

THE ROLE OF TECHNOLOGY AND INNOVATION IN MARKETING TO GENERATION Z

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ABSTRACT

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This research aims to analyze and explain the role of technology and innovation in marketing to Generation Z in Sukabumi. The data of this study is MSMEs in Sukabumi City with a population of 31,926 and the sample used in this study is 100 business actors. web.raosoft.com The method in this study used quantitative research, with a data collection method, namely the distribution of questionnaires through Google Forms in the form of statements to respondents and interviews. The analysis method in this study explains that the role of technology and innovation has a positive and significant impact in increasing curiosity in Generation Z, with an impact of 61.2% while other variables influence 38.8%.

Keywords: *Role of Technology, Innovation, Marketing, Generation Z*

INTRODUCTION

Rapid technological advancements have brought significant changes in the marketing landscape, especially in reaching and meeting the needs of Generation Z – the generation born between 1997-2012 (Bucoveţchi et al., 2019). This generation grew up in the digital age and is very familiar with various social media platforms, apps, and the latest technology. In facing Generation Z, the role of technology and innovation is vital for marketers (Roblek et al., (2019). This generation tends to want more interactive, innovative, and personalized experiences in interacting with brands (Priporas et al., 2017). They are also very adept at digging up information and making decisions based on online reviews and recommendations (Raza et al., 2022).

Therefore, marketers must leverage the latest technologies such as social media, digital marketing, artificial intelligence, and data analytics to create engaging, relevant, and effective campaigns to reach Generation Z (Kuleto et al., 2021). Innovation in strategy, content, and experiences is also key to attracting attention and building long-term relationships with this generation (Berkup., 2014). By understanding Gen Z behaviors, preferences, and trends, and strategically leveraging technology and innovation, marketers can develop effective marketing approaches to reach and influence this increasingly important generation (Seemiller et al., 2015).

There are several problems in digital marketing for Generation Z, overexposure to digital marketing, concerns about data

privacy and security, distrust of marketing content, demand for a more personalized and interactive marketing experience, and Difficulty in maintaining attention (Persada et al., 2019). The purpose of this study is to analyze and explain the role of technology and innovation in marketing to generation z.

LITERATURE REVIEW

Technology

Technology can be defined as the application of science to create devices, systems, or methods that can help humans solve problems or improve efficiency in various aspects of life (Szymkowiak et al., 2021). In the context of marketing, technology includes the use of digital tools, online platforms, data analytics, artificial intelligence, and more to support marketing activities (Gogolan et al., 2023).

Innovation

Innovation is the process of creating or developing a new idea, product, service, or process that is different from the one that already existed before. Innovation aims to provide added value, increase effectiveness, and meet unmet market needs (Genoveva et al., 2022). In marketing, innovation can be realized through the development of unique and creative strategies, content, experiences, or business models (Ruspini., 2019). Thus, technology provides tools and capabilities that can be leveraged to support innovation in marketing (Koulopoulos et al., 2016). While innovation is a creative effort to produce something new and different that can answer market challenges and needs (Au-Yong-Oliveira et al., 2022). The collaboration between technology and innovation allows marketers to create more effective, engaging, and relevant marketing approaches for this digital generation (Mavragani et al., 2022).

Generation z

Generation Z, or often referred to as iGeneration, Centennials, or Post-

Millennials, is a generation born between 1997 and 2012 (Bayhan, H. G et al.,2020). This generation follows the Millennial Generation (Generation Y) who were born in the range of 1981 to 1996 (Pichler, S., Kohli, C., 2021). Some of the key characteristics of Generation Z include being Digital natives, Multitasking, Social and collaborative, Pragmatic and realistic, Caring about social and environmental issues, and Interested in authentic and relevant content (Ly Phi, A. et al., 2023).

METHODS

Types and Objects of Research

This study uses a quantitative method with a type of causal associative relationship, which is research that aims to reveal problems that are causal relationships between two or more variables (Sugiyono., 2019). The type of research used is descriptive, which is research that aims to decrypt or explain something as it is or an overview of a situation (Arikunto., 2013). The object of this research is technology (X1), Innovation (X2), and digital marketing (Y). The location of this research is Sukabumi City MSMEs.

Types and Data Sources

This study uses primary data, namely data from the dissemination of questions or questionnaires related to technology and innovation, as well as marketing. The primary data of this study was sent to respondents, namely MSMEs in the Sukabumi City Area.

Population and Sample

The population of this study is MSMEs in Sukabumi City, with a total population of 31,926 business actors obtained from the West Java web open data. Samples were taken using **the web raosoft.com sample size calculator** with a data accuracy rate of 90% and a margin of error of 10%. So there were respondents who could be used as a sample of 100 people.

