

# Neuromarketing and its influence on customer loyalty in a coffee production company, La Victoria 2022

Araceli Ivonne Meza-Lazo<sup>1</sup>, Víctor Hugo Fernández-Bedoya<sup>2</sup>

<sup>1</sup>Escuela Profesional de Administración, Universidad César Vallejo, Perú, amezala@ucvvirtual.edu.pe

<sup>2</sup>Escuela Profesional de Administración, Universidad César Vallejo, Perú, vfernandezb@ucv.edu.pe

**Abstract**– *The objective of this research was to determine the influence of neuromarketing on customer loyalty (and its dimensions: internal marketing, communication, customer experience, incentives and privileges and information) in a coffee producing company in La Victoria, 2022, using a quantitative approach, applied type, explanatory and descriptive level, non-experimental design and transversal cut. The population consisted of the company's clients (infinite). The study sample consisted of 384 of the company's customers. The technique applied was the survey. The instrument consisted of 20 items. It was concluded that neuromarketing significantly influences customer loyalty in a coffee producing company in La Victoria, 2022 (sig.=0.000; r<sup>2</sup>=0.5271) as well as in its internal marketing, communication, customer experience, incentives and privileges and information dimensions (sig.=0.000, r<sup>2</sup>=0.6304; sig.=0.000, r<sup>2</sup>=0.4747; sig.=0.000, r<sup>2</sup>=0.3881; sig.=0.000, r<sup>2</sup>=0.2581; sig.=0.000, r<sup>2</sup>=0.1927) respectively. Finally, conclusions and recommendations were issued.*

**Keywords**-- Neuromarketing, customer loyalty, marketing.

## I. INTRODUCTION

In today's challenging reality, promoting the significance of neuromarketing is of utmost importance for businesses aiming to thrive in the market. Over time, this innovative approach to understanding consumer decision-making and emotions has proved vital in developing effective marketing strategies that directly resonate with customers and trigger their instincts [1], [2].

The COVID-19 pandemic has stimulated innovation in various entrepreneurial endeavors [3], [4], [5]. Consequently, when studying the techniques employed by organizations in our country on social networks during the pandemic, neuroscience technologies come into play, allowing for a deeper understanding of the subconscious response of the human brain to advertising, brands, and products [6].

By incorporating natural light, natural materials, windows facing plants and vegetation in clinics, according to the newspaper América Retail [7], neuromarketing in medical offices can help patients relax and recover quickly. In addition, in Colombia, 29% of women use their favorite social network according to a study by the School of Management of the Universidad del Rosario, the objective of the research was to

determine how fitness content can influence young target groups when it is part of publications or posters of clothing and sports footwear brands [8]. reduce animal accidents on the roads in order to conserve the populations of wolves and grizzly bears. the Junta Andalucía has therefore installed 2 neuromarketing panels on the road to warn drivers to slow down in advance. A virtual barrier with a population of kilometers [9].

In La Victoria, the coffee producing company wants to identify customer loyalty, so the option of neuromarketing is planned, with the objective that it would help to effectively intervene in customer loyalty and preference for the product located in the district of La Victoria, Lima 2022.

According to Coelho [10], the problem statement is the core of any study or idea that describes, refines and structures your main idea of any scientific research, this section develops the central ideas of a study and the reasons that motivated the researchers to study the topic; therefore, it is the part of the thesis where the topic should be explained or the question should be revealed.

According to the general problem of the study was: Is there an influence of Neuromarketing on customer loyalty in a coffee producing company in La Victoria, 2022?

And as for the specific problems were:

- a) Is there influence of neuromarketing on internal customer marketing in a coffee producing company in La Victoria, 2022?
- b) Is there influence of neuromarketing on customer communication in a coffee producing company in La Victoria, 2022?
- c) Is there an influence of neuromarketing on customer experience in a coffee producing company in La Victoria, 2022?
- d) Is there an influence of neuromarketing on customer incentives and privileges in a coffee producing company in La Victoria, 2022?
- e) Is there an influence of neuromarketing on customer information in a coffee producing company in La Victoria, 2022?

