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## 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

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### Abstract

For a couple of decades, neuroscience has positioned itself as a space for research that cuts across multiple disciplines and sciences. Its contributions generate new discussions within education, psychology, and, of course, marketing. Neuromarketing is a young field of study that is still being defined. In Google Scholar, there are only 21 thousand results of studies related to this topic. This article seeks to describe the visual neuromarketing practices present in two shopping malls in the city of Cúcuta (Colombia). The present paper is a quantitative study with a descriptive, non-experimental, cross-sectional design that uses an observation guide and a questionnaire as instruments. The first was applied to 220 study units (commercial establishments) and the second to 216 visiting customers. Although there is no certainty about the conscious application of neuromarketing strategies and principles by the owners of the establishments, the results show that customers experience positive emotions (joy, tranquility, euphoria, and affectivity) and elaborate positive concepts about the establishments (pleasant and comfortable), affecting their decision to buy (50%) and to return to the place (90% to 100%). It is concluded that the visual marketing

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of the establishments analyzed, characterized by the use of warm and cold lights, moderate use of images, predominant display of products and their diversity, little visualization of offers, is influential on the emotions, concepts, and decisions of buyers and customers.

**Keywords:** Marketing; Neuromarketing; Neuroscience; Visual perception; Shopping mall.

## Resumen

Desde hace un par de décadas, se ha venido posicionando la neurociencia como espacio de investigación transversal a múltiples disciplinas y ciencias. Con sus aportes, genera nuevas discusiones al interior de la educación, la psicología, y claro está, el marketing. El neuromarketing es un campo de estudio joven que hasta ahora viene delimitándose. En *Google Scholar* se registran tan solo 21 mil resultados de estudios relacionados con esta temática. En este artículo se busca describir las prácticas de neuromarketing visual presentes en dos centros comerciales de la ciudad de Cúcuta (Colombia). Se trata de un estudio con enfoque cuantitativo con diseño no experimental - transversal de nivel descriptivo en el que se aplicaron como instrumentos una guía de observación y un cuestionario. El primero fue aplicado a 220 unidades de estudio (establecimientos comerciales) y el segundo a 216 clientes visitantes. Aunque no se tiene certeza sobre la aplicación consciente de estrategias y principios de neuromarketing por parte de los propietarios de los establecimientos, los resultados muestran que los clientes experimentan emociones positivas (alegría, tranquilidad, euforia y afectividad) y elaboran conceptos positivos sobre los establecimientos (agradable y confortable), afectando su decisión de compra (50%) y de volver al lugar (90% al 100%). Se concluye que el marketing visual de los establecimientos analizados caracterizados por el uso de luces cálidas y frías, uso moderado de imágenes, exhibición predominante de productos y su diversidad, poca visualización de ofertas, es efectivo sobre las emociones, conceptos y decisiones de los compradores y clientes.

**Palabras Clave:** Marketing; Neuromarketing; Neurociencia; Percepción visual; Centro comercial.

## 1. Introduction

In its most basic and general sense, marketing can be interpreted as a social and administrative process embodied in scenarios of supply, creation, and exchange of products and services, coherent with individuals' desires and needs (Kotler, 1984). The central purpose is the satisfaction of those who acquire the product or service (Morgan, Whitley, Feng and Chari, 2019; Sarmiento, 2016). For such purposes, the product materialized in its intangible

elements (design, packaging, colors, shapes, among others) must have a price, a way of distribution, in addition to a promotional strategy that allows the divulgation of its existence within the public and informs about the ways of acquisition (Londhe, 2014; Fernández, 2015). Marketing is the activity, the set of institutions and processes to create, communicate, deliver, and exchange offers with value for customers, partners, and society in general (Sanclemente-Téllez, 2017).

Marketing strategies focused on the perception of the senses concerning brands have been developed to have a product or service acquired by buyers holistically and effectively. Within the framework of this type of marketing, one or more of the five senses of human beings are stimulated to influence the consumer through sensorial experiences that generate an impact on purchasing and consumption practices and establish brand retention in their memory (Ortegón-Cortázar and Gómez, 2016). It has been evidenced that each of the senses generates an impression through the stimuli received by vision, hearing, smell, taste, and touch, in the consumer's predilections, memories, and purchase choices. Therefore, the senses are relevant factors for business management due to their impact on the emotions, perceptions, and behavior of individuals (Krishna, 2009; Géci, Nagyová, and Rybanská, 2017).

