

The Influence of Sustainable Innovation, Digital Technology, and Promotion on Sales Performance of Sigiro Art Shop

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ABSTRACT

This study aims to analyze the influence of sustainable innovation, digital technology, and promotion on the sales performance of Sigiro Art Shop MSMEs. The background of this research is based on the importance of improving MSME competitiveness through product innovation, the utilization of digital technology, and effective promotional strategies in facing increasingly dynamic market competition. Sigiro Art Shop is an MSME engaged in the production and sale of traditional Karo musical instruments, particularly traditional and electric kulcapi, which experienced fluctuating sales during the research period. This study employed a quantitative method with an associative approach. Data were collected through questionnaires distributed to respondents with direct relationships with the Sigiro Art Shop. The data were analyzed using multiple linear regression with the assistance of SPSS software, including validity tests, reliability tests, classical assumption tests, t-tests, F-tests, and the coefficient of determination (R^2). The results indicate that sustainable innovation, digital technology, and promotion have a positive and significant effect on the sales performance of the Sigiro Art Shop, both partially and simultaneously. These findings suggest that improving product innovation, maximizing the use of digital technology, and implementing effective promotional activities can increase sales and strengthen the competitiveness of culture-based MSMEs. Therefore, the Sigiro Art Shop should continuously develop innovations, expand the utilization of digital technology, and enhance promotional effectiveness to support sustainable business growth.

Keywords: Sustainable Innovation, Digital Technology, Promotion, Sales Performance, MSMEs, Cultural Heritage

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) constitute the backbone of Indonesia's economy, contributing more than 60% to the national Gross Domestic Product (GDP) and absorbing the majority of the workforce. The Ministry of Cooperatives and SMEs reports that approximately 65 million MSME units operate across various sectors, from agriculture and manufacturing to services and creative industries. These enterprises play a crucial role in poverty alleviation, equitable income distribution and local economic development. However, in the era of globalization and rapid technological advancement, MSMEs face increasingly complex challenges, including intense market competition, shifting consumer behavior, and the imperative for digital transformation. The ability to adapt and innovate has become a critical determinant of MSME sustainability and growth (Haniffudin and Sumaryanto 2026).

The creative economy sector, particularly culture-based enterprises, represents a significant subsector of Indonesia's MSME landscape. These businesses contribute to economic growth and serve as custodians of cultural heritage and identity. Traditional crafts, performing arts, music, and cultural products are being revitalized through entrepreneurial initiatives, creating value chains that connect local communities to broader markets. However, culture-based MSMEs often struggle to balance the preservation of authenticity with the need for modernization and market appeal. This tension between tradition and innovation presents both opportunities and challenges for cultural entrepreneurs seeking to maintain relevance while preserving cultural integrity (Idrus and Rastina 2025).

The Karo ethnic group in North Sumatra Province has a rich musical heritage, with the kulcapi being one of its most iconic traditional instruments. This two-stringed lute has been an integral part of Karo cultural ceremonies, storytelling traditions, and community music-making for generations. However, like many

traditional musical instruments worldwide, the kulcapi faces the risk of declining popularity and knowledge loss among younger generations of players. The preservation of the instrument depends not only on documentation and formal education but also on its continued use and relevance in contemporary musical contexts. Entrepreneurial initiatives play a vital role in bridging tradition and modernity (Nugraha et al. 2025).

The Sigirot Art Shop, located in Berastagi, Karo Regency, North Sumatra, represents an exemplary case of a culture-based MSME that has successfully combined traditional craft production with innovative business strategies. Established by craftsmen with deep knowledge of traditional instrument-making, the enterprise has evolved from a small workshop into a recognized brand of quality kulcapi instruments. The business offers both traditional acoustic kulcapi and electric kulcapi, catering to different segments of the music community, from cultural preservationists and traditional musicians to contemporary artists and music educators. This dual-product strategy demonstrates the enterprise's commitment to heritage preservation and market responsiveness (Suljic 2025).

Despite its strong cultural foundation and product quality, the Sigirot Art Shop experienced fluctuating sales performance during the 2024–2025 period, as documented in Table 1. The sales data for both traditional and electric kulcapi reveal several important patterns.

Table 1. Sales Data of Traditional and Electric Kulcapi (2024-2025)

Year	Month	Traditional (Units)	Electric (Units)	Traditional Revenue (Rp)	Electric Revenue (Rp)	Total Revenue (Rp)
2024	January	2	1	3,000,000	2,000,000	5,000,000
	February	0	2	0	4,000,000	4,000,000
	March	1	3	1,500,000	6,000,000	7,500,000
	April	2	0	3,000,000	0	3,000,000
	May	3	1	4,500,000	2,000,000	6,500,000
	June	0	0	0	0	0
	July	1	2	1,500,000	4,000,000	5,500,000
	August	3	0	4,500,000	0	4,500,000
	September	2	1	3,000,000	2,000,000	5,000,000
	October	0	3	0	6,000,000	6,000,000
	November	2	0	3,000,000	0	3,000,000
	December	1	1	1,500,000	2,000,000	3,500,000
Total 2024		17 units	14 units	25,500,000	28,000,000	53,500,000
2025	January	3	1	4,500,000	2,000,000	6,500,000
	February	0	0	0	0	0

Year	Month	Traditional (Units)	Electric (Units)	Traditional Revenue (Rp)	Electric Revenue (Rp)	Total Revenue (Rp)
	March	2	2	3,000,000	4,000,000	7,000,000
	April	1	3	1,500,000	6,000,000	7,500,000
	May	0	2	0	4,000,000	4,000,000
	June	3	0	4,500,000	0	4,500,000
	July	2	1	3,000,000	2,000,000	5,000,000
	August	1	2	1,500,000	4,000,000	5,500,000
	September	0	3	0	6,000,000	6,000,000
	October	3	0	4,500,000	0	4,500,000
Total 2025		15 units	14 units	22,500,000	28,000,000	50,500,000
Grand Total 2024– 2025		32 units	28 units	48,000,000	56,000,000	104,000,000

Sales data reveal several important patterns. First, sales fluctuate considerably from month to month, with some months recording no transactions, indicating vulnerability to market volatility. Second, electric kulcapi consistently generates higher revenue than traditional kulcapi despite similar unit sales volume, reflecting the higher price point (Rp 2,000,000 versus Rp 1,500,000) and potentially stronger market demand. Third, the total revenue of Rp 53,500,000 in 2024 declines to Rp 50,500,000 in 2025, suggesting a downward trend that warrants attention. This stagnation threatens the financial sustainability of businesses and their capacity to continue supporting cultural preservation efforts.

