JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

OPERATIONAL EFFICIENCY AND MARKETING EFFECTIVENESS AS PREDICTORS OF BUSINESS PERFORMANCE IN THE FOOD MANUFACTURING INDUSTRY

Anjo M. Evora
Commissary Manager
Food Manufacturing Industry; Holy Angel University
Angeles City, Pampanga, Philippines
Email: evora.anjo06@gmail.com

ABSTRACT

Operational efficiency and marketing effectiveness are internal capabilities that shape how food manufacturers convert limited resources into business results. This study examined operational efficiency and marketing effectiveness as predictors of business performance among selected food manufacturing enterprises in Pampanga. Specifically, it determined the demographic and business profiles of respondents, assessed the levels of operational efficiency, marketing effectiveness, and business performance, examined the significant relationships among these variables, and identified their individual and combined predictive contributions. The study employed a quantitative, descriptive-correlational (predictive-correlational) research design involving 250 respondents, composed of business owners, operations managers, marketing managers, production supervisors, and other qualified managerial personnel, who were selected through purposive sampling. Data were gathered using a structured, four-point survey questionnaire and analyzed through frequency counts, percentages, weighted means, standard deviations, Pearson's product-moment correlation, and multiple linear regression analysis at the .05 level of significance. The illustrative findings revealed very high levels of operational efficiency, marketing effectiveness, and business performance, with overall weighted means of 3.34, 3.33, and 3.31, respectively. Operational efficiency and marketing effectiveness showed significant positive relationships with business performance ($r = 0.620$ and $r = 0.580$, respectively; both $p < .001$). Multiple regression analysis indicated that both variables significantly predicted business performance and collectively explained approximately 49.8% of its variation, with operational efficiency emerging as the stronger predictor ($\beta = 0.450$ versus $\beta = 0.377$). Operational and marketing capabilities were significantly associated with organizational performance, although causal relationships were not established. The findings contribute to understanding the organizational factors associated with business performance in Pampanga's food manufacturing industry.

Keywords: *Operational efficiency, marketing effectiveness, business performance, food manufacturing industry, Pampanga.*

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

INTRODUCTION

Background of the Study

The food manufacturing industry plays an important role in economic development through food production, employment generation, business expansion, and the distribution of essential consumer products. As competition intensifies and consumer preferences evolve, food manufacturing enterprises face increasing pressure to strengthen their internal operations and marketing activities to maintain competitiveness and achieve sustainable business performance. Operational efficiency involves the effective utilization of production resources, management of operating costs, optimization of manufacturing processes, maintenance of product quality, and timely delivery of finished products. Marketing effectiveness, in turn, encompasses the ability of enterprises to identify customer needs, implement appropriate promotional strategies, establish competitive pricing, expand market reach, and maintain customer satisfaction. These organizational dimensions are considered important determinants of profitability, sales growth, market competitiveness, and business sustainability. Consequently, the relationship among operational efficiency, marketing effectiveness, and business performance has become an important area of investigation, particularly among food manufacturing enterprises operating in competitive regional markets such as Pampanga.

Globally, the food manufacturing industry has undergone substantial transformation associated with technological advancement, digitalization, changing consumer behavior, and increasing competition in domestic and international markets. These developments encourage manufacturing enterprises to reconsider conventional production and marketing practices and to adopt strategies that improve productivity while strengthening customer engagement. In particular, digital marketing capabilities have become increasingly important in helping businesses communicate with consumers, improve market responsiveness, and generate financial returns. Homburg and Wielgos (2022) examined the contribution of digital marketing capabilities to organizational performance and found that these capabilities provided significant value to firm profitability beyond traditional marketing capabilities. Their findings emphasized the importance of integrating digital technologies into marketing activities to strengthen organizational competitiveness and financial outcomes. The global business environment thus demonstrates that effective marketing strategies are not merely promotional activities but essential organizational capabilities that contribute to sustained business performance.

The increasing complexity of international food production and distribution has also highlighted the importance of coordinating operational processes with market-oriented strategies. Manufacturing enterprises encounter challenges involving resource utilization, production costs, supply chain disruptions, and the need to maintain product quality while responding to consumer expectations. In this context, Kanellos et al. (2024) investigated digital marketing strategies and profitability in the agri-food industry and identified relationships among online customer engagement, advertising expenditures, and resource efficiency. Their findings demonstrated that appropriate digital marketing strategies contributed to the reduction of marketing costs and the improvement of business profitability, and they emphasized the importance of selecting effective marketing channels and allocating organizational resources strategically. These findings establish the relevance of examining marketing effectiveness alongside operational efficiency, because both dimensions influence how enterprises manage limited resources and generate business value.

In the Asian context, food manufacturing enterprises face increasing pressure to improve production systems, strengthen supply chain management, and respond to changing market conditions. The rapid development of manufacturing technologies and digital business practices encourages enterprises to enhance operational capabilities while maintaining competitive advantages. In China, Zhou et al. (2022) investigated the relationship among supply chain traceability, supply chain quality management, and organizational performance in food enterprises. Their findings revealed that traceability and quality management practices contributed to improvements in quality and economic performance, with supply chain quality management playing an important mediating role. The study

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

highlighted the significance of efficient production coordination, quality assurance, and supply chain integration in achieving favorable business outcomes, and it provided empirical support for the importance of operational efficiency as a factor associated with the performance of food manufacturing enterprises in Asian markets.

Food manufacturing enterprises in other Asian economies likewise recognize the importance of organizational capabilities and technological innovation in sustaining competitiveness. In Pakistan, Naz et al. (2022) examined entrepreneurial orientation, big data analytics capabilities, and artificial intelligence capabilities in relation to the performance of food manufacturing firms. Their findings indicated positive relationships between these capabilities and firm performance, suggesting that businesses with stronger technological and strategic capabilities achieved more favorable organizational outcomes. The study also emphasized the importance of aligning organizational resources with changing business conditions to improve competitiveness. These findings reinforce the relevance of investigating internal business capabilities and their relationships with performance, particularly in industries characterized by changing production requirements, evolving consumer demands, and increasing market competition.

In the Philippine context, the food manufacturing industry remains an important component of the manufacturing sector because of its contribution to food availability, employment opportunities, enterprise development, and economic activity. Nevertheless, food manufacturers encounter operational concerns involving production expenses, supply chain coordination, resource management, and the maintenance of product quality, which underscore the importance of strengthening organizational systems to sustain business operations. Aranzamendez et al. (2025) investigated supply chain management practices and organizational sustainability in a Philippine food manufacturing company and found a significant positive relationship between the two, particularly across economic, environmental, and social dimensions. The study demonstrated the relevance of effective supply chain practices in strengthening organizational outcomes and provided a foundation for examining operational efficiency as a potential predictor of business performance among Philippine food manufacturers.

Philippine food manufacturers also increasingly recognize the importance of inventory management in maintaining production continuity and controlling operating expenses. Effective inventory strategies are essential because food manufacturers must balance raw material availability, production requirements, storage limitations, and product shelf life. Adalim et al. (2025) examined inventory strategies and business performance among food manufacturing enterprises in the Philippines and highlighted the operational challenges associated with inventory control, supply chain disruptions, product quality, and changing market demands. These findings emphasize the importance of examining inventory management as a component of operational efficiency and its relationship with business performance, and they provide evidence that operational practices require continuous evaluation to strengthen the competitiveness and sustainability of food manufacturing enterprises.

At the local level, Pampanga maintains a strong reputation for food production, culinary entrepreneurship, and the commercialization of traditional and contemporary food products. Its food-related business activities create opportunities for enterprise development, product innovation, market expansion, and employment generation. Nevertheless, local food manufacturers encounter challenges associated with production requirements, distribution arrangements, pricing decisions, and changing customer demand, which emphasize the importance of strengthening marketing capabilities to remain competitive in the regional business environment. Olazo (2024) investigated marketing competency, marketing innovation, and sustainable competitive advantage among small and medium enterprises in Pampanga. The study found that marketing innovation significantly predicted sustainable competitive advantage and emphasized the importance of product, price, distribution, and promotional innovation in strengthening market positioning. These findings demonstrate the relevance of marketing capabilities to the competitiveness of Pampanga enterprises. However, the investigation primarily addressed marketing competency and innovation rather

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

than the combined predictive contributions of operational efficiency and marketing effectiveness to the business performance of food manufacturing enterprises.

The relationship between production operations and marketing activities has also received increasing attention because organizational performance depends on the coordination of internal processes and market demands. Although manufacturing enterprises may demonstrate effective production practices, inadequate marketing coordination can limit their ability to translate operational capabilities into favorable business outcomes. Similarly, effective marketing generates customer demand that becomes difficult to satisfy when production systems experience delays, resource shortages, or quality inconsistencies. Chen (2022) examined the integration of production and marketing functions among manufacturing enterprises and found that production-marketing integration improved build-to-order competitiveness and marketing performance, with marketing performance subsequently contributing to financial performance. The findings emphasize the importance of coordination between operational and marketing functions. Nevertheless, the study did not specifically examine food manufacturing enterprises in Pampanga, which indicates the need for further investigation within a localized industry context.

Review of Related Literature and Studies

This section reviews scholarly discussions and empirical findings on operational efficiency, marketing effectiveness, and business performance in the food manufacturing industry. It explains the importance of efficient production systems, effective marketing capabilities, and organizational strategies in achieving favorable business outcomes, and it establishes the relationships among the independent and dependent variables.

Operational efficiency in food manufacturing enterprises

According to Tortorella et al. (2021), the integration of Industry 4.0 technologies with lean manufacturing practices contributes to improvements in operational performance by strengthening production coordination, process monitoring, and organizational responsiveness. Their investigation emphasized that technological advancement becomes more beneficial when supported by established operational management practices that reduce inefficiencies and enhance manufacturing capabilities. The combination of digital technologies and lean production principles allows enterprises to improve information availability, strengthen process visibility, and facilitate timely operational decisions. These developments are particularly relevant to food manufacturing, where production requires careful coordination of raw materials, processing schedules, equipment utilization, and product quality. The findings further suggest that operational efficiency depends not only on the availability of modern technologies but also on the ability of management to integrate those technologies into existing organizational processes. The literature therefore emphasizes the importance of examining production management, cost efficiency, resource utilization, and quality control as interconnected dimensions of operational efficiency.

Ivanov and Dolgui (2021) examined the importance of digital supply chain technologies in strengthening organizational resilience and managing disruptions in interconnected production and distribution systems. Their research highlighted the contribution of digital supply chain capabilities to improved information exchange, operational coordination, and organizational responsiveness during periods of uncertainty. Manufacturing enterprises depend on the continuous availability of raw materials, reliable suppliers, and coordinated production schedules; disruptions in these activities create delayed production, increased operating expenses, and difficulties in meeting customer requirements. In food manufacturing, raw materials and finished products often require careful inventory control, timely processing, and appropriate storage conditions. Effective coordination among procurement, inventory management, and production activities is therefore an important consideration in assessing operational efficiency.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Belhadi et al. (2021) investigated the effects of the COVID-19 pandemic on manufacturing and supply chain operations and examined the strategies adopted by enterprises to address operational disruptions. Their findings demonstrated that manufacturing organizations encountered production interruptions, supply shortages, logistical constraints, and changing market requirements, which exposed weaknesses in conventional supply chain arrangements and emphasized the importance of operational flexibility, coordinated resource management, and strategic production planning. Organizational resilience and adaptive operational strategies were identified as important for maintaining business continuity under uncertain conditions. Within food manufacturing, production interruptions can affect product availability, inventory conditions, distribution schedules, and customer satisfaction. The study also reinforced the importance of evaluating operational efficiency through multiple dimensions rather than relying exclusively on production volume or operating costs. Production management, inventory control, resource utilization, and quality assurance are therefore complementary operational activities that support organizational performance.

