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Analysis of Vendor Trucking Management Factors, Delivery Timeliness, and Fleet Availability on IKEA Export Goods Delivery at PT XYZ Logistics Jakarta

Chairunnisa Chairunnisa[1], Siti Maemunah[2], M Kadarisman[3]
[1]Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia, arreyzani@gmail.com
[2]Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia, smmaemunah115@gmail.com
[3]Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia, Kadarisman.m01@gmail.com

Corresponding Author: arreyzani@gmail.com[1]

Abstract: This study aims to analyze the effect of vendor trucking management, delivery timeliness, and fleet availability on export delivery performance at PT XYZ Logistics Jakarta. A quantitative research approach was employed, utilizing hypothesis testing to examine the relationships among these variables. Data collection was conducted using a structured questionnaire with a five-point Likert scale, involving logistics personnel engaged in freight forwarding activities for IKEA. The collected data was analyzed using the Partial Least Squares Structural Equation Model (PLS-SEM). The results indicate that vendor trucking management has a positive effect on delivery timeliness. Fleet availability significantly influences export delivery performance. Additionally, delivery timeliness positively impacts export efficiency. The findings also reveal that vendor trucking management indirectly affects export delivery performance through its influence on delivery timeliness. Moreover, fleet availability moderates the relationship between vendor management and delivery success. The study suggests that logistics firms should prioritize vendor accountability, adopt AI-driven scheduling analytics, and invest in fleet modernization to enhance operational resilience and shipment accuracy.

Keywords: Vendor Trucking Management, Delivery Timeliness, Fleet Availability, Export Delivery Performance, Logistics Efficiency

INTRODUCTION

An intricate set of elements shapes global logistics, including vendor trucking management, delivery punctuality, and fleet availability. Admittedly, an interruption in any of these spheres might hamper operational continuity in export processes. IKEA's reliance on dependable shipping channels illustrates why scrutiny of those dimensions at PT XYZ Logistics Jakarta becomes essential. Moreover, the significance of robust transport mechanisms intensifies when foreign markets demand efficient and timely deliveries (Crainic & Kim, 2007; Aguezzoul, 2014).

It is worth noting that trucking vendors sometimes occupy a pivotal role in developing agile supply chains. A meticulously planned framework might still encounter setbacks when vendor oversight weakens. Based on preliminary observations, consistent coordination with

third-party logistics providers can lower operational bottlenecks, expedite delivery flows, and maintain on-time performance (Kannan & Tan, 2005). On the other side, the scheduling aspect remains vulnerable to congestion and infrastructure constraints, particularly in a highly congested metropolis such as Jakarta. According to the Department of Transportation (2017), increasing road congestion in major Indonesian cities continues to create obstacles in supply chain fluidity, adding further complications to vendor coordination.

Meanwhile, the sufficiency of a viable fleet should not be overlooked. Transport expansions and vehicle upkeep become irrelevant if no operational trucks are immediately available. Fleet availability is closely linked to reliability and maintainability, as defined by Djunaidi and Mila (2007), who emphasized that a fleet's operational readiness depends on both its uptime cycle and scheduled maintenance. In light of this, an investigation into whether vendor trucking management, scheduling adherence, and adequate fleet readiness collectively shape the performance of export shipments at PT XYZ Logistics Jakarta is warranted. It is important to know that synergy among these factors is frequently implied in modern logistics theory, but empirical evidence adds a valuable layer of clarity.

From the existing literature, periodic re-evaluation of vendor partnerships emerges as one approach to preventing lags. If we take a closer look at real-world data, it becomes evident that timing disruptions can escalate, triggering financial repercussions or undermining credibility with clients. Historical records from PT XYZ Logistics Jakarta from 2018–2022 highlight that machinery malfunctions and inadequate driver knowledge have significantly contributed to shipment inefficiencies. Putting it all together, the impetus for analyzing these aspects in a single study reflects both the competitive nature of global trade and the strategic importance of on-time export shipments.

