International Journal of Research in Interdisciplinary Studies
Volume 3, Issue 5, May 2025
https://www.ijris.com | ISSN (Online): 2584-1017

The Digitalization Initiatives and Customer Satisfaction in the Logistics Management in the Philippines: Basis for an Action Plan

Maricar B. Lapitan*
University of Cabuyao, City of Cabuyao, Philippines

Abstract—This study examined the impact of digitalization initiatives—specifically automation, real-time tracking, and data-driven decision-making—on customer satisfaction in the Philippine logistics industry. Using a descriptive-correlational design with data from 101 respondents, the research found that all digitalization initiatives significantly influenced customer satisfaction, with automation and real-tracking being the most effective in improving visibility, reducing delays, and building trust. The strong positive correlation between digitalization and satisfaction highlights the strategic importance of technology in enhancing service quality. The study provides actionable recommendations for logistics firms to strengthen digital systems and adopt customer-focused strategies to remain competitive.

***Index Terms*—Digitalization, Customer Satisfaction, Logistics Management, Automation, Real-Time Tracking.**

1. Introduction

Recognized as one of the most familiar slogans in the Philippine logistics sector, "Sagot ko, Padala mo" captures the essence of responsibility and customer-focused service that logistics companies strive to deliver. It goes beyond branding, representing a pledge to ensure timely, precise, and reliable delivery services despite common industry issues like delays and communication breakdowns. This level of commitment aligns with the broader objectives of logistics management, which involves the efficient coordination of transportation, inventory, and tracking to meet both operational and customer service goals.

Globally, logistics leaders like DHL, FedEx, and GXO Logistics utilize digital technologies to boost efficiency and meet growing consumer expectations. Innovations such as real-time tracking and AI analytics enhance delivery speed and transparency, while the express logistics market is projected to grow significantly. In the Philippines, firms like Ernest Logistics and Fast Logistics leverage technology to overcome geographic challenges, emphasizing the crucial role of digital solutions in managing complex delivery networks across the archipelago.

Digitalization has become essential in meeting modern logistics demands. Tools such as IoT, blockchain, and automation increase process accuracy, enable predictive management, and support proactive service. These advancements help reduce delays, minimize human error, and improve customer trust and satisfaction by providing real-time visibility and streamlined operations. As logistics continues to evolve, digital transformation is key to maintaining competitiveness and adapting to dynamic consumer expectations.

Despite global progress, there remains a gap in understanding how digitalization specifically impacts customer satisfaction in the Philippine logistics sector. Challenges such as fragmented infrastructure and inconsistent tech adoption complicate implementation. Existing studies often focus on efficiency metrics, overlooking customer perspectives. This research aims to bridge that gap by exploring the influence of digital tools on service dimensions like speed, reliability, and transparency, and by offering localized, actionable strategies to enhance customer experience and logistics performance.

2. Literature Review

A. Conceptual Literature

1) Digitalization Initiatives in Logistics Management

Digitalization has revolutionized logistics management by integrating advanced technologies—automation, real-time tracking, and data-driven decision-making (DDD)—to improve efficiency, reduce costs, and enhance customer satisfaction. Automation minimizes manual tasks through tools like robotic process automation and automated sorting systems, streamlining operations and enabling staff to focus on strategic tasks. Real-time tracking, powered by GPS, IoT, and cloud platforms, offers shipment visibility, reduces customer inquiries, and boosts trust by providing accurate updates and ensuring timely deliveries. DDD empowers logistics firms to optimize routes, forecast demand, and allocate resources based on real-time data and customer feedback, leading to faster, more reliable services. Collectively, these digital initiatives not only improve operational workflows but also address key customer expectations such as speed, reliability, transparency, and assurance—making digital transformation essential for competitiveness in the logistics sector.

