Research Article

© 2024 Mogollón García et al.
This is an open access article licensed under the Creative Commons
Attribution-NonCommercial 4.0 International License
(https://creativecommons.org/licenses/by-nc/4.0/)

Received: 4 August 2024 / Accepted: 29 October 2024 / Published: 05 November 2024

The Power of Neuromarketing as a Fuel to Drive Purchases in Local Retail (Piura 2024")

Francisco Segundo Mogollón García[1]
Blanca Carolina Quiroga Ríos[1]
Shirley Lilette Rodríguez Chamorro[1]
Linda Diana Becerra Rojas[2]
Mirian Elizabeth Arévalo Rodríguez[2]
Anggie Melissa Sánchez Yarleque[2]
Artemiza Garcia Arismendiz[3]

[1]Universidad César Vallejo,
Av. Larco 1770,
Víctor Larco Herrera,
Trujillo, Peru
[2]Universidad Tecnológica del Perú,
Cal. Natalio Sanchez Urb.
Santa Beatriz 125 lima,
Lima, Peru
[3]Universidad Nacional de Piura,
Urb. Miraflores S/N Castilla,
Piura, Peru

DOI: https://doi.org/10.36941/jesr-2024-0189

Abstract

Neuromarketing studies the neurological brain responses to various marketing stimuli, such as visual, sound, colour and emotional elements, in order to understand in depth the cognitive and affective processes associated with consumer decision-making. Given its relevance, the objective is to determine how the power of neuromarketing acts as a fuel to drive purchase in a local retail store - Piura 2024. Methodologically, a quantitative approach was used with a non-experimental, descriptive-correlational and transversal design. A total of 384 frequent customers, of legal age and with purchasing power, participated. The findings of this study are an irrefutable testimony to the transformative power of neuromarketing in this local setting (Piura). With a Spearman correlation coefficient of 0.823 ($p < 0.01$), a strong and statistically significant positive correlation between neuromarketing and purchase decision is revealed, demonstrating that this innovative discipline has the ability to profoundly influence consumer behaviour. These results are a call to action for companies in the sector to adopt neuromarketing strategies that allow them to connect with their customers in a more effective and emotional way, thus unleashing an unprecedented impact on their commercial success.

Keywords: *Neuromarketing, neuroscience, consumer behaviour, purchasing decisions, marketing strategies*

1. Introduction

Since the dawn of neuromarketing, the human brain has been an object of fascination for both trade professionals and the general public, as O'Connell et al. (2011) have pointed out. Despite this enduring interest that has transcended the barriers of time, it is in the last decade that science has managed to unravel the deepest mysteries of this enigmatic organ, revealing secrets that had remained hidden for centuries. In this context, it is crucial to highlight that, in today's market, companies are extremely interested in understanding consumer preferences, i.e. the reasons why customers choose one product over another, (Ismajli et al.,2022).

Neuromarketing emerges as an innovative approach that seeks to unravel the enigmatic brain processes of the consumer, with the purpose of captivating an increasingly demanding and hard-to-please customer (Mirian et al., 2022). Currently, neuromarketing has positioned itself as one of the most cutting-edge and effective approaches to enter the consumer market (Pérez & Tapia, 2020). However, in more recent times, marked by a profound global crisis, Yugcha et al. (2020) argue that the combination of the economic crisis triggered by the pandemic, which led to the total or partial interruption of commercial activities, forced consumers to drastically transform their purchasing and consumption habits. Faced with this scenario, they found in digital connectivity an alternative to incentivise their behaviour when purchasing services or products.

In the last decade, the business world and market research have turned their attention to neuroscientific techniques, with the purpose of exploring the consumer's mind and more accurately predicting their purchasing decisions in relation to the marketing strategies implemented by companies (Cherubino et al., 2019; Alsharif et al., 2021). The application of neuroscience in marketing has provided companies with a powerful tool, a kind of 'buy button' that allows them to tap into the minds of potential consumers, understand their desires and motivations, and thus influence their purchasing decisions (Isa et al., 2019).

MarketSplash (2023) has compiled studies on neuromarketing as a purchase driver, reaching revealing conclusions. Customers who are emotionally engaged with a brand have a 306% higher lifetime value than those who are not engaged. The brain processes affective brands 50% faster than non-affective ones. TV and print ads influence purchases by a 3:1 and 2:1 ratio, respectively, based on emotional response and product information. The brain filters 99% of sensory information, so effective marketing strategies are crucial. Multi-sensory brand events can increase product engagement by up to 70%.

