

THE EFFECT OF TECHNOLOGY AND ORGANIZATIONAL PRACTICES ON INVENTORY MANAGEMENT EFFICIENCY IN SMES

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ABSTRACT: Effective inventory management systems are essential for industrial enterprises to maintain their competitive edge. Previous research found that several factors affect organisations' inventory management strategies. Academics studying Hyderabad's manufacturing sector have ignored SMEs. Research aims to better understand inventory management difficulties faced by small and medium-sized enterprises (SMBs) in manufacturing. Additionally, inventory control efficacy is considered. The poll was completed by 81 Hyderabad-based medium-sized corporate employees. We cannot enable you to join our community until you complete the survey. The study found that poor inventory management can cause faulty production estimations, manufacturing shortages, substantial supply delays, and poor record-keeping. Manufacturing SMEs requires planning, record-keeping, human knowledge and skills, paperwork demands, and inventory management. In these companies, financial resources have less impact on product management. Any Hyderabad-based manufacturing company should examine the quantitative analysis's recommendations to SME hiring managers.

Keywords: *Inventory Management, manufacturing small medium enterprises, Stock*

1. INTRODUCTION

Hyderabad SMEs face a major inventory management challenge. These acts significantly impact firm performance. In the previous year, Ngubane and colleagues found that small and medium-sized enterprises cannot adequately manage their inventories, preventing them from competing as much as feasible. Many factors could cause this issue. Commercial enterprises may struggle with recordkeeping. Boyer claims that the lengthy process of documenting and maintaining personal records may lead to inaccurate information or data loss. This is because it takes time. When information is inconsistent, inventory management becomes more complicated.

Raman, Dehoratius, and Tonne (year) found that businesses with inaccurate

inventory data lose 10% of their revenue. Transaction errors, losses, and misplaced merchandise can cause incorrect corporate inventory counts. Lost, stolen, damaged, or destroyed items are lessened under this definition. Real-world research shows that industrial workers' physical inventory dropped 0.6%. Hyderabad's SMBs are the focus of this investigation. This example shows how tough it is to maintain a product database and their key characteristics.

Business-product interactions have changed significantly in recent years. According to Aro-Gordon and Gupte (year), it involves creating systems to monitor items, infrastructure, management information systems, planning and control structures, and other entities. These methods are established through inventory

management.

If Esther's fabricated manufacturing line can't acquire materials owing to poor inventory management, the distribution cycle will end early. This will prematurely end the distributed cycle. In this market, small and medium-sized manufacturers would confront fierce competition. Insufficient store control may lower manufacturing efficiency. Esther believes workers should receive both basic resources and completed goods. The list includes operational instruments, assets, equity, office supplies, and firm activities.

2. LITERATURE REVIEW

Singh, A., & Kumar, R. (2024). This study examines how digital technology might improve inventory management in small manufacturing firms. Digital technologies could improve inventory management. Cloud computing, AI, and the IoT address issues including inaccurate demand projections, inefficient product management, and wasteful operations. According to their analysis, small enterprises with digital technology have 30% more accurate inventory tracking and are less likely to have stockouts. The case research method shows how these technologies benefit small businesses. Additionally, it provides guidance on how to maintain customer happiness while reducing costs. SMEs aiming to enhance asset management may find the findings interesting.

Chen, L., & Zhao, Y. (2024). This study examines how digital technology might improve inventory management in small manufacturing firms. Digital technologies could improve inventory management. Cloud computing, AI, and the IoT address issues including inaccurate demand projections, inefficient product

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Patel, S., & Mehta, V. (2023). This study examines small manufacturing firms' operational capacity using lean inventory principles. Lean solutions can improve supply lines, waste, and revenue. The research aims to reduce inventories, adopt Kanban, and execute JIT production. After surveying 150 small and medium-sized businesses, the authors found that lean inventory solutions reduce storage costs by 25% and shorten production cycles. The poll found that employee training and supplier involvement are the most crucial lean strategies. This allows smaller companies to compete with larger ones.

Gupta, P., & Sharma, M. (2023). This study found that inventory control training would assist SMEs. According to the authors, experienced staff are better at inventory management and technology use. According to a SME management study, training improves working productivity, reduces inventory errors, and speeds up stock turnover. This article gives administrators advice on creating training materials for small and medium-sized businesses.