The mental representation of reality is essentially linked to what is perceived through the senses. All stimuli coming from different environments or contexts offer the person the necessary information about their inhabit world. However, some senses are used more than others: the environment is perceived mainly through vision, followed by smell and hearing, and lastly, taste and touch (Álvarez, 2011). Based on this type of data -and others-, emerged from the field of neuroscience and cognition, have led many brands to employ marketing strategies focused on generating sensations on the primary senses -sight, hearing, and smell-, to broaden customers' perception of environments and spaces, and strengthen more intimate relationships between brands and people (Avendaño, Paz, and Rueda, 2015).

These techniques included in the field of marketing are denominated neuromarketing,

where through advertising and other actions focused on impacting the senses of consumers, direct communication with the brain is generated to influence or modify the purchasing behavior of a customer, in addition, to generate emotion and motivation related to a brand positioning (Morin, 2011; De Andreis, 2012; Oliveira and Giraldi, 2017). Of course, one must also consider the ethical implications of this type of strategy, which are a point of academic discussion within the literature (Vega, 2016; Stanton, Sinnott-Amstrong, and Huettel, 2017).

Brands reach the consumer's brain through marketing techniques and strategies, which "activate extremely important motivation-related structures in the brain" (De Andreis, 2012, p. 51). therefore, to generate a more significant impact, brands should focus on knowing which environments, colors activate dynamic systems, smells, or sounds, and thus, be able to modify the established strategies if they are not generating the desired sensations in consumers or maintaining them if they are achieving an adequate impact on the senses.

## 2. Theoretical framework

### 2.1. Marketing of the senses and neuromarketing

Marketing of the senses, also called sensorial marketing, is the strategy related to promoting a product, a service, or a brand. The previous intends to impact the senses of consumers and influence their behavior, retention, and positioning related to a brand or product (Krishna, 2009). To develop a strategy that modifies or affects the consumers' desires, it is necessary to study sensation and perception to achieve this purpose. In a point of sale, a commercial establishment, or a retail store, sensorial marketing is expressly aimed at the stimulation of the five senses to generate a pleasant environment so that an individual customer or potential buyer increases their desire to purchase the offered brand (Jiménez-Marín, Bellido Pérez, and López Cortés, 2019). The construct 'marketing of the senses' is comprised within neuromarketing, defined by Gutiérrez (2019) as:

The application of neuroscience techniques in the field of marketing, which analyzes the levels of emotion, attention, and memory evoked by stimuli in the context of marketing, advertising, and sales, such as advertisements, products, services, or experiences, needs an understanding of the subconscious in order to have more accurate data about the reaction of customers and improve the management of resources for marketing and sales of companies (p. 1177).

More simply, Manzano, Gavilan, Avello, Abril, and Serra (2012) explain that neuromarketing can be understood as the science in charge of studying how an individual, in the role of consumer, perceives, processes, memorizes, learns, feels, and reasons the stimuli received from a particular brand to make decisions before buying, while buying and after buying. Thus, it "tries to explain the factors that influence and affect the thoughts, feelings, motivations, needs, and desires, to ultimately understand what defines "the buying behavior" of a person (Manzano *et al.*, 2012).

Recently, the marketing of the senses has taken great relevance in multiple sectors of commerce since it is an effective and efficient way to connect a brand, a product, or a service with the way of life of customers (or potential customers), resorting to the emotions generated by the environment, the stimulation of the senses and reason. The main objective of sensorial marketing is "to achieve an emotional commitment with the consumer so that they remember the brand and to remain in their memory it is necessary to touch the fiber of their feelings; that is why it is necessary to create a story with which they can relate and commit" (de Garcillán, 2015, p. 467).

The cerebral system is considered an open conglomerate with changes, formations, and recurrent neuronal development, from these lived experiences and learning. This system at the physiological level divides the conscious mind from the unconscious and separates reason from emotion. Although both participate in large part of the situations, the predominance of the moving part over the rational becomes more specific. Harmon-Jones, Gable, and Peterson (2009) explain the emotional brain the degree of relationship of the cerebral hemispheres with emotions

according to the level of activity during an experience.