Likewise, the general objective of the thesis was: to determine the influence of neuromarketing on customer loyalty in a coffee producing company in La Victoria, 2022.

And as for the specific objectives, these were:

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- To determine the influence of neuromarketing on internal customer marketing in a coffee producing company in La Victoria, 2022.
- To determine the influence of neuromarketing on customer communication in a coffee producing company in La Victoria, 2022
- To determine the influence of neuromarketing on customer experience in A coffee producing company in La Victoria, 2022
- To determine the influence of neuromarketing on customer incentives and privileges in a coffee producing company in La Victoria, 2022?
- To determine the influence of neuromarketing on customer information in a coffee production company in La Victoria, 2022.

Finally, it was proposed as a general hypothesis: there is a significant influence of neuromarketing on customer loyalty in a coffee production company in La Victoria, 2022.

Accordingly, the specific hypotheses were:

- There is significant influence of neuromarketing on internal customer marketing in a coffee producing company in La Victoria, 2022.
- There is significant influence of neuromarketing on customer communication in a coffee producing company in La Victoria, 2022
- There is significant influence of neuromarketing on customer experience in a coffee producing company in La Victoria, 2022
- There is a significant influence of neuromarketing on customer incentives and privileges in a coffee producing company in La Victoria, 2022
- There is a significant influence of neuromarketing on customer information in a coffee producing company in La Victoria, 2022.

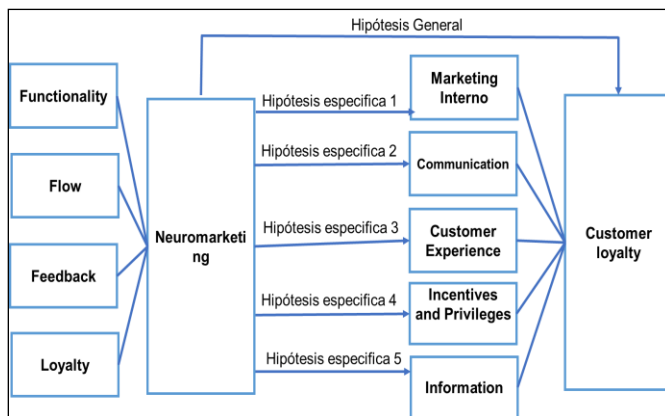


Fig. 1 Summary of hypotheses

## II. LITERATURE REVIEW

### A. Previous works

In Ambato (Ecuador), Torres [11] presents a thesis, in the repository "Universidad Técnica de Ambato". The approach of

the study was quantitative, and used 66 subjects as test. The sample Cronbach's alpha statistic and was achieved as effect  $p=0.000$ ,  $r=0.091$ . There is a high effective correlation between variables where it is shown that by applying neuromarketing tools we can increase customer loyalty in the company.

In Riobamba (Ecuador), Castro [12] presented a study in the repository "Escuela Superior Politécnica De Chimborazo". The approach of the thesis was quantitative and included 384 customers as a sample. The statistical test was Pearson's chi-square test and the effect was determined as  $p=0.000$ ,  $r=0.937$ . This shows that the instrument is very reliable, where the verification of hypotheses was performed through the tests here the null hypothesis is repudiated and the alternative hypothesis is approved.

In Tarapoto (Peru), Rodriguez [13] presented a study in the scientific journal repository "Universidad Cesar Vallejo". The research approach was quantitative and included 384 insured persons from a public hospital. The statistical test was Spearman's Rho, and the effect was  $p=0.000$ ,  $r=0.003$ . The fact that the site does not display promotions frequently also prevents the company from maintaining its customer base by offering more benefits through its digital platform.

In Lima (Peru), Pantoja [14] presented his thesis in the repository "Universidad Autónoma del Perú". The approach of the thesis was quantitative and included 144 shoppers of the Ripley company. The Cronbach's alpha statistical test and the effect was  $p=0.000$ ,  $r=0.831$ . A considerable high relationship is found between both variables and, therefore, the null hypothesis is repudiated and the alternative hypothesis is approved.

