Digital neuromarketing and advertising in shopping center consumers in a region of Peru in times of Covid-19

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Abstract: Neuromarketing, which is a revolution, tends to be more effective than other marketing strategies. The objective of the study was to determine the relationship between the effectiveness of digital neuromarketing and the effectiveness of BTL advertising according to consumers of shopping malls in the Junin region of Peru, in times of COVID-19, the research was of basic type, correlational level and descriptive correlational design, had as sample 1242 consumers, to whom were applied, the questionnaires of digital neuromarketing and BTL advertising, designed for the study; The instruments presented very high validity coefficients, 0.83 and 0.85 by geometric mean and very high reliability, 0.91 and 0.92 by Cronbach's alpha. As a result, an inverse correlation (Kendall's Tau b = -0.82) and significant (p = 0.045) was found between both variables. It was concluded that there is an inverse correlation between the effectiveness of digital neuromarketing and BTL advertising according to the sample in COVID-19 times, which denotes that the greater the effectiveness of neuromarketing, the lower the effectiveness of BTL advertising.

Keywords: neuromarketing; publicidad BTL; efectividad; centros comerciales..

Resumen: El neuromarketing, que supone una revolución, tiende a ser más efectivo que otras estrategias de mercadeo. El objetivo del estudio fue determinar la relación entre la efectividad del neuromarketing digital y la efectividad de la publicidad BTL según consumidores de centros comerciales de la región Junín de Perú, en tiempos de COVID-19, la investigación fue de tipo básico, nivel correlacional y diseño descriptivo correlacional, tuvo como muestra a 1242 consumidores, a quienes se aplicó, los cuestionarios de neuromarketing digital y de publicidad BTL, diseñados para el estudio; los instrumentos presentaron coeficientes de validez muy alta, 0,83 y 0,85 mediante media geométrica y confiabilidad muy alta, 0,91 y 0,92 mediante alfa de Cronbach. Como resultado se halló correlación inversa (Tau b de Kendall = -0,82) y significativa (p = 0,045) entre ambas variables. Se concluyó que existe correlación inversa entre las efectividades del neuromarketing digital y publicidad BTL según la muestra en tiempos de COVID-19, lo cual denota que a mayor efectividad del neuromarketing menor efectividad de la publicidad BTL.

Palabras clave: neuromarketing; BTL advertising; effectiveness; shopping malls..

Introduction

The COVID-19 pandemic has caused negative effects on the world socioeconomic system, to counteract the crisis, most countries have restricted their markets at various times, decreeing the closure of borders and confinement of their population; these measures largely paralyzed business and commercial activities, placing at serious risk the stability of the social and economic structures of the country; Vázquez-Martínez et al. (2021) state that, in relation to points of sale, channels and purchase motivations, the pandemic drastically modified the ways in which consumers acquired products.

Peru went from having one of the most stable economies in the region, to one of those with the greatest decline, in this sense, Peru was condemned to the greatest recession in Latin America only behind Venezuela, the economic downturn had a strong impact on retail chains, shopping malls and department stores; This sector, which had projected sales of approximately S/ 32,000 million soles for 2020, had a drop of around 40% among other factors because its capacity was restricted to 50% of its capacity; this context generated the need to adapt immediately to new models and digital sales channels; managing to be one of the sectors that has best adapted to the new normality, despite the significant drop in its revenues. In the first months of the pandemic, e-commerce in shopping malls grew from 5 % to 20 % and online shopping in 2020 became the market leader, with a growth of 51.77 % (Palomino, et al., 2020).

Blázquez et al. (2008) point out that the use of the Internet in marketing has a dual perspective: as a communication channel and as a new distribution channel. The success of shopping malls in the new format depends not only on the digitalization of their offers, but also on strategies that project profitable shopping experiences to consumers. This situation generated the need to accelerate the implementation of innovative strategies in the customer-company-brand relationship, such as neuromarketing that designs contexts in the sales channels that achieve consumer engagement. Cachero-Martínez and Vázquez-Casielles (2021) highlight the need to build consumer loyalty through e-shopping experiences that assign the mediating role to emotions. According to Vlăsceanu (2014) marketing and advertising campaigns with a cognitive and emotional approach generate strong emotional engagement.