Thus, when the activity of the left hemisphere predominates, the individual perceives emotions of approach; on the contrary, when the right hemisphere dominates in its activity, and emotional impulse of rejection or distancing is presented. More clearly, the approaching refers to the positive emotions of delight, joy, satisfaction, and pleasure. At the same time, the distancing is the negative one related to emotions of fright, fear, uncertainty, aversion, and doubt.

In this order of ideas, the predilection for a brand or the choice of a specific product or service is not based on the cost-benefit ratio, which is generally one of the main parameters that consumers point out as a motivating factor when making purchase decisions, but on the experience generated from the product or service offered, or on the perception produced by the environment where the product or service is available. Jiménez-Marín *et al.* (2019) indicates:

“There are behaviors that are managed by culture in the subconscious, others, however, are cultural. For the company to be successful through the use the marketing of the senses the strategy must be integrated” (p. 124); this means that it is necessary to opt for methodologies that are common and familiar to the public with innovative aspects and with positive influence from the perceived stimuli leading to the practical purchase.

Emotional consumption is based on intangible values, which influence consumers more than tangible characteristics by producing emotions and feelings. The knowledge of the characteristics of the product or service that awaken the emotional part in the consumer guarantees the sale and success of the same; therefore, marketing in this facet must offer attributes beyond the palpable, elaborating emotional concepts that awaken in people the need to get it and primarily, to remember it over time (Ferrer-Coyo, 2009). Jiménez-Marín *et al.* (2019) explain that:

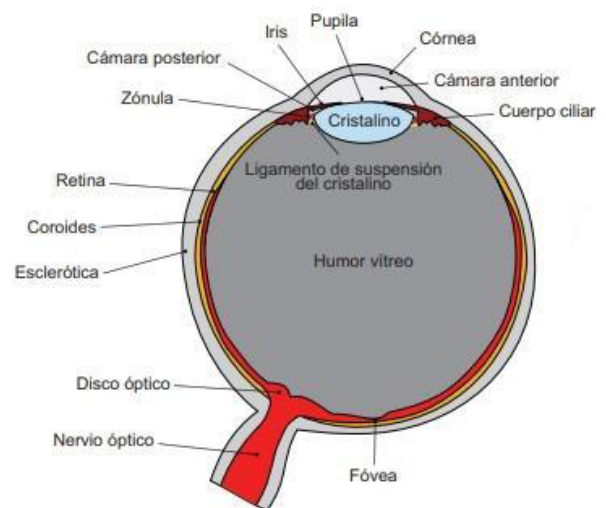
The product is not enough to be seen or talked about; it needs to be experienced and associated with a particular lifestyle.

Sensorial integration is of utmost importance because, otherwise, the effects on consumers may be counterproductive, resulting in confusion and, far from improving perception, would bring negative results: this would be antimarketing (p. 124).

## 2.2. Visual perception

The eye is a mobile organ located at the front of the skull. Its parts are identified in Figure 1. The mobility of the eye is given by a system of muscles that allow it to locate and focus properly on an object (Pires, Vásquez, Carboni and Maiche, 2014). It is almost generally believed that vision occurs in the eyes; however, the right and left eyeball and all its components are only the receptor instruments for visual stimuli from the environment. Visual perception occurs in the brain after interpreting the light and information captured by the eyes. Everything in a person's environment emits or reflects light at different frequencies and intensities that penetrate the eyeball through the pupil. The pupil dilates or contracts to depend on the light conditions through the mediation of the iris. Subsequently, the light signal passes through the cornea, the crystalline lens, and the aqueous inner chamber until it reaches the retina, the photosensitive part of the eye (Nava-Báez and Wright-Carr, 2016; Torrades and Pérez-Susta, 2018).

**Figure 1. Structure of the human eye**



Source: Image taken for academic purposes from Pires *et al.* (2014).



The retina contains cells that capture and process light called cones and rods. The first ones are in charge of perceiving the qualities of color determined by the wavelength of light, while the second ones capture luminosity in grayscale. In the vicinity of the fovea, there is a more significant presence of cones. In the retina's periphery, more rods, so when observing something directly, the more irradiated light falls directly on the fovea (area of greater sensitivity in the central part of the retina), the more details are perceived in the images interpreted by the brain. On the contrary, if the retina's periphery captures the irradiated light, the level of detail to interpret decreases (Pires *et al.*, 2014; Nava-Báez and Wright-Carr, 2016).

