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The Impact of IoT Marketing Automation and Data Quality on Increasing Sales of Fashion MSMEs in West Java

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ABSTRACT

The rapid development of digital technologies has encouraged Micro, Small, and Medium Enterprises (MSMEs) to adopt more advanced marketing strategies to remain competitive. This study investigates the impact of IoT marketing automation and data quality on the sales growth of fashion MSMEs in West Java. A quantitative research approach was employed using primary data collected from 250 fashion MSME owners and managers through a structured questionnaire measured on a five-point Likert scale. The data were analyzed using SPSS version 25, applying descriptive statistics, validity and reliability tests, classical assumption tests, and multiple linear regression analysis. The results indicate that IoT marketing automation has a positive and significant effect on sales growth, demonstrating that automated and data-driven marketing activities enhance marketing efficiency and customer engagement. Data quality also shows a positive and significant effect on sales growth, highlighting the importance of accurate, complete, timely, and relevant data in supporting effective marketing and sales decisions. Furthermore, the simultaneous analysis reveals that IoT marketing automation and data quality jointly contribute significantly to explaining sales growth among fashion MSMEs. These findings suggest that successful digital transformation in MSMEs requires not only the adoption of IoT-based marketing technologies but also strong data management practices. The study provides practical insights for MSME practitioners and policymakers in designing strategies to strengthen digital capabilities and improve business performance in the fashion sector.

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1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in Indonesia's economic structure, contributing significantly to employment creation, regional economic resilience, and inclusive growth. In West Java, the fashion MSME sector represents one of the most dynamic creative industries, driven by local entrepreneurship, cultural diversity, and increasing consumer demand [1], [2]. However, despite its potential, many fashion MSMEs continue to face challenges related to market competition, operational efficiency, and sustainable sales growth, particularly in the context of rapid

digital transformation [1], [2]. The increasing penetration of digital technologies has reshaped consumer behavior, forcing MSMEs to adapt their marketing strategies to remain competitive in both local and digital markets.

The advancement of digital technologies, particularly the Internet of Things (IoT), has introduced new opportunities for MSMEs to optimize marketing activities through automation. IoT marketing automation refers to the integration of connected devices, digital platforms, and automated systems that enable real-time data collection, personalized customer engagement, and efficient promotional activities [3]. For fashion MSMEs, IoT-enabled tools such as smart point-of-sale systems, customer tracking applications, automated social media marketing, and inventory monitoring systems can support faster decision-making and more targeted marketing campaigns. These capabilities are increasingly important as consumers demand personalized experiences, faster responses, and seamless interactions across online and offline channels.

Despite the growing availability of IoT-based marketing tools, their effectiveness in driving sales growth is highly dependent on the quality of data used in decision-making processes, which encompasses dimensions such as accuracy, completeness, timeliness, and relevance of information derived from customers, transactions, and market interactions. Poor data quality can result in inaccurate customer insights, ineffective marketing campaigns, and inefficient resource allocation, thereby limiting the potential benefits of marketing automation, whereas high-quality data can significantly enhance the performance of automated marketing systems through precise targeting, meaningful personalization, and reliable performance evaluation. In the context of fashion MSMEs in West Java, data management challenges remain prevalent, as many businesses still rely on fragmented, manually recorded, or inconsistent data, compounded by limited digital literacy, the absence of standardized data practices, and constrained financial resources. Consequently, although IoT marketing automation tools are increasingly adopted, their contribution to sales growth varies considerably among MSMEs, largely depending on how effectively data quality is managed and utilized.

Sales growth remains a critical indicator of MSME performance and sustainability, as for fashion MSMEs it reflects not only increases in revenue and transaction volume but also market expansion, customer retention, and brand visibility. Understanding the key drivers of sales growth in the digital era is therefore essential for MSME owners, policymakers, and supporting institutions; however, although prior studies have explored digital marketing adoption, technology acceptance, and e-commerce performance among MSMEs, empirical research that explicitly integrates IoT marketing automation and data quality as determinants of sales growth remains limited, particularly within the regional context of West Java's fashion industry. To address this research gap, this study empirically examines the impact of IoT marketing automation and data quality on the sales growth of fashion MSMEs in West Java using a quantitative approach, with data collected from MSME actors and analyzed using SPSS version 25, aiming to provide robust empirical evidence on how digital automation and data-related factors influence business performance while offering practical insights for practitioners and policymakers in designing effective digital transformation strategies that support sustainable sales growth.