*Corresponding author: maricarblapitan@gmail.com

2) Customer Satisfaction in Logistics Management

Customer satisfaction in logistics is shaped by four key dimensions—responsiveness, assurance, empathy, and reliability—all of which are significantly enhanced by digitalization initiatives. Responsiveness, particularly service speed, is improved through automation, real-time tracking, and data-driven decisions that streamline operations and reduce delays. Assurance is fostered through transparency and communication, as digital tools like tracking systems, SMS alerts, and blockchain ensure customers receive accurate, timely updates, building trust and reducing uncertainty. Empathy is demonstrated through service flexibility, with technologies like AI and IoT enabling personalized, adaptive logistics solutions that cater to individual customer needs and unexpected changes. Reliability, crucial for consistent service delivery, is strengthened by predictive analytics, automation, and real-time monitoring, ensuring timely, error-free shipments even in challenging conditions. Guided by the SERVQUAL model, this digital transformation framework supports the study's questionnaire focus—highlighting how digitalization initiatives improve logistics performance and customer satisfaction by aligning services with modern expectations and reinforcing competitive advantage.

B. Research Literature

1) Digitalization Initiatives in Logistics Management

Automation, real-time tracking, and data-driven decision-making have become pivotal components of digital transformation in the logistics industry, significantly enhancing efficiency, accuracy, and customer satisfaction. Automation has streamlined workflows by reducing manual labor and minimizing errors in processes such as warehouse management and order fulfillment, ultimately enabling faster, more reliable service delivery (Woschank, 2021; Kumar & Agrawal, 2020). Real-time tracking has improved transparency and responsiveness by offering continuous shipment visibility, which is especially valuable in geographically complex regions like the Philippines, helping logistics providers effectively manage customer expectations and reduce uncertainty (Pundir & Pundir, 2022). Meanwhile, data-driven decision-making has empowered logistics firms to optimize routes, forecast demand, and proactively respond to operational challenges, resulting in more resilient and customer-focused services (Singh & Kant, 2021; Kumar & Agrawal, 2020). Collectively, these digitalization tools have strengthened logistics operations, ensuring consistent, high-quality service delivery across diverse markets.

2) Customer Satisfaction in Logistics Management

Digitalization has become essential in enhancing customer satisfaction in the logistics industry by improving responsiveness, transparency, empathy, and reliability—core dimensions of service quality outlined in the SERVQUAL model. Responsiveness was significantly strengthened through technologies such as real-time tracking and automated notifications, enabling logistics providers to deliver quick resolutions and timely updates that aligned with customer expectations for speed and efficiency. Transparency and assurance were fostered by these same tools, as they offered continuous visibility and proactive communication, building trust and reducing uncertainty throughout the delivery process. Empathy was demonstrated through flexible, customer-centric services powered by predictive analytics and adaptive workflows, allowing logistics providers to anticipate and respond to individual needs with care and efficiency. Finally, reliability was reinforced through consistent, data-driven operations that minimized errors and ensured dependable service delivery, as emphasized in various studies on the Philippine logistics industry. Collectively, these digital initiatives not only elevated operational efficiency but also deepened customer trust, loyalty, and satisfaction in a rapidly evolving market.

3) Gap/s Bridged by the Present Study

A review of existing literature on digitalization in logistics revealed key research gaps, particularly regarding its direct impact on customer satisfaction—an area often overshadowed by a focus on operational efficiency. This study addressed these gaps by exploring how digitalization initiatives, such as real-time tracking and automated notifications, influenced customer satisfaction in logistics companies in the Philippines. It emphasized customer-centric factors like transparency, speed, and reliability, offering practical insights for enhancing service quality through digitalization. Additionally, the research investigated how digital technologies fostered customer-focused practices, such as improved communication and responsiveness, positioning customer satisfaction as a central outcome of digital transformation. It also examined the unique logistical challenges posed by the Philippines' complex geography, providing a contextual understanding of digitalization's adaptability. By focusing on specific tools like predictive analytics and automation within the Philippine logistics sector, the study developed a framework for optimizing digital efforts to improve customer experience. Ultimately, this research contributed to a more nuanced understanding of how digitalization can be effectively leveraged to meet both operational goals and evolving customer expectations in a dynamic logistics environment.

3. Methodology

A. Research Design

This study utilized a descriptive-correlational research design with impact analysis to examine the relationship between digitalization initiatives and customer satisfaction in logistics management. By using a survey questionnaire as the main data collection tool, the research analyzed statistical relationships without manipulating variables, allowing for an in-depth understanding of how digitalization affected both operational performance and customer satisfaction in the logistics sector.