Nava-Báez and Wright-Carr (2016) indicate that light reaches the eyes in the form of particles called photons. The cones and rods located in the retina receive it and transform it into electrical signals sent to the brain through the second cranial pair. Once the signal reaches the brain, it is interpreted and organized for understanding. At least 30 visual areas in the occipital, parietal, temporal, and frontal lobes of the cerebral cortex are known. Each area selects various types of information from the visual input signal, from the most basic features such as spatial frequency, orientation, and contrast, to more complex aspects such as motion, color, or shape of objects.

There is a hierarchical organization among the visual areas. All areas are highly interconnected, but each specializes in one part of the functional analysis of information. Visual cognition results from recurrent interactions between the different visual areas (Torrades and Pérez-Susta, 2018, p. 101).

It should be taken into account that an individual does not look at a frame statically; the eyes move to look for the most striking and attractive data of a scene to build a mental map of what is observed. The human eye makes rapid eye movements and captures small parts of the same scene to optimize resources. The brain interprets the data that ascends through the optic nerve constructing the totality of the scene through the small parts visualized by the eyes. An individual's interpretation of the stimuli generated in the

eyes is limited by the assumptions previously made about the environment (Pires *et al.*, 2014; Torrades and Pérez-Susta, 2018).

In the process of visual perception, the brain constructs in a certain way what a person sees and the assumptions made about the environment conditioning the final perception. Torrades and Pérez-Susta (2018) indicate that if part of visual perception depends on the personal assumptions of a subject, it is clear that what is "seen" does not necessarily have to be what that subject perceives: "the eyes are only responsible for a part of visual perception, the brain does the rest." In short, visual perception is an act of interpretative reconstruction. That is where neuromarketing finds its genesis: in the intentional organization of visual stimuli that are interpreted as pleasant in the brain, generating greater interest in a product, service, or brand.

### 2.3. Visual Neuromarketing

The sense of sight has a more significant impact on the mind generating multiple memories and combining several rational and emotional factors for the induction in the buying process; therefore, it is the sense of greater application and stimulation by marketing, used in packaging, advertisements, designs in establishments and on the Internet (Costa, 2010). Visual neuromarketing is explained by Álvarez and Simancas (2018) as "the knowledge based on the circuit of vision and its elements of light, color, image, and emotion, applicable to the generation of product design and communications that impact the consumer, based on the study of the capabilities of human visual perception." The basis of visual marketing lies in the mental interpretations made by people from perceived stimuli because the optic nerve is twenty-five times faster than the auditory nerve in its connection to the brain (the organ that organizes, interprets, and analyzes the light captured by the eyes). Therefore, the right visual stimuli provide a helpful link to the real decision-maker and have a decisive influence on the consumer's feelings and desires (Avendaño, 2013).

The way objects and spaces are distributed in the environments where

products and services are offered a mental impact on consumers and are, therefore, a subject of visual neuromarketing. Large images, appropriate colors, lights, product order, and visualization of offers are factors that affect the visual message footprint. Vera (2010) indicates that, visually, the figure-background relationship should be considered: predisposition to observe dark figures with illuminated backgrounds; use of lights with warm tones which allow bringing the consumer closer; dark figures on dark backgrounds make objects stand out; elements differentiated from the background attract the eye; shapes should be large and warm concerning the figures in the background; and chromatic sequences give a method of observation to the subject, making the image more dynamic (Avendaño, 2013).

The visual perception of human beings generates experiences connected and related to the emotional dimension. The visual perception of the person, also interpretative and comprehensive in a social and cultural framework that is inscribed, activates and enhances different negative and positive emotions, leading to new interpretations and understandings that affect their actions and behavior. In this sense, the purpose of visual neuromarketing is to create bonds between the sensorial experience and the emotions of individuals to produce conscious and unconscious gratifying memories. From the emotional perspective, the limbic system and the cerebral amygdalae are responsible for transmitting sensations and generating emotions in individuals (Malfitano, Arteaga, Romano, and Scinica, 2007). Today it is known that warm colors, such as red, orange, and yellow, produce emotional states of joy, vitality, activity, anxiety, and distraction, and that cold colors, such as blue or green, lead to tranquility, rest, happiness, love among others (Gómez and García, 2012).