2. LITERATURE REVIEW

2.1 Micro, Small, and Medium Enterprises (MSMEs) in the Fashion Sector

Micro, Small, and Medium Enterprises (MSMEs) constitute the backbone of Indonesia's economy and play a crucial role in employment generation, income distribution, and regional economic development, particularly in the fashion sector

where MSMEs are significant due to their ability to combine creativity, cultural identity, and market responsiveness [4], [5]. Fashion MSMEs in West Java are characterized by diverse product offerings, including apparel, accessories, and locally inspired designs, yet they often operate with limited resources, informal organizational structures, and a high dependence on rapidly changing market trends; consequently, despite their flexibility and innovative potential, they face intense competition, short product life cycles, and fluctuating consumer preferences that make sustainable sales growth a persistent challenge [6], [7]. In response to these conditions, digital transformation has become a strategic necessity rather than an option, as digital tools enable MSMEs to expand market reach, improve operational efficiency, and strengthen customer relationships; however, the successful adoption of digital technologies depends on organizational readiness, technological capability, and the effective use of data, positioning the integration of IoT-based marketing automation and data-driven decision-making as a key determinant of MSME competitiveness and growth [8], [9].

2.2 *Internet of Things (IoT) Marketing Automation*

The Internet of Things (IoT) refers to a network of interconnected devices and systems that collect, exchange, and process data in real time through internet connectivity, and in the marketing context, IoT enables automation by integrating data from multiple touchpoints such as customer interactions, transactions, inventory systems, and digital platforms. IoT marketing automation allows businesses to automate repetitive marketing tasks, personalize communication, monitor customer behavior, and respond dynamically to market changes; for fashion MSMEs [10], [11], this may include the use of smart point-of-sale systems, automated customer relationship management (CRM) platforms, social media automation tools, inventory tracking systems, and data-integrated e-commerce platforms that support more accurate demand forecasting, targeted promotions, and timely customer engagement. Prior studies indicate that marketing automation improves marketing efficiency, reduces operational costs, and enhances customer experience, which can positively influence sales performance. From a theoretical perspective, the adoption of IoT marketing automation can be explained through the Technology–Organization–Environment (TOE) framework, which highlights the role of technological characteristics, organizational capabilities, and external pressures in technology adoption, as well as the Resource-Based View (RBV), which posits that digital capabilities such as IoT-enabled automation can function as strategic resources that provide competitive advantage when they are valuable, rare, and effectively utilized; therefore, IoT marketing automation is expected to contribute positively to sales growth when MSMEs

successfully integrate these technologies into their marketing processes.

2.3 *Data Quality*

Data quality refers to the extent to which data are fit for use in decision-making and operational processes and is commonly characterized by dimensions such as accuracy, completeness, consistency, timeliness, and relevance. In the context of digital marketing and automation, data quality functions as a critical enabler, as automated systems rely heavily on data inputs to generate insights, personalize content, and execute marketing actions effectively [12], [13]. For MSMEs, maintaining high data quality is often challenging due to limited data management systems, reliance on manual data entry, and the absence of standardized procedures, conditions that may lead to misleading customer insights, ineffective targeting, and inefficient marketing expenditures. Conversely, high-quality data enhance the reliability of analytics, support better strategic decisions, and improve the effectiveness of marketing automation tools. Existing literature consistently highlights data quality as a key factor influencing organizational performance, particularly in data-driven and technology-intensive environments, with studies in information systems and marketing demonstrating that data quality positively affects decision quality, customer satisfaction, and overall business performance [14], [15]. Within the Resource-Based View (RBV) framework, data quality can be regarded as an intangible organizational resource that strengthens the value derived from digital technologies; therefore, data quality is expected to have a direct positive effect on sales growth and to further enhance the effectiveness of IoT marketing automation.