Data Analysis Techniques

Statistical data analysis is carried out in stages, namely first conducting data feasibility tests (validity and reliability tests), then conducting classical assumption tests, namely normality tests, heteroscedasticity tests, and multicollinearity tests. Meanwhile, the analysis technique used is multiple linear regression, a determination coefficient test, after which a partial and simultaneous hypothesis test is carried out. For multiple linear regression, it can be formulated as follows:

$$Y = \alpha + b_1X_1 + b_2X_2 + e$$

RESULTS AND DISCUSSION

Characteristics Respondent

The respondents in this study are 100 MSME actors in Sukabumi City. The characteristics of these respondents are based on gender and education, where business actors with the female gender dominate. Education level, and characteristics of MSMEs based on products.

Table 1. Characteristics of Respondents

No	Information	Frequency	Percentage
1.	Gender		
	Man	44	44%
	Woman	56	56%
2.	Education Level		
	Junior high school	30	30%
	Senior high school	35	35%
	Diploma III	15	15%
	S1	14	14%
	S2	6	6%
Sum		100	100%

Data Feasibility Test

Validity and Reliability Test

Validity test is a process to determine how good the instrument of each variable in the research is. Validity is crucial in research because it confirms whether or not the results obtained from the instrument are relevant and accurate. The validity test carried out is by testing all variable instruments of Technology, innovation, and digital marketing. The statement of the validity or not of an instrument is by comparing r calculate with r critical. Where if r calculates $>$ critical r (0.3), it is declared valid, and if r

calculates $<$ critical r , it is declared invalid (Sugiyono., 2019)

Reliability is a measure of how consistent and stable an instrument is in delivering results. Reliability testing is a process for evaluating how well an instrument can be trusted in measuring constructs. The reliability test was carried out using the Cronbach alpha formula technique, declared reliable if the alpha Cronbach value was above 0.600. The results of the reliability test in this study were declared reliable (>0.600). It can be seen in the table below:

Table 2. Research Validity and Reliability Test Result

Variable	Indicators	r Count	r Critical	Critical Point	Cronbach's Alpha	Result
Technology	X1.1	0,574	0,3	0,600	0,679	Valid & Reliable
	X1.2	0,621	0,3			
	X1.3	0,606	0,3			
	X1.4	0,590	0,3			
	X1.5	0,657	0,3			
	X1.6	0,687	0,3			
Innovation	X2.1	0,913	0,3	0,600	0,835	Valid & Reliable
	X2.2	0,833	0,3			
	X2.3	0,813	0,3			
	X2.4	0,784	0,3			
	X2.5	0,374	0,3			
	X2.6	0,807	0,3			
Digital marketing	Y1	0,754	0,3	0,600	0,708	Valid & Reliable
	Y2	0,772	0,3			
	Y3	0,680	0,3			
	Y4	0,703	0,3			
	Y5	0,699	0,3			
	Y6	0,772	0,3			
	Y7	0,634	0,3			
	Y8	0,699	0,3			

Source: processed data (Researcher, 2024)

Classical Assumption Test

Normality Test

The normality test is used to evaluate whether the data owned is normally distributed or not. Normal distribution is where data tends to accumulate around the middle value symmetrically and evenly on both sides. The normality test determines

whether the residual values are well distributed or not. Having regularly distributed residual values is an effective regression technique (Ghozali, 2016). In the normality test of *one sample of Kolgomorov-Smirnov*, the value of $p = 0.200 > 0.05$, which indicates that the data is normally distributed. It can be seen in table 3 below:

Tabel 3. One Sample Kolgomorov-Smirnov Test

	Unstandardized Residual
N	100
Asymp. Sig. (2-tailed)	,200c,d

Multicollinearity Test

The multicollinearity test is used to evaluate whether there is a strong correlation between independent variables in a regression analysis model. Multicollinearity occurs when two or more independent variables are highly correlated with each other, which can cause

problems in the interpretation and estimation of regression models. The method used to detect multicollinearity is to look at VIF and *tolerance* with test criteria if $VIF < 10$ with a *tolerance number* > 0.1 , then multicollinearity does not occur (Ghozali, 2016). It can be seen in the following table 4:

Table 4. Multicollinearity Test

Variable	Tolerance	VIF	Information
Technology (X1)	0,582	1,719	Free of Multicollinearity
Innovation (X2)	0,871	1,418	

Source: processed data (Researcher, 2024)

Heteroskedasticity Test

The Heteroscedasticity test aims to test whether in the regression model there is an unevenness in *variance* from *the residual* of one observation to another. If the *variance* from *the residual* of one observation to another is fixed, it is called homoscedasticity and if it is different, it is called heteroscedasticity. A good regression model

is one that is homoscedasticity or heteroscedasticity does not occur (Ghozali, 2016). The plot graph between the projected values of the dependent variable and its residuals can be used to find out whether there is heteroscedasticity between independent variables. From figure 2, the scatterplot below shows the spreading point with an irregular pattern, which means that there is no heteroscedasticity problem.