Neuromarketing has been a revolution in the field of marketing (Gill and Singh, 2020); drawing from neuroscience-oriented disciplines (Clark, 2020), such as psychology, neurology, marketing and economics (Alexander et al., 2019) focuses on the consumer and the various factors that affect their individual preferences and consumption behavior (Clark, 2020), through neuroscientific techniques that, applied to marketing management, analyze emotion, attention and memory at different levels, with an imminent role of the subconscious (Gutiérrez-Cárdenas, 2019), achieving the analysis and understanding of the dynamics of human behavior related to markets, purchasing needs and commercial exchanges (Vásquez-Patiño and Rueda-Barrios, 2019).

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For consumer neuroscience to thrive, it must be extended from basic scientific research to marketing theory and practice (Plassmann, et al., 2015); the novelty of neuromarketing is the neuroscience techniques that help to better understand customers, what really values and encourages commercial exchange (Duque, 2014). Emotional responses to marketing stimuli are fundamental for neuromarketing (Bastiaansen et al., 2018); people buy based on the emotions they generate and leave traces in memory of how a brand or company is perceived (González-Morales, 2020).

The application of neuromarketing focuses on two strands, the first focuses on the neuroscientific study of consumer behavior and decision making (Gill and Singh, 2020; Babiloni and Cherubino, 2020; Clark, 2020; Conick, 2018; Lee et al., 2007) and the second is directed to the stimulation of mental processes to achieve favorable consumer behaviors through neuro communication (Braidot, 2013; Alvarez del Blanco, 2011 and Fenger, 2015). The present study is framed within the second approach.

Álvarez del Blanco (2011) in his proposal for a persuasive neuromarketing model establishes three application phases: experimentation phase (attention, sensation, emotion and memory), intervention phase (associations, imaginary, sensory seduction and intelligence) and results phase (multisensory branding).

According to Braidot (2013) the application of neurocommunication occurs at the sensory (sight, touch, hearing, taste, smell) and semantic (meanings) levels; as well as at the level of internal stimuli, they comprise the attention, memory and emotion systems. The perception of promotional ads is not only neurophysiological; it is also an intrinsic and subjective process that is at the same time a cultural issue. It involves the activation of brain areas, basically the ventral tegmental area and the nucleus accumbens, which are centers that release dopamine (mainly) and other neurotransmitters that generate emotions, engagement and loyalty to a particular brand.

BTL (below the line) advertising uses alternative media to conventional advertising to target non-mass or segmented audiences. It is characterized by its creativity, surprise, innovation and opportunity, generating new advertising and promotion channels; it is complemented by other media such as merchandising, direct marketing and content marketing in social networks, among others. According to Reinares-Lara et al. (2016), the questioning of the effectiveness of television has driven the use of BTL formats.

Neuromarketing and BTL advertising coincide in their intention to stimulate perception to persuade the consumer, making use of creativity, alternative and non-mass media. The digitalization of commercial interactions in the pandemic period has greatly massified and neuromarketing is refocused on causing the same sensory impressions, but in a virtual way in increasingly different consumers. Nicolás (2013) points out that the evolutionary development of advertising forms has

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been enriched and energized by the new concept of customer prosumers, who not only receive information, but also create it.

Quinteros and Martínez (2018) when studying the behavior of consumers in retail interpreted that neuromarketing is a purchase motivator through advertising; Avendaño (2013) when analyzing visual marketing in establishments of a shopping mall, found that they apply neuromarketing associated with the perception of color, light and photographic image, however, as supported by Krings et al. (2021) state that there is a paucity of research related to the impact of digital platforms in improving marketing processes and results to generate purchasing opportunities.

