



**Global Connectivity, Knowledge and Innovation for
Sustainability and Growth: New Paradigms of Theory and
Practice**

Editors

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Application of Neuromarketing Perception in Commercial Sales in SMEs of Jewelry Industry in Guadalajara

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Abstract

Neuromarketing knowledge can be considered as support into a strategy to improve the quality in the service at SMEs. The research analyzed the relationship between neuromarketing perception and the quality of service for sales to the final customer of comercial SMEs in Guadalajara jewelry industry, as the jewelry Capital of America and one of the most profitable industries in the economy of Mexico. The methodology used was correlational, a field research, non-experimental and transactional. Demonstrates a relationship by applying the statistical test of Wilcoxon, among others, the factors of neuromarketing with tangible elements in direct sales, intangible items in sales by social networks and intangibles elements. This is an empirical study supported in scientific studies performed by neuroscience machines. It contributes to the application at a low cost of knowledge which was previously obtained through scientific studies of neuromarketing, allowing a better understanding of the needs and desires of consumers to carry out strategies while retaining a purpose practiced in the business environment.

Key words: *Neuromarketing, Sales, Service Quality.*

Introduction

Neuromarketing is a recent area of knowledge which is believed to represent the twenty-first century in microbiology in the twentieth century, chemistry in the nineteenth or physics in the eighteenth century (Bachrach, 2013). Is defined by Klaric (2011) as the study of the effects of advertising and other communications with the human brain with the intention to get to predict consumer behavior, connecting strategically products, services, brands or categories to the customer's mind.

As part of the foregoing in Mexico SMEs constitute 95% of established companies and contribute 23% to GDP, but it has a number of problems that causes 75% shut down their operations after two years on the market (INEGI, 2010), and the possibility of success is in average 25% to 30%, below the world average that is 40%.

Problem statement

Today, despite being one of the major drivers of the economy, it has a number of problems that cause 75% of SMEs closing their operations after two years on the market (INEGI, 2010). One of its main causes is the lack of proper application of marketing caused by ignorance on the part of entrepreneurs in the new areas of marketing which produces a greater connection between the brand and the consumer (Braidot, 2009).

The problems for the development of SMEs are increased because not only do they have to compete with Mexican companies but also with companies from foreign market, this occurs by the wide trade liberalization happened in Mexico in recent years caused by NAFTA (Haar, 2004). Consequently, it results in a dispute with

companies that offer products and / or services with lower prices than those offered by the domestic market and higher added value, generating a more competitive environment affecting the return on investment achieved prices.

One of the new trends in marketing is being used by more than 80% of the 100 leading companies in the business world to show positive results and its structure has the ability to adapt to different business and sizes is neuromarketing that is defined as the identification of brain areas involved in the process of buying a product or a brand selection (Taher, 2006).

Investigation questions

1. What is the proposal to compare the relationship between neuromarketing and service quality in a sales model led to the end customer?
2. What are the factors influencing neuromarketing commercial SMEs in the jewelry industry in Guadalajara?
3. What is the relationship between the elements of the quality of the service involved in commercial SMEs in industry jewelry in Guadalajara?
4. What is the relationship between the variables of neuromarketing and service quality of commercial SMEs in the jewelry industry in Guadalajara?

Theoretical review

Small and médium-sized enterprises

Mostly SMEs are intended for the business and a considerable percentage of companies that are engaged in the production of products also sold so discarded intermediaries, thereby achieving a more direct relationship between producer and consumer.

SMEs are mainly focused on the retail although this is one of the most competitive and less profit margin sectors, but the risks in its operations are smaller resulting in more attractive for its establishment (Canning, 2002).

SMEs in the jewelry industry in Mexico

Mexican craft sector is made about a million people scattered in 31 Mexican states with a higher concentration in the western and central of the country (INEGI, 2010). The jewelry industry in Mexico obtained a growth of 1.5% in 2013 and an annual production of 144 186 000 pesos (The Economist, 2014), representing 0.4% of total production volume (Guzman, 2006). It consists of 40 jewelers' centers, 700 designers, manufacturing workshops 2,000 and 1,000 exporters. Mexico stands out for its extensive jewelry tradition emphasizing in the manufacture of handmade jewelry. Only in the area of Jalisco is one of the national leaders in the production and commercialization is 60% of the jewelry in the country following in order of importance the Federal District produces 30% and Monterrey with 10% (Guzmán, 2006).