Operational efficiency nevertheless remains difficult to achieve when enterprises face resource limitations, inadequate technological capabilities, and weaknesses in production coordination. Kumar et al. (2021) examined the relationship between Industry 4.0 implementation and sustainable manufacturing practices, emphasizing the organizational challenges associated with technological adoption and process improvement. Their discussion highlighted the importance of aligning technological capabilities with production requirements, workforce competencies, and organizational objectives. Although advanced manufacturing technologies offer opportunities for improving productivity and resource management, their implementation requires appropriate investments, employee preparation, and managerial support. These considerations are especially relevant to small and medium-sized food manufacturers that operate with limited financial and technological resources. Operational improvements therefore do not automatically guarantee stronger business outcomes unless enterprises possess the organizational capacity to implement and maintain them effectively.

Dey et al. (2021) examined sustainable manufacturing practices among small and medium-sized enterprises and emphasized the significance of resource efficiency, organizational capabilities, and management practices in improving sustainability-related performance. Their findings highlighted the importance of integrating operational improvements into broader organizational strategies rather than treating efficiency as an isolated production objective. Effective production management allows enterprises to coordinate manufacturing activities; cost efficiency and inventory management support the responsible utilization of financial and material resources; and quality control contributes to product consistency and the reduction of production defects. These dimensions are particularly important in food manufacturing because product quality, material availability, and production reliability influence organizational competitiveness. Taken together, the reviewed literature provides a foundation for investigating operational efficiency as an independent variable. However, further localized investigation is necessary to determine the extent to which these operational dimensions predict business performance among food manufacturing enterprises in Pampanga.

Marketing effectiveness in food manufacturing enterprises

Bodlaj and Čater (2022) showed that responsive and proactive market orientation contribute differently to the development of marketing capabilities and competitive advantage among small and medium-sized enterprises. Responsive market orientation was particularly important in strengthening pricing capabilities, whereas proactive market orientation supported product development capabilities. These marketing capabilities were positively associated with differentiation advantage, which subsequently contributed to improved export venture performance. The findings emphasize that marketing effectiveness involves more than promotional activities, because it requires enterprises to understand customer expectations, recognize emerging market opportunities, and respond appropriately to competitive conditions. In food manufacturing, purchasing decisions are influenced by product quality, pricing,

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

availability, consumer preferences, and perceived value, so enterprises that gather market information and translate customer needs into marketing decisions are better positioned to establish competitive advantages. The study supports the examination of marketing strategy implementation, promotional effectiveness, market reach, and responsiveness to consumer needs as dimensions of marketing effectiveness.

Saifudin and Pasiama (2022) investigated entrepreneurial orientation, marketing capabilities, and the performance of small and medium-sized enterprises while considering the potential moderating influence of environmental dynamism. Entrepreneurial orientation and marketing capabilities had positive and significant effects on enterprise performance, whereas the proposed moderating role of environmental dynamism was not supported. These results suggest that marketing capabilities are important organizational resources associated with business outcomes even when changing environmental conditions are considered. Effective marketing requires appropriate approaches to product positioning, customer communication, pricing decisions, and market development. In food manufacturing, where competition involves both established manufacturers and emerging businesses offering similar products, strong marketing capabilities can help enterprises communicate product advantages, strengthen customer awareness, and identify opportunities for expanding their customer base. The findings also emphasize that marketing effectiveness depends on the strategic application of organizational capabilities rather than promotional expenditure alone, which supports its examination as a potential predictor of business performance.

Tolstoy et al. (2022) examined the indirect relationship between online marketing capabilities and the international performance of small and medium-sized e-commerce enterprises. Online marketing capabilities contributed to international performance through market-driven and market-driving orientations, which suggests that possessing digital marketing capabilities is not sufficient to guarantee favorable outcomes unless enterprises use those capabilities to respond to customer needs and influence market opportunities. Marketing effectiveness thus involves both technological resources and the strategic ability to transform them into meaningful customer engagement. In the food manufacturing industry, digital platforms offer opportunities for promoting products, communicating with distributors, expanding customer reach, and obtaining feedback on product quality and consumer preferences, but successful use of these platforms requires coordinated marketing strategies, appropriate content development, and responsiveness to customer concerns. These findings strengthen the rationale for examining market reach, promotional effectiveness, and customer relationship management as interconnected dimensions of marketing effectiveness.

Marketing effectiveness also remains challenging when enterprises lack the capabilities needed to adapt marketing activities to changing market conditions. Mathews et al. (2022) examined adaptive marketing capabilities, market orientation, and international performance among business-to-business small and medium-sized enterprises. They found positive relationships between market orientation and adaptive marketing capabilities, and between adaptive marketing capabilities and international performance. Enterprises benefit from capabilities that enable them to adjust strategies to changing customer expectations and competitive requirements, whereas conventional marketing activities become less effective when enterprises fail to recognize shifts in consumer behavior, technological developments, and market competition. For food manufacturers, product preferences, purchasing behavior, distribution arrangements, and promotional channels change over time, so marketing effectiveness requires continuous evaluation of customer needs and appropriate strategic adjustments. Marketing capabilities should therefore be examined as organizational practices that support market responsiveness rather than as isolated promotional activities.

Herhausen et al. (2020) examined digital marketing capabilities in industrial firms and identified important areas involving digital channels, social media, digital relationships, and digital technologies. Their investigation revealed gaps between the marketing capabilities currently practiced by organizations and those considered necessary for effective digital marketing, demonstrating that enterprises must continuously develop their marketing resources and competencies to respond to technological change and evolving customer expectations. In food manufacturing,

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

marketing effectiveness requires integrating traditional marketing activities with emerging digital practices to improve product visibility, strengthen customer relationships, and support market expansion. The study further emphasized that marketing capabilities are not limited to advertising but also involve customer interaction, relationship development, and the strategic use of marketing information. Collectively, the reviewed literature provides a foundation for examining marketing effectiveness as an independent variable, although further empirical evidence is needed on its predictive contribution to business performance among food manufacturing enterprises in Pampanga.

Business performance in food manufacturing enterprises

Samsuden et al. (2024) reported that digital capabilities play an important role in business performance because they influence organizational processes, resource integration, cost competitiveness, and financial outcomes. Their systematic literature review of 131 studies identified digital technology, digital agility, and digital marketing capabilities as important organizational capabilities associated with business performance, with internal process improvements connected to economic performance through greater efficiency and competitiveness. These findings emphasize that business performance should not be understood exclusively through financial indicators, because organizational capabilities and internal processes also influence the achievement of business objectives. Within food manufacturing, business performance reflects the capacity to generate favorable financial outcomes while maintaining reliable production systems, satisfying customer requirements, and responding to competitive pressures. Profitability and sales growth are important financial indicators, whereas market competitiveness and business sustainability reflect broader organizational outcomes. The review also suggested that relationships between organizational capabilities and performance vary according to industry characteristics and organizational conditions, which supports the treatment of business performance as a multidimensional dependent variable.

Rafi-Ul-Shan et al. (2022) examined the relationship between market orientation and small and medium-sized enterprise performance, considering the moderating role of the Internet of Things and the mediating role of creativity. Using structural equation modeling on data from 229 enterprises, they found that market orientation was positively associated with enterprise performance, that technological capabilities influenced certain relationships involving market orientation, and that creativity partially mediated the relationship between market orientation and performance. Business performance is thus influenced by the interaction of organizational resources, strategic capabilities, and the ability to respond to market requirements. In food manufacturing, production capabilities need to be aligned with customer preferences and competitive conditions, and business performance results from interconnected organizational capabilities rather than a single managerial activity. The study provides an empirical foundation for examining the predictive relationships among operational efficiency, marketing effectiveness, and business performance.

Verhoef et al. (2021) examined digital transformation and its implications for business models, organizational capabilities, and performance measurement. Their multidisciplinary review identified digitization, digitalization, and digital transformation as related but distinct stages of technological development within organizations, and it emphasized that digital transformation influences customer expectations, organizational structures, competitive strategies, and the capabilities required to achieve favorable outcomes. Their discussion highlighted the need to adapt performance measurement systems to changes in business operations and market conditions. In food manufacturing, technological developments affect production planning, inventory monitoring, customer communication, and distribution coordination, and enterprises that adapt their operational and marketing activities to technological change are better positioned to respond to emerging requirements. However, technology adoption also requires appropriate organizational structures and management capabilities. Business performance therefore depends on the coordination of internal operations, strategic marketing decisions, and organizational adaptability, which reinforces the importance of examining both operational efficiency and marketing effectiveness.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Business performance is also influenced by organizational and environmental conditions that affect the ability of enterprises to translate capabilities into favorable outcomes. Maratis et al. (2023) developed a conceptual framework on market orientation and the international performance of small and medium-sized enterprises, with particular attention to the mediating role of business alliances. They emphasized that market orientation and interorganizational relationships are important capabilities associated with competitiveness and market development, and that enterprises in competitive environments must consider both internal capabilities and external relationships. For food manufacturers, business outcomes depend partly on the coordination of production activities, supplier relationships, distribution networks, and customer expectations. Operational improvements alone may not generate favorable market outcomes when enterprises lack effective marketing strategies or reliable business relationships; similarly, strong marketing capabilities may not translate into sustainable performance when production systems fail to satisfy market requirements. Business performance must therefore be examined within a broader organizational context, recognizing that relationships among capabilities vary across industries and locations.

Vieira et al. (2026) conducted a meta-analysis of 127 empirical studies on marketing capabilities and firm performance and found a positive overall relationship between them. National competitiveness, innovation intensity, and certain firm characteristics influenced the strength of this relationship, and different forms of marketing capabilities contributed to organizational outcomes, with effectiveness varying across business environments. These findings reinforce the importance of contextual factors when evaluating the performance of manufacturing enterprises. In food manufacturing, profitability, sales growth, market competitiveness, and business sustainability provide complementary indicators of organizational success, and stronger performance may be associated with the strategic development and effective use of organizational capabilities. However, the relative predictive contributions of operational efficiency and marketing effectiveness require further investigation within the specific context of food manufacturing enterprises in Pampanga.