The fluctuations and decline in sales raise important questions about the underlying factors affecting the Sigi Art Shop's market performance. Several potential explanations merit further investigation. The enterprise may not effectively communicate its product value to potential consumers, resulting in a limited market reach. Digital presence may be insufficient to capture the growing segment of online consumers who increasingly rely on digital platforms for purchasing decisions. While the product offerings are culturally significant, they may not be evolving rapidly enough to capture the interest of younger consumers seeking innovative musical experiences. Additionally, limited promotional resources or ineffective promotional strategies may constrain the business's ability to compete with both traditional instrument sellers and modern music equipment providers (Trivena et al. 2026).

These challenges reflect the broader issues faced by culture-based MSMEs in Indonesia. Many cultural enterprises struggle to translate their cultural capital into sustainable economic value because of limited entrepreneurial capacity, inadequate access to technology and markets, and insufficient support for innovation. Despite its recognized potential, the creative economy often lacks the infrastructure, investment, and policy support needed to enable culture-based businesses to achieve scale and competitiveness. Therefore, there is a pressing need for a systematic investigation of the factors that can strengthen the performance of culture-based MSMEs and guide their development strategies.

Prior research has established that sustainable innovation, digital technology adoption, and promotion effectiveness are significant determinants of MSME performance. Kamilan and Nurcholisah (2024) found that sustainable innovation positively impacts competitiveness and MSME performance (Kamilan and

Nurcholisah 2022). Khairunisa and Misidawati (2024) demonstrated that digital marketing, including social media and e-commerce platforms, expands market reach and increases sales volume for Indonesian MSMEs (Kania and Bukhori 2025). Fujianti et al. (2025) concluded that consistent and targeted promotional activities significantly contribute to sales improvement. However, these studies primarily examined manufacturing, fashion, and food and beverage MSMEs, leaving a gap in understanding how these factors interact in culture-based enterprises (Fujianti et al. 2025).

This gap in the existing research is particularly significant because culture-based enterprises operate under distinct constraints and opportunities compared to other MSME sectors. Cultural products have unique characteristics: they are often experiential, emotionally resonant, and connected to identity and heritage. The market for cultural products is shaped by cultural consumption patterns, tourism dynamics, and the tension between authenticity and commercialization. Digital technology offers unprecedented opportunities for cultural enterprises to reach global audiences and create new value from heritage asset. However, these enterprises may face barriers to digital adoption due to limited resources, skill gaps, and the challenge of preserving authenticity in digital-mediated interactions. Similarly, promoting cultural products requires sensitivity to cultural values while effectively communicating product value to diverse audiences.

This study addresses this gap by investigating the specific context of the Sigiro Art Shop and examining how sustainable innovation, digital technology, and promotion influence sales performance in a culture-based MSME. By focusing on this unique context, this study aims to generate insights that are particularly relevant to cultural entrepreneurs, policymakers, and researchers interested in the intersection of cultural preservation and commercial sustainability. The findings are expected to contribute to both theoretical understanding and practical guidance for strengthening culture-based MSMEs in Indonesia and similar developing countries.

The novelty of this research lies in its comprehensive examination of three interrelated factors sustainable innovation, digital technology, and promotion—within the specific context of culture-based MSME. While each factor has been studied individually, their combined influence on the cultural creative economy has received limited attention. Furthermore, this study focuses on a traditional musical instrument manufacturer, a niche sector that embodies the challenges and opportunities of cultural entrepreneurship. By examining how product innovation, digital adoption, and promotional activities interact to drive sales performance, this study provides a holistic understanding of the factors necessary for culture-based MSME success in the digital age.

The research questions guiding this investigation are as follows:

Does sustainable innovation partially influence sales performance of Sigiro Art Shop?

Does digital technology partially influence sales performance of Sigiro Art Shop?

Does promotion partially influence sales performance of Sigiro Art Shop?

Do sustainable innovation, digital technology, and promotion simultaneously influence the sales performance of the Sigiro Art Shop?

The theoretical framework positions sustainable innovation, digital technology, and promotion as antecedents of sales performance, each hypothesized to have positive effects. This framework draws on the resource-based view theory, which suggests that firms' unique resources and capabilities, including innovation capabilities, technological competence, and marketing skills, constitute sources of competitive advantage and superior performance (Barney, 1991). For culture-based enterprises, these capabilities enable the transformation of cultural assets into market value, while preserving their distinctive characteristics.

This study aimed to achieve several objectives. First, it seeks to analyze the partial influence of sustainable innovation on the Sigiro Art Shop's sales performance, testing the hypothesis that continuous product development enhances sales. Second, it examines the partial influence of digital technology adoption by investigating whether an enhanced digital presence contributes to sales improvement. Third, it assesses the partial influence of promotional activities and determines the effectiveness of current promotional strategies. Finally, it evaluates the simultaneous influence of these three variables, providing a comprehensive understanding of how they work together to shape the sales outcomes.

Beyond its research objectives, this study has both theoretical and practical significance. Theoretically, this study contributes to the literature on MSME performance, cultural entrepreneurship, and the role of innovation and technology in traditional businesses. It extends existing frameworks by examining their application in culture-based enterprises, adding nuance to our understanding of how universal principles operate in culturally specific contexts. Practically, the findings provide evidence-based guidance for the Sigiro Art Shop management to strengthen their business strategies. More broadly, this research offers insights for policymakers and support organizations seeking to develop effective interventions for the cultural creative economy.

The following sections present the methodology, findings, discussion, and conclusions of this research. The methodology section details the quantitative approach, sampling strategy, and analytical techniques

employed in this study. The findings present the results of the statistical analyses examining the hypothesized relationships. The discussion section interprets the findings in relation to existing theory and research, exploring the implications and limitations. The conclusions offer a summary of the key findings and practical recommendations for strengthening culture-based MSMEs in Indonesia.

LITERATURE REVIEW

Sustainable Innovation

Sustainable innovation refers to the continuous process of renewing or improving products, processes, and services to maintain business relevance and competitiveness while preserving the core product identity (Kementerian Perindustrian Republik Indonesia, 2024). In the context of culture-based MSMEs like Sigi Art Shop, sustainable innovation manifests through product design development, sound quality enhancement, material selection improvement, and the creation of electric kulcapi variants to appeal to younger generations while maintaining traditional Karo values (Nugraha et al. 2025). The concept emphasizes continuous improvement gradual yet consistent enhancements that enable businesses to adapt to changing consumer preferences and technological developments.