### B. Theories related to the subject

The 4F theory of marketing considered by Fleming [15], is based on the consumption of modern users, therefore it is recommended to take into account these new marketing bases and adapt them in the company, and therefore, four dimensions were identified: functionality, flow, feedback and loyalty.

- Functionality*, I indicate that this is due to the fact that the system used a variety of media along with preferred mechanisms to understand the complexities of how society evolves.
- Flow*, is organizations with digital platform designs attract consumers in their final decision to purchase or purchase products that are attracted by the visual design of their images.
- Feedback*, is to creatively select the optimal communication actions to be sent to the general public or segmented recipients to achieve a goal or response.
- Loyalty*, is based on managing the persistence of acquired relationships with companies and buyers. Managing a user database gives your organization a cost advantage and allows you to manage promotions efficiently.



Fig. 2 4F marketing theory

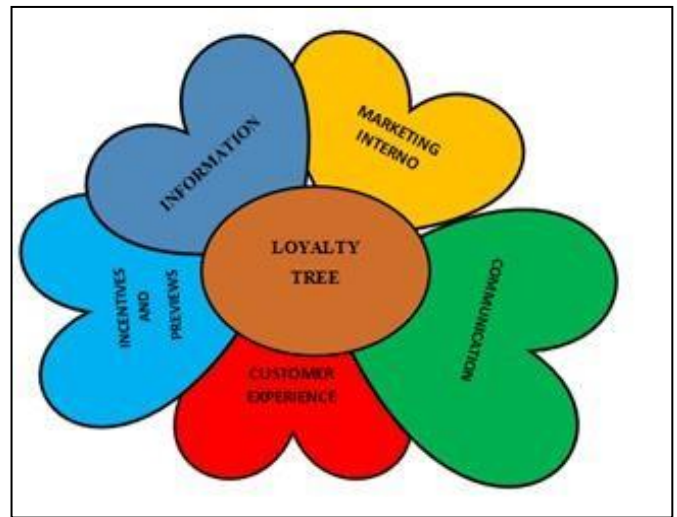


Fig. 3 Loyalty clover

The loyalty clover, considered by Alcaide [16], represents the consumer loyalty that makes it easier and understandable therefore, it contains 5 hearts information, internal marketing, communication, customer experience and incentives and privileges.

- a) *Information*, taking into account the needs of customers, this also includes keeping consumers within the company.
- b) *Internal Marketing*, entails a strong focus on customer information, but it goes beyond simply understanding their explicit needs. Instead, it seeks to create a comprehensive picture of the consumer, necessitating the adoption of a systematic approach to capture all facets and intricacies of the customer relationship.
- c) *Communication*, is a key component that can exist between customers and the organization is linked to the quality of service provided, timely through appropriate controls between companies where they achieve clear communication.
- d) *Customer experience*, it involves more than just offering services; it encompasses the entirety of the customer's interactions and engagements with the company. It focuses on ensuring that every touchpoint with the customer leaves a positive and lasting impression, contributing to overall satisfaction and loyalty.
- e) *Incentives and privileges*, loyal customers should be recognized and rewarded for their loyalty to the organization, in addition to being able to spread the utility derived from sales with customers to gain a better reputation.

### III. METHODOLOGY

The approach was quantitative. Considering Mata [17], it focuses on summarizing and inquiring data, detailing the objectives of the study, formulating hypotheses about the topic and developing methodologies to contrast these hypotheses.

The type was applied. According to Lozada [18], produce knowledge that can be directly applied to the difficulty of the association and the productive sector, based on the technical knowledge of basic research that basically deals with processes of connecting theory and products.

The level was explanatory. According to Rus [19], it is done for topics that have not been sufficiently explored so far, require prioritization, generate an operational definition and provide a better explored model. In fact, it is a type of study design that focuses on describing aspects of the study.