Research Gap

Despite the contributions of previous investigations, several gaps remain concerning the combined predictive roles of operational efficiency and marketing effectiveness in the food manufacturing industry. Previous studies primarily addressed supply chain management, inventory practices, digital marketing capabilities, production-marketing integration, and competitive advantage across different industries and geographical settings. Limited localized empirical evidence is available on the extent to which operational efficiency and marketing effectiveness independently and collectively predict business performance among food manufacturing enterprises in Pampanga. Furthermore, existing investigations have not sufficiently established the relative contributions of production-related practices and market-oriented activities to profitability, sales growth, competitiveness, and business sustainability within the selected industry. These limitations highlight the importance of a localized investigation that considers operational efficiency and marketing effectiveness as distinct but potentially complementary predictors of business performance.

Theoretical Framework

The study was anchored on the Resource-Based View (RBV) Theory developed by Barney (1991), which explains how organizations achieve competitive advantage and improved business performance through the effective utilization of valuable, rare, imperfectly imitable, and non-substitutable resources. The theory emphasizes that organizational success depends not only on external market conditions but also on the ability of enterprises to acquire, manage, and strategically utilize internal resources and capabilities, including physical assets, human competencies, organizational processes, technological capabilities, and managerial expertise. Enterprises that effectively organize and utilize their resources are more capable of developing competitive advantages and achieving favorable organizational outcomes.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

In the food manufacturing industry, the RBV provides a theoretical foundation for understanding how internal operational capabilities and marketing-related resources contribute to business performance.

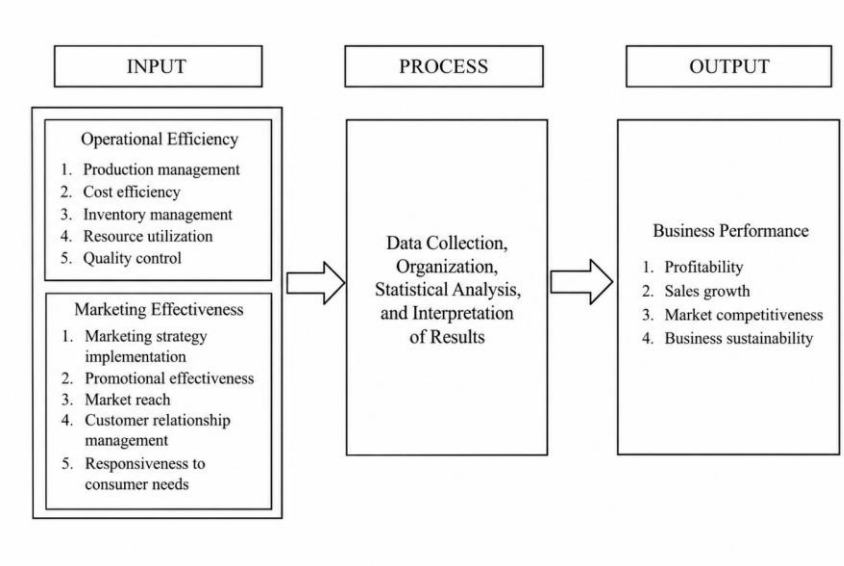
The RBV also supports the independent variables of the study. Operational efficiency reflects the ability of food manufacturing enterprises to maximize available resources through effective production management, cost efficiency, inventory management, resource utilization, and quality control, which are internal capabilities that support productivity, minimize unnecessary expenditures, and strengthen production performance. Marketing effectiveness reflects the strategic utilization of marketing-related resources through marketing strategy implementation, promotional effectiveness, market reach, customer relationship management, and responsiveness to consumer needs, which enable enterprises to identify market opportunities, strengthen customer relationships, communicate product value, and maintain competitive positioning. Operational and marketing capabilities thus represent organizational resources whose effective utilization contributes to competitive advantage and improved business outcomes.

Finally, the RBV serves as the theoretical anchor for business performance as the dependent variable, represented by profitability, sales growth, market competitiveness, and business sustainability, which reflect the organizational outcomes associated with the strategic utilization of internal resources and capabilities. The theory suggests that enterprises with stronger operational efficiency and marketing effectiveness are more likely to achieve favorable business performance because they possess capabilities that support production effectiveness and market responsiveness. Accordingly, the study examined the individual and collective predictive contributions of operational efficiency and marketing effectiveness to business performance among food manufacturing enterprises in Pampanga.

Conceptual Framework

The conceptual framework was developed using the Input-Process-Output (IPO) Model to illustrate the relationship among operational efficiency, marketing effectiveness, and business performance (Figure 1). It provides a systematic representation of the variables, research procedures, and expected outcomes of the investigation and guides the examination of how operational efficiency and marketing effectiveness individually and collectively predict business performance.

Figure 1. The Schematic Diagram of the Study on the Operational Efficiency and Marketing Effectiveness as Predictors of Business Performance in the Food Manufacturing Industry in Pampanga.



© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

The input component consists of the two independent variables. Operational efficiency is represented by production management, cost efficiency, inventory management, resource utilization, and quality control, while marketing effectiveness encompasses marketing strategy implementation, promotional effectiveness, market reach, customer relationship management, and responsiveness to consumer needs. These dimensions represent the organizational practices and capabilities examined to determine their relationships with business performance. The process component covers the procedures for collecting, organizing, analyzing, and interpreting the data: a structured survey questionnaire administered to qualified respondents from selected food manufacturing enterprises in Pampanga, followed by tabulation and appropriate statistical treatments, including descriptive statistics, correlation analysis, and multiple regression analysis. These procedures provide the basis for determining the levels of the variables, identifying significant relationships, and establishing the individual and collective predictive contributions of the predictors.

The output component represents business performance as the dependent variable, assessed in terms of profitability, sales growth, market competitiveness, and business sustainability. These indicators reflect the financial, competitive, and long-term organizational outcomes associated with operational and marketing practices. The framework holds that differences in operational efficiency and marketing effectiveness can account for variations in business performance among food manufacturing enterprises, and that the findings can provide an empirical foundation for practical recommendations that strengthen production processes, improve marketing strategies, optimize organizational resources, and enhance competitiveness.

Objectives of the Study

The study aimed to determine the extent to which operational efficiency and marketing effectiveness predict business performance among food manufacturing enterprises in Pampanga. Specifically, it sought to answer the following questions:

1. What is the demographic and business profile of the respondents in terms of:
   1.1. Age;
   1.2. Sex;
   1.3. Educational attainment;
   1.4. Position in the enterprise;
   1.5. Years of experience in the food manufacturing industry;
   1.6. Years of business operation; and
   1.7. Size of the enterprise?
2. What is the level of operational efficiency among food manufacturing enterprises in Pampanga in terms of:
   2.1. Production management;
   2.2. Cost efficiency;
   2.3. Inventory management;
   2.4. Resource utilization; and
   2.5. Quality control?
3. What is the level of marketing effectiveness among food manufacturing enterprises in Pampanga in terms of:
   3.1. Marketing strategy implementation;
   3.2. Promotional effectiveness;
   3.3. Market reach;
   3.4. Customer relationship management; and
   3.5. Responsiveness to consumer needs?
4. What is the level of business performance among food manufacturing enterprises in Pampanga in terms of:
   4.1. Profitability;

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

4.2. Sales growth;
4.3. Market competitiveness; and
4.4. Business sustainability?

5. Is there a significant relationship between operational efficiency and business performance among food manufacturing enterprises in Pampanga?
6. Is there a significant relationship between marketing effectiveness and business performance among food manufacturing enterprises in Pampanga?
7. Do operational efficiency and marketing effectiveness, individually and collectively, significantly predict business performance among food manufacturing enterprises in Pampanga?

Hypotheses

Research Questions 5 to 7 were tested at the 0.05 level of significance using the following null hypotheses:

H_o1. There is no significant relationship between operational efficiency and business performance among food manufacturing enterprises in Pampanga.

H_o2. There is no significant relationship between marketing effectiveness and business performance among food manufacturing enterprises in Pampanga.

H_o3. Operational efficiency and marketing effectiveness, individually and collectively, do not significantly predict business performance among food manufacturing enterprises in Pampanga.

Significance of the Study

The study is significant because it examines operational efficiency and marketing effectiveness as predictors of business performance among food manufacturing enterprises in Pampanga. It provides empirical evidence on the contributions of production-related practices and marketing strategies to profitability, sales growth, market competitiveness, and business sustainability, and it offers insights that support informed decision-making, organizational improvement, and the development of strategies for strengthening business performance in the industry. It may specifically benefit the following groups:

- **Food manufacturing business owners.** The findings may help owners identify operational weaknesses, improve resource allocation, strengthen marketing strategies, and make business decisions that enhance profitability, competitiveness, and long-term sustainability, as a basis for organizational improvements that support growth and market expansion.
- **Operations managers.** The study may help operations managers understand the importance of production management, cost efficiency, inventory management, resource utilization, and quality control, identify operational challenges, minimize production inefficiencies and unnecessary expenditures, and develop strategies that enhance productivity and maintain product quality.
- **Marketing managers.** The findings provide information on the contribution of marketing effectiveness to business performance and may guide the evaluation of marketing strategy implementation, promotional effectiveness, market reach, customer relationship management, and responsiveness to consumer needs, in order to strengthen brand positioning, customer engagement, and sales opportunities.
- **Production supervisors and employees.** The study may foster a better understanding of how efficient production processes and effective resource utilization contribute to organizational performance, encouraging greater attention to production planning, inventory control, quality assurance, and the proper

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

use of materials and equipment, and promoting workplace improvements, employee productivity, and coordination among production personnel.

- **Food manufacturing entrepreneurs.** The findings may serve as a practical reference for aspiring and existing entrepreneurs by showing the operational and marketing practices associated with favorable business outcomes, supporting the development of appropriate production systems, competitive marketing approaches, and effective resource management.
- **Customers and consumers.** Consumers may benefit indirectly through improvements in production efficiency, product quality, product availability, and marketing responsiveness, which may promote products that better satisfy expectations and consumer confidence in locally manufactured food products.
- **Local government units and the Department of Trade and Industry.** The results may serve as a reference for enterprise assistance programs, business advisory services, productivity enhancement and marketing assistance initiatives, entrepreneurship development programs, and local economic policies, and may help identify areas where technical assistance, entrepreneurial training, and market development can strengthen the competitiveness of local food manufacturers.
- **Business development organizations and industry associations.** The findings may assist in designing training programs, technical assistance initiatives, and collaborative activities, and may encourage knowledge sharing and the adoption of effective business practices that support enterprise development and industry competitiveness.
- **Academic institutions and business administration students.** The study provides research-based information that may serve as supplementary instructional material for courses in business administration, operations management, marketing management, entrepreneurship, and strategic management, and as practical examples of how production management, resource utilization, marketing strategies, and customer relationship management influence organizational outcomes.
- **Future researchers.** The study may serve as a reference that provides baseline information, methodological guidance, and empirical evidence for similar investigations in other industries or locations, and for examining additional predictors, mediating or moderating variables, and other factors that advance business management research.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

METHODS

Research Design

The study employed a quantitative predictive-correlational research design to determine the extent to which operational efficiency and marketing effectiveness predicted business performance among food manufacturing enterprises in Pampanga. The design was appropriate because the investigation measured the levels of the identified variables, determined significant relationships, and examined the individual and collective predictive contributions of the independent variables to the dependent variable without manipulating organizational conditions. Numerical data were gathered using a structured survey questionnaire and analyzed through descriptive and inferential statistical procedures. The approach allowed the researcher to identify statistical relationships among the variables and to determine the proportion of variation in business performance explained by operational efficiency and marketing effectiveness. Creswell and Creswell (2023) emphasized that quantitative research designs provide systematic approaches for examining relationships among variables through numerical measurement and statistical analysis.