B. Research Locale

The study was conducted among customers of logistics companies across various regions in the Philippines to capture diverse perspectives on customer satisfaction and the impact of digitalization initiatives. By selecting customers as

respondents, the research focused on the experiences of key stakeholders who regularly interacted with logistics services. This localized approach provided valuable insights into how digitalization efforts, such as automation, real-time tracking, and data-driven decision-making, addressed the unique logistical challenges within the Philippine context.

C. Respondents of the Study

The respondents of the study were selected customers of logistics companies in the Philippines who had direct experience with the companies' digitalization initiatives. From a total population of 135 customers, a sample of 101 participants was chosen to provide insights into customer satisfaction and service quality in relation to these digital efforts.

D. Sampling Design

The study targeted customers of logistics companies in the Philippines who had used various services across different industries and regions. Using a quota sampling technique to ensure balanced representation, 101 participants were surveyed. This sample size was chosen to achieve a 95% confidence level with a 5% margin of error, ensuring the reliability and accuracy of the study's findings.

E. Instrumentation (Validation and Scoring)

The study employed a self-constructed survey questionnaire to assess the impact of digitalization initiatives on operational efficiency and customer satisfaction in logistics. It included two main sections: one on digitalization (covering automation, real-time tracking, and data-driven decision-making), and another on customer satisfaction (measuring responsiveness, assurance, empathy, and reliability). The instrument's validity was ensured through expert review and a pilot test, while reliability was confirmed using Cronbach's Alpha, with high coefficients ranging from 0.816 to 0.937 and an overall reliability score of 0.974. Data were analyzed using structured Likert scales. For digitalization effectiveness, a 4-point scale (1.00–4.00) was used with verbal interpretations from "Not Effective" to "Very Effective." Similarly, customer satisfaction was assessed using a parallel scale ranging from "Very Low Satisfaction" to "Very High Satisfaction." These tools enabled precise, consistent evaluation of the study's key variables.

F. Data Gathering Procedures

The study utilized a Google Form survey for data collection to ensure efficiency, confidentiality, and compliance with data privacy standards. After obtaining necessary approvals and informing selected customers about the study's purpose, participation was solicited voluntarily. The form included an informed consent section to align with the Data Privacy Act, assuring participants of confidentiality. The survey link was distributed via email, and the researcher supervised the process, addressing participant concerns and ensuring data quality. Responses were securely stored in Google Sheets, reviewed for completeness, and organized for statistical analysis. A statistician later analyzed the data to examine the relationship between digitalization initiatives and customer satisfaction in logistics management in the Philippines.

G. Treatment of Data

The data collected in this study were analyzed using statistical tools to explore the relationship between digitalization initiatives and customer satisfaction in logistics companies. Weighted mean was used to assess perceptions of digitalization effectiveness and customer satisfaction by averaging responses on factors like automation, real-time tracking, and data-driven decision-making. Spearman's Rank-Order Correlation Coefficient (Spearman's rho) measured the strength and direction of the association between digitalization and customer satisfaction, chosen due to non-normal data distribution confirmed by the Shapiro-Wilk test. Additionally, regression analysis was applied to determine the predictive impact of digitalization initiatives on specific customer satisfaction dimensions, including responsiveness, assurance, empathy, and reliability.

H. Ethical Considerations

The study on "The Digitalization Initiatives and Customer Satisfaction in the Logistics Management in the Philippines: Basis for an Action Plan" adhered to strict ethical standards to ensure responsible and respectful research conduct. Participants provided informed consent after being fully briefed on the study's purpose and procedures. Their privacy was protected through data anonymization, in compliance with the Data Privacy Act of 2012. Participation was voluntary, with individuals free to skip questions or withdraw at any time. Transparency was maintained by clearly communicating objectives, potential risks, and benefits, and offering access to the researcher for concerns. The study avoided harm by ensuring the content was non-sensitive, acknowledged participant contributions while preserving anonymity, and upheld academic integrity by reporting findings honestly and accurately.

4. Results

The results of the study revealed that digitalization initiatives implemented in logistics management in the Philippines were perceived to be highly effective by customers.