Of the nine provinces, five only have malls (Yauli, Junin, Jauja, Chupaca and Concepción), three provinces have small malls (Tarma, Chanchamayo and Satipo), and in the city of Huancayo, which is the most important city in the region, there are six small and medium-sized malls and two large malls; the latter have reconfigured the consumption habits of the province. The COVID-19 pandemic has generated new needs and possibilities, the virtualization to which consumers have been forced has produced a democratizing effect in the access and consumption of internet, shortening digital gaps (Alania et al., 2020), in this context, neuromarketing and BTL advertising are seeking to attract these renewed prosumers. Except for the two large malls, the neuro-communication applied by the shopping centers in the Junín region is due to spontaneous efforts and BTL advertising has become the main promotional tool, due to the decrease in advertising budgets for conventional media.

In this sense, the study aimed to determine the relationship between the effectiveness of neuromarketing and the effectiveness of BTL advertising according to consumers in shopping malls in the Junin region during COVID-19.

Materials and Methods

The study had a quantitative, basic, correlational, non-experimental, cross-sectional, descriptive-correlational design.

The population included consumers of shopping malls in the Junín region of Peru, excluding consumers under 18 years of age and over 70 years of age; people of both sexes, residents in urban areas and regular consumers of the 18 largest shopping malls in the region were included: Real Plaza, Open Plaza, Makro, Plaza Vea, Metro, Astoria, Plaza Constitución and Megaplaza in Huancayo; Chichos and Bueno in Tarma; Supermarket Magda and Supermarket Aylas Lindo, Precio Uno and El Carmen in La Merced; Soco Market, Sánchez, Sarwest and Moda Joven in Satipo, the provinces of Jauja, Chupaca, Concepción, Yauli and Junín do not have establishments categorized large shopping centers.

The sample consisted of 1242 male (435) and female (807) consumers between 18 and 63 years of age; since the population was indeterminate, non-probabilistic purposive sampling was used to obtain the sample,

which according to López (2004) is the one by which the researcher decides the sample according to objectives, perception and experience.

To collect data, two instruments were designed and applied: the digital marketing questionnaire, with 27 items that measure the effectiveness of digital neuromarketing according to consumers, based on three dimensions: attention (1-9), emotion (10-18), memory (19-27), each item has four response options on a modified Likert scale (strongly disagree = 1, disagree = 2, agree = 3, strongly agree = 4). The scale was distributed in three levels: poor (27-54), fair (55-82) and good (83-108). Content validity was assessed with the judgment of 20 experts, resulting in a geometric mean of 0.803, which meant very high validity; reliability was evaluated by means of a pilot test on 110 subjects, whose result was 0.91 in Cronbach's alpha coefficient, implying very high reliability.

The BTL advertising questionnaire, with 42 items measuring the effectiveness of BTL advertising according to consumers, in four dimensions: direct advertising (1-12), point-of-sale advertising (13-20), sales promotion (21-28) and internet advertising (29-42), each item having four response options on a modified Likert scale (strongly disagree = 1, disagree = 2, agree = 3, strongly agree = 4). The scale was distributed in three levels: poor (42-84), fair (85-127) and good (128-168). Content validity was assessed by the judgment of 20 experts, resulting in a geometric mean of 0.85, which meant very high validity; reliability was evaluated by means of a pilot test on 110 subjects, which resulted in a Cronbach's alpha coefficient of 0.92, implying very high reliability.

Data collection was carried out between November and December 2020, the application of the instruments lasted approximately 20 minutes per subject, with the informed consent of the participants.

In the data processing, descriptive statistics were applied to characterize the behavior of the variables and inferential statistics to establish the sample parameters and decide the hypothesis test statistic, which was Kendall's Tau b for nonparametric samples and ordinal qualitative variables. The data were processed in SPSS 25 statistical software.