The design was also suited to examining organizational capabilities and performance outcomes in business research. It enabled the researcher to examine the predictive contributions of both independent variables within a single statistical model while considering their relationships with the dependent variable, and it supported standardized measurement procedures that facilitated consistent data collection and objective comparison of responses across participating enterprises. Because the variables were observed rather than experimentally manipulated, the design did not establish causal relationships. The findings were therefore interpreted as statistical associations and predictions rather than as evidence that operational efficiency or marketing effectiveness directly caused improvements in business performance.

Variables and Operational Definitions

Operational efficiency (production management, cost efficiency, inventory management, resource utilization, and quality control) and marketing effectiveness (marketing strategy implementation, promotional effectiveness, market reach, customer relationship management, and responsiveness to consumer needs) served as the independent variables. Business performance (profitability, sales growth, market competitiveness, and business sustainability) served as the dependent variable. To ensure a common and consistent interpretation, the essential terms were defined conceptually, supported by relevant scholarly literature, and operationally, according to the specific indicators examined in the study (Table 1).

Table 1. Conceptual and Operational Definitions of Key Terms

Term	Conceptual definition	Operational definition
Business performance	The extent to which an enterprise achieves its organizational and financial objectives through the effective utilization of resources, implementation of business strategies, and development of competitive capabilities; it encompasses financial and nonfinancial outcomes that reflect the ability to achieve sustainable competitive advantages (Homburg & Wielgos, 2022).	The overall organizational outcomes of food manufacturing enterprises in Pampanga, measured in terms of profitability, sales growth, market competitiveness, and business sustainability.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Term	Conceptual definition	Operational definition
Business sustainability	The ability of an enterprise to maintain its economic viability and operations while considering long-term environmental and social responsibilities, including practices that support organizational continuity, responsible resource management, and sustainable business development (Aranzamendez et al., 2025).	The capacity of food manufacturing enterprises to maintain stable operations, manage organizational resources responsibly, adapt to business challenges, and sustain their activities over time.
Cost efficiency	The ability of an organization to achieve desired operational outcomes while minimizing unnecessary expenditures and optimizing the allocation of financial, material, and organizational resources to improve productivity and organizational performance (Kanellos et al., 2024).	The ability of food manufacturing enterprises to control production expenses, minimize material wastage, manage operating costs, and maximize the economic value of resources used in manufacturing operations.
Customer relationship management	The systematic management of interactions and relationships between an organization and its customers through coordinated communication, customer information management, and marketing activities intended to strengthen satisfaction and loyalty; it involves the strategic use of marketing capabilities to create and maintain customer value (Homburg & Wielgos, 2022).	The practices employed by food manufacturing enterprises to maintain customer communication, address customer concerns, encourage repeat purchases, and strengthen long-term relationships with buyers and distributors.
Inventory management	The systematic planning, monitoring, controlling, and coordination of raw materials, work-in-process inventories, and finished products to maintain sufficient stock availability while minimizing storage costs, shortages, and unnecessary accumulation; it supports production continuity and organizational performance (Adalim et al., 2025).	The procedures implemented by food manufacturing enterprises to monitor raw material stocks, maintain appropriate inventory levels, prevent product shortages, reduce spoilage, and ensure the timely availability of materials required for food production.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Term	Conceptual definition	Operational definition
Marketing effectiveness	The extent to which an organization's marketing strategies, activities, and capabilities achieve marketing objectives, respond to customer needs, and contribute to favorable organizational outcomes, including customer engagement, competitive positioning, and financial performance (Homburg & Wielgos, 2022).	The ability of food manufacturing enterprises to achieve marketing objectives through marketing strategy implementation, promotional effectiveness, market reach, customer relationship management, and responsiveness to consumer needs.
Market competitiveness	The ability of an enterprise to establish and maintain a favorable position within its industry through valuable organizational capabilities, effective marketing strategies, and differentiated products or services, and to respond to market conditions and sustain advantages over competitors (Olazo, 2024).	The ability of food manufacturing enterprises to maintain a favorable market position, attract and retain customers, differentiate their food products, and compete effectively with other manufacturers in similar markets.
Operational efficiency	The ability of an organization to use available resources, coordinate production activities, and manage operational processes effectively to achieve desired outputs with minimal unnecessary costs, delays, and wastage, contributing to productivity, quality performance, and organizational outcomes (Zhou et al., 2022).	The effectiveness of food manufacturing enterprises in managing production activities, controlling operational costs, maintaining inventory, utilizing resources, and implementing quality control practices.
Production management	The systematic planning, organization, coordination, and control of manufacturing activities to ensure that products are produced according to established requirements, quality standards, and operational objectives (Chen, 2022).	The practices employed by food manufacturing enterprises in planning production schedules, coordinating manufacturing activities, managing production workflows, minimizing operational delays, and ensuring the timely completion of food products.
Quality control	The systematic implementation of procedures, standards, and monitoring activities to ensure that manufactured products consistently meet established quality requirements and customer expectations, preventing defects and maintaining product consistency (Zhou et al., 2022).	The procedures implemented by food manufacturing enterprises to monitor raw materials, inspect production processes, maintain food product standards, identify product defects, and ensure consistency in the quality of manufactured food products.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Respondents of the Study

The respondents consisted of 250 qualified business owners, operations managers, marketing managers, production supervisors, and other authorized managerial personnel from selected food manufacturing enterprises in the Province of Pampanga. These individuals were considered appropriate because their professional responsibilities gave them relevant knowledge of production management, operational costs, inventory practices, marketing activities, and organizational performance. The study prioritized respondents who were directly involved in enterprise management or sufficiently familiar with the operational and marketing activities of their organizations. To qualify, respondents had to be at least 18 years old, currently affiliated with an eligible food manufacturing enterprise, employed in or responsible for a relevant managerial or supervisory function for at least one year, and willing to provide voluntary informed consent. Individuals without sufficient knowledge of the research variables, employees without relevant operational or marketing responsibilities, and personnel affiliated exclusively with food retailing or restaurant services were excluded.

The sample comprised 50 business owners, 35 operations managers, 45 marketing managers, 45 production supervisors, and 75 other qualified managerial personnel (Table 2). Including these groups provided different managerial perspectives on the operational and marketing activities of food manufacturing enterprises: business owners contributed information on overall management and business performance; operations managers and production supervisors assessed production efficiency, inventory management, resource utilization, and quality control; marketing managers provided information on marketing strategies, promotional activities, customer relationships, and market responsiveness; and other qualified managerial personnel supplied additional organizational perspectives. The researcher coordinated with participating enterprises to identify eligible respondents and to explain the purpose, requirements, and voluntary nature of the investigation.

Table 2. Distribution of the Respondents

Respondent category	Number of respondents	Percentage
Business owners	50	20.00%
Operations managers	35	14.00%
Marketing managers	45	18.00%
Production supervisors	45	18.00%
Other qualified managerial personnel	75	30.00%
Total	**250**	**100.00%**

Research Locale

The study was conducted in the Province of Pampanga, located in Central Luzon, Philippines (Figure 2). Pampanga was chosen because it has an established food-related business environment that includes enterprises engaged in food production, processing, packaging, and manufacturing. The province comprises urban and rural communities where manufacturing enterprises operate under varying organizational and market conditions. The investigation covered

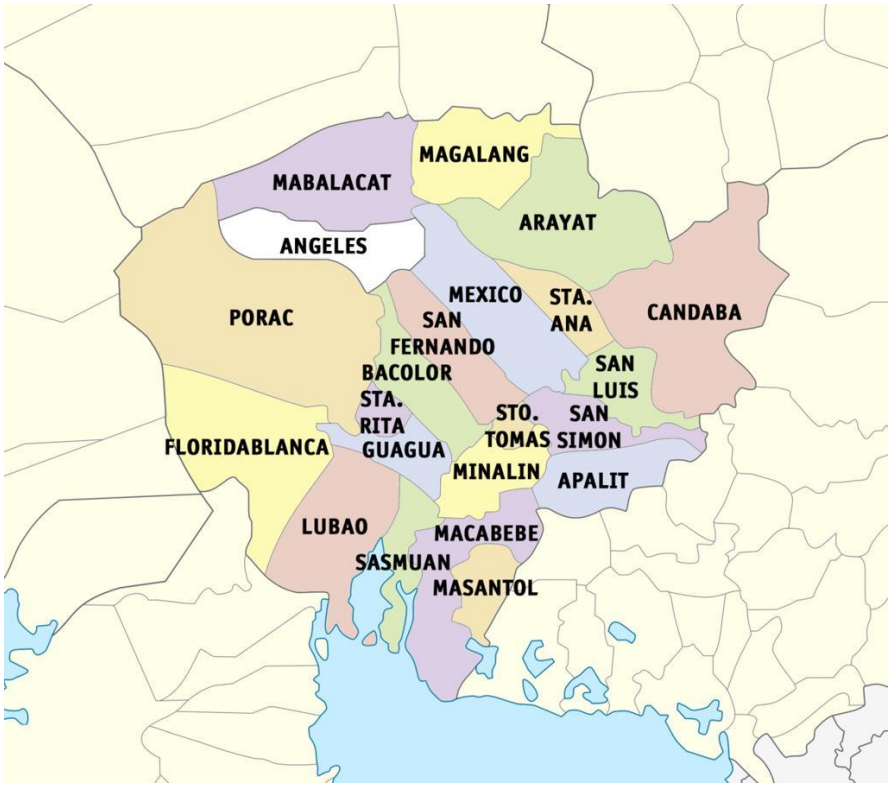
© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

selected enterprises in eligible municipalities and cities, including manufacturers of processed meat products, baked goods, confectionery, preserved foods, packaged food products, and other commercially manufactured food items, subject to their eligibility and actual participation. This diversity of food manufacturing activities provided a relevant setting for examining differences in production management, resource utilization, marketing strategies, and business performance.

Pampanga was also a suitable locale because its food manufacturers allowed the relationships among operational efficiency, marketing effectiveness, and organizational outcomes to be investigated within a defined regional business environment. The study focused on enterprises that met the inclusion criteria and agreed to participate. Data collection was conducted through coordinated visits or secure electronic survey administration, depending on enterprise accessibility and participant preferences, and the researcher sought organizational permissions before administering the questionnaire. The geographical coverage was limited to Pampanga to maintain a manageable scope and to generate findings directly relevant to the province's food manufacturing industry.

Figure 2. Map of the Province of Pampanga, the Research Locale of the Study.



Source: an official administrative map with the issuing agency acknowledged to be inserted in the final manuscript.