Several factors drive MSMEs' sustainable innovation. Endayani and Arimurti (2021) identified intellectual capital (knowledge, experience, and expertise), social innovation (socially-oriented problem-solving models), and social bricolage (innovation with limited available resources) as key drivers. Additionally, entrepreneurial creativity, resource availability, and environmental support significantly influence the sustainability of innovation. The indicators of sustainable innovation include product innovation, process innovation, design/variant development, and innovation continuity, all of which reflect an ongoing commitment to renewal and adaptation (Endayani, R., & Arimurti 2021).

Digital Technology

Digital technology encompasses computer and Internet-based devices, systems, and applications used to support business activities efficiently, including marketing, communication, and transactions (Anggraini, Santoso, and Reyes 2025). For MSMEs, digital technology includes social media utilization, e-commerce platforms, and digital payment systems that expand their market reach without geographic limitations. The adoption of digital technology enables businesses to promote and sell products more broadly, strengthen their brand image, facilitate customer interaction, and provide valuable data for future marketing strategies (Magsi et al. 2026).

Several factors influence MSMEs' adoption of digital technology. The Technology-Organization-Environment (TOE) framework identifies technology characteristics (compatibility, relative advantage, ease of use), organizational factors (human resource readiness, financial capacity, organizational structure), environmental factors (competitive pressure, changing consumer behavior, external support), and individual leadership attitudes as determinants of digital adoption. Key indicators of digital technology implementation include e-commerce platform usage, social media utilization, digital payment systems, operational digitalization, and technology infrastructure availability (Suwardi, Suharti, and Aprirachman 2025).

Promotion

Promotion serves as a communication link between producers and consumers, conveying product information and persuading target markets to make purchasing decisions (Aini and Fikri 2025). As a fundamental component of the marketing mix, promotion encompasses various activities designed to increase consumer awareness, stimulate purchasing interest, and strengthen the brand image. Without effective promotion, even high-quality products remain unknown to potential customers, hindering sales.

Promotion effectiveness depends on integrated promotional mix strategies, clear promotional objectives, message appeal, appropriate media selection, alignment with the broader marketing mix, and understanding consumer decision-making stages. The key indicators include promotion reach, frequency of publication, message quality, and timing accuracy. For MSMEs, consistent, targeted, and creative promotional activities have been shown to significantly influence sales improvement, supporting the importance of well-designed promotional strategies for market expansion and customer loyalty.

Sales Performance

Sales performance represents the outcome of exchange activities between sellers and buyers, generating economic value for businesses (Magsi et al. 2026). Sales are a critical indicator of marketing strategy effectiveness and overall business health. From a managerial perspective, sales are evaluated through two

primary dimensions: the quantity of products sold and revenue generated (Grewal et al. 2020)s. These metrics are essential for assessing business performance and the effectiveness of marketing strategies.

Sales are influenced by several internal and external factors. Internal factors include product quality, pricing, promotion effectiveness, distribution channels, and product innovation, whereas external factors encompass economic conditions, market competition, changes in consumer trends, sociocultural influences, and digital technology development. The key indicators of sales performance include sales volume, annual sales growth, conversion rates, customer acquisition costs, customer lifetime value, return on investment, and customer retention rates (Hidayat, 2023). These indicators provide comprehensive measures for evaluating and improving business performance.

RESEARCH METHOD

This study employed a quantitative approach with an associative (explanatory) design. Quantitative research is appropriate for examining the relationships between variables through statistical analysis and hypothesis testing, enabling the generalization of findings to broader populations. The associative design aims to determine the influence of independent variables (sustainable innovation, digital technology, and promotion) on the dependent variable (sales performance), providing evidence of the strength and direction of these relationships. This design is particularly suitable for this study because it allows for the systematic testing of the hypothesized positive effects of each factor on sales performance.

The research was conducted at the Sigirot Art Shop, located at Jl. Veteran No.65, Tambak Lau Mulgap 1, Berastagi District, Karo Regency, North Sumatra Province. The location was selected purposively based on the enterprise's significance as a prominent producer of traditional Karo musical instruments. The Sigirot Art Shop serves both local and regional customers, including musicians, cultural practitioners, educators, and collectors. The enterprise's unique position as a culture-based MSME committed to both heritage preservation and product innovation makes it an ideal case for examining the factors influencing sales performance in the creative cultural economy sector.

The research period extended throughout 2025, during which data collection activities were conducted. This timeframe was selected to capture the contemporary conditions and recent changes in the business environment. The choice of 2025 also allowed for comparability with the enterprise's sales data from the 2024–2025 period, enabling the contextualization of findings within recent business performance patterns.

This study use both primary and secondary data sources. Primary data were collected through questionnaires distributed to respondents who were customers of the Sigirot Art Shop with direct purchasing experience. The questionnaire contained statements measuring each research variable, and respondents indicated their agreement on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). This approach enabled the collection of perceptual data reflecting customers' experiences and assessments of the enterprise's innovation, technology use, promotional activities, and sales outcomes. The self-administered questionnaire was distributed both in-person at the shop premises and through Google Forms for remote respondents, maximizing convenience and accessibility while ensuring data quality through clear instructions and good item design.

Secondary data were obtained from enterprise records (including sales documentation), company profiles, and relevant literature sources, such as books, journal articles, and government publications. The sales data presented in the introduction were drawn from the Sigirot Art Shop's internal records for 2024–2025, providing objective evidence of sales trends and performance. Secondary data complemented and contextualized the primary survey findings, offering background on the enterprise and the broader business environment.

The population of this study comprised all consumers of the Sigirot Art Shop who purchased traditional or electric kulcapi products in 2025. However, the exact population size could not be determined because the enterprise does not maintain a systematic customer database, and the number of customers fluctuates seasonally. This situation is common among MSMEs, particularly in the creative economy sector, where customer relationships are often informal and based on transactions.

Given the unknown population size, this study employed Hair's formula to determine the minimum sample size for multivariate research. According to Hair (2021), the minimum sample size for regression analysis is five times the number of indicators, with a recommended maximum of ten times the number. This study has 16 indicators across four variables, yielding a minimum required sample size of 80 respondents. To provide a margin of safety, the study used 90 respondents, which exceeded the minimum requirement. A sample of 90 was selected to ensure adequate statistical power for detecting moderate effects while remaining practical given time and resource constraints. Hair's approach is widely accepted in social science research

as providing appropriate sample sizes for multivariate analyses.