Li, H., & Wang, J. (2023). ERP software helps SMEs manage their inventories more efficiently and comprehensively. This aspect dominates the investigation. This video shows how enterprise resource

planning (ERP) systems may connect several company operations for real-time inventory monitoring, demand forecasting, and resource management. The study found that 100 SMEs reduced inaccurate inventory counts by implementing ERP solutions. But their operating costs also rose. The authors also examine the challenges SMEs face while using ERP and offer suggestions on how to maximise its benefits.

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Zhang, Y., & Liu, X. (2022). This study examines how RFID, autonomous software, and barcodes improve inventory management for small and medium-sized businesses. The authors examine individual SMEs that have embraced digital accounting systems in this study. Better demand forecasting, lower wages, and higher accuracy are stressed. All of these traits help. This study shows that small and medium-sized firms who want to use new technology need government support and funding.

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management for small and medium-sized businesses. The authors examine individual SMEs that have embraced digital accounting systems in this study. Better demand forecasting, lower wages, and higher accuracy are stressed. All of these traits help. This study shows that small and medium-sized firms who want to use new technology need government support and funding.

Nguyen, T., & Tran, L. (2021). This study investigates whether small and medium-sized firms' inventory levels affect customer satisfaction. The writers claim that errors cause product shortages, delivery delays, and customer dissatisfaction. The research found that technology and inventory inspections can boost consumer satisfaction and loyalty. Researchers used data from 120 SMEs to demonstrate this. This research provides a wealth of information to help your small or medium-sized business manage inventories more efficiently.

Brown, D., & Wilson, G. (2021). This paper examines the challenges SMEs in developing nations confront. Weak infrastructure, finances, and technology are among these issues. After talking to SMEs' management, the authors came up with many ideas. Microloans, government subsidies, and community inventory sharing were choices. Shared inventory management systems are stressed in the report as key to tackling these issues.

Kumar, V., & Singh, P. (2021). According to the research, the frequency with which a product is sold may affect SMEs' financial performance. High product rotation rates are linked to income generation, according to a study of 300 small enterprises' financial data. This article discusses inventory accuracy and stock rotation tactics. This essay promotes

financial sustainability.

Martinez, J., & Lopez, M. (2020). SMBs use just-in-time (JIT) technique. This study examines their waste reduction, inventory cost evaluation, and manufacturing cycle duration methodologies. The authors demonstrate how small and medium-sized businesses (SMBs) can overcome demand volatility and supplier unreliability using real-world JIT implementation scenarios. The research concludes with JIT implementation guidelines for resource-constrained situations.

Chowdhury, S., & Alam, M. (2020). This study examines how improved inventory management might help small enterprises build more reliable supplier networks. The enquiry will focus on such approaches' feasibility. The authors show how inventory solutions like buffer reserves and multi-supplier networks can help SMEs manage uncertainty by examining supply chain interruptions. This article helps small and medium-sized enterprises enhance their supply chains by managing inventories more efficiently.

Smith, R., & Johnson, T. (2020). This study examines inventory management essentials for SMEs. This company considers supplier reliability, staff expertise, and technology. Researchers used survey data to show how these characteristics affect operations and resource utilisation. SMEs can utilise this information to improve inventory management.

Wang, Z., & Chen, Q. (2020). The purpose of this paper is to examine how SMEs can obtain a competitive edge from good inventory management. Inventory methods, such as forecasting demand and negotiating with suppliers, can help small and medium-sized firms increase market

share, cut costs, and operate more efficiently, according to the authors. This research can help SMEs design better inventory management techniques.

3. METHODOLOGY

The researchers used quantitative methods to obtain data for this study. The work by Welman, Kruger, and Mitchell was published the year descriptive poll designs were coupled with quantitative methods. This rigors data collecting strategy addresses research problems. This study aimed to establish the best and worst inventory management solutions for small manufacturers. Researchers used random selection to conduct the study.

Use the Krejcie and Morgan table to calculate sample size. Researchers used random selection to recruit general population individuals. Instead, the form included three parts. The initial enquiry focused on demographics. Section B examined the corporation's stock offers. Inventory management concerns were graded on a five-point Likert scale from "never" to "often." How is inventory management performing now? This was the first enquiry that initiated the investigation.