### 3. Methodology

It corresponded to a quantitative study with a non-experimental transactional -or cross-sectional- design of the descriptive level and framed in the empirical-analytical paradigm (Hernández-Sampieri, Fernández, and Baptista-Lucio, 2018). The research involved 220 stores in two shopping malls in

the city of Cúcuta: CC Jardín Plaza and CC Unicentro, and 216 customers who visited these establishments.

For the collection of information, two instruments were used as shown in Table 1: a) a non-participant direct observation guide applied to the commercial establishments that allowed the approach of the variable 'visual context' and its 'external' and 'internal' dimensions, and b) a Likert-type questionnaire applied to customers visiting the commercial establishments for the analysis of the variable 'impact on the consumer' and its dimensions 'emotions,' 'concept' and 'preferences.'

Both instruments were validated through expert judgment. Three experts with doctoral training and more than 15 years of experience participated; they reviewed and evaluated each of the items of the instruments under the criteria of neutrality, clarity, coherence, consistency, and sufficiency. The instruments were adjusted, and after validation, they were piloted to determine their functionality and usefulness in the field.

The results were analyzed through descriptive statistics and by type of establishment to identify convergences and divergences. Six categories of establishments were considered: a) food, b) jewelry/watches, c) games and entertainment, d) books, e) technology, and f) clothing, footwear, and textiles.

## 4. Results and discussion

### 4.1. External and internal visual context of the commercial establishments

As shown in Table 2, information was collected through direct observation of 220 commercial establishments in the two shopping malls, 116 in the Unicentro mall and 104 in the Jardín Plaza mall. For both locations, the number of businesses with the majority in terms of presence are food stores (31.03% Unicentro; 32.69% Jardín Plaza) and clothing, footwear, and textile sales and consulting stores (47.41% Unicentro; 34.61%; Jardín Plaza). These two commercial sites represent more than 65% of the total number of commercial establishments observed.

Those with the smallest presence in operation are book stores, representing 0.86% of the

businesses in Unicentro and 1.92% in Jardín Plaza.

**Table 1. Research variables, dimensions and indicators**

Variable	Instrument	Dimension	Indicator
Visual context	Non-participant observation guide	External	Number of images in the external space
			Type of exterior
			Predominant colors
			Predominance of light
			Display of product(s)
			Exaltation / size of the brand - name / logo of the establishment
			Exaltation / colors of the brand - name / logo of the establishment
			Display of offers
		Internal	Number of images in the internal space
			Predominant colors
			Predominance of light
			Variety of products
			Display of offers
Consumer impact	Likert-type questionnaire	Emotions	Joy
			Tranquility
			Euphoria
			Charm
			Optimism
			Affectivity
Sadness			
Stress			
Passivity			
Disenchantment			
Loneliness			
Selfishness			
Concept	Likert-type questionnaire	Preference	Pleasant
			Aesthetic
			Comfortable
Preference	Likert-type questionnaire	Preference	Return to the place
			Do not return to the place

Source: Authors' own elaboration.

**Table 2. Classification of commercial establishments by mall and type**

Type of Establishment	Unicentro	%	Jardín Plaza	%
Food	36	31.03	34	32.69
Jewelry and watches	10	8.62	15	14.42
Games and amusement	7	6.03	7	6.73
Books	1	0.86	2	1.92
Technology	7	6.03	10	9.61
Clothing, footwear and textiles	55	47.41	36	34.61
Total	116	100	104	100

Source: Authors' own elaboration.

