

E-Commerce Order Management Systems and Customer Satisfaction: A Data-Driven Approach

M. Prakash¹, Dr. R. Suyam Praba²

¹Student and ²Professor, School of Management Studies, Karpagam College of Engineering, Coimbatore, Tamil Nadu

ABSTRACT

This study examines the impact of Order Management Systems (OMS) on customer satisfaction in the e-commerce sector using a data-driven approach. The research is based on primary data collected from 120 respondents and supported by secondary sources. The study focuses on how OMS improves order processing, inventory control, and delivery performance. Findings indicate that fast delivery (50.8%) and error reduction (45.8%) are the most critical factors influencing customer satisfaction. The results also show that inventory tracking (53.3%) plays a key role in effective order management. However, challenges such as system complexity, cost, and logistics issues are still significant. The study concludes that a data-driven OMS enhances operational efficiency and customer experience in e-commerce.

Keywords: *Order Management Systems (OMS), e-commerce, supply chain partners, inventory control, and delivery performance.*

1. INTRODUCTION

The rapid expansion of e-commerce has transformed the retail sector, enabling businesses to operate without the limitations of physical stores. However, increasing order volumes require efficient systems to manage order processing and delivery. Order Management Systems (OMS) act as a central platform that integrates sales channels, inventory, payment systems, and logistics operations. These systems ensure smooth order processing from placement to delivery. In a data-driven environment, OMS collects and analyzes information related to orders, inventory, and customer behavior. This helps organizations improve efficiency and enhance customer satisfaction. Companies like Flipkart use integrated OMS to manage large-scale operations and ensure timely delivery.

2. LITERATURE REVIEW

Order Management Systems (OMS) have become a critical component in modern supply chain and e-commerce operations. Recent studies by Lee et al. (2023) demonstrated that inefficiencies in order management can increase operational costs and reduce customer satisfaction. The study also explained that lack of transparency in demand information leads to issues such as the bullwhip effect in supply chains. Nervewire (2023) and Tompkins (2023) further emphasized the importance of inter-organizational integration and collaboration in improving order management processes.

Overall, the literature indicates that effective OMS improves operational efficiency, reduces costs, enhances coordination, and increases customer satisfaction. However, challenges such as high implementation cost, system complexity, and integration issues continue to limit its full potential. The growing use of data analytics and digital technologies is expected to address these challenges and further enhance OMS performance. Earlier studies emphasize the importance of coordination and integration among supply chain partners to improve efficiency and reduce operational delays. According to Curran and Ladd (2018), the evolution of supply chain processes has introduced new distribution models such as direct supplier delivery and third-party logistics. These developments require efficient coordination mechanisms, where OMS plays a central role in managing order flow across multiple stakeholders. Similarly, Lutthuis and Biemans (2018) pointed out that traditional enterprise systems often focus on internal operations and lack effective integration with external partners, leading to inefficiencies and duplication of data. Angeles (2019) highlighted the emergence of collaborative order management solutions that integrate suppliers,

logistics providers, and financial institutions. These systems enable seamless information flow and improve overall supply chain visibility. Pulsipher (2019) further emphasized that advanced OMS solutions can significantly reduce order processing costs and inventory-related expenses through automation and outsourcing strategies. Johnson (2019) observed that many organizations still rely on multiple disconnected systems for order management and fulfillment, resulting in limited integration and increased manual intervention. This lack of coordination negatively affects efficiency and customer satisfaction. Sahay (2019) also identified that poor information sharing between supply chain partners leads to inefficiencies in demand management and inventory control. Chuang (2020) discussed the complexity of handling fragmented orders across multiple suppliers and logistics providers. The study emphasized the need for centralized coordination systems to ensure timely delivery and service quality. Croxton (2020) highlighted the role of ERP systems in integrating business functions such as supply chain, finance, and operations, thereby improving order fulfillment performance.

3. RESEARCH METHODOLOGY

Research methodology refers to the systematic process of collecting, analyzing, and interpreting data to address research objectives. In this study, a structured methodology has been adopted to examine the impact of Order Management Systems on customer satisfaction in e-commerce. Research Design follows a descriptive research design, which focuses on understanding the relationship between order management practices and customer satisfaction. This design is suitable for analyzing existing systems and identifying patterns based on collected data. The population of the study includes individuals who are familiar with e-commerce platforms and order management processes. A stratified random sampling technique was used to ensure proper representation of respondents from different backgrounds. The sample size for the study consists of 120 respondents, which provides a reliable basis for statistical analysis and interpretation. The study is based on both primary and secondary data sources: Primary data was collected through structured questionnaires distributed to respondents. This method helped in gathering direct insights regarding customer perceptions, order management efficiency, and satisfaction levels. Secondary data was collected from academic journals, books, reports, and reliable online sources to support theoretical understanding and provide context for the study.

Various statistical tools were used to analyze the collected data:

Percentage Analysis is used to interpret the proportion of responses and identify major trends among respondents.

Chi-Square Test: Applied to determine the relationship between variables such as education level and challenges in order management.

Correlation Analysis is used to examine the relationship between different factors influencing order management and customer satisfaction.

ANOVA (Analysis of Variance) is used to compare differences between multiple groups and evaluate the significance of variations in responses. This research adopts a data-driven approach, where decisions and conclusions are based on quantitative analysis of collected data. The responses obtained from the survey are systematically analyzed to identify patterns, relationships, and key influencing factors. The use of statistical tools ensures that the findings are objective, reliable, and relevant to real-world e-commerce operations.