Population and Sampling

The target population comprised eligible food manufacturing enterprises operating within the Province of Pampanga during the data collection period, primarily engaged in manufacturing or processing food products for commercial distribution, whether classified as micro, small, medium, or large. The sampling frame was established from business

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

registration records, local government business permit listings, relevant industry directories, and other authorized sources of enterprise information, taking into account the eligibility and operational status of the identified enterprises. Characteristics such as enterprise size, years of operation, respondent position, and years of experience in the food manufacturing industry were documented to describe the participating enterprises and their representatives.

Purposive sampling was used to select the 250 respondents who satisfied the inclusion criteria and possessed the knowledge necessary to address the research questions. The technique was appropriate because the investigation required individuals directly involved in or sufficiently familiar with operational processes, marketing practices, and organizational performance. Campbell et al. (2020) explained that purposive sampling supports the selection of information-rich participants whose characteristics are relevant to the research objectives. The researcher identified eligible enterprises, screened prospective respondents against the qualifications, and invited qualified individuals to participate voluntarily. Because purposive sampling does not guarantee statistical representativeness, the interpretation and generalization of the findings are limited to the participating respondents and comparable organizational settings.

Research Instrument

The primary instrument was a researcher-made structured survey questionnaire designed to measure operational efficiency, marketing effectiveness, and business performance. It was developed from the Statement of the Problem, the conceptual framework, and the relevant literature on organizational capabilities and business performance, and it consisted of four parts. Part I gathered the demographic and business profiles of respondents (age, sex, educational attainment, organizational position, years of experience in the food manufacturing industry, years of business operation, and enterprise size). Part II measured operational efficiency through production management, cost efficiency, inventory management, resource utilization, and quality control. Part III assessed marketing effectiveness through marketing strategy implementation, promotional effectiveness, market reach, customer relationship management, and responsiveness to consumer needs. Part IV evaluated business performance through profitability, sales growth, market competitiveness, and business sustainability.

The questionnaire employed a four-point Likert-type scale ranging from 4 (Very High Extent) to 1 (Very Low Extent). The absence of a neutral category encouraged respondents to indicate the direction of their assessment, although they were permitted to skip items they could not answer accurately. Each dimension contained statements reflecting its conceptual and operational meaning, and all items were reviewed for correspondence with the research questions. The instrument avoided unnecessarily technical language, was organized into clearly labeled sections with instructions and brief explanations of each section's purpose, and used a structured format that facilitated numerical coding and the application of descriptive and inferential statistics.

To establish validity and reliability, the instrument underwent expert evaluation and pilot testing before final administration. A panel of experts in business administration, operations management, marketing, and research methodology assessed the questionnaire for relevance, clarity, appropriateness, and alignment with the study variables. The Content Validity Index was used to evaluate expert agreement on item relevance, and items that did not meet the established criteria were revised or removed. The revised questionnaire was then pilot-tested among qualified respondents from food manufacturing enterprises not included in the final sample. Cronbach's alpha was used to evaluate the internal consistency of the operational efficiency, marketing effectiveness, and business performance scales, including their dimensions where appropriate; Tavakol and Dennick (2011) noted that alpha informs the internal consistency of measurement instruments, although its interpretation requires consideration of the number of items and the dimensionality of the scale. Item-total correlations, response patterns, and reliability coefficients were examined before the questionnaire was finalized.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Data Gathering Procedure

Data gathering began with the preparation of the survey questionnaire, informed consent form, request letters, and other supporting materials. The researcher sought approval from the appropriate academic authorities and research ethics committee before data collection. Upon approval, formal communication was established with relevant local government offices, business organizations, and food manufacturing enterprises in Pampanga to identify eligible establishments and request permission to conduct the study. A preliminary list of prospective enterprises was prepared, and their eligibility was verified against the inclusion and exclusion criteria; the questionnaire underwent expert validation and pilot testing, with revisions incorporated to improve its clarity, relevance, and consistency.

The researcher then coordinated with the management or authorized representatives of the selected enterprises to identify qualified respondents. Each prospective respondent received an explanation of the study's purpose, the nature of the questions, the estimated time required, and the procedures for protecting personal and organizational information, together with an informed consent form. Only individuals who voluntarily agreed were included, and they were informed that they could decline particular questions or withdraw before submitting their responses without penalty. Coordination was conducted so as to avoid unnecessary disruption of business operations, and administration schedules were arranged according to respondent availability and the approved data collection period.

The validated questionnaire was administered to the 250 qualified respondents through printed copies or a secure electronic survey platform, depending on accessibility and participant preference. Standardized instructions were provided so that respondents understood the response categories, and respondents were given sufficient time to evaluate the statements based on their knowledge of their enterprises. The researcher remained available to clarify procedural concerns without influencing answers. For electronic questionnaires, access was restricted to authorized participants whenever feasible and duplicate submissions were screened using non-identifying response controls; for printed questionnaires, completed forms were collected through an agreed confidential procedure. Follow-up communication, when necessary, was respectful and did not pressure respondents to participate.

After data collection, the questionnaires were reviewed for completeness, consistency, and suitability for analysis. Responses were assigned identification codes to protect the identities of respondents and enterprises, encoded in Microsoft Excel, and transferred to IBM SPSS Statistics or equivalent software. Data screening identified duplicate responses, invalid entries, inconsistent coding, and missing values. Questionnaires with substantial missing information on the principal variables were evaluated against predetermined exclusion criteria, and minor missing responses were handled using an appropriate and documented statistical procedure. The researcher kept an organized record of distributed questionnaires, completed responses, excluded cases, and final valid observations. Electronic data were stored in password-protected files and printed questionnaires in restricted storage.

Scope and Delimitations

The study examined operational efficiency (production management, cost efficiency, inventory management, resource utilization, and quality control) and marketing effectiveness (marketing strategy implementation, promotional effectiveness, market reach, customer relationship management, and responsiveness to consumer needs) as predictors of business performance (profitability, sales growth, market competitiveness, and business sustainability) among selected food manufacturing enterprises in the Province of Pampanga that engaged in the production, processing, packaging, and distribution of food products. The target respondents were business owners, operations managers, marketing managers, and other authorized personnel with sufficient knowledge of their enterprises' operational practices, marketing activities, and business performance.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

The study was delimited to selected food manufacturing enterprises in Pampanga and excluded businesses primarily engaged in food retailing, restaurant services, food distribution without manufacturing activities, and other industries unrelated to food production and processing. Respondents were selected through purposive sampling based on their direct involvement in operations, marketing, or management and their ability to provide relevant information, and only qualified respondents who voluntarily agreed to participate were included. The final number of participants followed from the identified population, the inclusion criteria, and the sample size requirements of the research design. The study did not directly examine other potential predictors, such as leadership styles, organizational culture, employee motivation, technological innovation, and external economic conditions.

Data Analysis

The data were processed using Microsoft Excel and IBM SPSS Statistics or equivalent software. Descriptive statistics summarized the demographic and business profiles of the 250 respondents and the levels of operational efficiency, marketing effectiveness, and business performance. Inferential statistics examined the significant relationships among the variables and the individual and collective predictive contributions of operational efficiency and marketing effectiveness to business performance. All statistical tests were evaluated at the 0.05 level of significance.

Frequency and percentage. Frequency counts and percentages described the demographic and business profiles of respondents in terms of age, sex, educational attainment, position, years of industry experience, years of business operation, and enterprise size. Frequency represented the number of respondents in each category, and percentage the corresponding proportion of the total number of valid responses. Numerical profile variables were summarized, when applicable, using means, standard deviations, or ranges.

$$P = \frac{f}{N} \times 100$$

Where:

P = Percentage
f = Frequency of responses in a particular category
N = Total number of valid responses

Mean and weighted mean. The arithmetic mean summarized the numerical responses for each indicator and dimension of operational efficiency, marketing effectiveness, and business performance and served as the basis for determining the overall levels of the variables. The weighted mean determined the average rating of the questionnaire statements using the numerical weights of the four-point scale. Dimension scores were calculated from their constituent items, and overall variable scores were derived from the relevant dimension scores using a consistent averaging procedure. The weighted means were interpreted using the scoring procedure in Table 3.

$$\bar{X} = \frac{\sum X}{N}$$

Where:

$\bar{X}$ = Mean score
$\sum X$ = Sum of individual scores
N = Total number of valid observations

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

$$WM = \frac{\sum fw}{N}$$

Where:

- WM = Weighted mean
- f = Frequency of responses for each rating
- w = Numerical weight assigned to each response category
- N = Total number of valid responses

Standard deviation. The standard deviation determined the variability of responses. A lower standard deviation indicated that responses were relatively concentrated around the mean, while a higher value indicated greater variation in respondents' assessments, which helped determine the consistency of evaluations across the dimensions of the variables.

$$s = \sqrt{\frac{\sum (X_i - \bar{X})^2}{N - 1}}$$

Where:

- s = Sample standard deviation
- X_i = Individual observation
- $\bar{X}$ = Sample mean
- N = Number of valid observations

Pearson product-moment correlation coefficient. Pearson's r determined the direction and strength of the linear relationships between operational efficiency and business performance and between marketing effectiveness and business performance, addressing Research Questions 5 and 6. Its suitability was evaluated using the distributional characteristics of the composite scores, scatterplots, the presence of influential outliers, and relevant statistical assumptions; Spearman's rank correlation was considered as a supplementary or alternative procedure when the data substantially violated these assumptions. Coefficients were interpreted according to their direction, magnitude, and statistical significance: positive coefficients indicated that higher levels of one variable tended to accompany higher levels of the other, and negative coefficients indicated an inverse relationship. Probability values were compared with the 0.05 level to decide whether the null hypotheses were rejected.

$$r = \frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum (X_i - \bar{X})^2 \sum (Y_i - \bar{Y})^2}}$$

Where:

- r = Pearson correlation coefficient
- X_i = Individual score for the independent variable
- Y_i = Individual score for business performance
- $\bar{X}$ = Mean score of the independent variable
- $\bar{Y}$ = Mean score of business performance

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Multiple linear regression. Multiple linear regression determined whether operational efficiency and marketing effectiveness individually and collectively predicted business performance (Research Question 7), using business performance as the dependent variable and the two constructs as predictors. It enabled the determination of the unique predictive contribution of each predictor while accounting for the other, and it generated unstandardized coefficients, standardized beta coefficients, standard errors, probability values, and model statistics. The regression model was expressed as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where:

Y = Business performance
β_0 = Regression intercept
β_1 = Regression coefficient for operational efficiency
X_1 = Operational efficiency
β_2 = Regression coefficient for marketing effectiveness
X_2 = Marketing effectiveness
ε = Random error term

Before interpretation, the assumptions of multiple linear regression were examined, including linearity, independence of errors, homoscedasticity, approximate normality of residuals, and absence of problematic multicollinearity, using Variance Inflation Factor values, residual plots, and other diagnostic measures. The coefficient of determination (R^2) indicated the proportion of variation in business performance explained collectively by the two predictors, and adjusted R^2 was also reported to account for the number of predictors. The overall model was evaluated with the F-test, and the individual contributions of operational efficiency and marketing effectiveness with the regression coefficients and t-tests. Conclusions were limited to predictive relationships rather than causal effects because the study was nonexperimental.