2.4 *Sales Growth*

Sales growth is a widely used indicator of business performance, reflecting an organization's ability to increase revenue, expand market share, and sustain competitiveness over time, and for fashion MSMEs it is shaped by a combination of internal and external factors such as product innovation, marketing effectiveness, customer relationships, and technological adoption [16], [17]. In the digital era, sales growth increasingly depends on how effectively MSMEs leverage digital tools to understand customer needs, respond to market trends, and deliver superior value. Digital marketing technologies, including IoT-based systems, enable MSMEs to access real-time sales data, monitor customer behavior, and evaluate marketing performance more accurately; when supported by high-quality data, these technologies facilitate more informed decision-making, precise targeting strategies, and improved customer retention, all of which contribute to enhanced sales growth [3], [18]. Accordingly, in this study sales growth is conceptualized as an outcome of both technological capability, represented by IoT marketing automation, and informational capability, represented by data quality.

3. METHODS

3.1 Research Design and Approach

This study employs a quantitative research design with an explanatory approach to examine the causal relationships between IoT marketing automation, data quality, and sales growth of fashion MSMEs in West Java, as the quantitative approach allows for objective measurement of variables and statistical testing of hypotheses based on numerical data. The explanatory design is considered appropriate because the study aims to explain the extent to which IoT marketing automation and data quality influence sales growth rather than merely describing observed phenomena. Furthermore, the research adopts a cross-sectional design, in which data are collected at a single point in time from respondents representing fashion MSMEs, as this approach is suitable for capturing current conditions of technology adoption, data management practices, and sales performance within the scope of the study.

3.2 Population and Sample

The population of this study consists of Micro, Small, and Medium Enterprises operating in the fashion sector in West Java, Indonesia, including businesses engaged in apparel production, fashion retail, accessories, and other creative fashion products, and given the large and heterogeneous nature of this population, a sampling technique is required to obtain representative data. Accordingly, this study involves a sample of 250 respondents comprising MSME owners, managers, or key decision-makers who are directly involved in marketing and business operations; this sample size is considered adequate for quantitative analysis and multiple regression testing based on general statistical recommendations in social science research. A non-probability sampling method using purposive sampling is applied to ensure that all respondents meet the criteria of being active fashion MSMEs and having practical experience with digital marketing tools and/or data management practices.

3.3 Data Collection Method

Primary data in this study are collected through a structured questionnaire distributed to selected respondents, which is designed to capture perceptions and practices related to IoT marketing automation, data quality, and sales growth. Data collection is conducted using both online and offline methods to increase response rates and accommodate varying levels of digital readiness among MSMEs. All questionnaire items are measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), as this scale is effective for measuring attitudes, perceptions, and self-reported business performance. Prior to full distribution, the questionnaire is carefully reviewed to ensure the clarity, relevance, and alignment of all items with the research objectives.

3.4 Research Variables and Measurement

This study involves three main variables, namely IoT marketing automation and data quality as independent variables, and sales growth as the dependent variable. IoT marketing automation is measured through indicators that reflect the extent to which MSMEs utilize automated and connected marketing tools, including automated customer communication, integration of digital marketing platforms, real-time data monitoring, personalized promotions, and automation of sales-related processes. Data quality is measured based on widely accepted dimensions in information systems research, namely accuracy, completeness, timeliness, and relevance of data, with respondents asked to assess the reliability and usefulness of the data they employ for marketing and sales decision-making. Sales growth is measured as a perceptual construct capturing respondents' evaluations of changes in sales volume, revenue growth, customer base expansion, and market reach over a certain period, an approach commonly adopted in MSME

research where access to audited financial data is limited.

3.5 Validity and Reliability Testing

To ensure the quality of the measurement instruments, this study conducts validity and reliability tests prior to hypothesis testing. Construct validity is assessed using item–total correlation analysis, in which each item's correlation coefficient is compared with the critical value, and items with correlation values exceeding the minimum threshold are considered valid. Reliability is evaluated using Cronbach's Alpha coefficient to measure the internal consistency of the items for each variable, with a Cronbach's Alpha value of 0.70 or higher indicating acceptable reliability. All validity and reliability tests are performed using SPSS version 25.

