

# **The Effect of Digital Marketing and Neuromarketing on Purchasing Decisions For Micro, Small and Medium-Sized Enterprise Food Products**

**Hidayati Purnama Lubis, Ikhah Malikhah, Sintia Sari**

## **Abstract**

This study aims to analyze the effect of digital marketing and neuromarketing on consumer purchasing decisions regarding culinary MSMEs products in Medan Sunggal District. A quantitative approach was used with a survey method, where data was collected by distributing questionnaires to 100 respondents who were culinary MSMEs consumers. Data analysis was performed using multiple linear regression with SPSS version 25. The results show that digital marketing has a positive and significant partial effect on purchasing decisions, with a significance value of 0.024. Meanwhile, neuromarketing also has a positive and significant partial effect with a significance value of 0.000, and shows a more dominant effect than digital marketing. The simultaneous test (F test) showed that both variables together had a significant effect on purchasing decisions (Y), with a contribution of 51.8% (Adjusted R Square). These findings reinforce the importance of integrating digital marketing and neuromarketing strategies to improve the effectiveness of culinary MSMEs marketing, especially in the Medan Sunggal District of North Sumatra Province.

**Keywords:** Digital Marketing, Neuromarketing, Purchase Decision.

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## Introduction

Technological developments in the digital age have driven major transformations in the world of marketing. Businesses, including Micro, Small, and Medium Enterprises (MSMEs), are required to adapt to increasingly dynamic and digital-based marketing trends. According to Kotler and Keller (2016), in digital marketing communication, a marketer must have effective tactics in order to have a maximum impact on product sales. Digital marketing itself is a marketing activity that utilizes internet-based media such as Instagram, Facebook, TikTok, and websites, with the aim of attracting consumer interest in the products or services offered (Lucyantoro & Rachmansyah, 2018).

Culinary MSMEs, as one of the most developed sectors in Indonesia, including in the Medan Sunggal District, face challenges and opportunities in utilizing digital marketing as a strategy to increase competitiveness and expand market reach. Based on data from the Central Statistics Agency, MSMEs, Industry, and Trade of Medan City (2024), the number of MSMEs in the Medan Sunggal District consists of 3,328 MSMEs. This figure shows that Medan Sunggal is a region that is quite active in small-scale entrepreneurial activities, especially in the micro sector.

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**Table 1. Number of MSME Data in Medan City in 2024**

Subdistrict	Micro Enterprise	Small Enterprise	Medium Enterprise
1	2	3	4
Medan Tuntungan	9.697	8	-
Medan Johor	3.328	5	1
Medan Amplas	5.685	4	3
Medan Denai	5.556	29	8
Medan Area	7.221	40	2
Medan Kota	4.913	3	-
Medan Maimun	1.059	-	1
Medan Polonia	1.004	-	-
Medan Baru	2.521	3	-
Medan Selayang	2.990	1	-
Medan Sunggal	3.328	4	1

<b>Medan Helvetia</b>	<b>5.259</b>	<b>10</b>	<b>3</b>
<b>Medan Petisah</b>	<b>3.310</b>	<b>2</b>	<b>-</b>
<b>Medan Barat</b>	<b>3.785</b>	<b>16</b>	<b>2</b>
<b>Medan Timur</b>	<b>3.932</b>	<b>1</b>	<b>-</b>
<b>Medan Perjuangan</b>	<b>4.748</b>	<b>1</b>	<b>-</b>
<b>Medan Tembung</b>	<b>6.993</b>	<b>1</b>	<b>3</b>
<b>Medan Deli</b>	<b>2.884</b>	<b>-</b>	<b>-</b>
<b>Medan Labuhan</b>	<b>2.890</b>	<b>-</b>	<b>-</b>
<b>Medan Marelan</b>	<b>4.304</b>	<b>1</b>	<b>-</b>
<b>Medan Belawan</b>	<b>4.724</b>	<b>16</b>	<b>36</b>
<b>MEDAN</b>	<b>90.131</b>	<b>145</b>	<b>60</b>

*Source: Medan City Cooperative, SME, Industry, and Trade Office*

In its implementation, MSME players need to adjust their digital strategies to the ever-changing preferences and behaviors of consumers. As stated by Kotler and Keller (2016), every year marketers continue to personalize messages and seek new strategies to encourage repeat purchases, including through the use of creative and interactive digital advertising. The emergence of the neuromarketing approach adds a new dimension to understanding consumers. Neuromarketing is a combination of marketing, psychology, and neuroscience, which aims to understand the cognitive and emotional processes that influence consumer behavior in decision-making (Venkatraman et al., 2012). Using this approach, marketers can create content or advertisements that are able to elicit unconscious emotional responses from consumers, which ultimately encourage them to make quick and impulsive purchases.