Table 3. Scoring Procedure for Operational Efficiency, Marketing Effectiveness, and Business Performance

Scale	Weighted mean range	Verbal interpretation
4	3.26–4.00	Very High Extent
3	2.51–3.25	High Extent
2	1.76–2.50	Low Extent
1	1.00–1.75	Very Low Extent

The four-point scale was used consistently across the operational efficiency, marketing effectiveness, and business performance sections of the questionnaire, and the interpretation ranges were derived from equal intervals within the response scale. Higher scores indicated more favorable assessments, and items were worded consistently so that higher ratings reflected higher levels of the measured variable. The interpretation of weighted means remained descriptive, while conclusions on significant relationships and predictive contributions were based on the inferential results. Table 4 aligns each research question with its analysis.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Table 4. Alignment of Research Questions, Hypotheses, and Statistical Treatment

Research question	Focus	Statistical treatment	Decision basis
1	Demographic and business profile	Frequency, percentage; mean, standard deviation, or range for numerical variables	Descriptive
2	Level of operational efficiency	Weighted mean and standard deviation per item, dimension, and overall	Scale in Table 3
3 and 4	Levels of marketing effectiveness and business performance	Weighted mean and standard deviation per item, dimension, and overall	Scale in Table 3
5 (H_o1)	Operational efficiency and business performance	Pearson r (Spearman's rank correlation as alternative)	p compared with .05
6 (H_o2)	Marketing effectiveness and business performance	Pearson r (Spearman's rank correlation as alternative)	p compared with .05
7 (H_o3)	Individual and collective prediction of business performance	Multiple linear regression: B, β, SE, t, R^2, adjusted R^2, F	F-test and t-tests at .05

Ethical Considerations

The study observed established ethical principles to protect the rights, dignity, welfare, and privacy of all participants. Before data collection, the researcher secured approval from the appropriate academic authorities and research ethics committee and permission from the management of participating enterprises. Participation was voluntary, respondents understood the purpose of the investigation, and all information was handled responsibly, with particular attention to business-related information that could be commercially sensitive. The procedures were guided by institutional research policies and the principles of Republic Act No. 10173, the Data Privacy Act of 2012.

Informed consent. Every qualified respondent gave informed consent before the questionnaire was administered. The consent form explained the study's objectives, procedures, expected duration, nature of the information requested, and intended use of the data, and stated that participation was entirely voluntary and that respondents could refuse, skip uncomfortable questions, or withdraw before submitting their responses without penalty. Respondents had sufficient time to review the information and ask questions, and understood the confidentiality measures, foreseeable risks, and potential benefits. No respondent was pressured by owners, supervisors, managers, or other representatives, and enterprise permission did not replace the individual consent required from each respondent.

Vulnerability of participants. Some respondents could experience professional or organizational vulnerability because of their employment relationships, managerial responsibilities, or access to commercially sensitive

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

information; employees and supervisors might perceive pressure when research is introduced through management, and respondents might hesitate to give assessments seen as unfavorable to their organizations. The researcher therefore emphasized that participation did not affect employment status, workplace relationships, performance evaluations, or promotion, minimized undue influence from supervisors and owners during recruitment, told respondents they need not disclose confidential production formulas, proprietary strategies, or exact financial records, and avoided collecting unnecessary personal details that could identify participants.

Risks and benefits. Physical risk was minimal because data collection was limited to a structured questionnaire. Psychological, professional, and informational risks were recognized, since some participants could feel discomfort when assessing organizational weaknesses or business outcomes, and disclosure of sensitive business information was a concern. To minimize these risks, the researcher used appropriately worded statements, avoided unnecessary requests for confidential financial figures, allowed respondents to decline sensitive questions, and reported data in aggregate form. Respondents did not necessarily receive direct benefits, but the study provides information on organizational practices associated with business performance and a basis for recommendations to improve production management, resource utilization, marketing strategies, and competitiveness; these benefits were explained as not guaranteed outcomes of participation.

Privacy and confidentiality. Personal and organizational data were collected only when necessary to address the research questions. Each questionnaire received a unique identification code, and names of respondents and enterprises were excluded from the analytical dataset unless specifically required and separately authorized. Electronic records were kept in password-protected files accessible only to the researcher and authorized research personnel, printed questionnaires were kept in secure storage, and any document linking codes to respondents or enterprises was stored separately from the dataset. Results were presented so as not to indirectly identify an enterprise through combinations of business characteristics, positions, or unusual responses. Data retention followed institutional policies and legal obligations, with secure deletion at the end of the retention period, and the handling of personal information complied with Republic Act No. 10173 and institutional data protection requirements.

Transparency. The researcher provided accurate information on the objectives, procedures, limitations, and intended use of the study, including the nature of the questionnaire, the time required, the information requested, and the methods of analysis, and disclosed that the study examined statistical relationships and predictive contributions rather than direct causal effects. Established statistical procedures were followed, and results were reported without fabrication, falsification, selective manipulation, or misrepresentation, whether or not they supported the anticipated relationships. Limitations involving sampling, response patterns, missing data, or measurement are acknowledged, and scholarly and methodological sources are properly credited.

Anonymity. The questionnaire avoided direct personal identifiers whenever they were not necessary, respondents were represented by numerical codes, and the final tables present aggregated findings. Because the study involved a defined group of enterprises in Pampanga, indirect identification through enterprise size, location, respondent position, or other distinctive characteristics was considered, and small categories that could reveal a particular respondent or enterprise were combined or omitted when necessary. Temporary contact information needed for recruitment or follow-up was stored separately from survey responses and excluded from the analytical dataset. Where complete anonymity could not be guaranteed because of recruitment or administrative procedures, the protections were described as confidentiality rather than absolute anonymity.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

RESULTS

The results follow the sequence of the research questions, beginning with the demographic and business profiles of respondents, followed by the levels of operational efficiency, marketing effectiveness, and business performance, the relationships among the variables, and the predictive contributions of operational efficiency and marketing effectiveness. The statistical values reported in this section are illustrative results.

Demographic and Business Profile of the Respondents

Table 5. Demographic and Business Profile of Respondents (n = 250)

Profile variable	Category	Frequency	Percentage
Age	20–29 years	45	18.0%
	30–39 years	85	34.0%
	40–49 years	75	30.0%
	50 years and above	45	18.0%
Sex	Male	140	56.0%
	Female	110	44.0%
Educational attainment	High school graduate	30	12.0%
	College undergraduate	45	18.0%
	College graduate	145	58.0%
	Postgraduate	30	12.0%
Position	Business owner	50	20.0%
	Operations manager	35	14.0%
	Marketing manager	45	18.0%
	Production supervisor	45	18.0%
	Other qualified managerial personnel	75	30.0%
Industry experience	Below 5 years	45	18.0%
	5–9 years	85	34.0%

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Profile variable	Category	Frequency	Percentage
	10–14 years	70	28.0%
	15 years and above	50	20.0%
Years of business operation	Below 5 years	40	16.0%
	5–9 years	80	32.0%
	10–14 years	75	30.0%
	15 years and above	55	22.0%
Enterprise size	Micro	40	16.0%
	Small	95	38.0%
	Medium	75	30.0%
	Large	40	16.0%

Table 5 presents the demographic and business profiles of the 250 respondents. In terms of age, the largest proportion belonged to the 30–39 age group (85 respondents, 34.0%), followed by those aged 40–49 years (75 respondents, 30.0%). Male respondents accounted for 56.0% and female respondents for 44.0%. College graduates constituted the majority in educational attainment (58.0%). In terms of position, other qualified managerial personnel represented the largest group (30.0%), followed by business owners (20.0%). The highest proportion of respondents had 5–9 years of industry experience (34.0%), the largest proportion of enterprises had operated for 5–9 years (32.0%), and small enterprises were the largest enterprise-size category (38.0%).

Level of Operational Efficiency

Table 6. Level of Operational Efficiency of Selected Food Manufacturing Enterprises

Dimension	Weighted mean	SD	Verbal interpretation
Production management	3.42	0.48	Very High Extent
Cost efficiency	3.18	0.55	High Extent
Inventory management	3.36	0.51	Very High Extent
Resource utilization	3.24	0.53	High Extent

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Dimension	Weighted mean	SD	Verbal interpretation
Quality control	3.51	0.44	Very High Extent
Overall	**3.34**	**0.50**	**Very High Extent**

The overall weighted mean for operational efficiency was 3.34, interpreted as Very High Extent (Table 6). Quality control obtained the highest weighted mean (3.51), followed by production management (3.42) and inventory management (3.36), all interpreted as Very High Extent. Resource utilization (3.24) and cost efficiency (3.18) were interpreted as High Extent, with cost efficiency recording the lowest mean.

Level of Marketing Effectiveness

Table 7. Level of Marketing Effectiveness of Selected Food Manufacturing Enterprises

Dimension	Weighted mean	SD	Verbal interpretation
Marketing strategy implementation	3.38	0.49	Very High Extent
Promotional effectiveness	3.21	0.56	High Extent
Market reach	3.16	0.58	High Extent
Customer relationship management	3.47	0.46	Very High Extent
Responsiveness to consumer needs	3.41	0.48	Very High Extent
Overall	**3.33**	**0.51**	**Very High Extent**

Marketing effectiveness obtained an overall weighted mean of 3.33, interpreted as Very High Extent (Table 7). Customer relationship management had the highest mean (3.47), followed by responsiveness to consumer needs (3.41) and marketing strategy implementation (3.38), all interpreted as Very High Extent. Promotional effectiveness (3.21) and market reach (3.16), the lowest, were interpreted as High Extent.

Level of Business Performance

Table 8. Level of Business Performance of Selected Food Manufacturing Enterprises

Dimension	Weighted mean	SD	Verbal interpretation
Profitability	3.19	0.55	High Extent
Sales growth	3.27	0.52	Very High Extent

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Dimension	Weighted mean	SD	Verbal interpretation
Market competitiveness	3.35	0.49	Very High Extent
Business sustainability	3.43	0.47	Very High Extent
Overall	**3.31**	**0.51**	**Very High Extent**

Business performance obtained an overall weighted mean of 3.31, interpreted as Very High Extent (Table 8). Business sustainability had the highest mean (3.43), followed by market competitiveness (3.35) and sales growth (3.27), all interpreted as Very High Extent. Profitability obtained the lowest mean (3.19), interpreted as High Extent.

Relationships Between Operational Efficiency, Marketing Effectiveness, and Business Performance

Table 9. Significant Relationships of Operational Efficiency and Marketing Effectiveness With Business Performance

Variables	Pearson r	p-value	Interpretation	Decision on H_0
Operational efficiency and business performance	0.620	< .001	Strong positive correlation	Reject $H_0$1
Marketing effectiveness and business performance	0.580	< .001	Moderate positive correlation	Reject $H_0$2

The Pearson correlation between operational efficiency and business performance was 0.620 ($p < .001$), a strong positive relationship, and the null hypothesis of no significant relationship was rejected (Table 9). Respondents who reported higher levels of operational efficiency also tended to report higher levels of business performance. The correlation between marketing effectiveness and business performance was 0.580 ($p < .001$), a moderate positive relationship, and the corresponding null hypothesis was likewise rejected. Higher assessments of marketing effectiveness tended to accompany higher assessments of business performance.