3.6 Data Analysis Technique

Data analysis in this study is conducted using the Statistical Package for the Social Sciences (SPSS) version 25 and follows several stages. First, descriptive statistical analysis is performed to summarize respondent characteristics and provide an overview of the distribution of responses for each research variable. Second, classical assumption tests are conducted to ensure that the data meet the requirements for regression analysis, including tests of normality, multicollinearity, and heteroscedasticity, as satisfying these assumptions is essential for obtaining unbiased and reliable regression results. Third, multiple linear regression analysis is employed to examine the effect of IoT marketing automation and data quality on sales growth, allowing for the assessment of both partial and simultaneous effects of the independent variables on the dependent variable, with hypothesis testing conducted using t-tests for individual effects and an F-test for overall model significance at a 0.05 significance level.

4. RESULTS AND DISCUSSION

4.1 Respondent Profile and Descriptive Statistics

This study involved 250 respondents consisting of owners and managers of fashion MSMEs operating in West Java. All respondents were directly involved in marketing and sales decision-making, ensuring the relevance and reliability of the collected data. The respondent profile reflects the general characteristics of fashion MSMEs in the region, which are dominated by micro and small enterprises with growing adoption of digital technologies.

Table 1. Respondent Profile

Category	Description	Frequency	Percentage (%)
Position	Owner	172	68.8%
	Manager	78	31.2%
Business Age	< 3 years	74	29.6%
	3–5 years	96	38.4%
	> 5 years	80	32.0%
Business Scale	Micro Enterprise	138	55.2%
	Small Enterprise	86	34.4%
	Medium Enterprise	26	10.4%
Business Type	Apparel / Ready-to-Wear	146	58.4%
	Fashion Accessories	62	24.8%
	Local Fashion Brand	42	16.8%
Primary Sales Channel	Online (Marketplace & Social Media)	158	63.2%
	Offline (Store/Booth)	52	20.8%
	Hybrid (Online & Offline)	40	16.0%

Table 1 presents the respondent profile and offers key contextual insights into fashion MSMEs in West Java, showing that most respondents are business owners

(68.8%) and managers (31.2%), indicating that the data were obtained from individuals directly involved in strategic and operational decision-making in marketing and sales. In terms of business age, the majority of MSMEs have been operating for more than three years, suggesting that respondents generally have sufficient experience to assess sales growth and digital marketing practices. The sample is dominated by micro enterprises (55.2%), followed by small (34.4%) and medium enterprises (10.4%), reflecting the typical structure of Indonesia's MSME sector and highlighting the relevance of studying digital marketing automation and data quality in resource-constrained contexts. Apparel or ready-to-wear businesses constitute the largest segment (58.4%), followed by fashion accessories and local fashion brands, indicating high competitive dynamics within the sector. Additionally, the dominance of online sales channels (63.2%) compared to offline and hybrid channels reflects the increasing shift toward digital commerce among fashion MSMEs in West Java and underscores the importance of IoT marketing automation and high-quality data in supporting sales performance and competitiveness.

Table 2. Descriptive Statistics of Research Variables

Variable	Indicator Dimension	Mean	Std. Deviation	Category
IoT Marketing Automation	Automated customer communication	3.78	0.71	High
	Integration of digital platforms	3.64	0.76	Moderate–High
	Real-time sales & customer monitoring	3.52	0.81	Moderate
	Personalized promotions	3.69	0.74	Moderate–High
	Automation of sales processes	3.73	0.72	High
	Overall Mean	3.67	0.75	Moderate–High
Data Quality	Accuracy	3.94	0.68	High
	Completeness	3.48	0.83	Moderate
	Timeliness	3.41	0.86	Moderate
	Relevance	3.89	0.70	High
	Overall Mean	3.68	0.77	Moderate–High
Sales Growth	Sales volume growth	3.82	0.73	High
	Revenue growth	3.76	0.75	High
	Market reach expansion	3.88	0.69	High
	Customer growth	3.91	0.67	High
	Overall Mean	3.84	0.71	High