The level was also descriptive. According to Rus [19], an adequate knowledge of how a phenomenon works and how variables, factors or elements that make up the behavior essential for the knowledge of the social structure by the scientific method are of great value.

The design was non-experimental. Indicates Hernandez et al [20], it occurs without intentional manipulation of variables in other words, studies that do not vary intentionally are those that lack independent variables instead, scientists observe the conditions under which a phenomenon occurs and analyze it to obtain knowledge.

The cut was cross-sectional. According to Sanchez [21], this section of study is determined as a discrete observational study design that measures one or more characteristics or variables in a population sample or a predefined subset during a specific period of time.

The population is generally a large number of people or things that are the object of scientific research that is desired to know where they are carried out for the benefit of the population [22].

This population is composed of consumers in the metropolitan area of Lima who have purchased coffee from coffee growers in the last 12 months.

In this research, the population is totally unknown.

According to López [23], the infinite population is that where the total number of elements that make it up is anonymous, when there is no documented list.

According to López [22], the sample is a subset of the data belonging to a population, considered representative of the whole, and extracted or isolated using a particular method for research purposes. In this research it amounts to 384 clients.

According to Ochoa [24] probability sampling is a sampling method that refers to examining or analyzing small groups of a population using a form of random selection, Thus Ochoa [19] random sampling a sampling method that includes all the elements that make up the universe within the sampling frame are chosen for selection with equal probability.

The technique incorporated was the survey. According to Arias, a survey is a technique used to develop data collection that allows individuals from a sample population to know their opinions, assessments, attitudes and behaviors, allowing them to achieve objectives during their research.

The instrument used was the questionnaire. According to Naupas [26], it contains questions that are categorized and ordered so that it clearly extracts key information from the samples taken during the research. Therefore, in the questionnaire they should be written or oral, depending on the study analyzed, and should be completed by each person in the sample population.

Validity was subject to expert judgment in this study and was considered quantitatively and qualitatively valid.

#### IV. RESULTS

In the course, the measurement effects of the fluctuation levels are shown below.

TABLE I  
MEASUREMENT OF VARIABLE LEVELS (IN UNITS)

Levels	Variable: Neuromarketing	Variable: Customer Loyalty
High [ 3.6666 - 5.0000]	379	376
Medium [ 2.3333 - 3.6666 ]	5	7
Low [ 1.0000 - 2.3333 ]	0	1

TABLE II  
MEASUREMENT OF THE LEVELS OF THE VARIABLES (IN PERCENT)

Levels	Variable: Neuromarketing	Variable: Customer Loyalty
High [ 3.6666 - 5.0000]	98.70%	97.92%
Medium [ 2.3333 - 3.6666 ]	1.30%	1.82%
Low [ 1.0000 - 2.3333 ]	0.00%	0.26%

According to Tables 1 and 2, the variable 'neuromarketing' was one of the high levels in its majority of the surveys (379 people, 98.70%), with 5 respondents of medium level (1.30%) and respondents of low level to 0 people.

Thus, tables 1 and 2 had the 376 sample subjects, the variable 'customer loyalty' was at a high level of consideration (97.92%), 7 at an intermediate level (1.82%) and 0 at a low level. is showing.

General hypothesis:

There is significant influence of neuromarketing on customer loyalty in a coffee producing company in La Victoria, 2022.

TABLE III  
SPEARMAN'S RHO STATISTIC FOR THE GENERAL HYPOTHESIS

		V_Neuromarketing	V_CustomerLoyalty
Spearman's Rho	V_Neuromarketing	Correlation coefficient	1.000
		Sig. (bilateral)	0.000
		N	384
	V_CustomerLoyalty	Correlation coefficient	0,726
		Sig. (bilateral)	0.000
		N	384

As shown in Table 3, the bilateral asymptotic significance measured for Spearman's rho test was 0.000. If this value is less than 0.05, the researcher can test the alternative hypothesis. Therefore, in 2022 neuromarketing will have a significant impact on customer retention in La Victoria coffee producers.