Purchase decisions are the result of a complex process involving the recognition of needs, information search, evaluation of alternatives, and finally selecting and purchasing a product. According to Kotler and Keller (2016), a purchase decision is the process of selecting from two or more available alternatives. In the digital context, consumer purchase decisions are influenced by various factors such as information quality, visual appearance, trust in the seller, and convenience in conducting online transactions.

Previous research shows that digital marketing has an influence on purchasing decisions (Romadlon et al., 2020). However, there is also research that states different results, namely that digital marketing does not have a significant effect on purchasing decisions (Romadlon et al., 2020). This shows that there are other factors that may influence consumer decisions, such as emotional aspects touched upon through neuromarketing.

Based on this background, this study aims to analyze the influence of digital marketing and neuromarketing on purchasing decisions for culinary MSME products in Medan Sunggal District, thereby providing a more comprehensive picture of the effectiveness of digital marketing and neuromarketing strategies in enhancing the competitiveness of culinary MSMEs in the digital era.

## Literature Review

Due to the rapid development of information technology, marketing strategies in the current digital era have undergone major changes. Businesses, including MSMEs, face difficulties in utilizing technology as a marketing tool to reach consumers more widely and efficiently. Digital marketing is one of the rapidly growing strategies that includes advertising using digital media such as social media, websites, and other platforms. However, rational marketing is often insufficient to influence consumer purchasing decisions. The concept of neuromarketing, for example, is a marketing approach that uses psychology and neuroscience

to study how consumers think about and feel about what they buy. The purchasing decision itself is a complex process influenced by various factors, including how the product works and how consumers perceive the stimuli provided by the company. Therefore, it is very important to have an understanding of how neuromarketing and digital marketing can influence the decisions made by consumers, especially in the case of micro, small and medium-sized culinary businesses (MSMEs) in the Medan Sunggal District. This section will discuss the theories and concepts of the three main research variables: digital marketing, neuromarketing, and purchasing choices.

## **2.1 Purchase Decision**

A purchase decision is a consumer's decision to buy a product after considering whether or not it is feasible to buy the product by taking into account the information they know and the reality of the product after seeing it.

Consumer behavior will determine the decision-making process in their purchases. Decision-making is an activity carried out by everyone, at any time and in any place, including decisions relating to individual activities. Effectively influencing consumer decisions will influence decision making. This means that the level of profit we obtain will also increase. Consumer or organizational decisions are activities that are carried out consciously, rationally, and planned. Consumer decisions are an analysis of problem solving (Venkatraman et al., 2012).

## **2.2 Digital Marketing**

Digital marketing is one of the most important marketing strategies in today's digital age. This strategy uses digital media and information technology, such as the internet, social media, websites, and mobile applications, to reach consumers more widely and effectively (Kotler and Keller, 2016). Digital marketing is the promotion and market search activities through online digital media by utilizing various means, such as social networking. The virtual world is now capable of connecting not only people with devices, but also people with other people around the world. Digital marketing, which usually consists of interactive and integrated marketing, facilitates interaction between producers, market intermediaries, and potential consumers (Venkatraman et al., 2012).

Social media can be used as a means of social marketing so that health communication created on these channels will ultimately bring about behavioral change in individuals or communities. Choosing social media that suits the characteristics of the target audience and managing social media appropriately will certainly have a positive impact on the behavioral change of the target audience. It is important to note that in today's era of digital technology and the internet, traditional marketing is no longer effective. In traditional marketing, companies usually promote what they sell, such as products or services, through advertising media. The hope is that when customers see the advertisement, they will immediately purchase the product. Of course, when we talk about content marketing, we are almost talking about digital marketing. Therefore, digital marketing methods that predate content marketing are currently less popular. People have become immune to product promotions, so when they see online promotional ads, they are indifferent and dismiss them (Lubis et al, 2024).