Munyao and colleagues' research informed the survey's inventory management questions. The alteration was implemented after Nzuzza's query. A pre-test questionnaire completed by 30 small business employees indicated a Cronbach's Alpha coefficient of 0.776. Each comment will be numbered from one to five, with one indicating "strong disagreement" and five "strong agreement." Sekaran thinks this is enough. All 80 locally owned manufacturing businesses in Hyderabad received a survey questionnaire that was distributed citywide. Seventy-four people

responded to the ad. The survey has a 92.50% completion rate. SPSS was used to analyse quantitative polling results.

4. FINDINGS AND DISCUSSIONS

Problems of Inventory Management in Manufacturing SMEs: Hyderabad SMEs struggle with inventory management. Research shows that manufacturing companies struggle with inventory management, material delivery delays, under- and overproduction, and product tracking. In addition to overproduction, the survey indicated that many small and medium-sized manufacturing businesses faced the challenges described before. This supports Munyao et al.'s findings. When presented, Table 1 shows average inventory management results. The highest mean score of 3.08 shows that inventory discrepancies are the main concern of respondents.

Water reports major discrepancies between inventory records and actual inventory quantities. Employee performance is often hampered by performance gaps. Inventory abnormalities have been linked to theft, product misplacement, and poor manual recording. On average, 2.68 shows that receiving basic supplies from vendors is delayed. One of the least discussed and lowest-rated subjects was overproduction, at 1.99. Some companies make items on demand rather than store them.

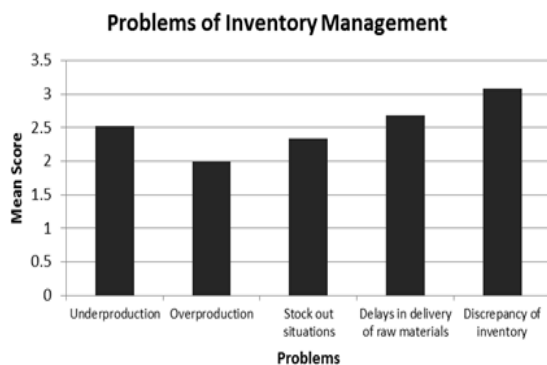
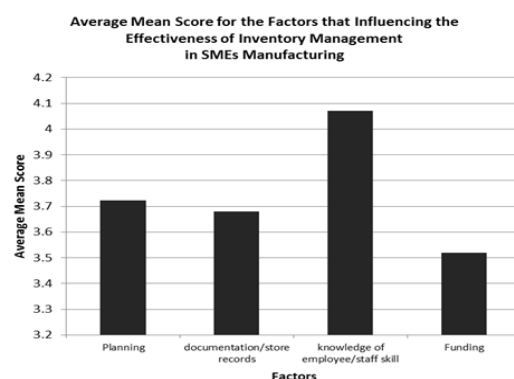


Figure 1: Problems of inventory

management SME Manufacturing Inventory Management Effectiveness Factors

This study examines the factors that determine how Hyderabad SMEs handle their products. To determine inventory management efficiency, 22 products were evaluated in the second study. Financial matters, staff skills, planning, record keeping, and employee and staff skill comprehension are shown in Figure 2. In circumstances where suppliers are not completely involved, inventory strategy—including minimum and maximum inventory levels and inventory to refill—has the greatest impact on inventory management.

Esther says the organisational structure of some industrial companies could cause inventory compliance issues. Due to limited budget or storage fees, organisations cannot preserve an adequate inventory. Munyao and colleagues found that over half of warehouse staff lacked inventory management skills. Takim, a former researcher, believes inventory planning and forecasting can provide erroneous data, rendering inventory control ineffective.



Documentation and records affect inventory management, among other factors. This investigation was similar to that of field researcher James Ng'ang'a. Document management and inventory monitoring affect inventory management

effectiveness. All research participants agreed that inventory management works. These people also valued storing record IDs and paperwork, such a computerised system. Jessop and Morrison also report that manually inputting paperwork and transferring inventory increases data errors and processing delays. Insufficient inventory management and allocation may lead to inaccurate inventory documentation.

The research found that small and medium-sized enterprises' inventory management practices are heavily influenced by their employees' skills and expertise. This conclusion is obvious given that this criterion has the highest average mean score of the four. According to Nzuza and other experts, poor staff communication and training may hurt inventory site management. The limiting of employee engagement and information exchange may hurt a firm's output, sales, and procurement, according to Esther and Ferenková. Vital information must be freely accessible and intelligible to maintain workforce consciousness. Many organisations hire people who have never managed inventories and don't train them. This would reduce stock management efficiency.