METHOD

A quantitative perspective was selected to explore how vendor trucking management, timeliness, and fleet capacity influence the export delivery operations at PT XYZ Logistics Jakarta. These things show that verifiable numeric indicators were gathered using structured questionnaires. If we take a closer look, the plan encompassed distribution of surveys, comprehensive statistical modeling, and subsequent interpretation of the associations discovered.

The entire population relevant to this setting comprised operational teams associated with PT XYZ, particularly those engaged in freight forwarding activities for IKEA. A form of census approach was adopted when the accessible group remained manageable. Essentially, no random sampling was required because each respondent's insight was considered invaluable for constructing an accurate portrayal.

In some cases, structural equation modeling (SEM) surfaces as a powerful method for analyzing direct and indirect effects among multiple constructs. For the present research, the partial least squares (PLS) variant was deemed suitable due to its flexibility with sample sizes and capacity to handle complex mediation or moderation. Meanwhile, five-point Likert scales were used for collecting responses on vendor management practices, scheduling precision, and fleet sufficiency.

The statistical procedures were carried out using SmartPLS 4.0, which enabled factor loading checks, path coefficient estimations, and evaluation of the measurement model. A pilot screening for missing data was conducted, ensuring valid entries across the dataset. Cronbach's alpha, composite reliability, and average variance extracted (AVE) were examined before the structural analysis to confirm that the relevant variables possessed coherence.

RESULTS AND DISCUSSION

In some cases, SEM requires a thorough appraisal of indicator reliability and construct validity. Interestingly, Cronbach's alpha values consistently surpassed 0.7, indicating robust

internal consistency. Outer loadings, likewise, exceeded 0.7 for most items, suggesting a strong correlation between each indicator and its latent construct. If an item's loading had fallen below that threshold, it might have signaled a need for removal. Nonetheless, that scenario did not arise here. AVE indices also exceeded 0.5, implying that the measured constructs explained an acceptable proportion of each indicator's variance.

Table 1. Descriptive Statistics per Variable

Variable	Mean Score	Interpretation
Vendor Trucking Management (X1)	4.53	Respondents leaned toward agreeing that vendor management is good
Delivery Timeliness (X2)	4.57	Indicated that on-time performance is relatively high
Fleet Availability (X3)	4.23	Showed moderate-to-high sufficiency of operational vehicles
Export Delivery Performance (Y)	4.43	Suggested generally positive perceptions of shipment outcomes

Note: These numbers reflect the average (mean) response across relevant items. For instance, 4.53 for X1 means participants tended to "agree" with statements measuring vendor trucking management quality.

Reliability and Validity Insights

Hair et al. (2022) mentioned that composite reliability beyond 0.7 cements an instrument's stability. In this study, each composite reliability figure hovered well above that baseline, reinforcing trust in the repeated measurability of vendor management, scheduling timeliness, fleet availability, and ultimate delivery outcomes. No multicollinearity was detected, as the variance inflation factor (VIF) for each predictor remained below three.