**Table 3. Dimension of the external visual context of commercial establishments**

Indicators	Type of establishment					
	Food	Jewelry and watches	Games and amusement	Books	Technology	Clothing, footwear and textiles
Number of images	Yes, some/ Yes, many	No, none/ Yes, some	Yes, many/ No, none	Yes, some	Si, many	No, none/ Yes, some
Type of exterior	Ludic/ Formal	Ludic/ Elegant	Fun/ Not very conservative	Ludic/ Formal	Ludic/ Formal	Ludic/ Formal
Predominant colors	Yellow/ Red	Black/ White	Red/ Blue	Green	Blue/ Black	Black/ Yellow
Predominance of light	Warm Lights	Warm Lights	Warm Lights	Cold Lights	Warm Lights	Warm Lights
Display of product(s)	No, none	Yes, many	Yes, many	Yes, many	Yes, many	Yes, many
Exaltation / size of the brand	Yes, quite a lot	Yes, quite a lot	Yes, quite a lot	Yes, somewhat	Yes, quite a lot	Yes, quite a lot
Exaltation / brand colors	Yes, quite a lot	Yes, quite a lot	Yes, quite a lot	Yes, somewhat	Yes, quite a lot	Yes, quite a lot
Display of offers	No, none/ Yes, some	No, none/ Yes, some	No, none/ No, very few	Yes, totally	Yes, totally	No, none/Yes, some

Source: Authors' own elaboration.

The direct observation made to the commercial establishments of both shopping malls in question allowed collecting data on each site's internal and external dimensions. Regarding the external dimension, we considered the number of images, the type of exterior, the predominant colors, the predominance of light, the display of products, the exaltation/size of the brand, and colors in

the establishment's logo, and the display of offers. Internally, data was collected on the number of images, predominant colors, the predominance of light, variety of products, and display of offers. The information was organized for analysis according to the type of establishment as indicated in the methodology. Tables 3 and 4 show the findings.



**Table 4. Dimension of the internal visual context of commercial establishments**

Indicators	Type of establishment					
	Food	Jewelry and watches	Games and amusement	Books	Technology	Clothing, footwear and textiles
Number of images in the internal space	Yes, some/ Yes, many	Yes, some/ Yes, many	Yes, many/ Yes, some	Yes, some	Yes, many/ No, few	No, none/ Yes, some
Predominant colors	White/ Yellow	White/ Black	White/ Red	Blue	White/ Black	White/ Yellow
Predominance of light	Warm Lights	Warm Lights	Warm Lights	Cold Lights	Warm Lights	Warm Lights
Variety of products	Yes, some	Yes, many	Yes, many	Yes, many	Yes, many	Yes, many
Display of offers	No, none/ Yes, some	No, none/ Yes, some	No, none/ No, very few	Yes, totally	No, none	No, none/ Yes, some

Source: Authors' own elaboration.

Direct observation at the external level of the establishments in operation in the Jardín Plaza and Unicentro shopping malls in the city of Cúcuta showed that, concerning the visual aspect, the food, games and entertainment and technology stores use a significant amount of images in the external space compared to stores offering jewelry and watches, books, or clothing, footwear and textiles. Regarding the type of exterior, the ludic/formal aspects predominate for most of the establishments, except for the jewelry and watch shops, which, although they keep the ludic style, have more elegant exteriors in comparison to the other sites, and the games and amusement stores, since their exteriors are more fun, informal and not very conservative.

However, concerning the colors that predominate on the exterior of the premises, the results are more varied; in food establishments, the colors yellow predominated in the first place and red in second place, in jewelry and watch stores the colors black and white, in gaming and amusement places red and blue, in bookstores green, in technology establishments blue and black, and finally, in businesses selling textiles, clothing, and footwear, black and yellow. As for the predominance of light, the preference was for warm lights for the different types of establishments, except for bookstores that use cold lights for their exterior lighting.

In all establishments, products are displayed, except for food stores, which do not have food displayed to the public unless it is "buffet style." On their exterior, all have a significant exaltation of the name of the establishment, the logo of the brand, and its characteristic colors; perhaps in the bookstores, the visual impact of these aspects is more discreet. Finally, concerning the external visuals, the display of offers was quite discreet for most establishments, except for book and technology stores, which had a strong display of offers on their exteriors.

Internal visuals correspond to the stimuli that a consumer can perceive through a vision when entering a commercial establishment. The presence of images inside the establishments is discreet concerning the exterior for most of the types. Most gaming, amusement, and technology stores have a significant number of images inside, and only in the case of textile, clothing, and footwear stores, the presence of images is almost nil. Regarding colors, the predominant tone for all types of indoor establishments is white combined with another color of significant presence such as yellow (food, textiles, clothing, and footwear), black (jewelry and watches, and technology), and red (games and entertainment). The only establishments where a different tone and lack of white was observed were bookstores, where blue predominated in interiors.

