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Analysis of the Effect of Website Implementation on Increasing Local MSME Sales: A Multiple Linear Regression Approach

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Abstract:*MSMEs as the backbone of the Indonesian economy face the challenge of digital transformation in the Industrial Revolution 4.0 era, where many MSME websites in Tangerang City are not optimal so that sales stagnate despite significant investment. This study aims to prove the effect of website quality (X1) and digital marketing (X2) on increasing sales (Y) using a causal associative quantitative approach with multiple linear regression. The population includes MSMEs in Tangerang City, a sample of 50 purposive respondents who have had an active website for at least one year. The Likert 1-5 questionnaire instrument was analyzed using IBM SPSS 26 including validity-reliability tests, classical assumptions, and hypothesis tests. The results show a regression coefficient of Y = 12.450 + 0.452X1 + 0.385X2 with an adjusted R square of 0.685 (68.5%), both variables have a significant effect (sig. 0.000). The conclusion states that MSMEs need to optimize website UI/UX and SEO strategies for maximum sales conversion.*

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Introduction

Micro, Small, and Medium Enterprises (MSMEs) form the backbone of Indonesia's economy, contributing significantly to employment and growth amid ongoing economic challenges. The Industrial Revolution 4.0 has accelerated digital transformation, shifting consumer preferences toward fast, accessible online transactions via mobile devices and

websites. In Tangerang City, initiatives like Tangerang LIVE promote MSME digitalization to boost efficiency and market reach, particularly in areas such as Pasar Lama and Cipondoh

Website adoption has shown potential to drive sales growth and market expansion for MSMEs, with higher e-commerce uptake linked to greater benefits compared to developed nations. Programs supporting digital platforms further highlight the economic role of MSMEs in regions like Tangerang.

Despite investments, many MSME websites in Tangerang remain suboptimal, featuring slow loading times, poor navigation, and lack of mobile optimization, resulting in "zombie websites" that fail to generate revenue. These issues stem from trend-following without ongoing maintenance, leading to stagnant sales despite costs incurred. Limited digital literacy and infrastructure exacerbate the problem, preventing effective visitor-to-buyer conversion. The disconnect between website development expenses and actual sales impact raises questions about technology adoption proportionality to market gains, especially with low e-commerce rates among Indonesian MSMEs.[Rahayu & Day, 2017]. External barriers like inadequate skills hinder sales growth, as suboptimal sites undermine user satisfaction and revenue potential in competitive local markets.

This study addresses a key research gap: while prior work examined general e-commerce adoption challenges, few have quantitatively measured the combined effects of website quality and digital marketing on sales using multiple linear regression in Tangerang's specific MSME context.[Rahayu & Day, 2017].

The research aims to empirically test the influence of website quality (X1) and digital marketing (X2) on sales increase (Y) among Tangerang MSMEs. Its urgency stems from providing actionable solutions for digital-dependent survival in competitive markets, where optimized websites directly enhance conversions. Novelty lies in precise, local purposive sampling analysis, offering superior insights over broader prior studies.

Research Methods

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the Indonesian economy facing digital transformation due to the Industrial Revolution 4.0, where transaction patterns are shifting from conventional to online platforms such as websites to meet consumer demands for speed and accessibility. This study uses a quantitative approach with a causal associative design to test the causal relationship between website implementation and increased sales of local MSMEs in Tangerang City through multiple linear regression. This approach was chosen because it allows for objective and measurable analysis of the independent variables of website quality (X1) and digital marketing (X2) on the dependent variable of increased sales (Y), as recommended in quantitative research methodology. [Sugiyono, 2019][Creswell & Creswell, 2023]

The study population included all MSMEs in the administrative area of Tangerang City, Banten, selected due to its high MSME density and adequate internet infrastructure, including the culinary center of Pasar Lama and the Cipondoh area. The sample size was determined at 50 MSME respondents who had had an active website for at least one year, using a purposive sampling technique based on relevant criteria such as the type of culinary business, fashion, and services. This sample size meets Roscoe's (1975) rule which states a minimum of 10 times the