Content presented through social media must be designed to be interesting, informative, and easy to understand in order to attract attention and build active engagement from the target audience. The use of interactive communication strategies and personalized messages can also

increase the effectiveness of health information delivery, thereby encouraging individuals to adopt healthy behaviors on an ongoing basis. Thus, the use of social media as a social marketing tool is not merely about disseminating information, but also serves as an effective means of inspiring positive changes in people's lifestyles.

### 2.3 Neuromarketing

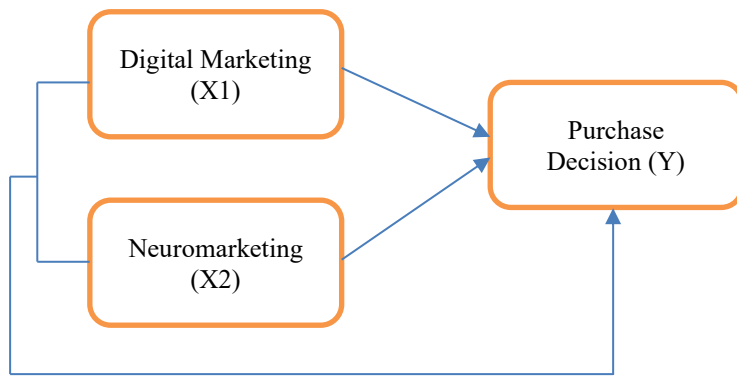
Neuromarketing is a popular topic and area of research in marketing science. Essentially, the goal of neuromarketing is to adapt theories and methods from neuroscience and combine them with theories and methods from marketing and related disciplines, such as economics and psychology, to develop neuroscientifically sound explanations of the impact of marketing on the behavior of target customers. Indeed, neuromarketing, as a method of investigation, is important because it uses neuroscience theories and methods to gain access to hidden information. This information is realized through the observation of neural processes without directly asking people to provide their thoughts, feelings, memories, evaluations, or decision-making strategies. The results of neuromarketing, as a field of research, are promising because its findings can secure a new foundation for generating new marketing theories or complement existing theories in marketing and related disciplines (Lim, 2018).

Neuromarketing is a discipline that combines neuroscience, psychology, and marketing research to study the physiological effects of marketing and advertising strategies on the human brain, using methods such as fMRI and EEG to measure the brain's response to marketing stimuli. Neuromarketing aims to understand how the human brain responds to advertisements, products, and consumer experiences, so that companies can develop more effective marketing strategies that are tailored to the desires and needs of customers. (Reynaldi, 2024).

External neuromarketing is part of neuromarketing studies that focus on the influence of external stimuli on consumer decision-making processes. This concept emphasizes that consumers' neurological responses are not only influenced by internal factors such as emotions, memory, and personal motivation, but are also greatly influenced by external environmental factors that can indirectly trigger certain neural activities related to value perception, purchase desire, and brand loyalty.

External factors in neuromarketing include various elements that can be observed in both physical and social environments. In physical environments, elements such as color, packaging design, product layout on shelves, background music, store lighting, and even the scents used can provide sensory stimulation that subconsciously shapes consumers' assessments and preferences for a product. For example, the color red is often associated with urgency and passion, while blue is associated with calmness and trust. Fast music can accelerate the pace of consumer shopping, while certain scents can increase the emotional appeal of a brand. These elements work subconsciously, affecting the limbic system in the brain, which is closely related to emotional decision making.

The hypothesis developed in this study based on previous theories and research results is that digital marketing and neuromarketing have a significant positive effect on purchasing decisions among MSME actors in Medan Sunggal District, both partially and simultaneously (H1, H2, and H3).



**Figure 1. Research Conceptual Framework**

## Research Methodology

This research was conducted in Medan Sunggal District, Medan City, focusing on consumers of culinary-specific MSMEs. The research was conducted from May to July 2025 with a sample size of 100 people. The sampling technique used was simple random sampling. This study examined two independent variables, namely Digital Marketing (X1) and Neuromarketing (X2), and one dependent variable, namely Purchase Decision (Y). The research approach used in this study was a quantitative approach with an associative purpose, where data analysis was carried out using multiple linear regression methods with the help of SPSS 25.0 software.