Zito et al., (2021) argue that neuromarketing techniques and digital marketing strategies have revealed that a purchase decision is made in as little as 2.5 seconds and that in 95% of cases, product preference is gestated unconsciously. These findings highlight the importance of appealing to subconscious cognitive and emotional processes to subtly influence consumer behaviour and guide them towards the products or services offered.

For his part, Trujillo (2019) points out that research on neuromarketing in Peruvian companies is quite scarce, which forces many researchers to resort to studies carried out in other countries and adapt their findings to specific cases. A clear example of this situation is the application of the famous experiment known as the "Pepsi Challenge" or "Pepsi Taste Test". In this experiment, a group of consumers were asked to participate in a blind taste test, in which they had to taste two different drinks: one was Coca-Cola and the other was Pepsi, without revealing the identity of each. Neuromarketing is an emerging field that integrates knowledge from psychology, neuroscience and marketing to better understand and more effectively manipulate consumer behaviour (Izaguirre-Torres et al., 2020).

The theoretical framework of neuromarketing focuses on the investigation of individuals' brain responses to various advertising stimuli and marketing strategies (Lee et al., 2007; Vecchiato et al., 2011). This paper offers a sociological perspective on this field of study.

The concept of "neuromarketing" was introduced in 2002 by Ale Smitds, professor at the Erasmus University Rotterdam, to refer to the application of neuroimaging techniques in market

research. However, the first time the term was used in the field of market research was by the advertising agency Bright House (Fisher et al., 2010).

Neuromarketing aims to attract the customer's attention, improve and enhance their consumer experience and establish emotional connections with the product or service (Salas Canales, 2018). Neuromarketing aims to induce the desire to purchase by using sensory cues to evoke emotions and experiences (Jiménez-Marín et al., 2019). Therefore, we will focus our efforts on the parameters set out below:

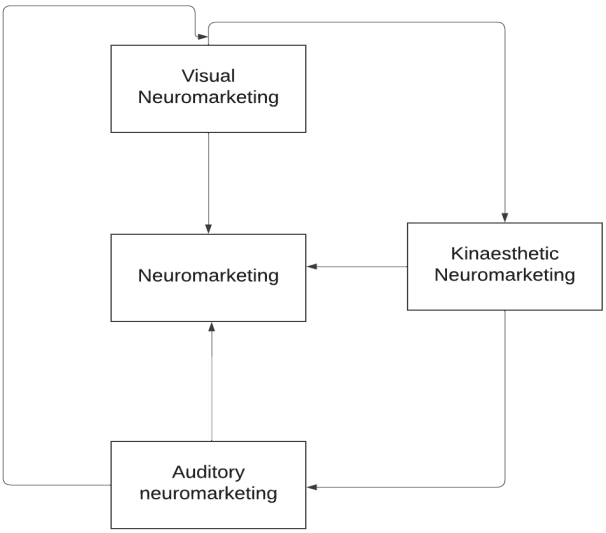

Figure 1: Malfitano's Neuromarketing Model (2007)

Visual neuromarketing: This term is used to describe the practice of tracking and analysing a person's eye movements to influence their purchasing decisions. The arrangement of supermarket shelves is a good example of this principle. Products with the highest prices are placed at eye level, while those with the lowest prices are placed at the highest possible levels, or on the floor. This method is quite basic, but it does the job (Malfitano, 2007).

Eye-tracking is used in high-tech because it is one of the most effective methods. A lot can be learned about customer influence and behaviour using this method, and it can be taken a step further by applying it to any website, app or digital content to improve its effectiveness and usability. (2). Auditory neuromarketing: Secondly, neuromarketing based on hearing is opening up. The customer's disposition can be positively or negatively impacted by the sounds we hear due to the emotions and sensations they evoke. A simple example is ambient music, depending on the type of institution and what you want to express to the customer. It is known that when we go to a professional who seeks our state of relaxation, such as a masseur, the music will be calm or with sounds of nature, such as a river, which soothes us, but in a gym, the music will be very energetic and exciting to give us a feeling of vitality and activate our motivation (Malfitano, 2007).

Kinaesthetic neuromarketing: Finally, kinaesthetic neuromarketing, which is related to the other senses of taste, smell and touch, and which mainly confirm or disprove what our eyes tell us, smell is crucial because it can transport you back in time, bring back good memories and even attract you. The bread baking at the door, the clean air in the cleaning products aisle and the scent of perfume in the cosmetics and fragrances section are just a few examples (Malfitano, 2007).