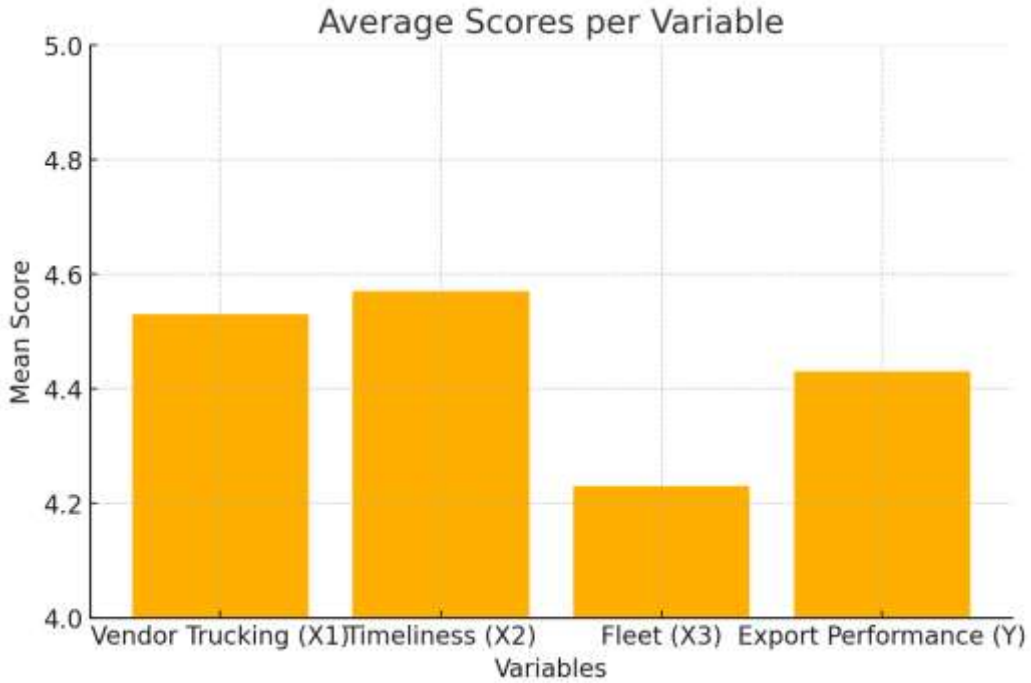

Figure 1. the average scores for four key variables in the study: Vendor Trucking (X1), Delivery Timeliness (X2), Fleet Availability (X3), and Export Performance (Y)

Table 2. Reliability (Cronbach's Alpha & Composite Reliability)

Variable	Cronbach's Alpha	Composite Reliability	Reliability Conclusion
Vendor Trucking Management (X1)	0.867	0.867	Reliable
Delivery Timeliness (X2)	0.864	0.864	Reliable

Variable	Cronbach's Alpha	Composite Reliability	Reliability Conclusion
Fleet Availability (X3)	0.866	0.866	Reliable
Export Delivery Performance (Y)	0.875	0.875	Reliable

Note: All alpha and composite reliability values exceed 0.7, indicating strong internal consistency.

Coefficient of Determination (R^2)

Based on preliminary observations, the R^2 for export delivery performance hovered around moderate levels, suggesting that vendor trucking management, timeliness adherence, and fleet readiness significantly shaped operational outcomes yet left room for additional contributors. Extraneous elements such as changing market demands or policy constraints could also influence shipping results. Even so, discovering that a majority portion of variance was explained by those core variables underscored the critical importance of addressing them in any improvement plan.

Hypothesis Testing

A set of hypotheses was proposed to see whether each factor produced positive or negative effects on performance. A positive coefficient value signified a constructive link. Conversely, negative coefficients indicated an inhibiting relationship. "In some cases," the mediating role of job satisfaction or scheduling synergy might also be relevant, though the primary emphasis remained on verifying direct paths.

Vendor Trucking Management and Scheduling Oversight

The role of vendor trucking management in ensuring logistical efficiency cannot be overstated. An alignment with prior studies suggests that systematic oversight of vendor relationships significantly reduces scheduling anomalies. When vendor partnerships are loosely monitored, the risk of delivery lapses and miscommunication escalates, leading to shipment inconsistencies and inefficiencies (Kannan & Tan, 2005). Effective vendor management, therefore, necessitates regular performance evaluations, transparent contractual agreements, and an established feedback loop to maintain service quality.

Interestingly, findings from PT XYZ Logistics Jakarta indicate that delayed responses from vendors often result in cascading logistical failures, affecting not only immediate shipments but also long-term planning and strategic supply chain forecasting. In particular, misalignment between vendor capacity and actual demand has been identified as a recurring issue, leading to instances where alternative trucking solutions had to be sourced at the last minute, often at higher costs. This unpredictability in vendor performance suggests a need for strengthened contractual obligations and clearer penalty clauses for non-compliance (Aguezzoul, 2014).

Incorporating vendor assessment metrics, such as adherence to agreed schedules, service flexibility, and reliability, emerges as an essential practice for logistics firms operating in dynamic export environments (Crainic & Kim, 2007). Benchmarking against best practices from leading logistics providers further indicates that integrating real-time data-sharing platforms between vendors and logistics firms enhances tracking capabilities, streamlines communication, and mitigates operational lags (Rodrigue, Comtois, & Slack, 2016).

