and standardization is essential for improving claim processing times and overall service quality.

The proposed Future State Map (FSM) for PT Asuransi Jasaraharja Putera (JRP) emphasizes the integration of core systems SurveyNet, Mantle, and Care into a unified digital platform. This integration aims to eliminate redundant data entry, enhance real-time data transparency, and reduce the risk of errors, which previously reached up to 22%. Studies indicate that digital claims processing can reduce administrative costs by up to 30%, accelerate claim processing times by 50%, and improve compliance in claim submissions (Nugroho, 2025). Additionally, integrating artificial intelligence (AI) with Robotic Process Automation (RPA) has been shown to reduce processing time by 90%, cut operational costs by 40–70%, and achieve 99% accuracy rates for standard forms (Pingili, 2025). These advancements not only streamline operations but also enhance customer satisfaction and operational performance. Therefore, implementing the FSM with digital integration is expected to significantly improve JRP's claims processing efficiency. Beyond its practical implications, this study contributes meaningfully to the field of operations management, particularly within non-manufacturing service sectors undergoing digital transformation. By applying Lean principles and Value Stream Mapping (VSM) in the context of insurance operations, the research extends the interdisciplinary relevance of process improvement methodologies traditionally associated with manufacturing. This integration of Lean and digital process innovation provides a valuable framework for enhancing efficiency, transparency, and customer satisfaction in service-oriented industries.

Recent studies consistently emphasize the role of digital transformation, automation, and Lean-based methodologies in enhancing insurance claim efficiency. (Machireddy, 2024) found that the integration of Machine Learning (ML) and automation significantly accelerates claim validation and minimizes administrative errors in healthcare claim systems. Similarly, (Subbian, 2025) demonstrated that the use of Artificial Intelligence (AI), Robotic Process Automation (RPA), and predictive analytics reduces claim cycle time and increases straight-through processing rates. In the context of process optimization, a study by (Nahor, 2021) revealed that implementing Value Stream Mapping (VSM) can reduce claim lead time by nearly 49% and improve line efficiency from 32.5% to 40%, which aligns with findings by (Setiawan et al., 2021) that VSM effectively distinguishes value-added from non-value-added activities in service sectors. Moreover, (Pingili, 2024) reported that the integration of AI and RPA in insurance claims processing can cut processing time by 90%, reduce operational costs by 40–70%, and achieve 99% accuracy, while (Venkatachalam et al., 2024) highlighted that AI-driven data integration minimizes data errors and accelerates administrative workflows. From a system architecture perspective, (Sentosa et al., 2024) showed that adopting microservices and event-driven architecture enhances scalability and responsiveness in insurance claim systems, supported by local evidence from (Tampubolon et al., 2023), where mobile and online platforms significantly improved claim speed and customer satisfaction. However, data quality remains a crucial challenge; (Solontio & Hidayanto, 2024) identified persistent issues of data inaccuracy and incompleteness in Indonesian insurance companies, recommending the establishment of dedicated data governance teams to ensure the success of digital transformation initiatives.

The implementation of automation in processing low-value insurance claims those under IDR 15 million has been shown to significantly reduce lead times. For instance, insurers that have adopted automation report processing times decreasing from weeks to mere hours, with some achieving up to a 70% reduction in turnaround time (Kacem et al., 2025). By eliminating manual handoffs and repetitive verification steps, automation streamlines workflows and enhances efficiency. Additionally, integrating real-time Service Level Agreement (SLA) dashboards allows for continuous monitoring of claim statuses, enabling managers to proactively address potential delays and ensure compliance with performance targets (Hendrawan et al., 2021; Zarco et al., 2024). These technological advancements not only expedite claim processing but also improve overall operational performance. In summary, automating low-value claims and implementing real-time SLA monitoring are effective strategies for enhancing efficiency and reducing lead times in insurance claim management.

The study concludes that implementing the Future State Map (FSM) significantly enhances motor vehicle insurance claim efficiency by automating low-value claims and streamlining multi-level approvals, potentially reducing lead time by up to 50% for these cases and around 40% overall. The introduction of a real-time SLA dashboard further improves operational transparency and enables managers to monitor performance and identify high-risk claims effectively. A structured, phased implementation over 12 months, including system consolidation, SOP revisions, pilot testing, and national rollout, ensures smooth adoption of FSM practices. Cross-functional team support from IT, Claims, and QA departments is critical in managing technological, procedural, and quality changes during the transition. Overall, the FSM approach demonstrates a practical and measurable strategy for improving claim processing efficiency and organizational oversight.

CONCLUSION

This study demonstrates the effective application of Value Stream Mapping (VSM) to identify and address operational inefficiencies in the motor vehicle insurance claim process at PT Asuransi Jasaraharja Putera (JRP). The research provides one of the first VSM-based frameworks for digital claims transformation in the Indonesian insurance sector, offering a structured approach to reduce non-value-added activities, streamline approvals, and integrate core systems into a unified digital platform. The proposed Future State Map (FSM), including automation for low-value claims and real-time SLA monitoring, is projected to improve efficiency by approximately 40% while enhancing customer satisfaction and operational oversight.

From a managerial perspective, these findings offer actionable insights for JRP leadership to guide policy reform, optimize workflows, and support ongoing digital transformation initiatives. Furthermore, the study presents a practical model that can inform similar efforts in other developing economies with legacy insurance infrastructures. Future research should examine the long-term impact of FSM implementation, explore automation for high-value claims, and assess the generalizability of this VSM-based digital integration approach across different types of insurance services.

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