The data collection technique was carried out by distributing questionnaires compiled based on a Likert scale (1 to 5) to measure respondents' perceptions quantitatively (Manullang & Pakpahan, 2022). Before the analysis process began, the data was first tested to ensure that the instruments used met the validity and reliability requirements (Wakhyuni et al., 2021). Next, classical assumption testing was carried out, including normality, multicollinearity, and heteroscedasticity tests to ensure the suitability of the data for regression analysis (Wakhyuni et al., 2021).

The regression analysis model used refers to the following equation:  $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$ , where Y is the Purchase Decision variable,  $\alpha$  is the constant value,  $\beta_1$  to  $\beta_2$  are the regression coefficients of each independent variable (Digital Marketing and Neuromarketing), and e indicates the residual error. Hypothesis testing was conducted individually using the t-test and collectively using the F-test (Wakhyuni et al., 2021). In addition, this study also tested the coefficient of determination ( $R^2$ ) to determine the proportion of the influence of independent variables on the dependent variable (HM Ritonga, et al., 2022).

## Results and Discussion

### 4.1 Research Result

#### 4.1.1 Respondent Characteristics

This study involved 100 respondents who were obtained through the distribution of questionnaires directly using the Google Form platform. The distribution was carried out in the Medan Sunggal area, North Sumatra, with the main target being consumers who had interacted with local culinary MSME products. The purpose of this data collection was to determine the extent to which digital marketing and neuromarketing influence consumer purchasing decisions regarding MSME products in the area.

**Table 2. Characteristics of Respondents Based on Gender**

Gender	Number	Percentage
Male	40	40%
Female	60	60%

Based on gender characteristics, it was found that the respondents consisted of 40 men (40%) and 60 women (60%). This shows that the majority of respondents were women, who in the context of consumer behavior often play a dominant role in purchasing decisions, especially in the food and beverage sector.

**Table 3. Respondent Characteristics Based on Age**

Age	Number (person)	Percentage
<17 years	2	2%
17-25 years	96	96%
26-35 years	2	2%

Based on age group, the majority of respondents were aged 17–25 years old, totaling 96 people (96%), followed by 2 people (2%) under the age of 17, and 2 people (2%) aged 26–35 years old. This composition illustrates that the respondents were predominantly young people, particularly Generation Z and early millennials, who are known to be very familiar with digital technology and tend to be more responsive to innovative marketing approaches such as neuromarketing.

This distribution of demographic characteristics supports the relevance of the study, given that the younger age group is a potential market segment for MSMEs that utilize digital and emotional strategies to influence consumer purchasing decisions.

**Table 4. Characteristics of Respondents Based on Employment Status**

Employment Status	Number (person)	Percentage
Student	81	81%
Entrepreneur	3	3%
Public/Private Employee	4	4%
Others	12	12%

Table 4 shows that 81 people (81%) are students who have a great desire to explore contemporary cuisine. This is followed by other professions, including 12 housewives (12%), 4 civil servants/private employees (4%), and 3 entrepreneurs (3%). It is known that consumers with civil servant/private sector employee and entrepreneur job statuses do not have enough time to visit culinary spots that serve contemporary food, a characteristic of Generation Z.

#### 4.1.2 Data Analysis Techniques

Data analysis was performed using SPSS software, with the following steps.

**a. Validity Test**

From the validity test results, all items in the Digital Marketing (X1), Neuromarketing (X2), and Purchase Decision (Y) variables showed a calculated r value that exceeded the critical r, which is  $> 0.300$ . This proves that all items in the questionnaire are valid and can be used (Setiawan, 2022).