Neuromarketing and scientific contributions

Neuroscience

Neuroscience represents the fusion between the disciplines of molecular biology, electrophysiology, neurophysiology, anatomy, embryology, developmental biology, cell biology, neuroscience, cognitive neuropsychology and cognitive science (Braidot, 2007).

The main aspect of neuroscience is to explain how millions of individual nerve cells work in the brain to generate behavior and in turn are influenced by the environment and the behavior of other individuals (Barrier, 2009). Neuroscience makes it possible to integrate the contributions of studies on the interpretation of the central nervous system in different communication systems to link them with perceptual representations of individuals to gain the knowledge of the inner workings of behavior that reveal the association of thought with feeling, that is, meet the functional structure of the mind and how it interacts with neurons to define human behavior (Malfitano, 2007).

Adaptation of neuromarketing in SMEs.

Today the constant changes have led to the marketing employee in business to be redesigned in order to meet changing consumer needs and achieve greater effectiveness in customer satisfaction, creating a competitive advantage and greater return on investment sales (Kojima, 2010).

In order to survive, achieve thrive in a highly competitive market and distinguish themselves from competitors is necessary to increase the effectiveness of marketing businesses by neuromarketing, knowing what the customer really wants and not what he says he wants, with adequate information to ensure proper planning and distribution of the product and / or service in the target market (Brooksbank, 2002).

Currently neuromarketing is used mostly by large enterprises, but also can be implemented in SMEs by focusing on rational, emotional and instinctive process of the buying process, meeting the needs and desires of consumers to form an emotional attachment to the brand, adapting to the areas and circumstances to be defined business objectives. (Sánchez, 2013).

Neuromarketing can be adapted in SMEs in various aspects: the package that is part of the experience offered by the company being the first thing what the customer perceives to modify it and as a result to make it more pleasing to the eye by organic forms, causing activation zone providing brain reward surprise and joy which improves the perceived experience in buying, it can be used in placing items and decor to provide a comfortable environment to encourage sales providing cross-selling different products, also in the creation , product development and design, and especially in dealing with the client (Ruiz, 2012).

General purpose

Outline a model of sales to the end customer to compare the relationship between neuromarketing and quality of service.

Methodological design

Based on the needs of the research study, the modalities of fieldwork and archival research are used; then graphically described the process that took place in the working methodology.

Using non-experimental research of transversal character, the purpose is the collection of data to describe the variables without prior manipulation and analyze their relationship at a given time (Baptista, al el, 2010). It is composed of:

- Exploratory research- Are survey SMEs belonging to the jewelry companies located in Center San Juan de Dios of Guadalajara as the jeweler mall number one in Latin America and its external customers in a period between August to October 2015.

- Correlational research.-Through this research will study the relationship between neuromarketing and quality of service.

The independent variable sales to final customers is comprised of the dependent neuromarketing variable that is made up of the factors of neuromarketing and the dependent variable quality of service that is made up of the elements in the quality of service. It was designed based on the model of the thesis of expertise of the University of Zulia from the Bolivarian Republic of Venezuela with the theme: Neuromarketing and quality service of the pharmaceutical sector in the city of Maracaibo. It is adapted to support a fashion designer school Center Fashion Design and studies in a jewelry school. A specialist in quantitative methods at the University of Guadalajara and a doctor specializing in consumer behavior and brand. (Table 1).