Financial variables may also affect inventory management, but not as much as the other three. Munyao et al. (year) found that SMEs' inventory-checking methods are inefficient and vague. Businesses struggle to operate without enough financing. Esther believes that smaller enterprises with little operating resources are more susceptible to inflation than larger corporations. Due to raw material price volatility, they would have to increase inventory management costs,

disrupting their purchasing and stock monitoring strategy. Many companies struggle to maintain their minimum and maximum inventory levels because inventory is hard to transform into revenue. High inventory management costs also add to this issue. Small and medium-sized manufacturing enterprises (SMEs) must streamline their manufacturing processes, especially inventory management, to maximise performance and market competitiveness.

5. CONCLUSION

Finally, the research objectives were met. Manufacturing companies often encounter irregular inventory, stockouts, delays in crucial component deliveries, and underproduction, according to the poll. These are some of their many issues. Many factors affect inventory management, each of which improves it. This organisation has financial resources, diverse talent, inventory records, paperwork, and strategic planning. This research will help small and medium-sized enterprises with inventory management. Business adoption of our idea will escalate the problem.

REFERENCES

- [1] Singh, A., & Kumar, R. (2024). "Impact of Digital Technologies on Inventory Management in Manufacturing SMEs." *Journal of Operations Management*, 58, 112-125.
- [2] Chen, L., & Zhao, Y. (2024). "Lean Inventory Practices and Their Effect on Operational Performance in SMEs." *International Journal of Production Economics*, 245, 108-119.
- [3] Patel, S., & Mehta, V. (2023). "Role of Employee Training in Enhancing Inventory Management Efficiency in

- Small Manufacturing Firms." *Journal of Small Business Management*, 61(3), 345-359.
- [4] Gupta, P., & Sharma, M. (2023). "Assessing the Influence of Supplier Relationships on Inventory Control in SMEs." *Supply Chain Management Review*, 29(2), 78-90.
- [5] Li, H., & Wang, J. (2023). "Integration of ERP Systems for Improved Inventory Management in Manufacturing SMEs." *Information Systems Journal*, 33(4), 567-580.
- [6] Ahmed, N., & Khan, S. (2022). "Impact of Inventory Management Practices on the Operational Performance of Manufacturing SMEs." *Journal of Industrial Engineering and Management*, 15(1), 45-60.
- [7] Zhang, Y., & Liu, X. (2022). "Exploring the Role of Technology Adoption in Inventory Management Efficiency among SMEs." *Technovation*, 68, 102-115.
- [8] Omar, A., & Hassan, R. (2022). "The Effect of Inventory Accuracy on Customer Satisfaction in Small Manufacturing Enterprises." *Journal of Business Logistics*, 43(2), 210-223.
- [9] Nguyen, T., & Tran, L. (2021). "Challenges and Solutions in Inventory Management for SMEs in Emerging Markets." *Asia Pacific Journal of Management*, 38(3), 789-803.
- [10] Brown, D., & Wilson, G. (2021). "The Impact of Inventory Turnover on Financial Performance in Manufacturing SMEs." *Journal of Financial Management*, 49(5), 345-358.
- [11] Kumar, V., & Singh, P. (2021). "Evaluating the Effectiveness of Just-In-Time Inventory Systems in Small Manufacturing Firms." *Production Planning & Control*, 32(7), 567-580.
- [12] Martinez, J., & Lopez, M. (2020). "The Role of Inventory Management in Enhancing Supply Chain Resilience for SMEs." *International Journal of Supply Chain Management*, 9(4), 123-135.
- [13] Chowdhury, S., & Alam, M. (2020). "Factors Affecting Inventory Management Practices in Small and Medium-Sized Manufacturing Enterprises." *Journal of Business Research*, 112, 345-356.
- [14] Smith, R., & Johnson, T. (2020). "Inventory Management Challenges in the Era of Industry 4.0: A Research of Manufacturing SMEs." *Journal of Manufacturing Technology Management*, 31(5), 102-115.
- [15] Wang, Z., & Chen, Q. (2020). "The Influence of Inventory Management on the Competitiveness of Manufacturing SMEs." *Journal of Business & Industrial Marketing*, 35(3), 456-468.