Hoyer et al. (2015) define the purchase decision as the process through which consumers make

crucial choices about the acquisition, use and disposal of products, services, activities, experiences, people and ideas. These choices, which can be made by both individuals and groups, are spread over a period of time and reflect the preferences and needs of buyers. Meanwhile; Kotler and Armstrong (2012) further elaborate on the concept of purchase choice behaviour, highlighting that more complex decisions often require the involvement of a greater number of actors and more in-depth analysis on the part of the buyer. This complexity is influenced by a number of factors, such as the type of product in question. For example, the process of selecting a new pair of trainers differs significantly from that of choosing a pair of dress shoes, as each product category arouses different emotions, expectations and considerations in the consumer's mind.

Kotler and Lane (2016), meanwhile, emphasise the importance of marketers developing a deep understanding of the cognitive, emotional and behavioural processes that drive their customers' buying decisions. This knowledge enables them not only to meet the needs and desires of their target audience more effectively, but also to forge stronger, longer-lasting relationships with them, thereby cultivating their brand loyalty.

The consumer purchase decision process is a complex journey involving multiple stages, each of which involves a series of considerations and actions on the part of the customer. Kotler et al. (2001) describe this process in five key stages:

1. Need recognition: In this initial stage, consumers identify a problem or unmet need, either through introspection or due to external stimuli that awaken their awareness. This recognition marks the starting point of the consumer journey.
2. Information search: Once customers have recognised their need, they embark on an information search to investigate possible solutions. This exploration can take the form of a 'light search', where consumers are more receptive to product details, or it can become a more comprehensive enquiry that encompasses a variety of channels, such as websites, word-of-mouth recommendations or personal visits to companies.
3. Evaluation of alternatives: With the information gathered in hand, consumers proceed to evaluate the available alternatives that could satisfy their need. At this stage, they apply different purchase decision models to weigh the advantages and disadvantages of each option, comparing features, prices and benefits.
4. Purchase decision: After careful analysis of the alternatives, the customer develops a preference for their preferred brand. However, it is important to bear in mind that external factors, such as social pressure or the opinions of friends and family, may influence their final choice.
5. Post-purchase behaviour: The purchase decision process does not end with the purchase of the product or service. In fact, even after the purchase has been made, consumers continue to pay attention to information that reinforces their initial decision. This post-purchase behaviour reflects customers' need to reaffirm the wisdom of their choice and minimise any cognitive dissonance that may arise.

According to the reality posed, the following will be considered as a general problem: Does the force of neuromarketing usually act as fuel to drive purchase in a local Retail - Piura 2024? And as specific problems: Do the forces of visual, auditory and kinaesthetic neuromarketing tend to act as fuel to drive purchase in a local retail - Piura 2024?

To address this problem that attacks the reality of local shopping centres, the central objective is: To determine how the force of neuromarketing tends to act as fuel to drive purchases in a local retail store - Piura 2024 and as specific objectives: To identify which forces of visual, auditory and kinaesthetic neuromarketing tend to act as fuel to drive purchases in a local retail store - Piura 2024.

In summary, this research is convenient because: (1). It allows retailers to understand the subconscious factors that influence consumers' purchasing decisions, which helps them to develop more effective and persuasive marketing strategies. (2). It will help retailers optimise the in-store customer experience by creating an environment that appeals to consumers' senses and emotions, encouraging impulse buying and increasing customer satisfaction. (3). It provides valuable insights

into the specific preferences and behaviours of consumers in Piura, allowing retailers to tailor their neuromarketing strategies to meet the unique needs and expectations of this local market.

2. Methodology

To collect information, this study used quantitative methods (approach), that is, studies that collect and analyse numerical data to test hypotheses and generalise results, in addition, it uses standardised instruments and statistics to obtain significant and replicable findings, minimising the influence of the researcher (Pinto, 2018). The research was developed under a non-experimental design, since the researcher collected the information directly from the context where the phenomenon manifested itself, processing the data obtained without altering or manipulating the variables involved, thus respecting the natural conditions of the studied environment (Sampieri & Torres, 2023).

Considering the practical focus of the study, it was essential to classify it as basic research. This type of study broadens the scientific understanding of the fundamentals related to the phenomena, without focusing on immediate applications (Ramos, 2023; Cortés, 2010). Motivated by the desire for knowledge, it lays the foundation for future research and technological developments.

In addition, the study was cross-sectional, descriptive and correlational. Cross-sectional, because it collected information on variables from a predefined population subsample at a single point in time (Heinemann, 2007). Descriptive, because its purpose was to objectively characterise a phenomenon through data collection, presentation, interpretation and analysis (Torres, 2006). Correlational, meaning that it used inferential statistics to determine relationships between variables (Gómez, 2006).