**Table 5. Validity Test of Digital Marketing Variables (X1)**

Item	Calculated r	Critical	Description
X1_1	0.759	0.300	Valid
X1_2	0.718	0.300	Valid
X1_3	0.555	0.300	Valid
X1_4	0.654	0.300	Valid
X1_5	0.709	0.300	Valid
X1_6	0.742	0.300	Valid
X1_7	0.636	0.300	Valid
X1_8	0.638	0.300	Valid

**Table 6. Validity Test of Neuromarketing Variables (X2)**

Item	Calculated r	Critical	Description
X2_1	0.725	0.300	Valid
X2_2	0.663	0.300	Valid
X2_3	0.677	0.300	Valid
X2_4	0.717	0.300	Valid
X2_5	0.79	0.300	Valid
X2_6	0.71	0.300	Valid
X2_7	0.696	0.300	Valid
X2_8	0.72	0.300	Valid

**Table 7. Validity Test of Variable Y (Purchase Decision)**

Item	Calculated r	Critical	Description
Y_1	0.745	0.300	Valid
Y_2	0.756	0.300	Valid
Y_3	0.786	0.300	Valid
Y_4	0.798	0.300	Valid
Y_5	0.804	0.300	Valid
Y_6	0.794	0.300	Valid
Y_7	0.742	0.300	Valid
Y_8	0.787	0.300	Valid

The validity test aims to determine the extent to which the research instrument is capable of measuring what it is supposed to measure. In this study, the instrument consists of three main variables, namely Digital Marketing (X1), Neuromarketing (X2), and Purchase Decision (Y), each consisting of 8 statement items.

The analysis technique used was Pearson Product Moment correlation. The number of respondents in this study was 100, with a significance level of 0.05. Based on the distribution of r product moment values with degrees of freedom ( $df-n-2=98$ ), a rtable value of 0.195 was obtained.

The analysis results show that all items in the three variables have a calculated r value  $>$  table r (0.195), with a calculated r value ranging from 0.555 to 0.804. This

indicates that each statement item has a significant correlation with the total score of its respective variable.

In detail, the calculated  $r$  value for the Digital Marketing variable (X1) ranged from 0.555 to 0.759. The Neuromarketing variable (X2) had a calculated  $r$  value ranging from 0.663 to 0.790. Meanwhile, the Purchase Decision variable (Y) shows the highest correlation, with calculated  $r$  values ranging from 0.742 to 0.804.

Thus, it can be concluded that all items in the research instrument are valid and suitable for use in the hypothesis testing stage. The high validity of each item also indicates that the instrument is capable of representing the measured construct well and consistently.

## b. Reliability Test

**Table 8. Reliability Test Results**

Variabel	Realibility Statistics			
	Cronbach's Alpha	N of Items	Cronbach's Alpha Minimal	Conclusion
Digital Marketing (X1)	0,904	8	0,70	Reliabel
Neuromarketing (X2)	0,828	8	0,70	Reliabel
Purchase Decision (Y)	0,861	8	0,70	Reliabel

Data reliability can be used as a reference to determine whether the data used in a questionnaire is consistent and reliable. One measure to test this reliability is to compare the Cronbach's alpha value of the data. If the data is below 0.5, it can be said that the data is inconsistent and unreliable. Data is considered reliable and consistent if the Cronbach's alpha value is above 0.7 or higher. It can be seen that the Cronbach's alpha value for X1 is 0.904, X2 is 0.828, and Y is 0.861. Based on the decision-making criteria, it can be concluded that the data in X1, X2, and Y is reliable, consistent, and trustworthy (Manullang and Pakpahan, 2022).

## c. Descriptive Test

**Table 9. Descriptive Test Statistics**

	N	Minimu m	Maximu m	Mean	Std. Deviation
Digital Marketing (X1)	100	21.00	40.00	32.1400	4.97878
Neuro Marketing (X2)	100	18.00	40.00	30.8700	5.49316
Purchase Decision (Y)	100	20.00	40.00	31.8900	5.63341
Valid N (listwise)	100				

Descriptive statistical tests were conducted to obtain a general overview of the characteristics of each variable in the study. The descriptive test table above shows that Digital Marketing (X1) has 100 data points, with a maximum value of 40 and a minimum value of 21. The mean value is 32.41 and the standard deviation is 4.97. Neuromarketing (X2) has 100 data points, with a highest value of 40, a lowest value of 18, a mean value of 30.87, and a standard deviation of 5.49. Purchase Decision (Y) has 100 data points,

with a minimum value of 20 and a maximum of 40. The average value is 31.89 and the standard deviation is 5.63.