Regarding the lighting inside the establishments, the results are consistent with the exterior lighting. The preference for the different establishments was inclined towards warm lights, except for bookstores that use cold lights in their interior lighting. For all the establishments, the variety of products available that a consumer can find according to their type is quite wide, except for the food places. Most of them focus on specific dishes or a specific gastronomic line. Furthermore, finally, inside all types of establishments, the display of offers was quite discreet for most of them, except for bookstores, which showed a strong presence of offers advertisements.

#### 4.2. Incidence of the internal and external visual environment of commercial establishments

The instrument of incidence of the internal and external visual environment was applied to 216 clients and/or consumers of the stores of both malls. The information analysis was made according to the responses of the people who totally agree and somewhat

agree according to the perception of each of the items for emotionality, concept, and preference.

Of the total surveys, 59.8% were conducted in Jardín Plaza and 40.2% in Unicentro. As shown in Table 5, most of the people who frequent the establishments are between 18 and 25 years of age (87.9%); the most frequented stores in both malls are textiles, clothing, and footwear (42.1%) and food (44%). Slightly more than half of the survey participants (58.4%) indicated purchase intentions when visiting the malls.

Table 6 addresses the perceptions that people visiting the commercial establishments located in Unicentro and Jardín Plaza perceive regarding the environment. For most types of establishments, visitors reported feeling joy mainly when entering into purchasing products or services. In many cases, this emotion is mixed with others, such as tranquility (in food and textile stores, clothing and footwear), euphoria (in games and fun), or charm (in technology). Concerning bookstores, the main emotion described is affectivity.

**Table 5. Sociodemographic characteristics of clients**

Dimensions	Options	Frequency	Percentage
Age	18-21 years	133	61.4
	22-25 years	57	26.5
	26-30 years	19	8.8
	31-35 years	4	1.9
	36-40 years	1	0.5
	41-50 years	2	0.9
	≥ 50 years	0	0.0
Type of establishment you visit	Textiles, clothing, footwear	91	42.1
	Food	95	44.0
	Games and amusement	7	3.2
	Stationery and bookstore	4	1.9
	Technology	18	8.3
	Jewelry / watches	1	0.5
Mall you visit	Unicentro	87	40.2
	Jardín Plaza	129	59.8
Reasons for visiting the establishment	Shopping	126	58.4
	Leisure	90	41.6

Source: Authors' own elaboration.

**Table 6. Predominant emotions, concepts and preferences by type of commercial establishment**

Dimension	Food	Jewelry / watches	Games and amusement	Bookstore	Technology	Textiles, clothing, footwear
Emotions	Joy 86% Tranquility 83%	Joy 100%	Joy 91% Euphoria 86%	Affectivity 97%	Joy 80% Charm 80%	Joy 83% Tranquility 83%
Concept	Pleasant 91%	Pleasant 100%	Comfortable 90%	Comfortable 90%	Pleasant 89%	Comfortable 87%
Preference	Return to the place 95%	Return to the place 100%	Return to the place 100%	Return to the place 90%	Return to the place 93%	Return to the place 99%
Source: Authors' own elaboration.						

For the concept dimension, respondents' answers ranged from pleasant for food stores, jewelry and watches, and technology; and comfortable for gaming and amusement establishments, bookstores and textiles, clothing, and footwear. Regarding preference, understood as the intention to return or not to return to visit the brand visited within the mall, for all types of establishments, the response indicated with percentages higher than 90% that customers intended to return.

### 4.3. Discussion

Neuromarketing is gaining more and more importance as a promising approach to engage consumers effectively. Haase and Wiedmann (2018) indicate that to predict and monitor the success of Sensorial Marketing activities is necessary to evaluate consumers' perception of sensorial cues. The present study is a first stage gathered information on the internal and external aspects of food, jewelry and watches, games and amusement, bookstore, technology, and textile, clothing and footwear stores of two malls in San José de Cúcuta (Norte de Santander, Colombia), Unicentro and Jardín Plaza. Subsequently, the impact of the environments on consumers was evaluated. Although all senses allow certain stimuli to influence the purchase decision of an individual, it is the visual stimuli that show greater effectiveness when it comes to impacting the way a customer experiences a brand and, specifically, its products or services (Nguyễn-Phú, 2017); therefore, the objective focused on visual perception.