Results and Discussion

Table 1. *Effectiveness of digital neuromarketing and its dimensions (n=1242).*

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Table 1
Effectiveness of digital neuromarketing and its dimensions (n=1242).

	Frequency	Percentage
Digital Neuromarketing		
Deficient	74	6 %
Regular	556	45 %
Good	612	49 %
Total	1242	100,0
Attention		
Deficient	49	4 %
Regular	548	44 %
Good	645	52 %
Total	1242	100,0
Excitement		
Deficient	24	2 %
Regular	523	42 %
Good	695	56 %
Total	1242	100,0
Memory		
Deficient	37	3 %
Regular	498	40 %
Good	707	57 %
Total	1242	100,0

From the consumers' perception, the effectiveness of digital neuromarketing and its dimensions, was predominantly of good effectiveness (49 % in digital neuromarketing, 52 % in attention, 56 % in emotion, 57 % in memory), to a large extent this perception has been conditioned by the period of confinement.

Table 2 . *Effectiveness of BTL advertising and its dimensions (n=1242).*

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Table 2
Effectiveness of BTL advertising and its dimensions n1242

	Frequency	Percentage
BTL Advertising		
Deficient	58	5 %
Regular	728	58 %
Good	456	37 %
Total	1242	100 %
Direct advertising		
Deficient	158	13 %
Regular	652	52 %
Good	432	35 %
Total	1242	100 %
Point of Sale Advertising		
Deficient	164	13 %
Regular	591	47 %
Good	487	40 %
Total	1242	100 %
Sales promotion		
Deficient	231	19 %
Regular	510	41 %
Good	501	40 %
Total	1242	100 %
Internet advertising		
Deficient	194	16 %
Regular	552	44 %
Good	496	40 %
Total	1242	100 %

From the consumers' point of view, the effectiveness of BTL advertising and its dimensions, was predominantly regular (58 % in BTL advertising, 52 % in direct advertising, 47 % in point-of-sale advertising, 41 % in sales promotion and 44 % in internet advertising), consequently the effectiveness of BTL advertising, according to consumers, was lower than the effectiveness of digital neuromarketing.

Table 3. *Overall hypothesis testing of digital neuromarketing effectiveness and BTL advertising effectiveness, attention effectiveness, emotion effectiveness and memory effectiveness.*

Table 3

Overall hypothesis testing of digital neuromarketing effectiveness and BTL advertising effectiveness attention effectiveness emotion effectiveness and memory effectiveness

Correlations (*Kendall's Tau b*)		Eff. *pneumarketing*	Eff. BTL advertising
Eff. *pneumarketing*	Correlation coefficient	1,000	-,082**
	Sig. (bilateral)	.	0,045
	N	1242	1242
Eff. BTL advertising	Correlation coefficient	-,082**	1,000
	Sig. (bilateral)	0,045	.
	N	1242	1242
		Attention	Eff. BTL advertising
Attention	Correlation coefficient	1,000	-0,035**
	Sig. (bilateral)	.	0,015
	N	1242	1242
Eff. BTL advertising	Correlation coefficient	-0,035	1,000
	Sig. (bilateral)	0,015	.
	N	1242	1242
		Excitement	Eff. BTL advertising
Excitement	Correlation coefficient	1,000	-0,068
	Sig. (bilateral)	.	0,041
	N	1242	1242
Eff. BTL advertising	Correlation coefficient	-0,068	1,000
	Sig. (bilateral)	0,041	.
	N	1242	1242
		Memory	Eff. BTL advertising
Memory	Correlation coefficient	1,000	-0,067**
	Sig. (bilateral)	.	0,047
	N	1242	1242
Eff. BTL advertising	Correlation coefficient	-0,067	1,000
	Sig. (bilateral)	0,047	.
	N	1242	1242

Table 3 shows that there was a significant relationship between the effectiveness of digital neuromarketing and the effectiveness of BTL advertising, with a bilateral significance level of 0.045 and a Kendall's Tau b inverse correlation strength of -0.82, which shows that the higher the effectiveness of digital neuromarketing, the lower the effectiveness of BTL advertising.

