

Minimizing Logistics Processes Through Technology to Increase Consumer Loyalty

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Abstract This study is a small and medium enterprise (SME) that produces processed taro products in Bogor. The methods implemented were data triangulation and SWOT. It was found that technology can help digitize marketing and customer interactions. This can lead to minimal logistics processes, a more efficient supply chain, and accurate demand predictions. It was found that technology can increase customer satisfaction and loyalty through better quality control, product innovation, and more efficient processes. The SWOT results show strengths such as strong local brands and unique packaging, while weaknesses include limited production capacity. Technology can increase the competitiveness of Bogor Taro SMEs and build consumer loyalty.

Keywords: Logistics; Supply Chain; Technology; Loyalty; Taro SMEs

INTRODUCTION

SMEs play a vital role in the economy through job creation, contribution to tax revenue, increased exports and foreign exchange earnings, distribution of goods, and human resource development (Maemunah, 2019b). Furthermore, SMEs have proven to be a driving force for national economic growth, while also spurring local entrepreneurship and innovation (Dini et al., 2022; Pesce et al., 2020). Bogor is renowned for its agricultural sector and taro production. SMEs engaged in processed taro food in Bogor have relatively short distribution channels and are subject to ever-changing consumer tastes (Cappellieri et al., 2020; Dsilva & Subramanian, 2021; Mishchuk & національний, 2020). The primary challenge is competition with similar products (typical Bogor souvenirs). Second, rapid distribution to ensure taro products reach consumers. Third, innovation in flavor, packaging, and promotion to maintain market share (Maemunah, 2019b, 2019a). Taro competition in Bogor is linked to competitive business models, connected to target markets, and the ability to integrate with them. Global economic changes have intensified competition in the food industry, particularly taro, and this is exacerbated by intense competition in the SME industry (Maemunah & Trisakti, 2025; Silalahi et al., 2022). Taro cake sales are highly competitive, given the ease of production, resulting in the emergence of many new producers. The competition in question involves rapid technological developments, production costs, and marketing costs for new products to compete in the market.

Lean manufacturing helps improve production efficiency, ensure product quality, and reduce waste. Efficient technology and manufacturing must be the main foundation for maintaining business continuity and increasing competitiveness (Blanchard, 2021; Kreye, 2022; Maemunah, 2024), both domestically and internationally. Winning the competition is a major challenge faced by taro SMEs in Bogor. Efficient technology and manufacturing can improve competitive business performance (Bobek et al., 2023; Maemunah et al., 2023). The company's work must always be aligned with the company's overall goals and the business environment in which the company operates, which can increase customer loyalty

(Maemunah & Syakbani, 2021; Maemunah & Trisakti, 2025; Pawar & Paluri, 2022; Rajagopal, 2022).

METHOD

This research method is data triangulation. The data source is consumers or customers, to evaluate their level of satisfaction with taste, price, packaging, and loyalty level (Febriyantoro & Arisandi, 2019; Maemunah et al., 2020). Data source. SWOT is conducted by drawing conclusions from interviews to determine strengths and weaknesses, as well as from journals and media to find opportunities and threats (Gupta & Singh, 2020; Maemunah et al., 2023). Each SWOT factor is calculated using the Summary of Internal Factor Analysis (IFAS) and Summary of External Factor Analysis (EFAS). IFAS and EFAS are obtained by multiplying the priority weight by the assessment level. The weight ranges from 1.0 which is very important to 0.0 which is very unimportant. The assessment is between 5.0 which is very good to 0.0 which is very bad. IFAS and EFAS are continued by drawing competencies using a Cartesian diagram and determining the most influential factor strategies (GURL, 2017; Prawestri & Wijaya, 2020).

RESULTS AND DISCUSSION

This study shows that SMEs in Talas still face various problems in marketing and consumer data management due to the ineffective use of technology. Using digital technology applications can facilitate inventory management, purchasing processes, and accounting and financial matters (Iqbal & Hassan, 2018; Maemunah & Susanto, 2019). Lean Manufacturing implementation can be done by analyzing the 5Ss in the warehouse area, namely Seiri, Seiton, Seiso, Seiketsu, and Shitsuke. In Indonesia, these 5Ss are often referred to as 5Rs, namely Ringkas (Right), Rapi (Right), Resik (Clean), Rawat (Care), and Rajin (Diligent). In addition, the Plan, Do, Check, and Act method is also applied in the workplace. Follow-up interviews with SME entrepreneurs in Talas were conducted to determine important factors in the SWOT analysis, followed by an assessment of the weight of each factor (Choi, 2024; Maemunah et al., 2023; Rathi et al., 2024).

The number of weaknesses found in the SWOT analysis (1,934) is greater than the number of strengths (1,747), indicating that the weaknesses factor is more dominant, with a difference of 0.187. Factors such as mental unpreparedness in entrepreneurship, lack of planning and mature strategy, minimal distribution and marketing networks, and limited funding sources. However, these weaknesses are offset by the product's strength, namely consumer perception that taro is an authentic product from Bogor and West Java. The biggest weakness is the ability to produce goods in large quantities (Wujarso, 2023; Yanine et al., 2020).

The Opportunity subtotal of 2,172 is higher than the Threat subtotal of 1,102, with a difference of 1,070. The biggest opportunity is opening markets outside the cities of Bogor, Jakarta, and West Java, and it poses a threat to new producers because the barriers to entry into this industry are quite low. SMEs in the taro sector need to be able to leverage the quality and positive impression of Bogor taro, apply technology in the production and marketing processes, and collaborate with the more developed food and retail industries. The Weakness Opportunity strategy means that actors must be able to take advantage of existing opportunities w(Kargar et al., 2020; Maemunah & Cuaca, 2021; Secinaro et al., 2022), namely threats, to cover their weaknesses. The best plan is to use digital technology

to improve marketing methods and implement lean methods to maintain product quality and increase work efficiency (Bobek et al., 2023).

CONCLUSION

Technology supporting small and medium enterprises (SMEs) in Talas, Bogor, needs to be ready to change and adapt to remain competitive and become the best in the market. This technology evolves due to several ongoing factors, namely progress made through innovation, changes and improvements to existing designs, and the implementation of important new ideas from the past. Creating a competitive advantage in Bogor's Talas SMEs is crucial to maintaining that advantage and meeting customer needs. Bogor's Talas SMEs' plans to adopt digital technology are determined by the state of their technological infrastructure, workforce capabilities, government policies, and costs. Direct sales from producers or distributors to consumers or those who directly use the product are possible thanks to e-commerce platforms, which greatly assist in selling Bogor's Talas SME products. Production by SMEs in Bogor and the surrounding city needs guidance on lean manufacturing to ensure they can maintain the quality of their products and improve performance in terms of customer satisfaction and loyalty.

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