Predictive Contributions of Operational Efficiency and Marketing Effectiveness

Table 10. Multiple Linear Regression Model Summary

Model statistic	Illustrative value
Multiple correlation coefficient (R)	0.706
Coefficient of determination (R^2)	0.498
Adjusted R^2	0.494

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

Model statistic	Illustrative value
F-value	122.5
Degrees of freedom	2, 247
p-value	< .001
Decision on H_o3	Reject H_o3

The regression model yielded a multiple correlation coefficient of 0.706 and a coefficient of determination of 0.498, indicating that approximately 49.8% of the variation in business performance scores was statistically explained by operational efficiency and marketing effectiveness (Table 10). The adjusted R^2 of 0.494 indicated that approximately 49.4% of the variation was explained after accounting for the number of predictors. The F-value of approximately 122.5 (df = 2, 247; $p < .001$) indicated that the overall model was statistically significant.

Table 11. Regression Coefficients of Operational Efficiency and Marketing Effectiveness as Predictors of Business Performance

Predictor	B	Standard error	Standardized β	t-value	p-value	Decision
Constant	0.71	0.18	—	3.94	< .001	Significant
Operational efficiency	0.42	0.049	0.450	8.53	< .001	Significant
Marketing effectiveness	0.36	0.050	0.377	7.15	< .001	Significant

Operational efficiency obtained an unstandardized coefficient of 0.42 and a standardized beta of 0.450 ($t = 8.53$, $p < .001$), while marketing effectiveness obtained an unstandardized coefficient of 0.36 and a standardized beta of 0.377 ($t = 7.15$, $p < .001$) (Table 11). Both predictors were statistically significant at the 0.05 level, and the null hypothesis that they do not significantly predict business performance was rejected for both. Holding marketing effectiveness constant, a one-unit increase in operational efficiency was associated with an estimated 0.42-unit increase in business performance; holding operational efficiency constant, a one-unit increase in marketing effectiveness was associated with an estimated 0.36-unit increase. Operational efficiency showed the stronger unique association, as reflected in its higher standardized beta.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

DISCUSSION

This study examined operational efficiency and marketing effectiveness as predictors of business performance among selected food manufacturing enterprises in Pampanga. The findings indicate that both capabilities were assessed favorably, that each was significantly and positively associated with business performance, and that together they accounted for about half of the variation in performance scores, with operational efficiency the stronger predictor. These results are interpreted below in relation to the Resource-Based View and the related literature.

Respondent Profile

The respondents were drawn from varied educational backgrounds, managerial responsibilities, and levels of industry experience. The substantial representation of college graduates and of respondents with several years of industry experience suggests that the sample included personnel able to give informed assessments of production processes, marketing practices, and organizational performance, and the inclusion of owners, managers, and production supervisors provided perspectives from different organizational functions. Nevertheless, the distribution does not establish that the sample is representative of all food manufacturing enterprises in Pampanga. Handoyo et al. (2023), who examined manufacturing performance in relation to operational efficiency, business strategy, ownership structure, and external competitive conditions, found that organizational and contextual factors are relevant to manufacturing outcomes. In the present study, respondents' positions, experience, and enterprise characteristics therefore provide an important context for interpreting assessments of operational efficiency, marketing effectiveness, and business performance.

Levels of Operational Efficiency, Marketing Effectiveness, and Business Performance

The participating enterprises demonstrated relatively stronger practices in maintaining product quality, managing production activities, and monitoring inventory. These dimensions are particularly relevant to food manufacturing because consistent product standards, organized production schedules, and effective inventory systems support manufacturing continuity. The comparatively lower assessments of cost efficiency and resource utilization suggest opportunities for improving expenditure management, reducing material wastage, and maximizing the productive use of resources. Although all dimensions were favorably assessed, the differences among their means indicate that operational efficiency was not uniformly assessed across organizational activities. The high rating of quality control is consistent with Nurcahyo et al. (2021), who examined ISO 9001:2015 in relation to operational and business performance among Indonesian manufacturing industries and highlighted the importance of quality management practices; maintaining production standards appears to be an operational strength of the participating enterprises.

For marketing effectiveness, the enterprises placed considerable emphasis on maintaining customer relationships, responding to consumer preferences, and implementing marketing strategies, practices that matter in an industry where consumer satisfaction, product availability, and changing purchasing preferences influence competitiveness. The lower assessments of promotional effectiveness and market reach indicate that enterprises could further strengthen advertising initiatives, distribution networks, digital marketing activities, and market expansion strategies, which would improve product visibility and customer accessibility. This pattern aligns with Gupta and Chauhan (2021), whose meta-analytical review established that marketing capabilities are positively associated with the export performance of small firms, although the magnitude of the relationship varies across business environments. The favorable assessment of customer relationship management and responsiveness to consumer needs suggests that market-oriented practices are important components of marketing effectiveness among the participating enterprises.

Respondents perceived their enterprises as relatively capable of sustaining operations, maintaining competitive positions, and generating sales growth. The lower assessment of profitability indicates that favorable market

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

performance does not necessarily correspond to equally strong perceptions of financial returns, which may reflect production expenses, raw material costs, distribution expenditures, and competitive pricing pressures. This pattern illustrates the importance of treating business performance as a multidimensional construct rather than relying on a single financial indicator, consistent with Mandler et al. (2021), whose systematic review showed that relationships between marketing approaches and organizational performance vary with strategic and methodological conditions, and with Samsuden et al. (2024). It also highlights the need to consider both operational and marketing practices when interpreting perceived business performance.

Relationships Among the Variables

The strong positive correlation between operational efficiency and business performance suggests that effective production management, cost efficiency, inventory management, resource utilization, and quality control are associated with favorable business outcomes. Enterprises that maintain organized production processes and manage operational resources effectively tended to receive higher assessments of profitability, sales growth, market competitiveness, and business sustainability. This is consistent with Handoyo et al. (2023), who reported that operational efficiency was positively and significantly associated with manufacturing performance among Indonesian firms, with competitive conditions also playing an important role, reinforcing the importance of operational efficiency as a potential predictor of performance in food manufacturing. The correlation, however, does not establish that operational efficiency directly causes improvements in business performance, since other organizational and external factors may also influence the association.

The moderate positive correlation between marketing effectiveness and business performance suggests that effective marketing strategy implementation, promotional activities, market reach, customer relationship management, and responsiveness to consumer needs are associated with favorable organizational outcomes. Enterprises that maintained customer relationships and responded to changing consumer preferences tended to show stronger perceived business performance, which supports the view of marketing as an important organizational capability in competitive markets. The moderate magnitude indicates that marketing effectiveness alone does not fully explain differences in performance, because operational practices, financial resources, competitive conditions, and other organizational characteristics may also contribute. The result agrees with Sharafuddin and Janarthanam (2025), whose systematic review and meta-analysis identified a positive relationship between marketing capability and firm performance whose strength varies with measurement and market conditions, and with Vieira et al. (2026).

Predictive Contributions of Operational Efficiency and Marketing Effectiveness

Operational efficiency and marketing effectiveness together explained approximately 49.8% of the variation in business performance scores, providing meaningful statistical information for predicting performance among the participating enterprises. The proportion of explained variation indicates that the two predictors are relevant to understanding differences in perceived profitability, sales growth, market competitiveness, and business sustainability. About 50.2% of the variation, however, remained unexplained and may be associated with financial management, technological capabilities, employee productivity, supply chain conditions, market competition, and external economic influences. Operational efficiency and marketing effectiveness are thus important but not exhaustive predictors of business performance. This is consistent with Handoyo et al. (2023), who found that internal organizational factors, including operational efficiency and business strategy, relate to manufacturing performance under different market conditions, and it demonstrates the value of considering multiple organizational predictors rather than operational or marketing practices in isolation.

Operational efficiency showed a stronger unique association with business performance than marketing effectiveness ($\beta = 0.450$ versus $\beta = 0.377$), which suggests that production management, cost efficiency, inventory management,

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

resource utilization, and quality control are particularly relevant to explaining differences in perceived performance. Marketing effectiveness nevertheless contributed significantly, indicating that customer-oriented strategies and market-related activities remain important. These results agree with Nurcahyo et al. (2021) on operational and business performance in manufacturing and with Gupta and Chauhan (2021) on positive associations between marketing capabilities and firm performance. In line with the Resource-Based View (Barney, 1991), operational and marketing capabilities can be understood as internal organizational resources whose effective utilization is associated with performance; the findings also resonate with the integration of production and marketing functions reported by Chen (2022), since the two capabilities complemented one another in the regression model. Because the design was nonexperimental, these results do not permit conclusions about direct causal effects.

Implications

For practice, the findings indicate that food manufacturers benefit from managing production and marketing as complementary capabilities. The comparatively lower cost efficiency, resource utilization, promotional effectiveness, market reach, and profitability scores identify the areas where enterprise managers, industry associations, and agencies such as local government units and the Department of Trade and Industry may focus technical assistance, training, and market development programs. For theory, the results provide localized empirical support for the Resource-Based View by showing that operational and marketing resources are each significantly associated with business performance in Pampanga's food manufacturing industry. For research, they provide baseline information for studies of additional predictors and of mediating or moderating variables.

Limitations

Several limitations should be considered. The study relied primarily on self-reported information from survey questionnaires rather than independently audited financial statements or direct observation of manufacturing operations. Purposive sampling and the focus on selected enterprises in Pampanga mean that the findings are interpreted within the context of the participating enterprises and are not automatically generalizable to all manufacturing businesses in Pampanga or to other locations. The study examined only the specified dimensions of operational efficiency, marketing effectiveness, and business performance and did not directly examine other potential predictors, such as leadership styles, organizational culture, employee motivation, technological innovation, and external economic conditions. Finally, the predictive-correlational design limits interpretation to statistical associations and predictive relationships rather than causal effects.

CONCLUSION

The study examined operational efficiency and marketing effectiveness as predictors of business performance in the food manufacturing industry and arrived at the following conclusions:

1. The respondents represented varied demographic groups, educational backgrounds, managerial positions, levels of industry experience, and enterprise characteristics, which provided perspectives from different organizational functions and established the context within which the variables were assessed.

2. Operational efficiency was assessed at a Very High Extent. Quality control, production management, and inventory management were perceived operational strengths, whereas cost efficiency and resource utilization received comparatively lower assessments and are important areas for further improvement; comprehensive operational management should attend to both production quality and the economical use of resources.

3. Marketing effectiveness was assessed at a Very High Extent. Customer relationship management and responsiveness to consumer needs were the highest-rated dimensions, while promotional effectiveness and

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

market reach received comparatively lower assessments, indicating opportunities to improve product visibility and market accessibility.

4. Business performance was assessed at a Very High Extent, with business sustainability, market competitiveness, and sales growth rated more favorably than profitability. Business performance should therefore be evaluated through multiple dimensions rather than through sales growth or perceived competitiveness alone.