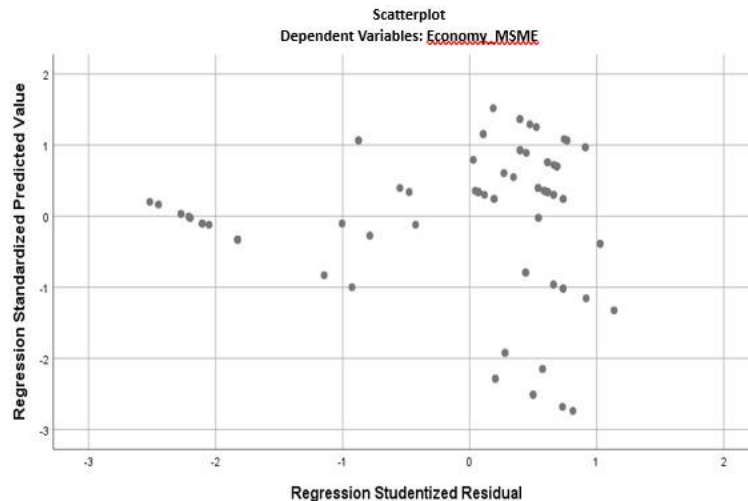


Figure 2. Scatterplot Heteroskedasticity Test

Hypothesis Test Results

Multiple Linear Regression Analysis Results

The results of the multiple regression test developed in this study are noted in the following equation:

$$Y = 5,561 + 1,174 X1 + 0,129 X2 + e$$

Technology and innovation variables have a significant influence on digital marketing. With a *p-value* of Technology of $0.015 <$

0.05 , and a *p-value* of Innovation of $0.000 < 0.05$. Test F value Sig. $0.000 < 0.05$, that is, together there is a significant influence of the independent variable on the bound variable. And the R Square test obtained a value of 0.612 , meaning that the variation of independent variables can explain Digital Marketing by 61.2% , while 38.8% is influenced by other variables that are not studied.

Table 5. Multiple Linear Regression Test Results

Research Variables	B	Beta	t	Mr.
Technology (X1)	1,174	0,831	12,725	0,015
Innovation (X2)	0,129	0,093	1,193	0,000
R Square = 0,612	Fhitung = 57,785			
Adjusted R2 = 0,592	Probabilitas = 0,000			

Source: processed data (Researcher, 2024)

Discussion

Digital technology for the MSME economy

The results of the statistical test explained that there was a significant influence of digital technology on the MSME economy in Sukabumi City, where the p-value was $0.015 < 0.05$, and the value of the t-calculation coefficient was $12.725 > 1.966$ from the t-table. This means that the significant influence of digital technology is positive on the economy of MSMEs, explaining that when digital technology is improved, it will have an impact on increasing the economy of business actors.

Innovation for the MSME economy

Based on the results of the statistical test, it is explained that there is a positive and significant influence of innovation on the economy of MSMEs in Sukabumi City, where the p-value is $0.000 < 0.05$. Innovation is one of the strategies that can be applied in the digital era, where it can help business actors in making new innovations from their products, and with this innovation will be able to reach a wider market.

CONCLUSION

The results of the statistical test analysis showed that the technology variables (X1) and innovation (X2) had a significant influence on the MSME economy. The influence of technology and digital innovation on the MSME economy is 61.2%, while 38.8% is influenced by other variables that are not studied. The results of this research are expected to contribute to the Sukabumi City government, the world of academics, and business actors who are used as research sites, and can be useful in improving and expanding knowledge for

researchers. In addition, this research can contribute to the development of science, and it is hoped that this research will have an impact on the world of education, and the Sukabumi City Cooperatives, Micro Enterprises, Industry and Trade Office as a recommendation in policy-making and decisions to improve the economy of MSMEs. This research is expected to be a reference for other researchers who conduct research related to digital technology and innovation in the MSME economy. As well as suggestions for future research to involve many business actors not only in Sukabumi City but also involving business actors in Regencies and Cities in West Java, so that they can increase respondents, and add other methods to strengthen the quantitative data from the questionnaire distribution.

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