It should be noted that the study universe included all consumers who frequent this commercial establishment located in the District of Castilla, Piura (SF). Due to the lack of precise information on the daily influx of visitors, the sampling formula for infinite populations was used, which yielded a sample size of 384 individuals.

In order to properly delimit the sample, the following inclusion criteria were established: firstly, consumers who frequent this commercial establishment (SF) were considered. Secondly, only customers with a credit card issued by this retail outlet were considered. Finally, only those individuals who had made at least one purchase in the last six months were included.

As a data collection technique, the survey was chosen, using two questionnaires as the main instruments, in line with the nature and parameters of the study. The first instrument, adapted by Castro and Vasques (2019), comprises 12 items. The second questionnaire was constructed from an exhaustive review of surveys posted in academic publications and university repositories, taking as a theoretical basis Kotler's (2012) postulates on consumer purchasing behaviour. Both instruments use a Likert scale to quantify the responses and evaluate the proposed dimensions, establishing three levels of measurement: low, medium and high.

The validation process was carried out with the participation of three experts in business administration, whose academic degrees are recognised by the National Superintendence of University Higher Education (SUNEDU).

The reliability of the instruments was assessed using Cronbach's alpha coefficient, obtaining a value in the range of 0.7 - 1 in both cases. This result allows us to affirm that the scales used have an adequate and relevant level of reliability for addressing the problem in question.

3. Results

As an initial step and prior to the application of the correlational tests, an exhaustive descriptive examination was carried out with the purpose of elucidating the current panorama of the two variables: "Neuromarketing and purchase decision". This preliminary analysis allowed us to obtain a global and detailed vision of the current situation, laying the foundations for a deeper understanding of the interrelationship between these elements within the context of this Retail located in the city of Piura (Castilla).

Table 1: Descriptive of the dimensions of neuromarketing.

	Low		Medium		High		Total	
	f(x)	f(%)	f(x)	f(%)	f(x)	f(%)	f(x)	f(%)
N. Visual	68	17,7%	177	46,1%	139	36,2%	384	100,0%
N. Auditory	56	14,6%	202	52,6%	126	32,8%	384	100,0%
N. Kinaesthetic	64	16,7%	223	58,1%	97	25,3%	384	100,0%
Neuromarketing	71	18,5%	160	41,7%	153	39,8%	384	100,0%

Note: Details on the current status of the neuromarketing variable and its dimensions.

The Visual dimension shows that almost half of the participants (46.1%) have a moderate response to visual stimuli in Neuromarketing, while just over a third (36.2%) have a high response. This suggests that the visual elements used in Neuromarketing strategies are effective in capturing the attention and interest of a large proportion of consumers. As for the Auditory dimension, more than half of the participants (52.6%) show a moderate reaction to auditory stimuli, and almost a third (32.8%) have a high response. These results indicate that sounds and music used in Neuromarketing can influence consumers' emotions and perceptions, although to a lesser extent than visual stimuli. The Kinaesthetic dimension reveals that the majority of participants (58.1%) have a moderate response to stimuli related to touch, movement and body sensations. In addition, a quarter of the participants (25.3%) show a high kinaesthetic response. This suggests that tactile experiences and physical interaction with products can be effective Neuromarketing strategies for a considerable segment of consumers.

In relation to Neuromarketing in general, a more balanced distribution is observed between the Medium (41.7%) and High (39.8%) levels. This implies that the combination of visual, auditory and kinaesthetic stimuli has a significant impact on the majority of consumers, which highlights the importance of designing comprehensive, multi-sensory Neuromarketing strategies.

Table 2: Descriptive of the dimensions of the purchase decision.

	Low		Medium		High		Total	
	f(x)	f(%)	f(x)	f(%)	f(x)	f(%)	f(x)	f(%)
Recognition of the need.	83	21,6%	240	62,5%	61	15,9%	384	100,0%
Search for information.	38	9,9%	207	53,9%	139	36,2%	384	100,0%
Evaluation of alternatives.	46	12,0%	277	72,1%	61	15,9%	384	100,0%
Purchase decision.	73	19,0%	256	66,7%	55	14,3%	384	100,0%
Post-purchase behaviour.	24	6,3%	274	71,4%	86	22,4%	384	100,0%
Diagnosis - Purchase decision.	24	6,3%	272	70,8%	88	22,9%	384	100,0%

Note: Details on the current status of the purchase decision variable and its dimensions.

In the Need Recognition dimension, it stands out that more than half of the participants (62.5%) have a high level of recognition of their needs when making a purchase decision. This suggests that consumers are aware of their needs and wants, which drives them to look for products or services that can satisfy them.