TABLE 1: PROPOSAL MODEL

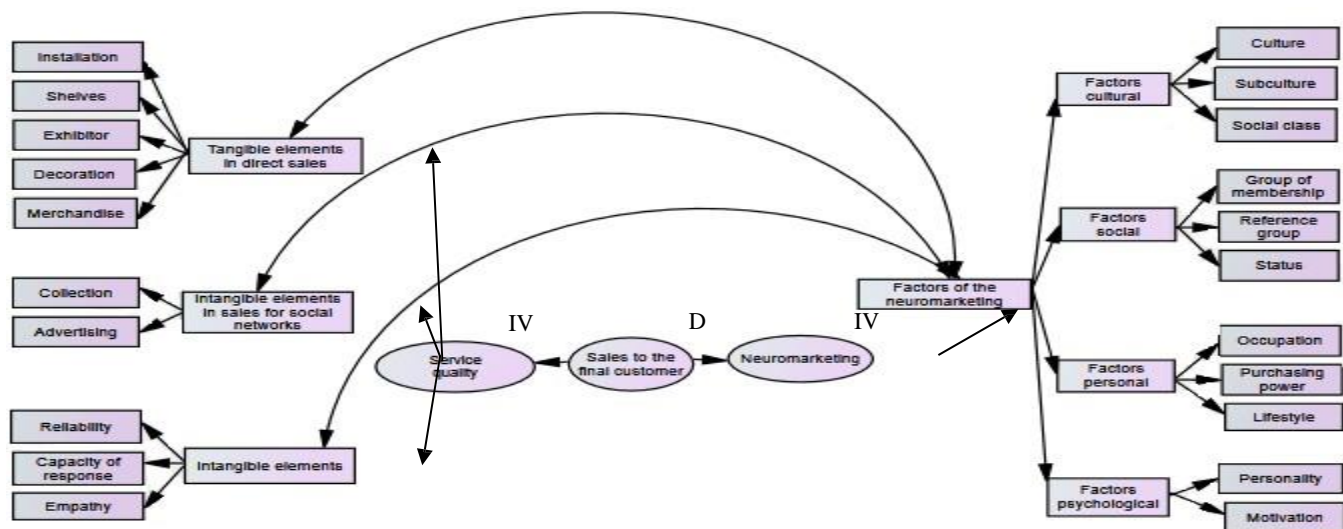
Variables	Dimensions		Sub-dimensions	Indicators	Author
Neuromarketing	Factors of neuromarketing	They influence the behavior of the process of the consumers who are determined in major measure by the unconscious zones that for the conscious zones of the brain. (Braidot 2012)	Cultural factors	Culture	(Braidot, 2007)
				Subculture	
				Social class	
			Social factors	Group of membership	(Kotler, 2003)
				Reference group	
				Status	(Braidot, 2007)
			Personal factors	Occupation	(Vélez,2011)
				Purchasing power	
				Lifestyle	(Kotler, 2003)
			Psychological factors	Personality	(Rivera, Arellano, Moreno, 2009)
Motivation	(Rodríguez, at el, 2006) (Kotler, 2003)				
Quality of service	Elements of the quality of service	Habit developed by an organization to interpret the needs and desires of the clients and to offer an accessible suitable service as well as opportune, sure an reliable, still under unforeseen situations. (Pizzo, 2013)	Tangible elements in direct sales	Installations	(Lovelock & Wirtz, 2009)
				Shelves	
				Exhibitor	
				Decoration	
				Merchandise	
			Intangible elements in sales for social networks	Collection	(Web and Macros, 2015)
				Advertising	
			Intangible elements	Reliability	(Prieto, 2005)
				Capacity of response	
Empathy					

Source: Own

The study used the following dimensions:

- Reliability. - Capacity of the company to provide the service accurately.
- Ability Answer. - Capacity of the organization to assist customers and serve them quickly.
- Empathy. - The company puts in place the client paying attention individually.

FIG. 1. VARIABLES



Source: Own

Sample

TABLE 2: SAMPLE

Population	Sample
Neuromarketing Variable	
Commercial SMEs in the jewelry industry center located in the Centro Magno Joyero San Juan de Dios	55
Variable quality of service	
Centro Magno Joyero San Juan de Dios. External customers	270

Source: Own

Sampling applied was probability in which all people have studied the same probability of being selected, studying the population evenly. The simple random sampling method providing the same probability of choice in the people who make the sample it was used in the questionnaire application. (Angels & Münch, 2006)

Results y analysis:

Dimension: Factors of neuromarketing

TABLE 3: NEUROMARKETING FACTORS DIMENSION

Sub-Dimensions	Items	Indicators	Alternatives									
			TA		DA		NA/ND		ED		TD	
			FA	%	FA	%	FA	%	FA	%	FA	%
Cultural factors	1	Culture	18	32,7	18	32,7	15	27,3	3	5,5	1	1,8
	2	Subculture	19	34,5	22	44,0	3	5,5	8	14,5	3	5,5
	3	Social class	16	29,1	26	47,3	4	7,3	7	12,7	2	3,6
Social factors	4	Group of membership	19	34,5	20	36,4	12	21,8	3	5,5	1	1,8
	5	Reference groups	14	25,5	29	52,7	6	10,9	4	7,3	2	3,6
	6	Status	18	32,7	13	23,6	13	23,6	6	10,9	5	9,1
Personal factors	7	Occupation	23	41,8	16	29,1	10	18,2	6	10,9	-	-
	8	Purchasing power	18	32,7	25	45,5	7	12,7	4	7,3	1	1,8
	9	Lifestyle	16	29,1	18	32,7	13	23,6	6	10,9	2	3,6
Psychological factors	10	Personality	17	30,9	18	32,7	9	16,4	9	16,4	2	3,6
	11	Motivation	12	21,8	21	38,2	13	23,6	7	12,7	2	3,6

Source. Own

The first thing that stands out from cultural factors in frequency data is that of SMEs surveyed the Jewelry Center of San Juan de Dios in the first item 32.7% strongly agree and agree that values affect customers in expressing their decision making with a cumulative total of 65.5%, showing that coexist in the jewelry industry indicators neuromarketing as pointed out by Braidot (2007) values are feelings that people have about the products they select. In relation to the second item it is 40% agree that the profession influences customer purchasing jewelry, as is proposed by Braidot (2007) the target market they operate in an environment that produces different demands of the profession-related products. In the third item 47.3% agree that social class influences customer buying jewelry, being an important factor when choosing because the consumer behavior changes, such differences are observed in attitudes, learning and consumption. On the whole cultural and sub-cultural factors are external factors that have great influence on consumer behavior that produce achieving higher levels of competitiveness.

Dimension: Elements of the quality of service

TABLE 3: ELEMENTS OF THE QUALITY OF SERVICE

Sub-Dimensions	Items	Indicators	Alternatives									
			TA		DA		NA/ND		ED		TD	
			FA	%	FA	%	FA	%	FA	%	FA	%
Tangible elements in direct sales	1	Installation	59	21,9	161	59,6	39	14,4	11	4,1	-	-
	2		63	23,3	151	55,9	49	18,1	6	2,2	1	0,4
	3	Shelves	50	18,5	121	44,8	81	30,0	15	5,6	3	1,1
	4	Exhibitor	41	15,2	140	51,9	83	30,7	5	1,9	1	0,4
	5		57	21,1	132	48,9	70	25,9	9	3,3	2	0,7
	6	Decoration	44	16,3	95	35,2	89	33,0	37	13,7	5	1,9
	7	Merchandise	20	7,4	97	35,9	119	44,1	29	10,7	5	1,9
	8		49	18,1	131	48,5	77	28,5	13	4,8	-	-
Intangible elements in sales for social networks	9	Colection	29	10,7	122	45,2	99	36,7	18	6,7	2	0,7
	10		41	15,2	132	48,9	87	32,2	10	3,7	-	-
	11	Advertising	27	10,0	84	31,1	116	43,0	39	14,4	4	1,5
Intangible elements	12	Reliability	28	10,4	114	42,2	94	34,8	30	11,1	4	1,5
	13		40	14,8	128	47,4	80	29,6	22	8,1	-	-
	14	Capacity of response	77	28,5	114	42,2	61	22,6	18	6,7	-	-
	15		53	19,6	130	48,1	77	28,5	10	3,7	-	-
	16		60	22,2	134	49,6	64	23,7	10	3,7	2	0,7
	17	Empathy	92	34,1	112	41,5	52	19,3	14	5,2	-	-
	18		58	21,5	113	41,9	87	32,2	10	3,7	2	0,7
	19		58	21,5	130	48,1	75	27,8	7	2,6	-	-