TABLE IV  
CALCULATION OF THE R<sup>2</sup> FOR THE GENERAL HYPOTHESIS

Correlation coefficient (r)	Coefficient of determination (r <sup>2</sup> )
0.726	0,5271

As detailed in Table 4, the calculated r<sup>2</sup> was 0.5271. This can be interpreted as the independent variable "neuromarketing" influences the dependent variable "customer loyalty" 52.71% of the time.

TABLE V  
CALCULATION OF UNSTANDARDIZED COEFFICIENTS FOR THE GENERAL HYPOTHESIS

Model		Unstandardized coefficients		Typified coefficients	T	Sig.
		B	Error tip.	Beta		
1	(Constant)	1,315	0,146		9,018	0,000
	V. Neuromarketing	0,718	0,032	0,754	22,420	0,000

As in Table 5, the value of B for the constant and independent variables achieved 1.315 and 0.718. Using this clarification, we can establish an equation that describes how the independent variable, neuromarketing, affects the dependent variable, customer loyalty.

$$Customer\ loyalty = 1.315 + (neuromarketing * 0.718)$$

Specific hypothesis 1:

There is significant influence of neuromarketing on internal customer marketing in a coffee producing company in La Victoria, 2022.

TABLE VI  
SPEARMAN'S RHO STATISTIC FOR SPECIFIC HYPOTHESIS 1

		V_Neuromarketing	D1_MarketingInterno
Spearman's Rho	V_Neuromarketing	Correlation coefficient	1.000
		Sig. (bilateral)	.000
		N	384
	D1_MarketingInterno	Correlation coefficient	0.794
		Sig. (bilateral)	.000
		N	384

As shown in Table 6, the bilateral asymptotic significance measured for Spearman's rho test was 0.000. If this value is less than 0.05, the researcher can test the alternative hypothesis. Therefore, in 2022 neuromarketing will have a significant impact on customer retention in La Victoria coffee producers.

TABLE VII  
CALCULATION OF THE R<sup>2</sup> FOR SPECIFIC HYPOTHESIS 1

Correlation coefficient (r)	Coefficient of determination (r <sup>2</sup> )
0.794	0.6304

As detailed in Table 7, the r<sup>2</sup> calculation was 0.6304. This can be interpreted as the independent variable "neuromarketing" intervenes in the "internal marketing" dimension 63.04% of the time.

TABLE VIII  
CALCULATION OF UNSTANDARDIZED COEFFICIENTS FOR SPECIFIC HYPOTHESIS 1

Model	Unstandardized coefficients		Typified coefficients	T	Sig.
	B	Error tip.	Beta		
1	(Constant)	0,123	0,179	0,688	0,492
	V. Neuromarketing	0,969	0,039	0,784	24,664

As shown in Table 8, the values of B for constants and dimensional values were 0.123 and 0.969. With this

information, you can create formulas that describe the strength with which certain factors play a role in customer loyalty.

$$Customer\ loyalty = 0.123 + 0.969(marketing\ interno)$$

Specific hypothesis 2:

There is significant influence of neuromarketing on customer communication in a coffee producing company in La Victoria, 2022.

TABLE IX  
SPEARMAN'S RHO STATISTIC FOR SPECIFIC HYPOTHESIS 2

		V_Neuromarketing	D2_Communication
Spearman's Rho	V_Neuromarketing	Correlation coefficient	1.000
		Sig. (bilateral)	0.000
		N	384
	D2_Communication	Correlation coefficient	0.689
		Sig. (bilateral)	0.000
		N	384

As shown in Table 9, the bilateral asymptotic significance measured for Spearman's rho test was 0.000. If this value is less than 0.05, the researcher can test the alternative hypothesis. Therefore, in 2022 neuromarketing will have a significant impact on customer retention in La Victoria coffee producers.

TABLE X  
CALCULATION OF THE R<sup>2</sup> FOR SPECIFIC HYPOTHESIS 2

Correlation coefficient (r)	Coefficient of determination (r <sup>2</sup> )
0.689	0.4747

As detailed in Table 10, the r<sup>2</sup> calculation was 0.4747. This can be interpreted as the independent variable "neuromarketing" intervenes in the "customer experience" dimension 47.47% of the time.