The Information Search dimension shows that more than half of the participants (53.9%) carry out a comprehensive search before making a purchase decision, while one third (36.2%) carry out a moderate search. These results indicate that consumers value obtaining detailed and complete information on products or services of interest to them, which enables them to make more informed decisions.

In the dimension Evaluation of alternatives, it is observed that the vast majority of participants (72.1%) make a thorough evaluation of the different options available before deciding what to buy. This suggests that consumers are selective and seek to compare the features, benefits and prices of products or services to find the best option that suits their needs and preferences.

The dimension. Purchase decision reveals that two thirds of the participants (66.7%) make informed purchase decisions based on the information obtained and the evaluation made. This implies that consumers are rational and seek to maximise their perceived satisfaction and value when purchasing a product or service.

Finally, in the Post-purchase behaviour dimension, it is observed that the majority of participants (71.4%) have a positive and satisfactory behaviour after making a purchase. This suggests that consumers tend to feel happy and satisfied with their purchase decisions, which may influence their brand loyalty and the likelihood of making repeat purchases in the future.

In conclusion, the analysis of both tables reveals that Neuromarketing has a considerable impact on consumers, especially in terms of visual stimuli and the combination of different sensory stimuli. Furthermore, it is observed that consumers are active and rational in their purchase decision-making process, seeking information, evaluating alternatives and making informed decisions. These findings highlight the importance of designing effective Neuromarketing strategies that are adapted to the needs and preferences of consumers, as well as providing clear and complete information about the products or services offered.

Table 3: Correlations between neuromarketing dimensions and the purchase decision.

			Visual neuro marketin	Visual neuro marketing	Visual neuro marketing	Visual neuro marketing	Visual neuro marketing
Rho de Spearman	Visual neuro marketing	Coeficiente de correlación	1,000	,039	-,044	,519**	**,530****
		Sig. (bilateral)	.	,446	,386	,000	**,000**
		N	384	384	384	384	**384**
	Auditory neuro marketing	Coeficiente de correlación	,039	1,000	,263**	,705**	**,546****
		Sig. (bilateral)	,446	.	,000	,000	**,000**
		N	384	384	384	384	**384**
	Kinesthetic neuro marketing	Coeficiente de correlación	-,044	,263**	1,000	,608**	**,445****
		Sig. (bilateral)	,386	,000	.	,000	**,000**
		N	384	384	384	384	**384**
	Global Neuromarketing	Coeficiente de correlación	,519**	,705**	,608**	1,000	**,823****
		Sig. (bilateral)	,000	,000	,000	.	**,000**
		N	384	384	384	384	**384**
	Purchase decision	Coeficiente de correlación	,530**	,546**	,445**	,823**	1,000
		Sig. (bilateral)	,000	,000	,000	,000	.
		N	384	384	384	384	384

**. The correlation is significant at the 0.01 level (bilateral).

Correlation between Visual Neuromarketing and Purchase Decision: Spearman's correlation coefficient between these variables was 0.530, indicating a moderate positive correlation and statistically significant ($p < 0.01$). This suggested that the visual stimuli employed in Piura retail had a considerable impact on customers' purchase decision. The more effective the visual elements were, such as product presentation, shop design and visual advertising, the more likely customers were to make the decision to purchase the products offered.

Correlation between auditory neuromarketing and purchase decision: A Spearman correlation coefficient of 0.546 was observed, indicating a moderate positive correlation and statistically significant ($p < 0.01$). This result suggested that auditory stimuli, such as ambient music, loudspeaker announcements and salespersons' tone of voice, had a significant influence on the purchase decision of retail customers in Piura. The creation of a pleasant and persuasive auditory atmosphere was able to increase the likelihood that customers would choose to purchase the products.

Correlation between kinaesthetic neuromarketing and purchase decision: Spearman's correlation coefficient was 0.445, which was a moderate positive correlation and statistically significant ($p < 0.01$). This finding indicated that tactile experiences and physical interaction with

products had a significant impact on the purchase decision of retail customers in Piura. Allowing customers to touch, try and experience products could increase their interest and desire to buy, which in turn positively influenced their final decision.

Correlation between Neuromarketing and Purchase Decision: A Spearman correlation coefficient of 0.823 was observed, indicating a strong and statistically significant positive correlation ($p < 0.01$). This result suggested that the strategic combination of visual, auditory and kinaesthetic stimuli had a very significant impact on the purchase decision of retail customers in Piura. The implementation of an integrated neuromarketing approach, which encompassed multiple senses and experiences, was able to maximise the likelihood of customers making the decision to purchase the products offered.