#### 4.1.3 Classical Assumption Test

##### a. Data Normality Test

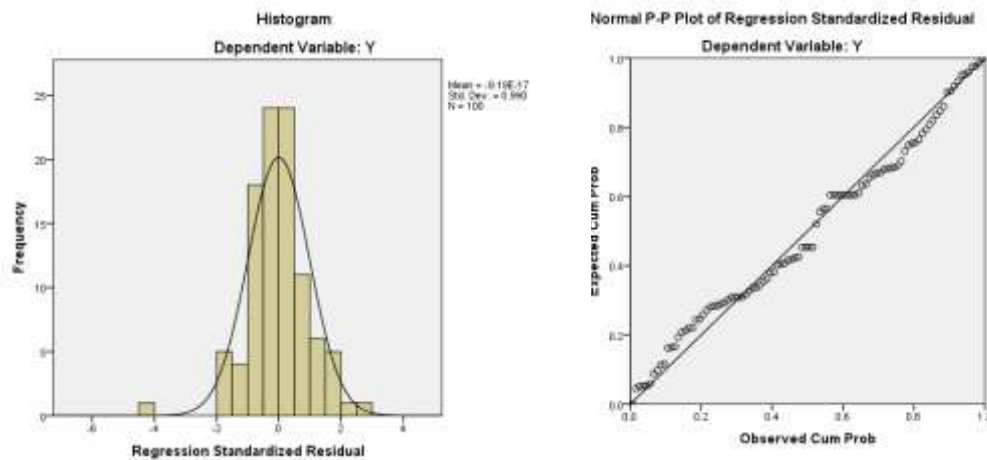


Figure 2. Histogram Curve and P-P Plot Graph of Normality

The residual histogram shows a distribution that approximates a normal curve (bell-shaped), indicating that the residual distribution is symmetrical and does not deviate significantly from the normal distribution. The histogram visualization shows a distribution that forms a symmetrical bell curve, while in the P-P Plot graph, the data points are scattered along a diagonal line, indicating a distribution that is close to normal (Setiawan, 2022).

Table 10. Data Normality with the Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
<i>N</i>		100
<i>Normal Parameters<sup>a,b</sup></i>		
	<i>Mean</i>	.0000000
	<i>Std. Deviation</i>	3.87312291
<i>Test Statistic</i>		.070
<i>Asymp. Sig. (2-tailed)</i>		.200 <sup>c,d</sup>

##### Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>Sig.</i>	Collinearity Statistics	
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>			<i>Tolerance</i>	<i>VIF</i>
1 (Constant)	6.424	2.606		2.465	.015		
Digital Marketing (X1)	.278	.121	.246	2.300	.024	.426	2.346
Neuromarketing (X2)	.535	.110	.522	4.881	.000	.426	2.346

a. Dependent Variable: Purchase Decision (Y)

The normality test is intended to test whether the standardized residual values in the regression model are normally distributed or not. Data normality is tested using the Kolmogorov-Smirnov statistic against unstandardized residuals with a significance level of 5%. Based on these criteria, the research data can be assumed to be normal because it has a value greater than 0.05, namely 0.2. The significance value resulting from the Kolmogorov-Smirnov test is 0.200, which means that the data is normally distributed and passes the normality assumption because it is greater than 0.05 (Wakhyuni et al., 2021).

#### b. Multicollinearity Test

The multicollinearity test aims to test whether there is a correlation between independent variables in the regression model. If a correlation is found, the regression model is affected by multicollinearity. The presence or absence of multicollinearity can be seen from the tolerance and variance factors (VIF) values. Data is said to be free of multicollinearity if the tolerance value is  $\geq 0.1$  and the VIF is not more than 10. As can be seen from the table above, the tolerance value is 0.426 or greater than 0.1, and the VIF value is less than 10. Using these values, it can be concluded that there is no multicollinearity between the data tested.

