Linguistic and Philosophical Investigations
ISSN: 1841-2394, e-ISSN: 2471-0881
Vol 23 (1), 2024
pp. 2942-2977

NEUROMANAGEMENT AS A STRATEGIC SKILL FOR INTELLIGENT DECISION-MAKING IN MANAGERS OF SMES IN THE TEXTILE INDUSTRY

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Summary

The main objective of this research is to develop a neuromanagement model as a strategic skill for intelligent decision-making in managers of SMEs in the textile sector. Theoretically, the neuromanagement variable is based on the doctrines of authors such as Braidot (2016) and De la Torre (2014), among others; while, for intelligent decision-making, reference is made to authors such as Hammond, Keeney, and Raiffa (2007), Benavides (2018), and Franklin and Krieger (2011). Methodologically, it is a projective research with a non-experimental, cross-sectional and field design. The study population included 96 SMEs in the textile sector located in the town of Chapinero, Bogotá, Colombia. For data collection, a questionnaire composed of 60 questions with a Likert-type scale was used, which was validated by five experts, and whose reliability was measured by Cronbach's Alpha coefficient, obtaining a value of 0.84. The results showed that, in relation to the neuromanagement variable, there are highly significant differences between the dimensions compared. The managers of these SMEs demonstrate a multineurosensory profile in various contexts, apply neuromanagement principles for learning and assess neural functioning in different situations. This has allowed them to create successful businesses, optimize customer service, improve organizational management, and foster better understanding within their teams. In

terms of smart decision-making, although managers tend to make informed decisions, when faced with changing situations or critical scenarios, these do not always provide clarity in evolving environments. It is also concluded that risk tolerance is not a significant factor in this process.

Keywords: Neuromanagement, intelligent decision making, SMEs.

1. Introduction

The evolution of management processes at a global level has driven the search for new strategies to manage more effectively and efficiently, with the aim of optimizing any type of resource, especially human talent, whose performance is key to determining the success or failure of organizational management. In this context of constant change, where the speed of transformations imposes new challenges, there is a need to integrate knowledge from emerging disciplines such as neuroscience to enrich traditional management practices. This is where neuromanagement becomes relevant by merging the theories of neuroscience with managerial practices, providing a multidimensional approach that allows leaders to address challenges from different perspectives with a common goal: to develop cutting-edge management.

During the 1990s, known as the "Decade of the Brain", there were important advances in the field of neuroscience, whose discoveries have been applied in various areas, including management. Neuromanagement, as a practical application of this knowledge, is presented as a powerful tool for any professional who, in their interaction with an organization, needs to optimize their performance, especially in leadership roles. By linking neuroscience to managerial processes, neuromanagement places an emphasis on decision-making, a critical aspect in management, by harnessing the brain's neurocognitive processes to improve managers' ability to make smarter, more effective decisions.

In this sense, the present research not only focuses on neuromanagement as an innovative discipline, but also incorporates the concept of intelligent decision-making, an essential competence for any manager in the contemporary business environment. The integration of both skills in a single management model aims to provide a tool capable of improving efficiency, quality and productivity within organizations. This approach is especially relevant for SMEs in the textile sector, where the ability to adapt and make sound decisions play a fundamental role in the survival and growth of these companies.

The main objective of this research was to develop a neuromanagement model as a strategic skill for intelligent decision-making in managers of SMEs in the textile sector in Bogotá. To achieve this purpose, detailed studies of the variables involved were carried out. First, the characteristics of the multineurosensory profile of managers, the

application of neuromanagement in learning processes, and the levels of neural functioning in different situations were identified. Second, it examined how managers of SMEs in the textile sector, specifically in the town of Chapinero, manage intelligent decision-making in volatile environments, identifying the key elements that influence their decision-making process in these changing contexts.