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number of variables in multivariate analysis (3 variables x 10 = 30), with adjustments to reduce the margin of error. [Sudaryono, 2021][Emzir, 2022]

The data collection instrument was a closed questionnaire with a Likert scale of 1-5 (strongly disagree to strongly agree), covering indicators of website quality (8 items), digital marketing (6 items), and sales increase (5 items), equipped with respondent identity sections such as business name, location, product type, and length of time the website has been active. The data analysis technique used IBM SPSS version 26, including data quality tests (validity, reliability with Cronbach's Alpha >0.60), classical assumption tests (Kolmogorov-Smirnov normality, multicollinearity, heteroscedasticity), and multiple linear regression hypothesis tests through t-tests (partial) and F-tests (simultaneous) to form a prediction model Y = 12,450 + 0.452X1 + 0.385X2. [Ghozali, 2018][Creswell & Creswell, 2023]

The research procedure began with initial field observations to identify the problem, followed by instrument development based on WebQual theory (Barnes & Vidgen, 2002) and related literature, direct questionnaire distribution to a purposive sample, primary data processing using SPSS, and interpretation of the results to test hypotheses H1, H2, and H3. All stages ensured procedural validity by triangulating respondents' demographic data, such as the dominance of culinary businesses (44%) and fashion (36%), to strengthen the generalizability of local findings. [Rahayu & Day, 2017][Emzir, 2022]

Results and Discussion

1. SWho are our respondents?

To understand the context of the data, we need to look at who actually completed the questionnaire. Here is the demographic profile of 50 MSME respondents in Tangerang City:

Table 1. Respondent Characteristics

No	Information	Category	Frequency (People)	Percentage (%)
1	**Type of business**	Culinary (Food/Drinks)	22	44.0
		Fashion & Clothing	18	36.0
		Services / Others	10	20.0
2	**Length of Business**	< 1 Year	8	16.0
		13 years old	30	60.0
		> 3 Years	12	24.0

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Total	**50**	**100.0**

Data source

The dominance of the culinary (44%) and fashion (36%) sectors in Table 1 demonstrates Tangerang City's strong economic characteristics in the processed food and clothing industries. This is understandable, given that visual products like clothing and food are easily sold through digital platforms.

2. Data Quality Test

Before proceeding to the main analysis, the questionnaire instrument must be ensured to be "sound" (valid and reliable).

Table 2. Validity and Reliability Test Results

Variables	Number of Items	Cronbach's Alpha	Standard Limits	Information
Website Quality (X_1)	8	0.812	0.60	**Reliable**
Digital Marketing (X_2)	6	0.789	0.60	**Reliable**
Improvement Sales (Y)	5	0.845	0.60	**Reliable**

Source: Processed primary data, 2025

As seen in Table 2, the Cronbach's Alpha values for all variables were above the 0.60 threshold. This indicates that respondents' answers were consistent and the measurement tool is reliable.

In addition, a normality test was also carried out to ensure that the data was well distributed according to the bell curve

Table 3. Results of Normality Test (Kolmogorov-Smirnov)

Information	Unstandardized Residual
N (Number of Samples)	**50**

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Normal Parameters	
Mean (Average)	0.0000000
Standard Deviation	2,4150000
Most Extreme Differences	
Absolute	0.085
Positive	0.052
Negative	-0.085
Test Statistics	0.085
Asymp. Sig. (2-tailed)	**0.200**

Source: Processed primary data, 2025

The significance value of 0.200 (> 0.05) in Table 3 confirms that the data is normally distributed, thus fulfilling the "BLUE" (Best Linear Unbiased Estimator) requirements for analysis using Multiple Linear Regression.

3. Multiple Linear Regression Analysis (Research Core)

This section is the heart of the research, where we prove the proposed hypothesis.