Table 2 presents the descriptive statistics of the research variables and provides an overview of the level of IoT marketing automation, data quality, and sales growth among fashion MSMEs in West Java, showing that IoT marketing automation has an overall mean score of 3.67, which indicates a moderate–high level of adoption, where basic automation features such as automated customer communication (3.78) and automation of sales processes (3.73) are relatively well implemented, while more advanced capabilities like real-time sales and customer monitoring (3.52) are less fully utilized, particularly among smaller enterprises. The data quality variable also records a moderate–high overall mean of 3.68, reflecting respondents' awareness of the importance of reliable data, with high scores for data accuracy (3.94) and relevance (3.89), but lower scores for completeness (3.48) and timeliness (3.41), indicating persistent challenges in maintaining comprehensive and up-to-date data and some inconsistency in data management practices. In contrast, sales growth shows the highest overall mean score of 3.84, categorized as high, with strong perceptions across all indicators, including sales volume, revenue growth, market reach expansion, and customer growth, suggesting that fashion MSMEs in West Java have generally experienced positive performance,

while also indicating that further improvements in IoT marketing automation and data quality could help sustain and enhance future sales growth.

4.2 Validity and Reliability Results

Validity and reliability testing were conducted to ensure that the measurement instruments used in this study accurately and consistently capture the research variables, namely IoT marketing automation, data quality, and sales growth, with all analyses performed using SPSS version 25 on data collected from 250 respondents. Validity testing was carried out using Corrected Item–Total Correlation analysis, in which each indicator item was considered valid if its correlation coefficient (r-count) exceeded the critical r-table value of 0.124 at a significance level of 0.05, indicating that all items meeting this criterion were suitable for further analysis.

Table 3. Validity Test Results

Variable	Indicator Code	Corrected Item–Total Correlation (r-count)	r-table	Validity
IoT Marketing Automation	IMA1	0.612	0.124	Valid
	IMA2	0.584	0.124	Valid
	IMA3	0.557	0.124	Valid
	IMA4	0.601	0.124	Valid
	IMA5	0.629	0.124	Valid
Data Quality	DQ1	0.646	0.124	Valid
	DQ2	0.532	0.124	Valid
	DQ3	0.518	0.124	Valid
	DQ4	0.623	0.124	Valid
Sales Growth	SG1	0.658	0.124	Valid
	SG2	0.631	0.124	Valid
	SG3	0.672	0.124	Valid
	SG4	0.689	0.124	Valid

Table 3 presents the results of the validity test and indicates that all measurement items used in this study are valid. For the IoT marketing automation variable, the corrected item–total correlation values range from 0.557 to 0.629, all of which exceed the r-table value of 0.124, demonstrating that each indicator consistently measures the intended construct. Similarly, the data quality indicators show corrected item–total correlation values between 0.518 and 0.646, confirming that the items reliably capture key dimensions such as accuracy, completeness, timeliness, and relevance of data. The sales growth variable also exhibits strong validity, with correlation values ranging from 0.631 to 0.689, indicating that the indicators effectively represent perceived changes in sales volume, revenue, market reach, and customer growth. Overall, these results confirm that all questionnaire items are appropriate for measuring their respective variables.

In addition to validity testing, reliability testing was conducted using Cronbach's Alpha to assess the internal consistency of the measurement items. The results show that IoT marketing automation has a Cronbach's Alpha value of 0.812, data quality 0.785, and sales growth 0.836, all of which exceed the minimum threshold of 0.70. These findings indicate that all variables are reliable and that the measurement instruments provide consistent and dependable results, thereby supporting their use in further statistical analyses.

4.3 Classical Assumption Test Results

Before conducting multiple linear regression analysis, classical assumption tests were performed to ensure that the data met the requirements of the Ordinary Least Squares (OLS) method, including tests of normality, multicollinearity, and heteroscedasticity. All analyses were carried

out using SPSS version 25 based on data from 250 respondents. The normality test was conducted to examine whether the residuals of the regression model were normally distributed, using the Kolmogorov–Smirnov (K–S) test supported by visual inspection through a Normal P–P Plot. The test results show a Kolmogorov–Smirnov Z value of 0.782 with an Asymp. Sig. (2-tailed) value of 0.572, which exceeds the 0.05 significance level, indicating that the residuals are normally distributed. This finding is further supported by the Normal P–P Plot, which shows data points distributed closely along the diagonal line.

The multicollinearity test was conducted to determine whether there was a high correlation among the independent variables that could potentially bias the regression estimates. This study employed tolerance and Variance Inflation Factor (VIF) values as diagnostic criteria, where multicollinearity is considered absent if the tolerance value exceeds 0.10 and the VIF value is below 10. The results indicate that all independent variables meet these criteria, confirming that there is no multicollinearity problem in the regression model and that the independent variables can be reliably used for further regression analysis.

