

CHAPTER 5 – CONCLUSIONS AND RECCOMENDATIONS

5.1. Conclusions

This study explored how structured data governance, simulation-based logistic process optimization, and visualization can enhance logistics performance at Company XYZ Indonesia. The research was guided by three core objectives and their corresponding questions, which are answered as follows:

1. **Structured Data Governance for Logistics Operations.** Based on the results in Subchapter 4.2 – Pillar 1: Data Governance Implementation Result, the implementation of a governance framework improved data ownership mapping, defined roles and responsibilities, and introduced data quality controls. Findings revealed measurable improvements: data accuracy increased from 82% to 96%, completeness rose from 75% to 93%, and consistency across systems improved from 68% to 95%. Ownership coverage expanded from 45% to full 100%, policy compliance improved from 60% to 92%. The introduction of a fully implemented RACI matrix further reinforced governance enforcement.
2. **Data-Driven Optimization of Cost and Delivery Performance.** As discussed in Subchapter 4.3 – Pillar 2: Logistics Improvement Process, governed data enabled gap identification and simulation-based optimization (including incoterm switching), which led to measurable cost reductions and delivery time improvement. Evidence of cost savings is demonstrated in Figure 4.3, and the resolution of governance-related gaps is shown in Table 4.2. By leveraging governed data, the simulation of logistics scenarios particularly incoterm switching, yielded measurable improvements. Cost reduction reached up to 74%–76% in two shipment cases (Figure 4.3), and delivery accuracy improved by 18% within two months, reducing late deliveries from 24% in May 2025 to 6% in July 2025 (figure 4.10 and 4.11).

3. Real-Time Dashboard for Monitoring and Decision Support. Detailed in Subchapter 4.4 – Pillar 3: Visualization, the development of a PowerApps dashboard enabled real-time tracking of delivery performance. Key insights include improved shipment status visibility, enhanced user experience (via Figure 4.4), and decision-making benefits validated through Focus Group Discussion (FGD) results in Subchapter 4.5, where users confirmed enhanced monitoring capability, better user experience, and timely responsiveness to delivery issues.

5.2. Future Works

Based on limitations discussed in the study and insights from stakeholders mentioned in Subchapter 4.5 – FGD Feedback, the following future work is proposed:

1. Advance the assessment of data governance maturity by incorporating additional frameworks such as ISO and COBIT. This comparison would provide a more comprehensive evaluation of maturity levels across different standards and allow the organization to identify the minimum acceptable maturity gaps. By doing so, clearer strategic direction can be established for aligning processes, technology, and data management practices, ensuring that the organization not only maintains governance compliance but also strengthens its long-term capability to optimize logistics performance.
2. Expansion to Warehousing and Inventory Analytics. Extend the current framework beyond delivery data to include warehouse management and stock turnover to provide a complete logistics picture.
3. Advanced Predictive Analytics and AI Integration. The data foundation allows for future implementation of predictive models such as delivery delay forecasting or route optimization using AI, in line with industry practices discussed in Chapter 2.9.

4. Cross-Departmental Data Governance Expansion. Expand the governance model piloted in logistics discussed in Subchapter 4.2, to other departments to achieve enterprise-wide data standardization.

5.3. Recommendations

Recommendations for practitioners and stakeholders are derived from the research findings and FGD outcomes in Subchapter 4.5:

1. For Company XYZ Indonesia: Maintain and institutionalize the data governance council established in this study. Conduct periodic reviews and maturity assessments to ensure continuous improvement (refer to Table 4.1 and Table 4.2).
2. For System Developers and IT Teams: Adopt Agile models as discussed in Subchapter 3.4.3, and continue developing the dashboard iteratively based on operational feedback from users.
3. For Operational Managers: Use the PowerApps dashboard (Figure 4.4) not only for passive monitoring but as a strategic tool to identify delays early and validate delivery KPIs during review cycles.
4. For Other Engineering Trade Firms: This study, as presented across Chapters 3 and 4, demonstrates that data-driven logistics transformation is feasible without overhauling existing infrastructure, making it replicable for similar SMEs in the sector.