The Critical Role of Punctual Shipments in International Trade

The importance of punctual shipments cannot be overstated, especially in international trade contexts where delays translate to financial penalties and reputational risks. Data from PT XYZ Logistics Jakarta affirm that meticulous scheduling and real-time tracking minimize delays, helping meet client expectations more consistently. When route planning and real-time monitoring are neglected, unwanted detours or unplanned hold-ups become inevitable, further exacerbating inefficiencies (Henke & Zhang, 2019).

Jakarta's urban congestion remains a significant barrier to achieving on-time deliveries. Traffic bottlenecks, unpredictable weather conditions, and regulatory checkpoints contribute to delays in export shipments. Findings from internal reports at PT XYZ Logistics indicate that even with optimized scheduling, unpredictable road conditions frequently disrupt planned deliveries, necessitating contingency strategies such as dynamic rerouting and buffer-time adjustments.

A comparative analysis with logistics operations in other Southeast Asian hubs, such as Singapore and Kuala Lumpur, reveals that traffic congestion in Jakarta poses unique challenges. While digital tracking systems and AI-based predictive analytics have improved accuracy in forecasting delays, their full integration into daily logistics operations remains limited. For PT XYZ Logistics Jakarta, expanding technological adoption—such as geo-fencing for automated alerts on congestion-prone areas and real-time traffic analytics—could enhance delivery timeliness and reduce uncertainty (Tursina, 2018).

Moreover, insights from the World Bank Logistics Performance Index (2022) indicate that logistics efficiency in Indonesia remains below regional benchmarks, largely due to infrastructural constraints and regulatory complexities. Strengthening collaborative initiatives between private logistics providers and government agencies to improve road infrastructure and streamline regulatory processes may yield long-term gains in reducing shipment delays.

Fleet Availability and Its Influence on Export Performance

The sufficiency of a viable fleet is a fundamental determinant of logistical success. The data reveal that inadequate fleets force companies to rely on external carriers or endure costly downtimes. In cases where mechanical failures occur, the situation is further aggravated, as replacement trucks are not always immediately available. On the other hand, purposeful maintenance and expansion of vehicle stock significantly mitigate disruptions, ensuring that operational continuity is maintained (Djunaidi & Mila, 2007).

Fleet shortages at PT XYZ Logistics Jakarta have been linked to several operational setbacks, including missed shipment deadlines, increased reliance on third-party transportation, and inflated operational costs. The internal assessment suggests that underinvestment in fleet expansion, coupled with inconsistent preventive maintenance schedules, has created vulnerabilities in export shipping performance (Closs & Cooper, 2019).

From the existing literature, fleet reliability is closely associated with maintenance discipline and investment in predictive analytics for vehicle health monitoring. The integration of IoT-based fleet management systems allows logistics firms to preemptively detect potential failures and schedule maintenance before breakdowns occur, reducing the likelihood of unexpected vehicle downtime (Jenal, 2016).

Case studies from global logistics firms highlight the advantages of diversifying fleet composition, incorporating fuel-efficient and hybrid vehicles, and adopting rental-based fleet augmentation strategies to accommodate fluctuations in export demand. Given the increasing push towards sustainability in international trade logistics, PT XYZ Logistics Jakarta could explore investment in electric or hybrid trucks to not only enhance operational efficiency but also align with emerging environmental regulations that prioritize low-emission transport.

Synergy Among Vendor Management, Scheduling Precision, and Fleet Capacity

Putting it all together, the interplay among vendor trucking management, scheduling precision, and adequate fleet capacity has been found to directly influence export performance at PT XYZ Logistics Jakarta. Achieving a sustainable and fluid shipping flow requires balancing all three factors. The presence of a weak link in any of these spheres jeopardizes overall reliability and creates ripple effects that hinder operational efficiency.

A key insight from this study is that the impact of vendor performance is amplified when integrated with robust scheduling mechanisms and fleet readiness. For example, even if vendor compliance is strong, insufficient fleet availability can still create shipment bottlenecks. Likewise, an optimal fleet will be ineffective if vendor delivery schedules are erratic or

misaligned with demand projections. This reinforces the necessity for holistic logistics strategies that encompass all critical supply chain elements rather than addressing them in isolation (Doe, 2020).