In conclusion, the correlations analysed showed that the different dimensions of neuromarketing, both individually and together, had a notable influence on the purchase decision of retail customers in Piura. The visual dimension and the overall combination of stimuli presented the strongest correlations, suggesting that neuromarketing efforts should focus on creating impactful visual experiences and strategically integrating the different sensory stimuli. These findings provided valuable information for retailers in Piura to optimise their neuromarketing strategies and improve their effectiveness in influencing the purchase decision of their customers.

4. Discussion

The findings of this research highlight the importance of neuromarketing as a catalytic element in the purchase decision-making process within the local retail environment in Piura. The results obtained are in line with the assertions of Ismajli et al. (2022), who highlight the growing interest of business organisations in elucidating consumer preferences and the factors that influence the selection of one product over another. In line with these findings, Mirian et al. (2022) highlight the role of neuromarketing as a cutting-edge approach to unravel consumer neural processes and captivate an increasingly demanding and selective customer.

In relation to the dimensions of neuromarketing, a significant influence of visual, auditory and kinaesthetic stimuli in the customer's purchasing decision process was evidenced. These results converge with the neuromarketing model proposed by Malfitano (2007), which emphasises the relevance of visual elements, musical ambience and tactile experiences in modulating consumer behaviour.

In terms of the purchase decision dimensions, it was found that consumers exhibit a high level of need recognition, conduct a thorough search for information, thoroughly evaluate available alternatives and make informed decisions. These findings align with the postulations of Kottler et al. (2001) on the five cardinal phases of the consumer purchase decision process.

The correlations identified between the neuromarketing dimensions and the purchase decision support the hypothesis that the strength of neuromarketing acts as a fuel to drive purchase in Piura's local retail. These results are consistent with statistics compiled by MarketSplash (2023), which highlight the impact of neuromarketing on the lifetime value of emotionally engaged customers, the processing speed of affective brands, and the influence of TV and print ads on purchases.

Furthermore, the findings of this study converge with the assertions of Zito et al. (2021), who argue that neuromarketing techniques and digital marketing strategies have revealed that a purchase decision is gestated in as little as 2.5 seconds and that in 95% of cases, product preference originates unconsciously.

It is relevant to emphasise that the application of neuromarketing in local retail in Piura can contribute to optimise the customer experience, create an attractive and persuasive environment, and adapt strategies to the idiosyncratic needs and preferences of this market. However, as Trujillo (2019) points out, research on neuromarketing in Peruvian companies is scarce, which enhances the relevance of this study in the local context.

In summary, the results of this research provide empirical evidence on the effectiveness of

neuromarketing as a catalyst of the purchase decision in local retail in Piura. It is recommended that companies in the sector implement holistic and multisensory neuromarketing strategies, adapted to the preferences and needs of local consumers. Future research could further investigate the influence of region-specific cultural and demographic factors on the effectiveness of neuromarketing, as well as explore its application in other sectors and contexts within Peru.

5. Conclusion

This study powerfully reveals the transformative power of neuromarketing as a catalyst for the purchase decision in local retail in Piura, demonstrating that the strategic combination of visual, auditory and kinaesthetic stimuli acts as a powerful fuel to drive purchase in this specific context. The results not only strongly support the effectiveness of these strategies, but also provide a clear and practical roadmap for companies in the sector to optimise the customer experience and boost their commercial success. This study marks a milestone in the understanding of consumer behaviour in Piura and opens new horizons for the innovative application of neuromarketing in local retail, laying the foundations for a revolution in the way companies connect with their customers and generate extraordinary results in an increasingly competitive and challenging environment.

Based on the findings of the neuromarketing study in the Piura retail shop, the conclusions show that the shop should implement more integrated multi-sensory strategies. It would benefit from experimenting with sophisticated combinations of visual, auditory and kinaesthetic elements, such as synchronising ambient music with visual displays or incorporating fragrances that complement the tactile experience of products.

In addition, it is suggested that this retailer invest in advanced neuromarketing technologies, such as eye-tracking. This would allow it to obtain more accurate data on consumer behaviour and optimise shop layout more effectively, revealing unique insights into its customers' preferences and responses to various marketing stimuli.

References

Alsharif, A. H., Salleh, N. Z. M., & Baharun, R. (2020a). Research trends of neuromarketing: A bibliometric analysis. Journal of Theoretical and Applied Information Technology, 98(15), 2948-2962.