TABLE XI  
CALCULATION OF UNSTANDARDIZED COEFFICIENTS FOR SPECIFIC HYPOTHESIS 2

Model	Unstandardized coefficients		Typified coefficients	T	Sig.
	B	Error tip.	Beta		
1	(Constant)	0,722	0,199	3,620	0,000
	V. Neuromarketing	0,838	0,044	0,700	19,139

As shown in Table 11, the values of B for constants and dimensional values were 0.722 and 0.838. With this information, you can create formulas that describe the strength with which certain factors play a role in customer loyalty.

$$\text{Customer loyalty} = 0.722 + 0.838 (\text{Communication})$$

Specific hypothesis 3:

There is significant influence of neuromarketing on customer experience in a coffee producing company in La Victoria, 2022.

TABLE XII  
SPEARMAN'S RHO STATISTIC FOR SPECIFIC HYPOTHESIS 3

		V_Neuromarketing	D3_ Customer Experience
Spearman's Rho	V_Neuromarketing	Correlation coefficient	1.000
		Sig. (bilateral)	0.000
		N	384
	D3_ Customer Experience	Correlation coefficient	0.623
		Sig. (bilateral)	0.000
		N	384

Considering Table 12, the bilateral asymptotic significance measured for Spearman's rho test was 0.000. If this value is less than 0.05, the researcher can test the alternative hypothesis. Therefore, in 2022 neuromarketing will have a significant impact on customer retention in La Victoria coffee producers.

TABLE XIII  
CALCULATION OF THE R<sup>2</sup> FOR SPECIFIC HYPOTHESIS 3

Correlation coefficient (r)	Coefficient of determination (r <sup>2</sup> )
0.623	0.3881

As detailed in Table 13, the r<sup>2</sup> calculation was 0.3881. This can be interpreted as the independent variable "neuromarketing" intervening in the "customer experience" dimension 38.81% of the time.

TABLE XIV  
CALCULATION OF UNSTANDARDIZED COEFFICIENTS FOR SPECIFIC HYPOTHESIS 3

Model	Unstandardized coefficients		Typified coefficients	T	Sig.
	B	Error tip.	Beta		
1	(Constant)	1,327	0,198	6,684	,000
	V. Neuromarketing	0,709	0,044	0,640	16,260

As shown in Table 14, the values of B for constants and dimensional values were 1.327 and 0.709. With this information, you can create formulas that describe the strength with which certain factors play a role in customer loyalty.

$$\text{Customer loyalty} = 1.327 + 0.709(\text{customer experience})$$

Specific hypothesis 4:

There is significant influence of neuromarketing on customer incentives and privileges in a coffee producing company in Victoria, 2022.

TABLE XV  
SPEARMAN'S RHO STATISTIC FOR SPECIFIC HYPOTHESIS 4

		V_Neuromarketing	D4_ IncentivesandPrivileges
Spearman's Rho	V_Neuromarketing	Correlation coefficient	1.000
		Sig. (bilateral)	0.000
		N	384
	D4_ IncentivesandPrivileges	Correlation coefficient	0.508
		Sig. (bilateral)	0.000
		N	384

As shown in Table 15, the bilateral asymptotic significance measured for Spearman's rho test was 0.000. If this value is less than 0.05, the researcher can investigate the alternative hypothesis. Therefore, in 2022 neuromarketing will have a significant impact on customer retention in La Victoria coffee producers.

TABLE XVI  
CALCULATION OF THE R<sup>2</sup> FOR SPECIFIC HYPOTHESIS 4

Correlation coefficient (r)	Coefficient of determination (r <sup>2</sup> )
0.508	0.2581

As detailed in Table 16, the r<sup>2</sup> calculation was 0.2581. This can be interpreted as the independent variable "neuromarketing" intervenes in the "customer experience" dimension 25.81% of the time.