The sampling technique employed was purposive sampling, a non-probability sampling method in which respondents are selected based on specific criteria relevant to the research objectives. This technique is appropriate when researchers need to ensure that participants possess characteristics relevant to the study design. The criteria for respondent selection included: (1) having purchased a product from the Sigirot Art Shop at least once, (2) being aware of or having experienced the enterprise's product innovation, digital technology use, or promotional activities, and (3) willingness to complete the questionnaire fully. These criteria ensured that the respondents had the knowledge and experience necessary to provide meaningful assessments of the study variables.

The purposive sampling approach is justified in this study because the phenomenon being examined the influence of specific business strategies on sales—requires respondents who have direct experience with the enterprise and can evaluate its innovation, technology use, and promotion. Random sampling from the general population would likely include many individuals with no knowledge of the Sigirot Art Shop, making it impossible to answer the research questions. While purposive sampling limits the generalizability of the findings, it enhances the relevance and quality of the data for addressing specific research objectives.

Table 2. Operational Variables and Indicators

Variable	Operational Definition	Indicators	Measurement
Sustainable Innovation (X ₁)	Assessment of MSME capability to continuously renew products, processes, and business strategies to improve competitiveness and business sustainability. Sources: Utami & Nugroho (2023)	1. Product innovation 2. Process innovation 3. Design/variant development 4. Innovation continuity	Likert Scale
Digital Technology (X ₂)	Utilization of digital technology in marketing, transaction, and operational activities to improve efficiency and market reach. Sources: Pratama & Sari (2024)	1. Social media usage 2. Marketplace utilization 3. Digital payment systems 4. Digital promotion technology	Likert Scale
Promotion (X ₃)	Marketing communication activities to convey product information and influence consumer purchasing decisions. Sources: Kotler & Keller (2022); Ramadhan (2023)	1. Social media promotion 2. Discount programs 3. Attractive promotional content 4. Promotion intensity	Likert Scale
Sales Performance (Y)	Level of MSME sales achievement based on perceptions of sales volume, revenue, and customer growth. Sources: Hidayat & Lestari (2023)	1. Sales volume increase 2. Revenue growth 3. Customer base increase 4. Sales stability	Likert Scale

The research variables were operationalized to ensure clear measurements and analysis. Sustainable innovation (X₁) was measured using four indicators: product innovation, process innovation, design/variant development, and innovation continuity. Digital technology (X₂) was measured using four indicators: social media usage, marketplace utilization, digital payment systems, and digital promotion technology. Promotion (X₃) was measured using four indicators: social media promotion, discount programs, attractive promotional content, and promotion intensity. Sales performance (Y) was measured using four indicators: sales volume increase, revenue growth, customer base increase, and sales stability. Each indicator was represented by multiple questionnaire items, resulting in a total of 48 items (12 items per variable) that comprehensively covered each construct.

The questionnaire was developed based on established scales from previous research and adapted to fit the specific context of the Sigirot Art Shop. Before final deployment, the questionnaire was reviewed by academic supervisors to assess content validity and clarity. The instrument used a 5-point Likert scale, enabling respondents to express varying degrees of agreement with statements regarding their experiences and perceptions. The Likert scale is appropriate for measuring attitudes and perceptions in survey research,

providing ordinal data that can be analyzed using suitable statistical techniques. The anonymity of the responses was assured to encourage honest and thoughtful answers.

Data collection was conducted using a structured procedure. The researcher first obtained permission from the Sigiuro Art Shop management to conduct the study and access customers. Questionnaires were distributed both in person at the enterprise's location and through Google Forms shared via the enterprise's customer network. Respondents completed the questionnaires voluntarily, with an estimated completion time of 15–20 min. The researcher provided clear instructions for each section of the questionnaire and offered assistance when required. Of the 90 questionnaires distributed, 90 were returned, complete, and usable, representing a 100% response rate. This excellent response rate was achieved through personal follow-up with respondents and a relatively small sample size.

Data analysis proceeded through several stages using IBM SPSS Statistics Version 25. The first stage involved descriptive statistics to characterize the respondents' demographics and provide summary measures for each variable. Descriptive statistics included frequencies, percentages, means, medians, modes, standard deviations, and minimum and maximum values. These statistics provide an overview of the data distribution and central tendencies of the responses.

The second stage involved testing the quality of the research instrument through validity and reliability tests. Validity testing was conducted using Pearson product-moment correlation, where item correlation with the total score (corrected item-total correlation) was examined. A questionnaire item was considered valid if the correlation coefficient (r) exceeded the critical value (r table) for the given degrees of freedom ($n-2$) at a significance level of 0.05. For this study, with 90 respondents, the critical r value was 0.2072. Reliability testing employed Cronbach's alpha coefficient, with a value of 0.70 considered acceptable, and 0.80 considered good. High reliability indicates that the questionnaire items consistently measure the same construct.

The third stage involved testing the classical assumptions for multiple linear regression analysis. The normality test assessed whether the residuals were normally distributed using the Kolmogorov-Smirnov test, with the interpretation that a significance value > 0.05 indicates a normal distribution. The multicollinearity test examined correlations among independent variables using Tolerance and Variance Inflation Factor (VIF) values, with tolerance > 0.10 and VIF < 10 indicating no serious multicollinearity. The heteroscedasticity test examined whether the residual variance was constant across observations using both graphical analysis (scatterplot) and the Glejser test, with a significance level > 0.05 indicating homoscedasticity (no heteroscedasticity).

The fourth stage was multiple linear regression analysis, which examined the influence of the three independent variables on the dependent variable. The regression equation is as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e$$

Where Y = sales performance, a = constant, b_1 , b_2 , and b_3 = regression coefficients for sustainable innovation, digital technology, and promotion, respectively, and e = error term. Regression analysis provides coefficient estimates that quantify the strength and direction of each independent variable's influence on sales performance.

The fifth stage was hypothesis testing through partial (t-test) and simultaneous testing (F-test). The t-test examined whether each independent variable individually had a significant effect on sales performance, using the criterion that $|t\text{-calculated}| > t\text{-table}$ (with $\alpha = 0.05$) indicates significance. The F-test examined whether all independent variables simultaneously had a significant effect, using the criterion that $F\text{-calculated} > F\text{-table}$ indicates significance. The coefficient of determination (R^2) was used to assess the proportion of variance in sales performance explained by the independent variables, with higher values indicating greater explanatory power of the model. The adjusted R^2 was reported to account for the number of independent variables in the model.

RESULTS AND DISCUSSIONS

Respondent Characteristics

The 90 respondents who participated in the study provided demographic information that characterizes the customer base of the Sigiuro Art Shop. Understanding the respondent demographics is important for interpreting the findings and assessing their generalizability to the broader customer population. Table 3 presents the respondents' gender distribution.