5. Operational efficiency (strong) and marketing effectiveness (moderate) had statistically significant positive relationships with business performance. These findings do not establish that improvements in either capability directly caused improvements in performance.

6. Operational efficiency and marketing effectiveness collectively and individually served as statistically significant predictors of business performance, explaining approximately 49.8% of its variation. Operational efficiency demonstrated the stronger unique association, while marketing effectiveness remained an important component of the model. The remaining unexplained variation indicates that other organizational, financial, technological, and environmental factors are also relevant.

7. The observed predictive relationships support an integrated approach to operational and marketing management, without implying that either predictor independently caused improvements in business performance.

RECOMMENDATIONS

Based on the findings and conclusions, and considering the limitations of the nonexperimental design, the following are recommended:

1. **Business owners and enterprise managers** should strengthen the management of operational efficiency through systematic planning, monitoring, and evaluation of production activities, maintaining quality control standards, improving production schedules, and strengthening inventory procedures. Measurable indicators of production output, material utilization, product quality, and operating costs, together with regular operational assessments, are advised to identify inefficiencies and corrective measures.

2. **Operations managers** should prioritize cost efficiency and resource utilization, which received comparatively lower assessments, through systematic cost monitoring, production budgeting, waste reduction, and resource allocation strategies. A review of raw material, energy, equipment capacity, and labor consumption, and regular comparison of planned and actual production expenditures, are recommended to support informed decisions and financial performance.

3. **Production supervisors and quality assurance personnel** should maintain and strengthen quality control through standardized production procedures, routine inspections, and food safety monitoring systems, supported by continuing technical training and periodic evaluation of product defects, production inconsistencies, and customer complaints, to sustain consistent product quality.

4. **Marketing managers** should improve promotional effectiveness and market reach through integrated promotional strategies involving digital marketing, social media communication, product demonstrations, and appropriate distribution partnerships. Promotional effectiveness should be evaluated with measurable indicators such as customer inquiries, sales inquiries, conversion rates, and market coverage, and potential customer segments and underserved markets should be identified to guide market expansion.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

5. **Business owners and marketing personnel** should maintain effective customer relationship management and responsiveness to consumer needs through structured customer feedback mechanisms, satisfaction monitoring, and complaint resolution systems. Feedback should inform reviews of product quality, packaging, pricing, distribution, and promotion, and regular market assessments should track changing consumer preferences and purchasing behaviors.

6. **Enterprise management** should strengthen profitability management while maintaining favorable sustainability, sales growth, and market competitiveness by integrating operational cost analysis, pricing reviews, sales monitoring, and financial planning. Profitability should be evaluated alongside nonfinancial indicators, with regular assessment of production costs, distribution expenses, and product-level margins.

7. **Business owners and senior managers** should adopt an integrated management approach that treats operational efficiency and marketing effectiveness as complementary capabilities, with coordination among production, inventory, sales, and marketing personnel, regular interdepartmental meetings to review production capacity, customer demand, inventory availability, and marketing plans, and shared performance indicators to strengthen accountability and communication.

8. **Industry associations, business development organizations, and relevant government agencies** should strengthen technical assistance for food manufacturers in Pampanga, with training on production efficiency, quality assurance, inventory management, digital marketing, and financial management. Particular consideration should be given to micro and small enterprises with limited financial resources, technological capabilities, and access to specialized training, and partnerships among government agencies, educational institutions, and industry organizations should facilitate knowledge sharing and technical support.

9. **Policymakers and local economic development offices** should consider programs supporting the operational modernization and market competitiveness of food manufacturers, including access to appropriate technology, business development services, market information, and training, through collaboration among local government units, industry associations, and educational institutions, and regular consultation with stakeholders to identify common operational challenges and marketing constraints.

10. **Future researchers** should examine other factors associated with business performance, such as financial management capability, technological innovation, employee productivity, supply chain resilience, entrepreneurial orientation, and external market conditions. Larger samples, probability sampling, and multiple geographic locations would improve representativeness and generalizability, while longitudinal designs and objective financial indicators would provide stronger evidence on changes in performance over time. Future studies should also account for the clustering of respondents within enterprises and examine whether organizational size, years of operation, or market conditions influence the relationships among the variables.

© 2026 Advancing SDG Impact. All rights reserved.

JASDG
JOURNAL FOR THE ADVANCEMENT OF SUSTAINABLE DEVELOPMENT GOALS
Advancing Knowledge. Inspiring Innovation. Achieving the SDGs.
AN INTERNATIONAL, PEER-REVIEWED, OPEN ACCESS JOURNAL
www.jasdg.com
Volume 1 Issue 4 Pages 1041-1076
ISSN: 3155-7546 (Online)

REFERENCES

Adalim, K. F., Aquino, M. P., Bacan, C. J. D., Koothiah, F., Lazarte, R. C., Mariano, R. A., Olaguer, J. R. A., Olmido, M. D. D., Palanas, M. T., Pasaol, A. P. R., Saragena, M. A. A., & Sayon, V. M. R. (2025). Assessing inventory strategies on business performance among food manufacturing enterprises. *International Journal of Research and Innovation in Social Science, 9*(4), 695–723. https://doi.org/10.47772/IJRISS.2025.90400053

Aranzamendez, C. H. N., An, C. M., Briones, J., & Abante, M. V. (2025). Impact of supply chain management on organizational sustainability: The case of a Philippine food manufacturing company. *Journal of Governance Risk Management Compliance and Sustainability, 5*(1), 1–20. https://doi.org/10.31098/jgrcs.v5i1.2816

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Bodlaj, M., & Čater, B. (2022). Responsive and proactive market orientation in relation to SMEs' export venture performance: The mediating role of marketing capabilities. *Journal of Business Research, 138*, 256–265. https://doi.org/10.1016/j.jbusres.2021.09.034

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: Complex or simple? Research case examples. *Journal of Research in Nursing, 25*(8), 652–661. https://doi.org/10.1177/1744987120927206

Chen, Z. (2022). An empirical examination on the links of cross-functional integration of production-marketing, BTO competitiveness and performance. *European Journal of Management Studies, 27*(2), 173–203. https://doi.org/10.1108/EJMS-06-2021-0053

Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications. https://us.sagepub.com/en-us/nam/research-design/book270550

Gupta, P., & Chauhan, S. (2021). Firm capabilities and export performance of small firms: A meta-analytical review. *European Management Journal, 39*(5), 558–576. https://doi.org/10.1016/j.emj.2020.12.003

Handoyo, S., Suharman, H., Ghani, E. K., & Soedarsono, S. (2023). A business strategy, operational efficiency, ownership structure, and manufacturing performance: The moderating role of market uncertainty and competition intensity and its implication on open innovation. *Journal of Open Innovation: Technology, Market, and Complexity, 9*(2), Article 100039. https://doi.org/10.1016/j.joitmc.2023.100039

Herhausen, D., Miočević, D., Morgan, R. E., & Kleijnen, M. H. P. (2020). The digital marketing capabilities gap. *Industrial Marketing Management, 90*, 276–290. https://doi.org/10.1016/j.indmarman.2020.07.022

Homburg, C., & Wielgos, D. M. (2022). The value relevance of digital marketing capabilities to firm performance. *Journal of the Academy of Marketing Science, 50*(4), 666–688. https://doi.org/10.1007/s11747-022-00858-7

Kanellos, N., Karountzos, P., Giannakopoulos, N. T., Terzi, M. C., & Sakas, D. P. (2024). Digital marketing strategies and profitability in the agri-food industry: Resource efficiency and value chains. *Sustainability, 16*(14), Article 5889. https://doi.org/10.3390/su16145889

Mandler, T., Sezen, B., Chen, J., & Özsomer, A. (2021). Performance consequences of marketing standardization/adaptation: A systematic literature review and future research agenda. *Journal of Business Research, 125*, 416–435. https://doi.org/10.1016/j.jbusres.2020.12.023

© 2026 Advancing SDG Impact. All rights reserved.

Volume 1 Issue 4 Pages 1041-1076 ISSN: 3155-7546 (Online)

Maratis, M., Lily, J., Chew, T. C., & Sulong, R. S. (2023). Conceptual framework on market orientation and performance of SMEs: Alliances as mediating. *Malaysian Journal of Business and Economics, 9*(1). https://doi.org/10.51200/mjbe.v9i1.4544

Naz, S., Haq, N. U., & Nasir, S. (2022). Capabilities pathway to firm performance: Moderating role of environmental dynamism in the food manufacturing firms of Pakistan. *International Journal of Innovation Management*. https://doi.org/10.1142/S136391962250030X

Nurcahyo, R., Zulfadlillah, & Habiburrahman, M. (2021). Relationship between ISO 9001:2015 and operational and business performance of manufacturing industries in a developing country (Indonesia). *Heliyon, 7*(1), Article e05537. https://doi.org/10.1016/j.heliyon.2020.e05537

Olazo, D. B. (2024). *Marketing competency, marketing innovation and sustainable competitive advantage among small and medium enterprises in Pampanga*. De La Salle University Animo Repository. https://animorepository.dlsu.edu.ph/faculty_research/14420/

Republic Act No. 10173. (2012). *Data Privacy Act of 2012*. Official Gazette of the Republic of the Philippines. https://www.officialgazette.gov.ph/2012/08/15/republic-act-no-10173/

Saifudin, A., & Pasiama, H. (2022). Orientasi kewirausahaan dan kapabilitas pemasaran pada kinerja usaha kecil dan menengah: Peran faktor lingkungan yang dinamis sebagai pemoderasi. *Cakrawala, 29*(1), 23–35. https://doi.org/10.56070/cakrawala.v29i1.21

Samsuden, N. S., Kohar, U. H. A., Khatib, S. F. A., & Abbas, A. F. (2024). Digital capabilities and business performance: A systematic literature review. *Sustainability, 16*(24), Article 11108. https://doi.org/10.3390/su162411108

Sharafuddin, M. A., & Janarthanam, S. (2025). Why method matters: A systematic review and meta-analysis of the marketing capability–performance relationship. *Encyclopedia, 5*(4), Article 212. https://doi.org/10.3390/encyclopedia5040212

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education, 2*, 53–55. https://doi.org/10.5116/ijme.4dfb.8dfd

Tolstoy, D., Nordman, E. R., & Vu, U. (2022). The indirect effect of online marketing capabilities on the international performance of e-commerce SMEs. *International Business Review, 31*(3), Article 101946. https://doi.org/10.1016/j.ibusrev.2021.101946

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research, 122*, 889–901. https://doi.org/10.1016/j.jbusres.2019.09.022

Vieira, V. A., De Toni, D., & Agnihotri, R. S. (2026). Foundations of marketing capabilities across 25-year: The role of competitive and innovation indexes in establishing firm performance. *Industrial Marketing Management, 133*, 104–119. https://doi.org/10.1016/j.indmarman.2026.02.001

Zhou, X., Zhu, Q., & Xu, Z. (2022). The mediating role of supply chain quality management for traceability and performance improvement: Evidence among Chinese food firms. *International Journal of Production Economics, 254*, Article 108630. https://doi.org/10.1016/j.ijpe.2022.108630

© 2026 Advancing SDG Impact. All rights reserved.