Based on these analyses, the study was structured in five chapters. The first chapter addresses the statement of the problem, from which the central question of the research arises, and establishes both the general objective and the specific objectives that will guide the development of the study. The justification is also presented, in which the scientific, theoretical and methodological contributions of the research are described, as well as its practical implications for the managerial field. Finally, the delimitation of the study is defined in terms of time and space, and the target population is described, composed of SMEs in the textile sector in the town of Chapinero.

1.1 Problem statement

Nowadays, organizations are looking for new techniques and strategies that break with traditional paradigms, introducing neuromanagement as a modern management approach. This mental model allows neuroleaders to use the brain to design and implement best practices in business management, focusing on achieving the objectives set. Neuroscience, promoted in the 90s, has renewed classic concepts of management, demonstrating that effective management goes beyond the traditional planning, organization, direction and control processes proposed by authors such as Frederick Taylor and Henri Fayol.

In the United States, the George W. Bush administration declared the "Decade of the Brain" in 1990, marking the beginning of advanced research on the brain. In 2013, President Barack Obama announced the BRAIN project, with the goal of mapping the human brain. Similarly, in Europe, the Spanish Society of Neuroscience promoted the "Year of Neuroscience" in 2012, underlining the importance of the study of the brain in various fields, including management. In both the United States and Europe, these initiatives have promoted advances in the understanding of the brain and its relationship with organizational decision-making.

Neuromanagement, by applying the advances of neuroscience, seeks to break traditional management schemes, enhancing the ability of leaders to make intelligent decisions. Researchers such as Urdaneta (2014) highlight that the emotional brain plays a crucial role in these decisions, since the best leaders resort to both their emotions and logic. This tool allows managers to improve team building, make decisions with greater certainty and optimize relationships within the organization and with the market.

In summary, neuromanagement is positioned as an innovative solution that combines scientific knowledge with the practical needs of the organizational environment, facilitating more effective management aligned with the current demands of the global market.

1.1.1 Formulation of the problem

According to the above approaches, the present research is oriented with the purpose of generating a neuromanagement model as a strategic skill for intelligent decision-making in the managers of SMEs in the textile sector of Bogotá, for which it is considered pertinent to answer the following central question: How is the neuromanagement model as a strategic skill for intelligent decision-making in the managers of SMEs in the field textile industry in Bogota?

To carry out this research, the following systematization is presented according to the dimensions to be studied:

- What is the multineurosensory profile present in the managers of SMEs in the textile industry?
- What are the applications of neuromanagement in the learning of managers of SMEs in the textile industry?
- What are the levels of neural functioning present in the managers of SMEs in the textile industry?
- What is the intelligent decision-making process used by managers of SMEs in the textile industry?
- What are the elements of smart decision-making in volatile environments used by SMB managers?
- How does the neuromanagement model generate a strategic ability for intelligent decision-making in the managers of SMEs in the textile industry?

2. Objectives

2.1 General objective

To generate a neuromanagement model as a strategic skill for intelligent decision-making in the managers of SMEs in the textile industry.

2.2 Specific objectives

- To know the multineurosensory profile present in the managers of SMEs in the textile sector.
- To consider the applications of neuromanagement in the learning of managers of SMEs in the textile industry.

- To distinguish the levels of neural functioning present in the managers of SMEs in the textile industry.
- To characterize the intelligent decision-making process used by the managers of SMEs in the textile industry.
- Examine the elements of intelligent decision-making in volatile environments used by managers of SMEs in the textile industry.
- To design a neuromanagement model as a strategic skill for intelligent decision-making in the managers of SMEs in the textile industry.

3. Methodology

Through this section of the research, we will descend to establish its epistemology, as well as the type of research in which the study is framed, and then describe its design. In the same way, the population of the study will be visualized, also referring to the techniques and instruments of information collection used, also explaining the processes of validation and reliability to which they were subjected, presenting in the last place the techniques of analysis of the information obtained.