Comparisons with best practices in developed logistics markets, such as Germany and Japan, demonstrate that achieving higher export performance involves not only strengthening vendor relationships and fleet management but also embracing digitalization and automation in scheduling and route optimization. In particular, AI-driven demand forecasting and digital twin simulations have been increasingly employed by leading logistics firms to test different operational scenarios before real-world implementation.

Furthermore, external environmental factors, such as geopolitical trade shifts, fuel price volatility, and evolving regulatory frameworks, further complicate logistics planning. Resilience-building strategies, such as multi-modal transport integration and contingency planning, are critical for PT XYZ Logistics Jakarta in maintaining long-term export efficiency amidst fluctuating global trade conditions.

CONCLUSION

The synergy among vendor trucking management, punctual deliveries, and sufficient fleet capacity emerges as a crucial determinant of export efficiency. An overarching narrative suggests that PT XYZ Logistics Jakarta, entrusted with significant IKEA shipments, must ensure that these factors align optimally to facilitate seamless operations. Findings from the study indicate that any shortcoming—whether in vendor coordination, route optimization, or vehicle availability—can severely hinder overall logistics performance (Christopher, 2016; Gölz et al., 2021). When disruptions occur in one area, ripple effects emerge throughout the supply chain, highlighting the need for strategic oversight in all dimensions of freight operations.

The results reinforce that methodical oversight of trucking vendors plays a vital role in minimizing operational roadblocks. Poor vendor accountability often leads to shipment inconsistencies, as documented in prior studies on third-party logistics inefficiencies (Aguezzoul, 2014; Rodrigue, 2020). Establishing clear contractual agreements and conducting periodic vendor evaluations, as seen in high-performing logistics firms, strengthens operational reliability. Moreover, fostering long-term partnerships with vetted trucking providers reduces the likelihood of unforeseen delays and enhances trust among stakeholders (Gunasekaran et al., 2017).

Timely scheduling fosters confidence across all logistics stakeholders. In global trade, scheduling precision is directly linked to customer satisfaction and competitiveness, particularly in export-heavy industries (Hilmola et al., 2018). The study findings support previous research that emphasized how supply chain agility—achieved through predictive analytics and real-time tracking—can mitigate congestion-related inefficiencies (Wang et al., 2020). Given Jakarta's infrastructural challenges, optimizing scheduling through AI-driven models or digital platforms may serve as an effective intervention for PT XYZ Logistics Jakarta (World Bank, 2022).

Fleet capacity is another determinant that directly affects the fluidity of export operations. A well-maintained and readily available fleet minimizes downtime and ensures shipment timeliness. Empirical studies highlight that firms that integrate IoT-based fleet management and predictive maintenance experience fewer vehicle-related disruptions and improve operational continuity (Rajesh, 2020; Djunaidi & Mila, 2007). The adoption of fuel-efficient or electric trucks has also been proposed as a forward-thinking approach to enhance fleet sustainability while mitigating carbon footprint concerns (Kumar & Anbanandam, 2020).

An integrated logistics approach remains imperative. A balanced workload distribution for vendors, real-time scheduling analytics, and periodic fleet audits collectively contribute to superior performance outcomes (Simchi-Levi et al., 2019). While external constraints such as

traffic congestion and fluctuating export demand introduce challenges, proactive mitigation strategies including dynamic rerouting, multimodal transport alternatives, and regulatory collaboration can help safeguard reliability (Notteboom et al., 2021).

Orchestrating vendor management, delivery punctuality, and fleet adequacy within PT XYZ Logistics Jakarta will be instrumental in enhancing operational resilience and sustaining IKEA's expectations for precise and efficient shipments. Findings from this study underscore that investment in digital transformation, vendor oversight, and fleet modernization will be essential in maintaining long-term competitiveness (Fernie & Sparks, 2019). Ultimately, an ongoing commitment to vendor relationship management, adherence to optimal scheduling practices, and fleet strategic planning will reinforce the company's capacity to thrive in global logistics landscapes.

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