TABLE XVII  
CALCULATION OF UNSTANDARDIZED COEFFICIENTS FOR SPECIFIC HYPOTHESIS 4

Model	Unstandardized coefficients		Typified coefficients	T	Sig.
	B	Error tip.	Beta		
1	(Constant)	1,941	0,223	8,704	0,000
	V. Neuromarketing	0,581	0,049	0,519	11,875

As shown in Table 17, the values of B for constants and dimensional values were 1.941 and 0.581. With this information, you can create formulas that describe the strength with which certain factors play a role in customer loyalty.

$$\text{Customer loyalty} = 1.941 + 0.581 (\text{incentivesandprivileges})$$

Specific hypothesis 5:

There is significant influence of neuromarketing on customer information in a coffee producing company in La Victoria, 2022.

TABLE XVIII  
SPEARMAN'S RHO STATISTIC FOR SPECIFIC HYPOTHESIS 5

			V Neuromarketing	D5 Information
Spearman's Rho	V Neuromarketing	Correlation coefficient	1.000	0.439
		Sig. (bilateral)		.000
		N	384	384
	D5 Information	Correlation coefficient	0.439	1.000
		Sig. (bilateral)	.000	
		N	384	384

According to Table 18, the bilateral asymptotic significance measured for Spearman's rho test was 0.000. If this value is less than 0.05, the researcher can investigate the alternative hypothesis. Therefore, in 2022 neuromarketing will have a significant impact on customer retention in La Victoria coffee producers.

TABLE XIX  
CALCULATION OF THE R<sup>2</sup> FOR SPECIFIC HYPOTHESIS 5

Correlation coefficient (r)	Coefficient of determination (r <sup>2</sup> )
0.439	0.1927

As detailed in Table 19, the r<sup>2</sup> calculation was 0.1927. This can be interpreted as the independent variable "neuromarketing" intervening in the "customer experience" dimension 19.27% of the time.

TABLE XX  
CALCULATION OF UNSTANDARDIZED COEFFICIENTS FOR SPECIFIC HYPOTHESIS 5

Model	Unstandardized coefficients		Typified coefficients	T	Sig.	
	B	Error tip.	Beta			
1	(Constant)	2,462	0,203		12,101	0,000
	V. Neuromarketing	0,492	0,045	0,491	11,012	0,000

As shown in Table 20, the values of B for constants and dimensional values were 2.462 and 0.492. With this information, you can create formulas that describe the strength with which certain factors play a role in customer loyalty.

$$\text{Customer loyalty} == 2.462 + 0.492 (\text{information})$$

## V. DISCUSSION AND CONCLUSIONS

### A. Discussion

The work developed by Torres [11] also had the same study of the variables of this thesis which was "neuromarketing" and "customer loyalty". While the report of Torres [11] was conducted in Ambato (Ecuador), while this thesis as geographical focus Lima (Peru). Therefore, the two researches a quantitative approach based on statistics: Torres (2012) assigned Cronbach's alpha test while this thesis used linear regression. Torres [11] limited the test to 66 customers. On the other hand, there were 384 consumers representing the population in this work. The results of the general hypothesis of Torres [11] include values of p= 0.000 and r= 0.091. In contrast, in this study, the general hypothesis result was p= 0.000, r<sup>2</sup>= 0.568.

The work published by Castro [12] also had the same study of the variables of this thesis which was "neuromarketing" and "customer loyalty". While the study of Castro [12] was conducted in Riobamba (Ecuador), while this thesis as geographical focus Lima (Peru). Therefore, both studies followed a quantitative approach and were based on statistics: Castro [12] adapted Pearson's chi-square test and used linear regression. Castro [12] limited the sample to 384 customers. On the other hand, there were 384 consumers representing the population in this work. Castro [12] general hypothesis result including the values of p= 0.000, r= 0.937; this study found that it was the result of a general hypothesis p= 0.000, r<sup>2</sup>= 0.568.