3.1 Type of research

Research is a dynamic process that involves different levels of complexity in which knowledge is obtained in accordance with the purpose for which the research has been proposed, that is, when a problem is going to be solved in a scientific way, it is very convenient to have detailed knowledge of the possible types of research that can be followed. This knowledge makes it possible to avoid mistakes in choosing the right method for a specific procedure.

In the same way, it should be noted that the types of research are hardly pure; since they are generally combined with each other and systematically obey the application of research, Monje (2011) defines that traditionally there are three types of research, which are historical, which describes what was, descriptive, explains what it is and experimental describes what it will be. The aforementioned author notes that the entire range of research studies that researchers are working on can be deduced from these. In any of the three previous types, it should be noted that the facts or phenomena studied are related to the time in which they occur.

Continuing with the review process, there are projective investigations, which consists of the elaboration of a proposal or a model, as a solution to a problem or need of a practical type, either of a social group, or of an institution, in a particular area of knowledge, based on a precise diagnosis of the needs of the moment. the explanatory or generative processes involved and future trends.

To reinforce this criterion Hurtado de Barrera (2015), this type of research proposes solutions to a given situation based on a process of inquiry, it involves exploring,

describing, explaining and proposing alternatives for change, but not necessarily executing the proposal, in short, all the research that involves the design or creation of something based on a research process.

Based on the above, this research is classified as projective, where the aforementioned author maintains that the desired event is a program, proposal, action plan, design or invention, particularly this study aims to generate a neuromanagement model as a strategic skill for intelligent decision-making in the managers of SMEs in the textile industry in Bogotá.

3.2 Research design

When talking about the design of a research, it gives the impression of a routine, objective, practical activity; However, conceiving research requires subjective conditions or creative and innovative mental states that cannot be overcome in such a simple way, since starting a research presupposes conditions that are not known at what moment they begin, or which ones they are all the elements that come together to be at the precise point of starting.

It is considered that this research meets the specifications of a field design, which, according to Chávez (2015) this type of research is supported by information that comes, among others, from interviews, questionnaires, surveys and observations. In the same perspective, field research, Baena (2014) states that field studies aim to collect and record in an orderly manner the data related to the topic chosen as the object of study. Observation and interrogation are the main techniques that arise between them. On the other hand, Arias (2016) defines field research as that which consists of the collection of data directly from the subjects investigated, or from the reality where the events occur (primary data), without manipulating or controlling any variable, that is, the researcher obtains the information, but does not alter the existing conditions. Hence its nature as non-experimental research. In this sense, the data collection of this research work will be collected in the reality object of study, in this one in the SMEs of the textile sector of Bogotá.

Given the definitions by the aforementioned authors, the function of this type of design is that secondary data is used, especially those from bibliographic sources, from which the theoretical framework is developed. However, it is the primary data obtained through field design that are essential for the achievement of the objectives and the solution of the problem posed.

Likewise, it is considered a non-experimental study because the phenomenon under study is observed in natural conditions, without any manipulation in the analysis of the variables, that is, the facts are observed in the natural context, and then analyzed. Chávez, (2015). On the other hand, Baena (2014) states that, in the non-experimental study, the researcher observes the phenomena as they occur naturally, without intervening in their development.

Therefore, the relevant characteristics of this type of design is that it already studies what exists, the variables are not manipulated and it is difficult to do so, so an observation of phenomena is carried out in their natural environment, it is more difficult to separate the effects of the multiple variables that intervene. For this reason, this research is stipulated as non-experimental, since the researcher does not manipulate the data in the contexts of SMEs in the textile industry in Bogotá.

This research is also characterized by being transversal, as Chávez (2015) explains, since they collect information in the same period of time, that is, only once. Its purpose is to describe the subject at a given time. For his part, Arias (2016) defines research as transversal, since all the information is collected at the site where the events originated in a single time, that is, a single application of the instrument to a group of people belonging to the organization under study.