It is also observed that there was a significant relationship between the dimensions of digital neuromarketing effectiveness (attention,

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emotion and memory) and BTL advertising effectiveness, with a bilateral significance level p-value of 0.015; 0.041 and 0.047 and an inverse correlation strength of -0.35; -0.068 and -0.047 respectively, which denotes that the higher the effectiveness of digital neuromarketing attention, emotion and memory, the lower the effectiveness of BTL advertising.

The results show that there was a significant correlation between the effectiveness of digital neuromarketing and the effectiveness of BTL advertising, since the significance value was 0.045; the inverse correlation (-0.82) determined that the higher the effectiveness of digital neuromarketing the lower the effectiveness of BTL advertising, which is explained because neuromarketing stimulates mechanisms of unconscious thinking of the human psyche (Malfitano et al., 2019), unlike BTL which is more perceptive and rational, both coincide in being emotional (Salas, 2018; Bastiaansen et al., 2018 and González-Morales, 2020) and can be employed in marketing campaigns in a complementary and not mutually exclusive manner; it is necessary to highlight that BTL advertising has become the alternative most used by companies to reach the consumer in the context of the crisis due to COVID-19. There is still a wide lack of knowledge about the possibilities of implementing neuromarketing. The results coincide with the study by Avendaño (2013) who determined that in shopping malls the application of neuromarketing is associated with the perception of color, light and photographic image.

From the study it can be inferred that neuromarketing is more effective than BTL advertising, because it is oriented to generate effects in the unconscious mechanisms that activate the purchase decision. The pandemic by COVID-19 generated new needs and possibilities for the implementation of neuromarketing, based on more personalized and experiential sales (Klaric, 2014), generation of positive emotions in electronic shopping experiences (Cachero-Martínez and Vázquez-Casielles, 2021; Quintero and Martínez, 2018; Duque, 2014) and loyalty of an increasingly digitized target audience (Alania et al., 2020).

With the exception of the two national chain malls Open Plaza and Real Plaza, the shopping centers in the Junín region do not apply neuromarketing because of its integral and complex perspective, which begins with the study of the consumer and continues with the implementation of promotional strategies; however, the managers of these companies carry out empirical neurocommunication actions that achieve positive effects; because everything communicates, it is impossible not to communicate (Watzlawick, 1971); consequently, all the shopping centers investigated transmit sensory elements that are perceived by the unconscious mechanisms of the consumers. The study confirmed that these isolated neuro-communication actions are relatively more effective than BTL advertising efforts, which are implemented as part of structured marketing campaigns.

As an integral marketing discipline, neuromarketing will generate transcendental changes in the way products are conceived, presented,

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distributed, promoted and sold. We are just witnessing the beginnings of a great revolution, which will be consolidated in the coming years and decades; concepts such as neuro product, neuro pricing, neuro communication, will be everyday terms in increasingly digitalized markets.

One limitation of the study was the heterogeneity of the shopping centers, in terms of size, strategies and management model; however, this variety also represents the sociodemographic and cultural context of the Junín region, where a large city exerts economic influence in a region of nine provinces that integrates the geography of the highlands and jungle.

Conclusions

There is an inverse and significant correlation between the effectiveness of digital neuromarketing and the effectiveness of BTL advertising in shopping malls in the Junin region of Peru during COVID-19, which indicates that the greater the effectiveness of neuromarketing, the lower the effectiveness of BTL advertising.

Neuro-communication actions proved to be more effective than BTL strategies. It is confirmed that neuromarketing as an omnipresent discipline, will be determinant in the management of marketing and business models in the coming years, which will be characterized by the predominance of digital markets.

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