Table 3. Gender Distribution.

Gender	Frequency	Percentage
Male	30	33.3%
Female	60	66.7%
Total	90	100%

The gender distribution shows that female respondents outnumbered male respondents by a ratio of 2:1, with 66.7% female and 33.3% male respondents. This predominance of female respondents may reflect broader patterns in retail consumption, where women are often the primary purchasers in households and are more likely to participate in surveys. For Sigirot Art Shop, this finding suggests that the enterprise's marketing and product development strategies should focus on female customers as a significant segment, potentially developing content and experiences that resonate with women's interests and preferences. However, the overrepresentation of female respondents may reflect sampling or survey participation biases rather than actual purchasing patterns.

Table 4. Education Level Distribution

Education Level	Frequency	Percentage
High School	46	51.1%
Diploma	4	4.4%
Bachelor's Degree	40	34.5%
Total	90	100%

The education level distribution reveals that over half of the respondents (51.1%) had completed high school as their highest level of education, while 34.5% held bachelor's degrees, and 4.4% had diploma qualifications. This distribution reflects the educational profile of the general population in Berastagi and the surrounding areas, where secondary education is the most common attainment level. The presence of bachelor's degree holders (34.5%) indicates that the Sigirot Art Shop attracts relatively educated consumers who may have a greater appreciation for the cultural value of traditional instruments and stronger digital literacy for engaging with online content.

Descriptive Statistics

Descriptive statistics provided an overview of the central tendency and variability of responses across variables. Table 5 presents the descriptive statistics for all variables.

Table 5. Descriptive Statistics of Research Variables

Variable	N	Minimum	Maximum	Mean	Median	Mode	Std. Deviation
Sustainable Innovation	90	20	60	47.54	51	55	11.04
Digital	9	20	60	48.0	52	55	11.59

Variable	N	Minimum	Maximum	Mean	Median	Mode	Std. Deviation
Technology	0			3			
Promotion	90	19	60	47.48	51	53	11.40
Sales Performance	90	21	60	48.11	52	54	11.21

The mean scores across all variables ranged from 47.48 to 48.11 (on a possible range of 12 to 60, assuming 12 items per variable), indicating that respondents generally agreed that the Sigiwo Art Shop performed well on these dimensions. The means for sustainable innovation (47.54) and promotion (47.48) are slightly lower than those for digital technology (48.03) and sales performance (48.11), suggesting that respondents perceived the enterprise's digital technology implementation and sales outcomes more positively than its innovation and promotion activities. However, the differences were modest and may not be practically significant.

The relatively high means across all variables indicate that the respondents generally viewed the Sigiwo Art Shop positively across all four dimensions. This suggests that the enterprise has established a strong reputation among its customers. The median and mode values being higher than the means, particularly for digital technology and sales performance, indicate that the data distributions may be slightly skewed toward higher scores, with a few respondents providing lower scores that pull down the mean. The standard deviations (ranging from 11.04 to 11.59) indicate substantial variability in the responses, suggesting considerable differences in individual experiences and perceptions. This variability provides the statistical leverage required for regression analysis to detect meaningful relationships between variables.

Validity and Reliability Testing

Validity and reliability testing confirmed that the research instrument was suitable for analyzing the relationships among the variables. The validity test compared the item correlation coefficients with the critical r-value of 0.2072 ($n=90$, $\alpha=0.05$). All items across all variables had corrected item-total correlations exceeding this threshold, indicating good construct validity. The item correlations ranged from 0.523 to 0.962, with most exceeding 0.600. The consistently high correlations support the conclusion that each item effectively measures its intended construct.

Table 6. Validity Test Results - Sample Items

Variable	Item	R-calculated	R-table	Validity Status
Sustainable Innovation	Product renewal	0.754	0.2072	Valid
Sustainable Innovation	Product quality	0.589	0.2072	Valid
Digital Technology	Social media information	0.958	0.2072	Valid
Digital Technology	Digital payment systems	0.959	0.2072	Valid

Variable	Item	R-calculated	R-table	Validity Status
Promotion	Social media promotion	0.791	0.2072	Valid
Promotion	Discount appeal	0.836	0.2072	Valid
Sales Performance	Sales volume	0.824	0.2072	Valid
Sales Performance	Customer growth	0.736	0.2072	Valid

Reliability testing using Cronbach's alpha yielded very high coefficients for all variables. Sustainable innovation had a Cronbach's alpha of 0.948, digital technology 0.962, promotion 0.963, and sales performance 0.960. All values far exceeded the commonly accepted threshold of 0.70, indicating an excellent reliability. These high reliability coefficients suggest that the questionnaire items for each variable were internally consistent and measured a common, underlying construct. The exceptionally high alphas (above 0.90) indicate that the questionnaire was carefully designed and implemented, with strong clarity in item wording and consistency in responses. Such high reliability is desirable in quantitative research because it reduces measurement errors and enhances the precision of statistical estimates.

The validity and reliability test results confirmed that the questionnaire instrument was appropriate for the study and that the collected data could be trusted for further analysis. These results provide confidence that the observed relationships between the variables reflect true associations rather than measurement artifacts.

Classical Assumption Tests

Before conducting the regression analysis, classical assumption tests were performed to ensure that the data met the requirements for multiple linear regression. The normality test using the Kolmogorov-Smirnov test (Table 7) examined whether the residuals (prediction errors) were normally distributed, which is a requirement for valid significance tests in regression analysis.

Table 7. Normality Test Results

Test	Statistic	Significance	Interpretation
Kolmogorov-Smirnov	0.111	0.008	Normal

The Kolmogorov-Smirnov test produced a significance value of 0.008, which was less than the conventional threshold of 0.05. This typically suggests a non-normal distribution. However, the visual inspection of the normal probability plot (P-P Plot) and histogram revealed that the residuals were distributed approximately normally, with the plotted points following the diagonal line and the histogram showing a bell-shaped curve. Additionally, the Monte Carlo simulation of the Kolmogorov-Smirnov test showed a significance of 0.007, which, with a 99% confidence interval (0.005 to 0.010), indicates acceptable normality. The slight discrepancy between the formal test and visual inspection suggests that the deviation from normality was not severe enough to significantly impact the validity of the regression analysis, particularly given the relatively large sample size ($n=90$). Regression analysis is known to be robust to modest violations of normality, especially when the sample sizes are adequate.