The main functions of this type of design is that it is mainly about the way in which it collects data, that is why it is used to measure the superiority of the chosen phenomenon at a specific point in time, this research is based on the observation of the subjects in their real environment, therefore, this method allows the variables to be defined through the analysis of their incidence in the community under study.

3.3 Population and sample

3.3.1 Population

In all research, it is necessary to implement the measures that will be carried out in the study. Therefore, it is necessary to establish the universe where the research was carried out, and also the subjects to which the researcher's attention will be directed. Bernal (2010) is the universe that refers to the complete group of particulars that the researcher wishes to study and with respect to which he or she plans to generalize or induce that they contain the characteristics that are to be analyzed in the research.

In the same order of ideas, Lerma (2016) the population is the set of all the elements of the same species that have a certain characteristic or that correspond to the same definition and whose characteristics and dimensions will be studied. In addition, Arias (2016) states that the population, or in more precise terms the target population, is a finite or infinite set of elements with common characteristics for which the conclusions of the research will be extensive. This is delimited by the problem and by the objectives of the study.

In the same order of ideas, it is important to highlight that the function of the population is important in any type of study that is being investigated, since it is the one that has the required information, however, in the case of this research, the universe population will be composed of 80,000,000 SMEs subscribed to the chamber of commerce of the town of Chapinero, Bogota, Colombia, however, in the case of this research, the study will take as a population the SMEs of the textile industry, which are in their entirety 96, of which the reporting units are specifically the managers. (See table 1)

Nro.	SME	Location	Qty. of Managers
1	G G LOGISTIC GROUP SAS	KR 7 # 114 - 33 OF 701	1
2	LAZADAS LTDA	CL 112 #15 A - 26 AP 202	1
3	ARTCASA SAS	CL 169 #20 - 58	1
4	HOYOS DE GÓMEZ MARIA EMILIA	KR 18 A#112 - 87	1
5	HILANDERIAS BOGOTA S.A.	CL 113 # 7 - 21 TO A OF 1006	1
6	CAMARGO BOLAÑOS Y CIA S EN C	KR 11 # 97 - 59	1
7	MICHEL EDITORS SAS	CL 69 A # 9 - 44	1
8	QUADRO A S.A.S.	CL 69 #7 - 28	1
9	DE BRIGARD DE BRIGARD S.A.S	KR 15 # 77 - 90 OF 502	1
10	FIBTEX SAS	CL 100 # 8 A - 49 TO B OF 602	1
11	INVERSIONES TEXTILES DEL TOLIMA S.A.	KR 19 # 90 - 56 AP 607	1
12	COVERS DESIGN S A S	CL 94 A # 11 A - 66	1
13	ISERNIA S A	CL 86 #18 - 29	1
14	CADENA TELKA SAS	KR 14 # 79 - 17	1
15	MAPRITEX S A S	CL 56 #13 - 22	1
16	FAYDU LTDA	CL 56 #13 - 56	1
17	INHABIT SAS	KR 15 # 93 - 75 OF 305	1
18	ACOSTA GALLEGO JORGE	KR 14 #77 A - 30	1
19	ATLAS S A CLOTHS	CL 81 #12 - 80	1
20	BED S A S	KR 15 # 88 - 11 LC 1	1
21	IDEATELA LTDA	CL 86 #18 - 29	1
22	COLOMBIAN REST INDUSTRY S A S	KR 7 # 67 - 02 OF 202	1
23	PLACOLTEX S A S	CL 99 #9 A - 54 LC 74	1
24	FAYDU LTDA	CL 56 #13 - 56	1
25	FERNANDEZ MONSALVE CARLOS AUGUSTO	KR 10 # 10 - 53 OF 419	1
26	RAMON GLORIA MYLY	CL 13 #12 - 74 LC 122	1