Alsharif, A. H., Salleh, N. Z. M., & Baharun, R. (2021). Neuromarketing: Marketing research in the new millennium. Neuroscience Research Notes, 4(3), Article 3. https://doi.org/10.31117/neuroscirn.v4i3.79

Avendaño Castro, W. R., Luna Pereira, H. O., & Rueda Vera, G. (2021). Visual neuromarketing strategies in two shopping malls in the city of Cúcuta, Colombia: Estrategias de neuromarketing visual en dos centros comerciales de la ciudad de Cúcuta, Colombia. Cuadernos de Administración, 37(71), 1-14. https://doi.org/10.25100/cdea.v37i71.11195

Babaç, E., Yüncü, H. R., Babaç, E., & Yüncü, H. R. (2022). Determination of user experience on food business websites using neuromarketing techniques. Tourism & Management Studies, 18(3), 49-64. https://doi.org/10.18089/tms.2022.180304

Castro Ramos, C. G., & Vasquez Gutierrez, K. M. (2019). Neuromarketing y su relación con el comportamiento de compra en los Malls Plaza Norte y Mega Plaza Lima Norte, 2019. https://repositorio.usil.edu.pe/entities/publication/bb39de33-def6-44eb-97ea-618ec3392883

Cherubino, P., Martinez-Levy, A. C., Caratù, M., Cartocci, G., Di Flumeri, G., Modica, E., Rossi, D., Mancini, M., & Trettel, A. (2019). Consumer Behaviour through the Eyes of Neurophysiological Measures: State-of-the-Art and Future Trends. Computational Intelligence and Neuroscience, 2019, e1976847. https://doi.org/10.1155/2019/1976847

Chicoma Ruiz, G. del P., Martel Carranza, C. P., & Torero Solano de Martel, N. Z. (2021). Neuromarketing y decisión de compra en consumidores del Departamento de Huánuco, Perú. Desafíos: Revista Científica de Ciencias Sociales y Humanidades, 12(1), 37-43.

Chicoma-Ruiz, G. del P. (2021). Neuromarketing y decisión de compra en consumidores de la región Huánuco-Perú. Desafios, 12(1), Article 1. https://doi.org/10.37711/desafios.2021.12.1.269

Cortés, D. M. (2010). Sobre la ruptura entre ciencia y tecnología en psicología. Revista Colombiana de Psicología, 19(1), 133-137.

Fisher, C. E., Chin, L., & Klitzman, R. (2010). Defining Neuromarketing: Practices and Professional Challenges. Harvard Review of Psychiatry, 18(4), 230. https://doi.org/10.3109/10673229.2010.496623

Gómez, M. M. (2006). Introducción a la metodología de la investigación científica. Editorial Brujas.

Heinemann, K. (2007). Introducción A La Metodología De La Investigación Empírica En Las Ciencias Del Deporte. Editorial Paidotribo.

Hoyer, W., Maclnnis, D. & Pieters, R. (2015). Comportamiento del consumidor .7ma Edición. México D.F.: Cengage.

Isa, S. M., Mansor, A. A., & Razali, K. (2019). Ethics in Neuromarketing and its Implications on Business to Stay Vigilant. KnE Social Sciences, 687-711. https://doi.org/10.18502/kss.v3i22.5082

Ismajli, A., Ziberi, B., & Metushi, A. (2022). The Impact Of Neuromarketing On Consumer Behaviour. Corporate Governance and Organizational Behavior Review, 6(2), Article 2. https://doi.org/10.22495/cgobrv6i2p9

Izaguirre-Torres, D., Málaga-Juárez, J., Chuqui-Diestra, S. R., Velásquez-Ccosi, P. F., Siche, R., Izaguirre-Torres, D., Málaga-Juárez, J., Chuqui-Diestra, S. R., Velásquez-Ccosi, P. F., & Siche, R. (2020). La neurociencia en la publicidad de productos agroalimenticios: ¿Una herramienta beneficiosa o un peligro para salud pública? Scientia Agropecuaria, 11(4), 629-639. https://doi.org/10.17268/sci.agropecu.2020.04.19

Jara Cerna, K. S., Miranda Guerra, M. del P., Céspedes Ortiz, C. P., Jara Cerna, K. S., Miranda Guerra, M. del P., & Céspedes Ortiz, C. P. (2022). Relación entre el neuromarketing y el posicionamiento de marca de una empresa del sector retail. Revista Universidad y Sociedad, 14(1), 554-563.

Jiménez-Marín, G., Bellido-Pérez, E., & López-Cortés, Á. (2019). Marketing Sensorial: El Concepto, Sus Técnicas Y Su Aplicación En El Punto De Venta. Vivat Academia, 148, 121-147.

Kotler, P. & Lane, K. (2016). Dirección del Marketing (15a. ed.). México: Pearson Educación.

Kotler, P., y Armstrong, G. (2012). Marketing. Méxi- co: Pearson Educación de México.