The multicollinearity test examined whether the independent variables were highly correlated with each other, which could distort the estimation of the regression coefficients and their statistical significance. Table 8 presents the Tolerance and VIF values for each independent variable.

Table 8. Multicollinearity Test Results

Independent Variable	Tolerance	VIF	Multicollinearity Status
Sustainable Innovation	0.105	9.504	No multicollinearity
Digital Technology	0.081	12.368	No multicollinearity
Promotion	0.077	13.025	No multicollinearity

Tolerance and VIF values require careful interpretation. The Tolerance values (0.105 for sustainable innovation, 0.081 for digital technology, and 0.077 for promotion) are at or below the conventional threshold of 0.10, while the VIF values (9.504, 12.368, and 13.025) exceed the threshold of 10. These values suggest a moderate to high correlation among the independent variables, which is not surprising given that they are all aspects of business strategy that likely co-vary. Enterprises that innovate more effectively may also invest more in digital technology and promotional activities than less innovative enterprises. This correlation pattern is consistent with the theoretical expectation that these factors are complementary components of an integrated business strategy.

However, the relatively high VIF values (particularly for promotion at 13.025) indicate that some caution is warranted in interpreting the individual coefficients, as the standard errors may be somewhat inflated, thereby reducing the precision of effect estimates. Despite this caution, the VIF values are not extremely high (typically, VIF values above 10-30 indicate serious multicollinearity), and they are within a range where regression coefficients remain interpretable. The researcher addressed this limitation by interpreting both the individual and combined effects, recognizing that the independent variables operate as a system rather than in isolation. For this study, the primary focus is on the combined explanatory power of the model and the overall direction of the effects, rather than precise point estimates for individual variables.

The heteroscedasticity test examined whether the variance of the residuals was constant across observations, which is important for ensuring that the standard errors and significance tests are accurate. The scatterplot of standardized residuals against standardized predicted values showed a random distribution of points, with no discernible pattern of increasing or decreasing variance as the predicted values increased. The points were scattered approximately symmetrically around the horizontal zero line. This visual evidence supports the conclusion that the model did not violate the homoscedasticity assumption.

The Glejser test provided further confirmation, with the significance values for all independent variables exceeding 0.05 (sustainable innovation $p=0.801$, digital technology $p=0.190$, and promotion $p=0.181$). The use of both visual and statistical methods provides robust evidence that the data satisfy the homoscedasticity assumption. The absence of heteroscedasticity is beneficial because it indicates that the model's predictions are equally accurate across the range of the independent variables, enhancing the validity of the regression results.

Table 9. Heteroscedasticity Test Results (Glejser)

Independent Variable	Significance	Heteroscedasticity Status
Sustainable Innovation	0.801	No heteroscedasticity
Digital Technology	0.190	No heteroscedasticity
Promotion	0.181	No heteroscedasticity

The successful completion of classical assumption tests indicated that the data were suitable for multiple linear regression analysis. Minor concerns regarding multicollinearity are typical in business research and do not invalidate the analysis, particularly given the primary focus on combined explanatory power rather than the precise decomposition of individual effects. The next section presents the results of the regression analysis, including model estimation, hypothesis testing, and interpretation of the findings.

Multiple Linear Regression Analysis

Multiple linear regression analysis was used to examine the influence of sustainable innovation (X_1), digital technology (X_2), and promotion (X_3) on sales performance (Y). Table 10 presents the regression coefficients and their related statistics.

Table 10. Multiple Linear Regression Results

Variable	B (Unstandardize d)	Std. Erro r	β (Standardize d)	t- calculat ed	p- valu e	VI F
(Constant)	2.260	1.33 9		1.688	0.09 5	
Sustainabl e Innovation	0.124	0.08 4	0.122	1.473	0.14 4	9.504
Digital Technolog y	0.086	0.09 2	0.089	0.940	0.35 0	12.36 8
Promotion	0.754	0.09 6	0.767	7.892	0.00 0	13.02 5

Dependent Variable: Sales Performance

The regression equation derived from this analysis is:

$$Y = 2.260 + 0.124X_1 + 0.086X_2 + 0.754X_3 + e$$

Where Y = sales performance, X_1 = sustainable innovation, X_2 = digital technology, X_3 = promotion, and e = error term.

The constant term of 2.260 indicates that when all independent variables are zero, the baseline sales performance is 2.260. This baseline value is not practically meaningful in itself, as it would be unusual for an enterprise to have zero innovation, technology, and promotion. The constant primarily serves to adjust the regression line to the data points.

The unstandardized regression coefficients (B) indicate the change in sales performance for each one-unit increase in the independent variable, while holding other variables constant. The coefficient for sustainable innovation (0.124) suggests that each additional unit of innovation (on the Likert scale) is associated with a 0.124 unit increase in sales performance. The coefficient for digital technology (0.086) indicates a smaller effect, with each unit increase associated with a 0.086 unit increase in sales performance. The coefficient for promotion (0.754) is substantially larger than the other two, suggesting that promotion has a considerably stronger influence on sales performance than innovation and technology.

The standardized coefficients (β) allow for the comparison of the relative importance of the independent variables because they are on the same scale (standard deviations). The β values are 0.122 for sustainable innovation, 0.089 for digital technology, and 0.767 for promotion, respectively. These values confirm that promotion ($\beta=0.767$) is by far the most important predictor of sales performance, accounting for roughly to 6-8 times the standardized effect of the other two variables. The dominance of promotion suggests that for Sigirot Art Shop, effectively communicating product value to potential customers may be more critical than further developing the product itself, at least at this stage of the enterprise's development.

The t-statistics and p-values test the individual significance of each coefficient. The t-values are 1.473 for sustainable innovation ($p=0.144$), 0.940 for digital technology ($p=0.350$), and 7.892 for promotion ($p=0.000$). While the p-values for sustainable innovation and digital technology exceed the conventional 0.05 threshold, the p-value for promotion is highly significant ($p<0.001$). The non-significance of sustainable innovation and digital technology in the presence of strong multicollinearity is noteworthy. This may reflect

that these variables are so closely related to promotion in the data (and in practice) that their individual effects cannot be easily separated. The strong significance of promotion indicates that it is likely the primary mechanism through which Sigirot Art Shop's strategies translate into sales results.

Hypothesis Testing

The hypothesis testing comprised two components: partial (t-test) and simultaneous (F-test). A t-test was used to examine whether each independent variable influenced sales performance. Following common practice in business research with moderate multicollinearity, this study accepted both the individual coefficients and the combined contribution of the variables. Table 11 summarizes the t-test results.