#### c. Heteroscedasticity Test

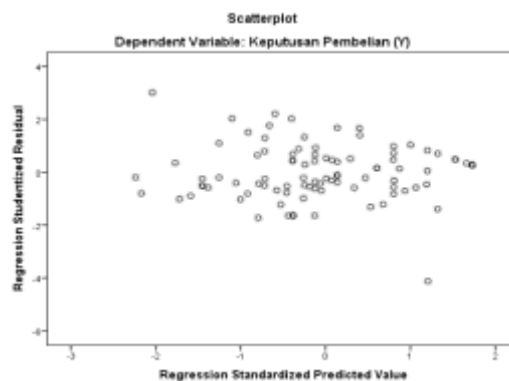


Figure 3. Scatterplot Graph

The 100 data points in the scatterplot are randomly distributed, do not form a specific pattern, and are evenly spread above and below the horizontal zero line. This indicates no evidence of heteroscedasticity (Manullang and Pakpahan, 2022).

#### d. Multiple Linear Regression Test

Conducted to determine the simultaneous effect of two independent variables on the dependent variable.

#### 4.1.4 Hypothesis Test (Partial t-test)

Table 11. Partial Test (t-test)

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Collinearity Statistics

	B	Std. Error	Beta			Tolerance	VIF
(Constant)	6.424	2.606		2.465	.015		
<i>Digital Marketing (X1)</i>	.278	.121	.246	2.300	.024	.426	2.346
<i>Neuro Marketing (X2)</i>	.535	.110	.522	4.881	.000	.426	2.346
a. Dependent Variable: Purchase Decision (Y)							

The t-test is conducted to determine the extent to which an independent variable can influence a dependent variable. Decisions are made based on the significance level. If the value is less than 0.05, it can be said that a variable significantly influences another variable, and vice versa. Based on the table, it can be concluded that X1 and X2 partially have a positive and significant effect on Y.

$$Y = 6.424 + 0.278X_1 + 0.535X_2 + e$$

The constant of 6.424 indicates that if all independent variables ( $X_1$ ,  $X_2$ ) are constant (zero), the base value of the Purchase Decision (Y) is 6.424 (Manullang & Pakpahan, 2022). Each one-unit increase in the Digital Marketing variable ( $X_1$ ) will increase the purchase decision by 0.278 units or 27.8%, assuming that other variables remain constant. A one-unit increase in Neuromarketing ( $X_2$ ) will increase the purchase decision by 0.535 units or 53.5%, indicating that this variable has the strongest influence (Rahayu, 2024). All independent variables are indicated to have a positive effect because they have positive values, which means that an increase in the independent variable will increase the dependent variable, and vice versa (Rizky, 2022).

#### a. F Test (Simultaneous)

**Table 12. Simultaneous Test (F Test)**

ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1656.683	2	828.341	54.103	.000 <sup>b</sup>
	Residual	1485.107	97	15.310		
	Total	3141.790	99			

a. Dependent Variable: Purchase Decision (Y)

b. Predictors: (Constant), Neuro Marketing (X2), Digital Marketing (X1)

The F test is performed to examine the relationship between several independent variables and one dependent variable simultaneously. If the calculated F value is greater than the F table value, it can be said that there is a significant simultaneous effect between the independent variables and the dependent variable. It can also be seen from the significance value of the data; if it is below 0.05, then the data can be said to have a simultaneous effect. Looking at the table above, the significance is 0.000 and smaller than 0.005, which means that X1 and X2 together have a significant effect on Y.

#### b. Determination Test

**Table 13. Determination test results****Model Summary<sup>b</sup>**

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	.726 <sup>a</sup>	.527	.518	3.91285

a. *Predictors: (Constant), Digital Marketing (X1), Neuromarketing (X2),*

b. *Dependent Variable: Purchase Decision (Y)*

The results of the determination test show that the coefficient of determination (R Square) value obtained is 0.527, which means that 52.7% of the dependent variable, namely Purchase Decision (Y), can be explained by the independent variables Digital Marketing (X1) and Neuromarketing (X2). Meanwhile, the remaining 47.3% is explained by other factors outside this research model (Sibagariang et al., 2025). The adjusted R Square value of 0.518 or 51.8% indicates that the regression model is quite strong and stable even when taking into account the number of predictor variables (Lubis & Amiyanada, 2024). Thus, the regression model has excellent predictive power for the Purchase Decision variable (Y).