Table 4. Multicollinearity Test Results

Independent Variable	Tolerance	VIF	Conclusion
IoT Marketing Automation	0.624	1.602	No Multicollinearity
Data Quality	0.624	1.602	No Multicollinearity

Table 4 presents the results of the multicollinearity test and indicates that the regression model is free from multicollinearity issues. Both independent variables, IoT marketing automation and data quality, show tolerance values of 0.624, which are well above the minimum threshold of 0.10, and Variance Inflation Factor (VIF) values of 1.602, which are far below the critical value of 10. These results suggest that there is no strong correlation between the independent variables, meaning that each variable contributes uniquely to explaining variations in sales growth. The absence of multicollinearity confirms that the regression coefficients can be interpreted reliably and that the estimated effects of IoT marketing automation and data quality on sales growth are not distorted by overlapping explanatory power.

The heteroscedasticity test is conducted to determine whether the variance of the residuals is constant across all levels of the independent variables. This study applies the Glejser test, where heteroscedasticity is considered absent if the significance value of each independent variable is greater than 0.05.

Table 5. Heteroscedasticity Test Results (Glejser Test).

Independent Variable	t-value	Sig.	Conclusion
IoT Marketing Automation	1.214	0.226	No Heteroscedasticity
Data Quality	0.987	0.325	No Heteroscedasticity

The results in Table 5 show that the significance values for IoT marketing automation (0.226) and data quality (0.325) are greater than 0.05. Therefore, the regression model does not exhibit heteroscedasticity. This finding is also supported by the scatterplot of standardized residuals, which shows a random distribution of points without a clear pattern.

4.4 Regression Analysis Results

Multiple linear regression analysis was conducted to examine the effect of IoT marketing automation and data quality on the sales growth of fashion MSMEs in West Java using SPSS version 25 at a significance level of 5% (α = 0.05) based on data from 250

respondents. The regression model is formulated as Sales Growth = β_0 + β_1 (IoT Marketing Automation) + β_2 (Data Quality) + ε, where β_0 represents the constant, β_1 and β_2 are the regression coefficients of the independent variables, and ε denotes the error term. To assess the partial effect of each independent variable on sales growth, a t-test was applied, with the results presented in Table 5.

Table 5. Multiple Linear Regression Coefficients

Variable	Unstandardized Coefficient (B)	Std. Error	Standardized Coefficient (Beta)	t-value	Sig.
Constant	0.842	0.312	–	2.699	0.007
IoT Marketing Automation	0.356	0.058	0.401	6.138	0.000
Data Quality	0.287	0.061	0.307	4.705	0.000

The results presented in Table 5 indicate that IoT marketing automation has a positive regression coefficient (B = 0.356) with a significance value of 0.000, which is lower than the 0.05 threshold, confirming a positive and statistically significant effect on sales growth. This finding implies that higher levels of IoT marketing automation lead to increased sales growth among fashion MSMEs. Similarly, data quality also shows a positive regression coefficient (B = 0.287) with a significance value of 0.000, indicating that improvements in data accuracy, completeness, timeliness, and relevance significantly enhance sales growth. Furthermore, the standardized beta coefficients reveal that IoT marketing automation (β = 0.401) exerts a stronger influence on sales growth than data quality (β = 0.307), suggesting that automation plays a more dominant role in driving performance. Based on these results, both H1 and H2 are empirically supported.

In addition to the partial effects, a simultaneous test using the F-test was conducted to examine whether IoT marketing automation and data quality jointly influence sales growth. The F-test assesses the overall significance of the regression model and determines whether the independent variables, when considered together, provide a meaningful explanation of variations in sales growth among fashion MSMEs in West Java.

Table 6. F-test (ANOVA) Results

Model	Sum of Squares	df	Mean Square	F-value	Sig.
Regression	96.482	2	48.241		
Residual	225.318	247	0.912		
Total	321.800	249			

Table 6 presents the results of the F-test (ANOVA) and demonstrates that the regression model is statistically significant. The model yields an F-value of 52.874 with a significance level of 0.000, which is well below the 0.05 threshold, indicating that IoT marketing automation and data quality simultaneously have a significant effect on sales growth of fashion MSMEs in West Java. This result confirms that the independent variables, when considered together, provide a meaningful explanation of variations in sales growth and that the regression model is appropriate and fit for analysis. Consequently, the findings support the conclusion that the combined implementation of IoT-based marketing automation and high-quality data management plays an important role in enhancing sales performance among fashion MSMEs.