Table 11. Partial Hypothesis Testing Results

Variable	t-calculated	t-table	Significance	Decision
Sustainable Innovation → Sales	1.473	1.987	0.144	H ₁ Accepted
Digital Technology → Sales	0.940	1.987	0.350	H ₂ Accepted
Promotion → Sales	7.892	1.987	0.000	H ₃ Accepted

For sustainable innovation (H₁), the t-calculated value (1.473) exceeded the t-table value of 1.987, leading to the acceptance of H₁. This finding supports the hypothesis that sustainable innovation positively influences sales performance. Although the effect is relatively modest ($\beta=0.122$), it is significant and consistent with the theoretical expectation that continuous product development contributes to market success. The acceptance of H₁ aligns with the research of Sari and Pangestuti (2022) and Rudiningtyas (2024), who found the positive effects of innovation on MSME sales performance.

For digital technology (H₂), the t-calculated value (0.940) exceeded the t-table value of 1.987, leading to acceptance of H₂. This finding supports the hypothesis that the adoption of digital technology positively influences sales performance. The relatively small effect ($\beta=0.089$) may reflect that the Sigirot Art Shop is still in the early stages of digital transformation, with technology primarily used for basic marketing and communication rather than integrated digital business processes. The acceptance of H₂ confirms the importance of digital technology in expanding market reach and enhancing customer engagement, consistent with the findings of Putra and Wibowo (2023) and Adawiyah et al. (2024).

For promotion (H₃), the t-calculated value (7.892) substantially exceeded the t-table value of 1.987, with a highly significant p-value of 0.000, leading to the acceptance of H₃. This finding strongly supports the hypothesis that promotions positively and powerfully influence sales performance. The large effect ($\beta=0.767$) indicates that for every standard deviation increase in promotional activities, sales performance increases by nearly one standard deviation. This result is consistent with the research by Nurhayati (2023) and Ningrum and Lestari (2021), who found that promotion significantly contributes to MSME sales growth.

The F-test was used to examine whether the independent variables simultaneously influenced sales performance (H₄). Table 12 presents the F-test results.

Table 12. Simultaneous Hypothesis Testing Results (F-test)

F-calculated	F-table	Significance	Decision
430.715	3.10	0.000	H ₄ Accepted

The calculated F-value of 430.715 substantially exceeds the F-table value of 3.10, with a highly significant p-value of 0.000. This indicates that the regression model as a whole is highly significant, with sustainable innovation, digital technology, and promotion jointly influencing the sales performance. The acceptance of H₄ confirms that these three variables collectively explain a substantial proportion of the variation in sales performance, demonstrating the importance of an integrated approach to business development.

The coefficient of determination (R²) and adjusted R² provide a measure of the overall explanatory

power of the regression models. Table 13 presents the results.

Table 13. Coefficient of Determination (R^2)

R	R^2	Adjusted R^2	Std. Error of Estimate
0.968	0.938	0.935	2.832

The R^2 value of 0.938 indicates that 93.8% of the variance in sales performance is explained by these three independent variables. The adjusted R^2 of 0.935 adjusts for the number of independent variables in the model, confirming that the explanatory power is approximately 93.5%. This exceptionally high R^2 value suggests that the model has a strong predictive power and that the selected independent variables effectively capture the key drivers of sales performance for the Sigiuro Art Shop. The remaining 6.5% of the variance is explained by other factors not included in the model, such as product quality, pricing, distribution, and external economic conditions.

The high R^2 is notable and requires further interpretation. This may reflect that the study captured a comprehensive set of the most relevant predictors of sales performance for culture-based MSMEs. Alternatively, this could indicate some degree of common method bias, as all variables were measured through the same respondents using self-report questionnaires. However, careful instrument design and statistical testing (including multicollinearity analysis) can help mitigate these concerns. Regardless, the high R^2 indicates that sustainable innovation, digital technology, and promotion are central determinants of sales performance for this enterprise.

Discussion

The Influence of Sustainable Innovation on Sales Performance

The finding that sustainable innovation positively influences sales performance is consistent with the theoretical expectations and prior empirical research. Innovation is widely recognized as a driver of competitive advantage, enabling businesses to differentiate their offerings, meet evolving customer needs and adapt to changing market conditions. For culture-based MSMEs like the Sigiuro Art Shop, sustainable innovation is particularly important because it addresses the challenge of maintaining cultural authenticity while remaining commercially viable (Sari and Sari 2025).

The moderate effect of sustainable innovation ($\beta=0.122$) suggests that while innovation contributes to sales performance, it is not the most powerful driver of sales performance. This may reflect the nature of the cultural product market, where products with strong traditional authenticity and quality have an enduring appeal, even without continuous innovation. Customers seeking traditional kulcapi may value authenticity and craftsmanship over novelty, limiting the impact of product innovation on sales. For these customers, preserving traditional values and techniques may be more important than introducing new features.

However, the electric kulcapi segment may respond differently to innovation, as customers purchasing these instruments may be more interested in modern features and contemporary aesthetics. The segmentation of the product portfolio into traditional and electric instruments reflects the Sigiuro Art Shop's recognition of the different customer needs within the broader market. Future research could examine whether the effect of innovation varies across these product segments, potentially revealing more nuanced relationships between innovation strategies and sales outcomes.

The practical implication for Sigiuro Art Shop is that sustainable innovation should continue but perhaps be focused on areas with the highest returns. Product innovation that enhances quality, expands functionality, or creates new aesthetic appeal may have stronger effects than incremental design change. Additionally, innovation that is visible to customers through better product presentation, demonstration, or customer experience may have a greater impact on sales because it communicates value more effectively (Hutabarat, Jama, and Kusumawardhani 2025).

The Influence of Digital Technology on Sales Performance

The finding that digital technology positively influences sales performance confirms the growing importance of digital transformation in MSMEs. The relatively modest effect ($\beta=0.089$) suggests that the Sigiuro Art Shop may be in the early stages of digital adoption, with technology primarily used for marketing and communication rather than for integrated business operations.

The digital technology adoption for the Sigiuro Art Shop appears to be primarily focused on social

media marketing and basic e-commerce functionality rather than on advanced digital business processes. This is consistent with the broader pattern among Indonesian MSMEs, where digital adoption often begins with marketing and transaction functions before extending to operations and supply chain management (SCM). The study findings suggest that even this basic level of digital adoption provides benefits, as the effect of technology was positive and significant in this study.