The coefficient of determination is used to see how much influence the independent variables have on the dependent variable. Looking at the table above, it can be concluded that changes in Y can be explained by Digital Marketing (X1) and Neuromarketing (X2) by 51.8%, while the other 48.1% can be explained by factors other than X1 and X2.

## 4.2 Discussion

This study aims to analyze the effect of digital marketing and neuromarketing on purchasing decisions for culinary MSME products in Medan Sunggal District. The testing was conducted using multiple linear regression with a partial (t-test) and simultaneous (F-test) approach.

### 4.2.1 Partial Test Results (t-test)

The regression analysis results show that the digital marketing variable (X1) has a significance value of 0.024 ( $< 0.05$ ) with a regression coefficient of 0.278, which means that digital marketing has a positive and significant partial effect on purchasing decisions (Y). This indicates that the more intensive and effective the use of digital media by culinary MSME players, the higher the tendency for consumers to make purchases. These results support the statement by Lucyantoro and Rachmansyah (2018) that digital media such as Instagram and Facebook can increase consumer interest in purchasing through more open and rapid interaction.

Meanwhile, the neuromarketing variable (X2) shows a significance value of 0.000 ( $< 0.05$ ) and a regression coefficient of 0.535. Thus, it can be concluded that neuromarketing also has a positive and significant partial effect on purchasing decisions. This finding is in line with Lim's (2018) study, which states that neuromarketing provides a new approach to understanding consumer behavior through unconscious emotional and sensory responses. This means that elements such as color, design, and brand image play a major role in triggering consumer purchasing interest, even without them realizing it.

### 4.2.2 Simultaneous Test Results (F Test)

The F test results show a significance value of 0.000 ( $< 0.05$ ) with a calculated F value of 54.103, indicating that digital marketing and neuromarketing simultaneously

have a significant effect on purchasing decisions. In other words, when both strategies are applied simultaneously, their effect on consumer behavior will be stronger and more effective.

#### 4.2.3 Coefficient of Determination ( $R^2$ )

An Adjusted R Square value of 0.518 indicates that 51.8% of the purchase decision variables can be explained by digital marketing and neuromarketing, while the remaining 48.2% is influenced by other variables outside the model, including price, product quality, direct promotion, and the influence of the consumer's social environment (Kotler & Keller, 2016).

Overall, the results of this study confirm that both independent variables, namely digital marketing and neuromarketing, have a significant effect on consumer purchasing decisions. These results are in line with the findings of Romadlon et al. (2020), which show that digital marketing can accelerate the consumer purchasing decision process by simplifying access to product information and increasing convenience in transactions.

However, these results also add that the influence of neuromarketing is greater than that of digital marketing, reinforcing the view of Venkatraman et al. (2012) that the emotional and subconscious influences in neuromarketing can create stronger buying impulses.

The demographic composition of respondents, which was dominated by young people (96% aged 17–25 years), further reinforced these findings. Generation Z is known to be highly responsive to visual, emotional, and digital approaches due to their familiarity with technology and social media experiences (Turner, 2015). In this context, digital marketing approaches serve as communication channels, while neuromarketing provides emotional reinforcement to product perceptions. The implications of these results emphasize the importance of integrated marketing strategies that not only focus on conveying information (rational selling points) but also create strong emotional connections through visual and sensory stimuli. The application of neuromarketing in the form of attractive visual design, aesthetic product packaging, or the use of storytelling in digital content can be a winning strategy for culinary MSMEs to increase their competitiveness (Reynaldi, 2024).

## Conclusion

Based on the results of data analysis obtained through multiple linear regression testing, this study concludes that:

1. Digital marketing partially has a positive and significant effect on the purchasing decisions of culinary MSME products in Medan Sunggal District with a significance value of 0.024.
2. Neuromarketing partially has a positive and significant effect on the purchasing decisions of culinary MSME products in Medan Sunggal District with a significance value of 0.000.
3. Digital marketing and neuromarketing simultaneously have a positive and significant influence on purchasing decisions for culinary MSME products in Medan Sunggal District, with a significance value of 0.000 and an F-value of 54.103.

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