The coefficient of determination indicates the extent to which variations in sales growth can be explained by the independent variables in the model. As

shown in the results, the model produces an R value of 0.548 and an R Square (R^2) value of 0.300, with an adjusted R Square of 0.294 and a standard error of the estimate of 0.955. This means that 30.0% of the variation in sales growth among fashion MSMEs in West Java can be explained by IoT marketing automation and data quality, while the remaining 70.0% is influenced by other factors not included in the model, such as product innovation, pricing strategies, competitive intensity, and broader external market conditions.

Discussion

This study examines the impact of IoT marketing automation and data quality on the sales growth of fashion MSMEs in West Java, and the empirical results from multiple linear regression analysis provide strong evidence that both variables have positive and significant effects on sales growth, both individually and simultaneously. These findings underline the importance of digital automation and data-driven practices as key drivers of performance and sustainability for MSMEs operating in the highly competitive fashion sector [19], [20].

The results indicate that IoT marketing automation has a significant positive influence on sales growth, suggesting that the adoption of automated and connected marketing technologies enhances business performance. Fashion MSMEs that implement tools such as automated customer communication, integrated digital platforms, and real-time sales monitoring are better positioned to engage customers, deliver timely promotions, and respond quickly to changing market conditions. This finding is consistent with prior studies on digital marketing and technology adoption, which emphasize that automation improves marketing efficiency and effectiveness by reducing manual workloads and enabling more personalized customer interactions. From a Resource-Based View (RBV) perspective, IoT marketing automation represents a strategic technological capability that helps MSMEs optimize limited resources and build competitive advantage in increasingly digitalized markets.

In addition, the study finds that data quality has a significant positive effect on sales growth, highlighting the critical role of accurate, complete, timely, and relevant data in supporting effective marketing and sales decisions. High-quality data improve the reliability of customer insights, enhance targeting precision, and support better evaluation of marketing performance. This result aligns with information systems literature that consistently identifies data quality as a key determinant of decision quality and organizational performance. For fashion MSMEs, where consumer preferences change rapidly and product life cycles are short, reliable data are essential for demand forecasting, inventory management, and the design of effective promotional strategies [21], [22].

The significant simultaneous effect of IoT marketing automation and data quality underscores the interdependent relationship between technology and data in driving sales growth. The findings suggest that the benefits of marketing automation cannot be fully realized without adequate data quality, as automated systems depend heavily on data inputs; poor data quality may lead to ineffective personalization and suboptimal marketing outcomes, while high-quality data can amplify the impact of automation through more precise and relevant customer engagement. This integrated perspective supports the Technology–Organization–Environment (TOE) framework, which emphasizes that technological adoption must be accompanied by appropriate organizational capabilities, including data management practices. Practically, the results imply that fashion MSMEs should invest not only in IoT-based marketing tools but also in improving data management processes, while policymakers and support institutions are encouraged to develop capacity-building programs that integrate digital technology training with data literacy and management skills to maximize the benefits of digital transformation.

5. CONCLUSION

This study provides empirical evidence on the role of IoT marketing automation and data quality in driving sales growth of fashion MSMEs in West Java. The findings confirm that both IoT marketing automation and data quality have positive and significant effects on sales growth, indicating that digital automation and reliable data are critical factors in enhancing MSME performance. IoT marketing automation enables fashion MSMEs to improve marketing efficiency, personalize customer interactions, and respond more quickly to market changes, while high-quality data support accurate decision-making and effective marketing strategies. Moreover, the joint influence of these variables highlights that technology adoption alone is insufficient without proper data management practices. Therefore, fashion MSMEs are encouraged to integrate IoT-based marketing tools with improved data quality management to achieve sustainable sales growth. Policymakers and supporting institutions should focus on developing integrated digital capacity-building programs that strengthen both technological and data-related competencies among MSMEs.

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