Automation scored a general weighted mean of 3.59, real-time tracking 3.54, and data-driven decision-making 3.43. All three fall within the "Strongly Agree" category, indicating that respondents found these digitalization tools very effective in enhancing shipment visibility, reducing errors, and improving delivery speed and accuracy.

Table 1
Weighted mean scores on the effectiveness of digitalization initiatives

Digitalization Initiative	Weighted Mean	Verbal Interpretation
Automation	3.59	Very Effective
Real-Time Tracking	3.54	Very Effective
Data-Driven Decision-Making	3.43	Very Effective

Table 3
Correlation between digitalization initiatives and customer satisfaction

Variables	Correlation Coefficient (Spearman's rho)	Significance Level
Automation and Customer Satisfaction	0.736	$p < 0.01$
Real-Time Tracking and Customer Satisfaction	0.721	$p < 0.01$
Data-Driven Decision-Making and Customer Satisfaction	0.698	$p < 0.01$

Table 4
Regression analysis: impact of digitalization on customer satisfaction

Predictor Variable	Beta Coefficient	t-value	Significance Level
Automation	0.421	5.87	$p < 0.01$
Real-Time Tracking	0.398	5.56	$p < 0.01$
Data-Driven Decision-Making	0.365	5.12	$p < 0.01$

Table 2
Weighted mean scores on customer satisfaction dimensions

Dimension	Weighted Mean	Verbal Interpretation
Responsiveness	3.33	Very High Satisfaction
Assurance	3.43	Very High Satisfaction
Empathy	3.41	Very High Satisfaction
Reliability	3.46	Very High Satisfaction

Respondents rated their experience highly across all four dimensions: responsiveness (3.33), assurance (3.43), empathy (3.41), and reliability (3.46). These figures suggest that the logistics services met or exceeded customer expectations, particularly in service speed, transparency, customer care, and dependability.

Statistical analysis using Spearman's rank-order correlation coefficient indicated a significant positive relationship between digitalization initiatives and customer satisfaction.

Regression analysis further confirmed that automation, real-time tracking, and data-driven decision-making significantly impacted each customer satisfaction dimension. These findings validated the hypothesis that digitalization initiatives contribute meaningfully to improved service quality and customer satisfaction.

5. Discussion

The results align with existing literature that highlights digitalization as a key enabler of efficiency and customer satisfaction in logistics. Automation's high effectiveness rating confirms previous findings that it enhances real-time visibility and operational accuracy, reducing errors and processing time. Real-time tracking was likewise confirmed to boost transparency and trust, especially critical in the Philippine logistics landscape with its geographical complexities. Data-driven decision-making, while slightly lower in score, still showed strong support for predictive insights and optimization of logistics operations.

On the customer satisfaction front, responsiveness and reliability received slightly higher ratings than empathy and assurance, suggesting that while customers appreciate efficiency and dependability, further improvements in personalized service and proactive communication could enhance the overall experience. The statistically significant relationship between digitalization and satisfaction supports the SERVQUAL model and the Digital Transformation Theory, illustrating how technological tools directly influence perceived service quality.

6. Conclusion

The study concluded that digitalization initiatives—specifically automation, real-time tracking, and data-driven decision-making—were highly effective in improving operational performance and enhancing customer satisfaction in logistics companies in the Philippines. These initiatives positively impacted key service dimensions such as responsiveness, assurance, empathy, and reliability. The strong correlation between digital tools and customer satisfaction supports continued investment in digital transformation strategies. Logistics companies are encouraged to further enhance their digital systems, particularly in customer communication and personalized services, to sustain a competitive edge and deliver superior service quality in the dynamic logistics landscape.