Source. Own

As a result of the work of field applied to the clients of the Jewelry Center of San Juan de Dios in their absolute and relative frequency. First item within the tangible elements in direct sales facilities 59.6% agreed that installations are visually attractive according to the expectations of the customer. In the second item 55.9% agreed that facilities provide an environment appropriate to the needs and desires of the client, the tangible elements as the physical aspect of the facilities and presentation of the settlements are a factor that can induce the client perform a commercial activity. The eighth item 48.5% agreed that merchandise is appropriate to the needs and desires of the target, according to Jimenez (2012) in Maslow hierarchy: jewelry is at the level of social acceptance to be a psychological need that is satisfied when people take care of himself physically, covering the needs of belonging to a social group and acceptance; at the level of self-esteem covering the need to achieve success, reputation, respect, prestige and status; and it is also a desire to be a feeling that motivates the desire to own an object to quench a taste.

Analysis Wilcoxon test

In analyzing the relationship between the variables of neuromarketing and service quality of commercial SMEs in the jewelry industry in Guadalajara.

TABLE 5. TEST STATISTICS^A

	Intangible elements in sales of social network - Intangible elements	Tangible elements in direct sales - Intangible elements	Intangible elements in sales of social network - Tangible elements in direct sales	Tangible elements in direct sales – Factors for NMKT	Intangible elements in sales of social network – Factors for NMKT	Intangible elements – Factors for NMKT
Z	-1,265 ^b	-,628 ^b	-,595 ^b	-,360 ^c	-,251 ^b	-,528 ^c
Sig. asintot. (bilateral)	0,206	0,530	0,552	0,719	0,802	0,598

- a. Wilcoxon signed-rank test.
 - b. b. Based on the positive ranks.
 - c. c. Based on the negative ranks
- Source: SPSS

The outcome of the bilateral asymptotic significance is 0,719 so there is no significant difference between factors of neuromarketing and tangible elements in direct sales. The outcome of the bilateral asymptotic significance is 0,802 so that there is no significant difference between factors of neuromarketing and intangible elements in sales of social networks. The outcome of the bilateral asymptotic significance is 0,598 so there is no significant difference between factors of neuromarketing and intangible elements in sales of social networks.

Conclusions

The purpose of this research was to outline a proposal model of sales to final customers of commercial SMEs in the jewelry industry in Guadalajara comparing the relationship of neuromarketing and quality of service. In applying the tools of neuromarketing can investigate consumer preferences, their motivations, their ability to pay and their values, as well as the quality of service perceived by the customer; the main reason is to meet customer expectations and achieve their loyalty to have a positive economic impact on SMEs through increased sales.

The results allow conclusions highlight the following specific objectives: Regarding the second specific goal focused on identifying factors that influence neuromarketing commercial SMEs in the jewelry industry in Guadalajara for the sales model, with the percentages indicators more favorable of each sub-dimension are subculture, reference group, occupation and personality.

Regarding the third objective aimed at comparing the elements of quality of service affecting trade SMEs in the jewelry industry in Guadalajara for the sales model. In the tangible elements in direct sales indicator having the greater presence of positive is the appearance of the physical facilities in the process of promoting servuction the moment of truth that helps the growth of the industry. In intangible elements in sales of social networks Magno Centro Joyero San Juan de Dios there is weakness in advertising on social networks that handle according to customer feedback. In intangibles elements ServPerfect assessment tool was used to assess customer perception regarding the service received, the items with the highest scores were the responsiveness that is the desire of the

organization to assist customers and serve them quickly and empathy where the organization is put in place to provide individualized customer attention to each element with the lowest score was the reliability is the ability to provide service accurately.

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Endnotes

Within the limitations of the research are that is not a parametric statistics, for what cannot be proofs of inferential statistics such as parametric test t, the correlation coefficient of Pearson and linear regression; because for a parametric analysis you should start with the following assumptions:

1. The population distribution of the dependent variable is normal: the universe has a normal distribution.
2. The measurement of the dependent variable is interval or reason.
3. When two or more populations are studied, these have a homogeneous variance: the populations in question have similar dispersion in distributions.