Kotler, Philip., Amstrong, Gary., Escalona García, R. Luis., & Benassini, Marcela. (2001). Marketing. 688. https://books.google.com.ec/books?id=JozqsnlGXqEC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

Lee, N., Broderick, A. J., & Chamberlain, L. (2007). What is 'neuromarketing'? A discussion and agenda for future research. International Journal of Psychophysiology, 63(2), 199-204. https://doi.org/10.1016/j.ijpsycho.2006.03.007

Malfitano, O. (2007). Neuromarketing: cerebrando negocios y servicios. Ediciones Granica. Recuperado el 04 de agosto de 2020, de https://elibro.net/es/ereader/unitechn/66677

MarketSplash. (2023, septiembre 28). El Poder De La Influencia Con Más De 200 Estadísticas, Estrategias, Perspectivas Y Crecimiento Del Neuromarketing. MarketSplash. https://marketsplash.com/es/estadisticas-de-neuromarketing/

Mirian, O. V. L., Lizbeth, C. G., & Manuel, A. P. J. (2022). Estrategias de neuromarketing en campañas publicitarias para empresas del sector restaurantes en Huancayo-Perú. Revista de Ciencias Sociales, 28(1), 322-333. Scopus. https://doi.org/10.31876/rcs.v28i1.37694

Nieto, E. (2018). Tipos de Investigación. Universidad Santo Domingo de Guzmán. http://repositorio.usdg.edu.pe/handle/USDG/34

O'Connell, Barbara, Steven Walden, and Andrew Pohlmann. "Marketing and neuroscience what drives customer decisions." American Marketing Association. (2011).

Ouzir, M., Chakir Lamrani, H., Bradley, R. L., & El Moudden, I. (2024). Neuromarketing and decision-making: Classification of consumer preferences based on changes analysis in the EEG signal of brain regions. Biomedical Signal Processing and Control, 87. Scopus. https://doi.org/10.1016/j.bspc.2023.105469

Pérez, M. P., & Tapia, V. C. (2020a). Neuromarketing y decisión de compra en jóvenes de la región Junín. Desafios, 11(1), Article 1. https://doi.org/10.37711/desafios.2020.11.1.142

Pérez, M. P., & Tapia, V. C. (2020b). Neuromarketing y decisión de compra en jóvenes de la región Junín. Desafios, 11(1), Article 1. https://doi.org/10.37711/desafios.2020.11.1.142

Pinto, J. E. M. (2018). Metodología de la investigación social: Paradigmas: cuantitativo, sociocrítico, cualitativo, complementario. Ediciones de la U.

Ramos, C. E. (2023). La investigación básica como propuesta de línea de investigación en psicología. Revista de Investigacion Psicologica, 30, 151-161. https://doi.org/10.53287/wrtc9638pi23r

Salas Canales, H. J. (2018). Neuromarketing: Explorando la mente del consumidor. Revista Científica de la UCSA, 5(2), 36-44. https://doi.org/10.18004/ucsa/2409-8752/2018.005(02)036-044

Sampieri, R. H., & Torres, C. P. M. (2023). Metodología de la investigación: Las rutas cuantitativa, cualitativa y mixta. McGraw-Hill Interamericana Editores.

Torres, C. A. B. (2006). Metodolog¡a de la investigaci¢n: Para administraci¢n, econom¡a, humanidades y ciencias sociales. Pearson Educación.

Trujillo, A. L. R. (2019). ¿Es el neuromarketing una realidad o simplemente una teoria? La importancia de su aplicación en las empresas comerciales. InnovaG, 5, 82-89.

Vecchiato, G., Toppi, J., Astolfi, L., De Vico Fallani, F., Cincotti, F., Mattia, D., Bez, F., & Babiloni, F. (2011). Spectral EEG frontal asymmetries correlate with the experienced pleasantness of TV commercial advertisements. Medical & Biological Engineering & Computing, 49(5), 579-583. https://doi.org/10.1007/s11517-011-0747-x

Yugcha, J., Cajas, M., & Villalba, R. (2020). Estímulos sensoriales en prácticas de neuromarketing aplicadas al proceso de decisión de compra online, caso: Empresas de licores en la ciudad de Ambato. 593 Digital Publisher CEIT, 5(6-1), Article 6-1. https://doi.org/10.33386/593dp.2020.6-1.404

Zito, M., Fici, A., Bilucaglia, M., Ambrogetti, F. S., & Russo, V. (2021). Assessing the Emotional Response in Social Communication: The Role of Neuromarketing. Frontiers in Psychology, 12. https://doi.org/10.3389/fpsyg.2021.625570