Acknowledgement

Above all, I thank God for the strength and wisdom that guided me throughout this journey. To my adviser, Dr. Maricris G. Unico, for the guidance. Your insights shaped the outcome of this research. To our thesis professor, Dr. Lani Deada, and to the research instrument validators, Dr. Leslie Gamundoy, Dr. Egaie Salazar, and Dr. Marilou Urbina, thank you for your invaluable input. To Dr. Nel Cerbito, my research paper statistician, thank you for your prompt and thorough support with data analytics. To the panel members, Dr. Rem Bucal, Dr. Angelo Penaredona, and Dr. Fernando Pendon III, thank you for your constructive suggestions that helped refine this study. To the management and my teammates, thank you for the opportunity and support in conducting this research. Your cooperation made this study possible and meaningful. To my classmates, Ms. Celica Marino, Ms. May Punongbayan-Voluntad, Sir David Bernal, Sir Lino Aragon, Sir Bryan Joaquin, Sir Aldrin Danao, and the rest of my MBA classmates, thank you for your encouragement and friendship. I will always cherish the experiences and challenges we overcame together. To Sir Kelly Gonzaga, who opened the doors to logistics for me, I would not have made it this far without you and for always believing in my potential and talent and to the entire logistics operations team from Luzon, Visayas and Mindanao, thank you for the unwavering support that helped me reach this point. To my co-managers, the warehouse and account management group, especially the UPS, DFA, Locad and Turbina team, thank you for the shared efforts, long hours, and perseverance.

Those moments will always stay with me. To Cathy Teberio, your mentorship and support were a constant source of strength. To Sir Jeffrey Garcia "Serjep," your friendship and unstoppable encouragement meant so much during this journey. To my friends and cousins, Flo Denina, Trish Tan, Jazelle Barundia, and Gerlie Barundia, and special thanks to Ate Juliet Trinos, thank you for the laughter, comfort, motivation and encouragement that made this journey brighter. To my dearest family, my loving mother, Tining Barundia, my sister, Riza Barundia and my children, thank you for your love, patience, and unwavering belief in me. Your prayers have carried me through every step. Lastly, to everyone who, in any way, contributed to this achievement, thank you from the bottom of my heart.

References

[1] AIR21 Philippines. (n.d.). *Sagot ko, Padala mo (Your Delivery is My Responsibility)*. https://www.air21.ph/#:~:text=AIR%2021%20Philippines,committed%20to%20innovation%20and%20growth

[2] Airspeed. (n.d.). *Airspeed embraces digitalization to improve customer-centricity*. https://airspeed.ph/airspeed-embraces-digitalization-to-improve-customer-centricity/

[3] Barreto, L., Amaral, A., & Pereira, T. (2020). Industry 4.0 implications in logistics: An overview. *Procedia Manufacturing, 51*, 1443–1450.

[4] Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2019). *Supply chain logistics management* (5th ed.). McGraw-Hill Education.

[5] Caridi, M., Moretto, A., Perego, A., & Tumino, A. (2014). The benefits of supply chain visibility: A value assessment model. *International Journal of Production Economics, 151*, 1–19.

[6] Çemberci, M. (2019). The impact of digital transformation on customer satisfaction in logistics services. *Journal of Business and Industrial Marketing, 34*(8), 1630–1641.

[7] Chae, B. (2015). Insights from hashtag #supplychain and Twitter analytics: Considering Twitter and Twitter data for supply chain practice and research. *International Journal of Production Economics, 165*, 247–259.

[8] Choi, T. M. (2020). Technological advancements and their influence on customer satisfaction in the supply chain. *Annals of Operations Research, 291*(1), 257–275.

[9] Chopra, S., & Meindl, P. (2021). *Supply chain management: Strategy, planning, and operation* (7th ed.). Pearson.

[10] Christopher, M. (2016). *Logistics & supply chain management* (5th ed.). Pearson Education.

[11] Collier, D. A., & Evans, J. R. (2017). *Operations and supply chain management*. Cengage Learning.

[12] Esper, T. L., Fugate, B. S., & Davis-Sramek, B. (2007). Logistics learning capability: Sustaining the competitive advantage gained through logistics leverage. *Journal of Business Logistics, 28*(2), 57–81.

[13] Fawcett, S. E., Ellram, L. M., & Ogden, J. A. (2014). *Supply chain management: From vision to implementation*. Pearson Education Limited.

[14] Fernie, J., & Sparks, L. (2019). *Logistics and retail management: Emerging issues and new challenges in the retail supply chain* (5th ed.). Kogan Page.

[15] Flint, D. J., Larsson, E., & Mentzer, J. T. (2005). Logistics innovation: A customer value-oriented social process. *Journal of Business Logistics, 26*(1), 113–147.