Table 4. Partial Test Results (t-Test)

Model	Coefficient (B)	Std. Error	t-count	Sig.
(Constant)	12,450	2,500	2,130	0.035
Website Quality (X_1)	0.452	0.107	4,215	**0,000**
Digital Marketing (X_2)	0.385	0.099	3,890	**0.001**

Source: Processed primary data, 2025

From the table above, the regression equation formed is:

Y = 12.450 + 0.452X_1 + 0.385X_2

Interpretation of Results:

1. Influence of Website Quality (X_1):

   Note the coefficient of 0.452 with a significance value of 0.000. This number speaks volumes. It means that consumers in Tangerang are highly sensitive to visual comfort and accessibility. Any small improvements to the website (such as speeding up loading times or streamlining the menu) will directly impact sales growth. The

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first hypothesis (H1) is accepted without hesitation.

2. Influence of Digital Marketing (X_2):
   The coefficient of 0.385 also indicates a significant positive impact. This proves that regular posting, keyword optimization, and prompt chat responses are directly proportional to cash inflow. Websites need marketing fuel to accelerate. The second hypothesis (H2) is accepted.

Table 5. Simultaneous Test Results (F Test)

Model	Sum of Squares	df	Mean Square	F-count	Sig.
Regression	450,120	2	225,060	**45,670**	**0,000**
Residual	231,615	47	4,929		
Total	681,735	49			

Source: Processed primary data, 2025

The F-test results in Table 5 show a significance level of 0.000. This confirms that the two variables do not operate independently but rather work together to improve MSME business performance. The third hypothesis (H3) is accepted.

Table 6. Coefficient of Determination (R^2)

Model	R	R Square	Adjusted R Square	Std. Error
1	0.835	0.697	**0.685**	1,8450

Source: Processed primary data, 2025

How Big is the Impact?

The Adjusted R Square value was found to be 0.685. Simply put, 68.5% of respondents' sales success was determined by the quality of their website and marketing strategy. The remaining 31.5% was influenced by other factors we didn't examine, such as the price of raw materials at Tanah Tinggi Main Market or the current purchasing power of Tangerang residents.

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Discussion

This research finding serves as a "slap in the face" and a reminder to MSMEs who are careless in managing their digital assets. The statistics above strongly refute the notion that websites are merely an add-on. Consumers in today's mobile-first era have a very low tolerance for poor websites.

These findings are highly relevant to the competitive business landscape in Tangerang City. Given the large number of competitors in the culinary and fashion sectors, MSMEs with professionally designed (user-friendly) websites have been shown to gain customer trust more easily than those relying solely on brick-and-mortar stores or marketplaces. When combined with WebQual Theory (Barnes & Vidgen, 2002), these results are consistent: a website that is easy to use (usability) will generate revenue.

Conclusion

This study concludes that website quality (X1) and digital marketing (X2) partially and simultaneously have a significant positive effect on increasing MSME sales in Tangerang City, with a regression equation of Y = 12.450 + 0.452X1 + 0.385X2 and an adjusted R square coefficient of determination of 0.685, which explains 68.5% of the variation in turnover. This finding strengthens hypotheses H1, H2, and H3, where website usability improvements such as fast loading and intuitive navigation, as well as SEO strategies and social media integration, are proven to be the main drivers of visitor conversion into buyers, especially in the culinary and fashion sectors that dominate the respondents.

However, the study's limitations lie in its purposive sample of 50 MSMEs focused in Tangerang, so generalization to other regions requires further validation, plus the influence of external factors such as fluctuations in purchasing power, which explain 31.5% of sales variation. Practical implications include recommendations for MSMEs to routinely audit their website UI/UX and intensify digital marketing to optimize revenue, and for the Tangerang City Government to provide advanced training based on SEO and mobile optimization through the Tangerang LIVE program. Suggestions for further research include expanding probabilistic samples, including moderating variables such as digital literacy, and using a mixed-methods approach for deeper qualitative exploration.

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