4. DATA ANALYSIS AND KEY FINDINGS

The analysis of the collected primary data provides several important insights into customer expectations and the effectiveness of Order Management Systems in e-commerce. A majority of the respondents (50.8%) identified fast delivery as the most important factor influencing their satisfaction. Additionally, 45.8% of respondents stated that OMS plays a significant role in reducing operational errors, while 53.3% highlighted inventory tracking as a critical function in effective order management. The study also reveals that 33.3% of respondents prefer automation in order management processes, as it minimizes manual intervention and improves efficiency. Furthermore, 38.3% of respondents indicated that OMS helps in minimizing errors in multichannel operations. However, a significant proportion (78.3%) reported that organizations face various challenges in managing order systems. These findings clearly demonstrate that a data-driven OMS enhances operational efficiency and contributes positively to customer satisfaction.

5. DISCUSSION

The findings of the study emphasize the significant role of Order Management Systems in improving both operational efficiency and customer satisfaction. The adoption of automation and real-time data tracking reduces manual errors and accelerates order processing activities. This leads to improved accuracy and faster delivery performance, which are key factors influencing customer experience. The study also highlights the importance of inventory management techniques such as Just-in-Time (JIT) and vendor-managed inventory, which help organizations optimize stock levels and reduce costs. The case of Flipkart logistics demonstrates how integrated OMS can effectively manage large-scale operations. However, despite these benefits, challenges such as high implementation cost, system complexity, and logistics inefficiencies continue to affect performance. Therefore, organizations must focus on technological advancement and system integration to maximize the benefits of OMS.

6. CHALLENGES IN ORDER MANAGEMENT

Despite the advantages offered by Order Management Systems, several challenges affect their effective implementation in e-commerce. One of the major challenges is the high cost associated with implementing and maintaining advanced OMS technologies. In addition, system complexity and integration issues make it difficult for organizations to align OMS with existing business processes. Logistics-related challenges such as delivery delays and bottlenecks also negatively impact customer satisfaction. Inventory management issues, including overstocking and understocking, further complicate operations. Moreover, reverse logistics, which involves handling returns and refunds, adds another layer of complexity to order management. These challenges highlight the need for better infrastructure, efficient system design, and improved coordination across supply chain activities.

7. CONCLUSION

Order Management Systems play a vital role in ensuring the smooth functioning of e-commerce operations. The study clearly indicates that a data-driven approach to order management enhances operational efficiency, improves delivery performance, and increases customer satisfaction. Efficient OMS enables faster order processing, reduces errors, and ensures accurate inventory management. The findings also highlight the importance of integrating data analytics into order management processes to support informed decision-making. As e-commerce continues to grow, organizations must invest in advanced OMS technologies to remain competitive and meet customer expectations effectively.

8. RECOMMENDATIONS

Based on the findings of the study, several recommendations can be made to improve order management practices in e-commerce. Organizations should adopt data-driven OMS solutions to enhance decision-making and operational efficiency. Improving logistics infrastructure and delivery systems is essential to ensure timely order fulfillment. Automation should be implemented to minimize errors and improve process efficiency. Additionally, organizations must focus on strengthening inventory management practices to maintain optimal stock levels. Enhancing customer experience through efficient order tracking and communication is also crucial for building trust and long-term customer relationships.

9. REFERENCES

- Alba, J., Lynch, J., Weitz, B., Janiszewski, C., Lutz, R., Sawyer, A., & Wood, S. (1997). Interactive home shopping: Consumer, retailer, and manufacturer incentives to participate in electronic marketplaces. *Journal of Marketing*, 61(3), 38–54.
- Ansari, A., Mela, C. F., & Neslin, S. A. (2008). Customer channel migration. *Journal of Marketing Research*, 45(1), 60–76.
- Ariffin, M. F., Mat, Z., & Aris, A. (2025). A comprehensive review on determinants of employees' job satisfaction. *Journal of Contemporary Issues in Business and Government*, 31(6), 4150–4163.
- Gupta, S. P. (2019). *Statistical methods*. Sultan Chand & Sons.

- Indergård, K., & Hansen, G. K. (2025). The impact of workplace design on academic staff: A systematic literature review. *Building Research & Information*, 53(4), 479–491. <https://doi.org/10.1080/09613218.2024.2419868>
- Kothari, C. R. (2004). *Research methodology: Methods and techniques* (3rd ed.). New Age International Publishers.
- Kotler, P. (1994). *Marketing management: Analysis, planning, implementation, and control* (8th ed.). Prentice Hall of India.
- Primayanti, A. D. (2024). Job satisfaction in the workplace: A systematic literature review. *Jurnal Indonesia Sosial Teknologi*, 5(6), 2014–2021.
- Rangaswamy, A., & Van Bruggen, G. H. (2005). Opportunities and challenges in multichannel marketing: An introduction to the special issue. *Journal of Interactive Marketing*, 19(2), 5–11.
- Rastogi, A. K. (2010). A study of Indian online consumers and their buying behavior. *International Research Journal*, 1(10), 80.
- Schmid, Y., & Dowling, M. (2022). New work: New motivation? A comprehensive literature review on the impact of workplace technologies. *Management Review Quarterly*, 72, 59–86. <https://doi.org/10.1007/s11301-020-00204-7>
- Sharma, D. D. (1998). *Marketing research* (1st ed.). Sultan Chand & Sons.
- Sherlekar, S. A. (1991). *Marketing management* (4th ed.). Himalaya Publishing House.
- Syahir, A. N. A., Zainal Abidin, M. S., Sa'ari, C. Z., & Rahman, M. Z. A. (2025). Workplace spirituality and its impact on employee well-being: A systematic literature review of global evidence. *Journal of Religion and Health*, 64, 3313–3345. <https://doi.org/10.1007/s10943-025-02350-2>