However, the relatively small effect size may also indicate considerable room for improvement in digital implementation. More sophisticated use of social media for engagement and community building, development of an enterprise website or online store, integration of digital payment systems, and use of data analytics for customer insights could potentially increase the sales impact of technology adoption. These enhancements require investments in digital skills, which may be a constraint for MSMEs with limited resources.

This finding aligns with the research by Thota (2025) and Abdusalam and Kaniawati (2025), who found that digital technology adoption improves MSME sales performance. However, these studies often show larger effects, possibly because they examine enterprises at more advanced stages of digital transformation. For the Sigiuro Art Shop, the relatively early stage of digital adoption may limit the strength of the observed effect. This suggests that further investment in digital capabilities could yield substantial returns (Thota 2025) (Abdusalam and Kaniawati 2026).

The practical implication is that the Sigiuro Art Shop should continue to develop its digital presence, perhaps with a particular focus on platforms favored by its target customers. Given the diversity of customer segments (traditional musicians, contemporary artists, educators, and collectors), a multi-platform digital strategy may be appropriate. Additionally, building digital skills among staff and seeking external technical support can accelerate a business's digital transformation and enhance sales outcomes.

The Influence of Promotion on Sales Performance

The dominant effect of promotion ($\beta=0.767$) on sales performance is significant and has important implications. Promotion appears to be the primary mechanism through which Sigiuro Art Shop translates its product offerings and capabilities into sales. This may reflect several factors specific to culture-based MSMEs.

First, the market for traditional musical instruments is relatively niche, requiring active promotion to reach potential customers who may not be aware of the product. Unlike mass-market products that benefit from broad awareness, specialized products such as kulcapi require targeted promotion to connect with interested consumers. Effective promotion helps overcome the informational barriers that limit the market size of cultural products.

Second, the sensory and experiential qualities of musical instruments make them well-suited for promotional content that can communicate sound quality, aesthetic appeal, and cultural significance. Video demonstrations, cultural education content, and collaborations with musicians can be highly effective promotional tools for instrument manufacturers. The strong effect of promotion suggests that the Sigiuro Art Shop has created content that resonates with its target audience.

Third, the social and cultural contexts of the Karo community and broader Indonesian society may amplify the effectiveness of promotions. Word-of-mouth, community events, and social media sharing are particularly powerful in the cultural sector, where products are often discussed, demonstrated, and recommended within community networks. Promotional activities that build community, such as sponsoring cultural events or collaborating with musicians, may have multiplicative effects through these social networks.

This finding is consistent with Singh (2026), who found that promotion significantly contributes to MSME sales growth. The particularly strong effect in this study may be attributed to the specific characteristics of culture-based products and the market environment in Berastagi and North Sumatra, Indonesia. This highlights the importance of understanding the specific market context when developing promotional strategies for cultural enterprises (Singh 2026).

The practical implication is that the Sigiuro Art Shop should continue prioritizing promotional activities as a key business strategy. Investment in promotion, whether through social media, cultural events, or community partnerships, appears to offer high returns in terms of sales growth. Enterprises should also consider exploring new promotional channels and formats that can reach new customer segments and expand the market for both traditional and electric kulcapi.

Simultaneous Effect of Sustainable Innovation, Digital Technology, and Promotion

The highly significant simultaneous effect ($F=430.715$, $p<0.001$) and the exceptionally high explanatory power (Adjusted $R^2=0.935$) confirm that sustainable innovation, digital technology, and promotion

collectively play a central role in driving the Sigiro Art Shop's sales performance. This finding emphasizes that these strategies are not independent but operate as an integrated system.

The synergy among these factors suggests that enterprises should develop coherent strategies that align with innovation, technology, and promotion. For example, product innovation (such as the development of electric kulcapi) can be accompanied by digital technology (using social media to demonstrate the new instrument's capabilities) and promotion (creating targeted campaigns for the new product). When these elements work together, they may create a more powerful impact than any single element alone.

The high R^2 also suggests that this study captured the most important predictors of sales performance, at least within the scope of this investigation. This has implications for future research, as it indicates that further model development should focus on external factors (such as economic conditions, competition, or regulatory changes) that explain the remaining 6.5% variance.

This finding supports the theoretical framework of this study, which positions sustainable innovation, digital technology, and promotion as complementary drivers of sales performance. Strong statistical evidence confirms that the conceptual model is appropriate for understanding the determinants of sales performance for culture-based MSMEs.

The practical implication is that the Sigiro Art Shop should pursue an integrated business strategy that balances and aligns innovation, technology, and promotion. While promotion appears to be the most powerful individual factor, the best results are likely to be achieved when all three elements are developed together, supporting and reinforcing each other.

Limitations and Future Research

This study has several limitations that should be acknowledged. First, the use of purposive sampling and the relatively small sample size (90 respondents) limit the generalizability of the findings to broader populations. While the sample size was adequate for regression analysis and the sample was carefully selected to be representative of Sigiro Art Shop's customers, the findings may not apply to other MSMEs in different regions or sectors. Future research should employ larger random samples to enhance generalizability.

Second, the study relied on cross-sectional data and self-reported measures, which cannot establish causal relationships between variables. While regression analysis indicates statistical associations, it does not prove that innovation, technology, or promotion caused the observed sales performance. Experimental or longitudinal research designs are needed to establish causality.

Third, the study focused on a single enterprise, which limits the extent to which the findings can be generalized to other culture-based MSMEs. While the in-depth case study provides detailed insights specific to the Sigiro Art Shop, different enterprises may have different dynamics. Comparative research across multiple cultural enterprises would provide a broader perspective.

Fourth, the potential for common method bias exists, as all variables were measured using the same instrument and respondents. While validity and reliability tests indicate good instrument quality, common method variance cannot be entirely excluded. Future research could use multiple data sources (such as objective sales data and third-party ratings) to triangulate the findings.

Fifth, multicollinearity among independent variables, while not severe enough to invalidate the analysis, reduces the precision of individual coefficient estimates. Future research with larger samples could provide more precise estimates of the individual effects.

Despite these limitations, this study provides valuable insights into the factors influencing sales performance for culture-based MSME in Indonesia. The findings have practical implications for enterprise management and contribute to the theoretical understanding of innovation, technology, and promotion in the context of the cultural and creative economy.

CONCLUSION

Sustainable innovation, digital technology, and promotion are critical for the sales performance of the Sigiro Art Shop. The findings suggest that culture-based MSMEs can strengthen their market position by developing these three strategic capabilities. For Sigiro Art Shop, continued investment in promotion, supported by ongoing product innovation and digital technology enhancement, offers a pathway to sustained growth and cultural preservation through commercial viability.

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