Ramírez, Giraldo, Ramos, and Gordillo (2017) concluded that visual marketing determines the purchase decision. From the way products are displayed, the different possibilities, combinations, and styles of what is offered, to the colors used to recreate environments and generate pleasant atmospheres, they capture the individual's attention, activating emotions with an impact on the purchase decision (Krishna and Schwarz, 2014). The present study made it possible to demonstrate that all commercial establishments in the malls in one way or another obey the principles established within visual neuromarketing, translated into positive stimuli on consumers from the internal and external environments. When evaluating how customers perceived these, it was found that most of them experienced positive emotions, purchase intention in more than 50%, and a high possibility of returning to the establishment (90% to 100%).

An interesting aspect of the findings obtained from the observation guide is that the visualization of offers was not a predominant aspect in the units of analysis or commercial establishments. In food, jewelry, and textile establishments, it was barely possible to visualize the offers that directly relate to the prices of the products. Only in bookstores was there evidence of the use of offers to attract customers through visual perception. Some studies show that advertisements about offers are an important neuromarketing strategy, including that buyers tend to pay more attention to the discount rate than to the reduced price itself,

and therefore, discount labels should be placed at the center of the visual promotion (Boz, Arslan, and Koc, 2017; Juárez, Tur-Viñez, and Mengual, 2020).

It is important to highlight the emotions and concepts that prevail for each type of commercial establishment. The findings indicate that joy is prevalent for all types of establishments, except for bookstores that generate affectivity. Nevertheless, it also shows the prevalence of emotional tranquility for food, textile, clothing, and footwear establishments; euphoria for gaming and amusement establishments; and charm for technology establishments. These prevalent emotions are explained by the same dynamics and practices carried out by customers in these places. On the other hand, the prevalence of concepts such as pleasant for food, jewelry, and technology stores and comfortable for games, bookstores, and textiles play an important role in the decision to purchase and return to the commercial establishment.

Nevertheless, the development of detailed studies should be considered for each type of establishment considering that the sensorial experience for each of these is different, for example, in the case of restaurants, the design of the dishes, their taste, and even the music that is available in these places. The information about the food, plays an essential role in the totality of the perceptual experience and the emotions they generate (Mengual-Recuerda, Tur-Viñez, and Juárez-Varón, 2020; Stasi, Mauri, Ciceri, Diotallevi, Nardone, and Russo, 2018).

## 5. Conclusions

The research shows that, based on the emotions experienced, the majority of the customers express the decision to return to the commercial establishment. In this sense, it can be noted that the possibility of experiencing certain emotions (joy, affection, tranquility) and elaborate concepts about the places (pleasant, comfortable) positively affect the customers' decision to purchase (50%) and to return to the location (90% to 100%). Although the results allow for relevant discussions and reflections, future research should be considered, focusing on

each type of establishment to understand the relationships underlying the integral sensorial experience, the emotions produced, the concepts elaborated, and the customers' decisions.

Although there is no certainty about the conscious application of visual neuromarketing strategies and principles by the owners of the establishments, the results show that both on the outside and inside, there are visual conditions that provide customers and visitors with a sensorial experience that has a positive impact on their emotions, concepts, and preferences. To a large extent, all types of commercial establishments have an exterior that allows a person to be informed about the products and services offered inside and the current promotions to which anyone can have access and their respective terms and conditions. For most establishments, the exterior provides stimuli ranging from being able to visualize part of the products or services offered to colors and lights that attract and tune consumers in a positive attitude towards the place.

Regarding the interior, the stimuli perceived are complementary to the sensations previously received on the outside; that is, the interiors of the establishments in both malls have a small load of promotional images, offer pleasant spaces in terms of color and light, which allows customers to perceive pleasant, familiar, comfortable environments, which respond to what is expected, to that interpretation that the brain made of the stimuli received from the external environment. Most establishments share some aspects both in their exterior and interior, for example, the color white, which the brain interprets as safe, reliable, and hygienic, and warm light, which generates feelings of well-being, attachment, and comfort.

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The authors declare no conflict of interest.

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