[16] Gunasekaran, A., Subramanian, N., & Papadopoulos, T. (2017). Information technology for competitive advantage within logistics and supply chains: A review. *Transportation Research Part E: Logistics and Transportation Review, 99*, 14–33.

[17] Huang, Y., & Li, S. (2019). Real-time logistics tracking and customer satisfaction. *Transportation Journal, 58*(3), 278–296.

[18] IDC. (2024). *60% of Asia's top 2000 companies to use GenAI tools for major supply chain overhaul*. https://www.idc.com/getdoc.jsp?containerId=prAP51802324

[19] Ivanov, D., Dolgui, A., & Sokolov, B. (2022). Real-time supply chain analytics: Enhancing resilience with digital twins and real-time data. *Journal of Supply Chain Management, 58*(2), 1–13.

[20] Kumar, A., & Agrawal, V. (2020). Adoption of digital technologies in logistics and supply chain management. *Journal of Digital and Social Media Marketing, 8*(1), 58–71.

[21] Lai, K. H., & Cheng, T. C. E. (2009). *Just-in-time logistics*. Gower Publishing Ltd.

[22] Lim, K., Tan, H., & Lee, J. (2020). Data-driven decision-making for logistics companies in Southeast Asia. *Asian Journal of Logistics and Transport, 7*(2), 78–89.

[23] McAfee, A., Brynjolfsson, E., Davenport, T. H., Patil, D. J., & Barton, D. (2012). Big data: The management revolution. *Harvard Business Review*. https://hbr.org/2012/10/big-data-the-management-revolution

[24] McKinsey & Company. (2021). *Overcoming global supply chain challenges*. https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/overcoming-global-supply-chain-challenges

[25] Mentzer, J. T., DeWitt, W., Keebler, J. S., Min, S., Nix, N. W., Smith, C. D., & Zacharia, Z. G. (2001). Defining supply chain management. *Journal of Business Logistics, 22*(2), 1–25.

[26] OpenGov Asia. (2021). *Digitalizing logistics to solve supply chain challenges in the Philippines*. https://opengovasia.com/2021/09/15/digitalising-logistics-to-solve-supply-chain-challenges-in-the-philippines/

[27] Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing, 49*(4), 41–50.

[28] Pundir, A., & Pundir, S. (2022). Sustainable supply chain practices in the digital era. *International Journal of Sustainable Transportation, 16*(1), 15–28.

[29] Quincus. (2023). *The last-mile impact on customer satisfaction in Asia*. https://www.quincus.com/blog/the-last-mile-impact-on-customer-satisfaction-in-asia/

[30] Shi, Z., & Shang, H. (2020). A review on quality of service and SERVQUAL model. In *Handbook of research on quality in customer service and experience management*. IGI Global.

[31] Singh, A., & Kant, R. (2021). Impact of digitalization on operational efficiency in logistics. *Logistics and Supply Chain Management Review, 9*(3), 134–150.

[32] Transportify. (2022). *Top 5 logistics companies in the Philippines: 3PL solutions*. https://logisticsbid.com/ph/top-5-logistics-companies-in-the-philippines-3pl-ernest-ceva-fast-aai-worldwide/

[33] Trappey, C. V., Trappey, A. J. C., & Govindarajan, U. H. (2021). Internet of Things and blockchain-enabled logistics: Toward a smart service system. *Service Systems and Service Management, 18*(3), 394–403.

[34] Vial, G. (2019). Understanding digital transformation in logistics: A review and research agenda. *International Journal of Information Management, 48*, 120–135.

[35] Wang, C., Zhang, L., & Wang, Y. (2021). Big data analytics in logistics: Improving decision-making for customer satisfaction. *International Journal of Information Management, 58*, 102–116.

[36] Woschank, M., Kaiblinger, A., & Miklautsch, P. (2021). Digitalization in industrial logistics: Contemporary evidence and future directions. *International Journal of Production Research, 59*(5), 1–15.

[37] Zhou, W., & Piramuthu, S. (2015). Security/privacy of wearable fitness tracking IoT devices. *Journal of Information & Knowledge Management*.