The thesis published by Rodriguez [13] focused on investigating the variables 'digital marketing' and 'customer loyalty', hence, the current report was developed in 2022 to investigate the variables 'neuromarketing' and 'neuromarketing' Investigate customer loyalty. Under the research of Rodriguez [13]. Therefore, both studies were conducted in Peru, but it is important to note that this research was conducted in Lima, while the Rodriguez [13] study was developed in Tarapoto. Therefore, both studies followed a quantitative approach and were based on statistics. Rodriguez [13] used the statistical test such as Spearman's rho, while in this thesis linear regression was used. Rodriguez [13] limited the sample to 384 insured in public hospitals. On the other hand, there were 384 consumers representing the population in this work. The result of the general hypothesis of Rodriguez [13] contains values of p= 0.000 and r= 0.003. In contrast, in this study, the result of the general hypothesis was p= 0.000, r<sup>2</sup>= 0.568.

The study published by Pantoja [14] included the same research on the variables of this paper, namely 'neuromarketing' and 'customer loyalty'. It is important to emphasize that, like this work, the Pantoja [14] work was developed in Lima studies. It was also conducted in Peru. For this reason, both studies adopted a quantitative approach and were based on statistics. Pantoja [14] applied the Cronbach's alpha statistical test, which is why linear regression is used in this study. Pantoja [14] portrayed this sample as a sample of 144 Ripley's customers. On the other hand, there were 384 consumers representing the population in this work. The results of the general hypothesis of

Pantoja [14] contains the values of  $p= 0.000$ ,  $r= 0.831$ . In contrast, in this study, the diagnostic of the general hypothesis was  $p= 0.000$ ,  $r^2= 0.568$ .

### B. Conclusions

Each conclusion should be presented accurately and clearly based on the topic that has been presented, it is worth emphasizing the important things by stating the main results of the research [27]. The following conclusions were drawn from this study:

First: Neuromarketing affects considerably in customer loyalty in a coffee product company, La Victoria, 2022. This was done by means of a Spearman's rho test ( $p = 0.000$ ;  $r^2 = 0.5271$ ).

Second: Neuromarketing intervenes in internal marketing in a coffee producing company located in La Victoria 2020. This was validated through Spearman's rho tests ( $\text{sig.} = 0.000$ ;  $r^2 = 0.6304$ ).

Third: Neuromarketing has a notable impact on customer communication in a coffee product company, La Victoria, 2022. This was achieved by means of a statistical Spearman's rho test ( $p = 0.000$ ;  $r^2 = 0.4747$ ).

Fourth: Neuromarketing has a significant impact on customer experience in a coffee product company, La Victoria, 2022. Where it was reached by means of a statistical Spearman's rho test ( $p = 0.000$ ;  $r^2 = 0.3881$ ).

Fifth: Neuromarketing has a notable impact on customer incentives and privileges in a coffee product company, La Victoria, 2022. This was validated through Spearman's rho tests ( $p = 0.000$ ;  $r^2 = 0.2581$ ).

Sixth: Neuromarketing significantly affects customer information in a coffee product company, La Victoria, 2022. Where it was reached by means of a statistical Spearman's rho test ( $p = 0.000$ ;  $r^2 = 0.1927$ ).

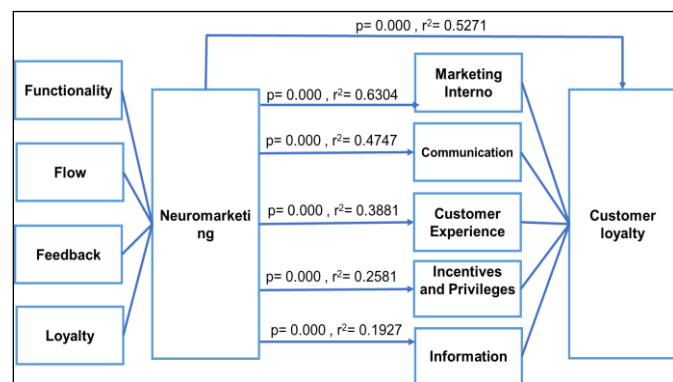


Fig. 4 Conclusion graphs.

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