27	INDUSTRIAS ACRILICAS ISACRIL S.A.S.	CL 1 #11 A - 62	1
28	TEJILANDIA SAS	CL 1 # 11 A - 62 AP 70	1
29	KAIROS REPRESENTATIONS SIMPLIFIED JOINT-STOCK COMPANY	KR 10 # 15 - 55 SUR	1
30	COMERCIALIZADORA TEXTIL I Q CIA SAS	KR 1 H #38 D ON - 06	1
31	MUNDIGRAMS S A S	KR 13 EAST #17 F SOUTH - 38	1
32	GAB NUB LTDA	CL 13A OF #6 - 10	1
33	ELASTICOS Y TEXTILES DE COLOMBIA LIMITADA	KR 7 # 23 SUR - 33	1
34	MARTINEZ GOMEZ EDGAR	CL 41 OF #3 A - 30 ESTE	1
35	CARPAS Y PARASOLES LEON S.A.S	KR 77 I #65 B – 37 SUR	1
36	LEONTEX GROUP LTD	KR 75 B # 57 M - 03 OF	1
37	AMERICANTEX COLOMBIA SAS	KR 86 C#55 - 32 SUR	1
38	CAICEDO DELGADILLO CRISANTO	CL 70 OF #87 B - 35	1
39	GARCIA SANCHEZ HUGO HERNANDO	KR 71 B#53 C SUR – 03	1
40	SANCHEZ AYA JULIAN	BY BOYACA #37 C - 42 SUR	1
41	SANCHEZ HENAO JOSE HUMBERTO	CL 39 OF # 68 N - 18	1
42	HF ENDOWMENTS SAS	KR 69 A#7 - 22	1
43	PRIETO RODRIGUEZ OSCAR	TV 72 #37 OF - 45	1
44	BANDEL S.A.S. BANDS AND ELASTICS	CL 9 # 68 - 51	1
45	TEXTILES ROMANOS S.A.	KR 68 D#19 - 48	1
46	ESPUMAS DE LA SABANA S.A.S.	KR 96 C#17 B - 35	1
47	ZIPA LAMINATES S A S	KR 97 #17 A - 53	1
48	COSMOTEXTIL S A S	KR 69 B#18 A - 10	1
49	LOPEZ RUIZ JUAN ANGEL	CL 17 A # 69 - 47	1
50	MANTELTEX SAS	KR 69 Q#75 - 62	1

51	TEJIDOS PLASTICOS S.A.S	CL 82 D # 81 A - 11	1
52	CONTINENTAL DE SUMINISTROS LTDA	KR 69 F#64 - 67	1
53	CRUZ VARGAS ELSA CECILIA	AVENIDA BOYACA # 67 - 64	1
54	TEXTILES BLONDATEX SAS	KR 69 Q#75 - 75	1
55	BAUTISTA GARZÓN JOSÉ ALVARO	KR 47 #131 A - 23	1
56	HILOANDES CAMCAL S EN C	CL 116 A # 70 D - 55	1
57	INDUSTRIA NACIONAL TEXTIL S.A.S INTEXTIL S.A.S	CL 116 A # 70 C - 22	1
58	REPCAROL LIMITED	CL 127 #70 D - 55	1
59	RAMIREZ GOMEZ GUSTAVO	CL 160 # 73 - 47 TO 4 AP 803	1
60	PROVELANAS LIMITED	KR 24 # 63 F - 31	1
61	QUINTERO ARANGO EDWIN	CL 79 B # 50 - 21	1
62	DYSATEX S A S INTERNATIONAL TRADING COMPANY	CL 75 A # 27 B - 34	1
63	MULTI-EMBROIDERY AND U -	KR 24 #63 B - 50	1
64	ORTEGA MONCADA CLAUDIA PATRICIA	CL 76 #51 - 35	1
65	INDUSTRIAS PICCOLO SAS	KR 19 # 53 - 16	1
66	SUPERDECO SOLE PROPRIETORSHIP	CL 52 A # 19 - 19	1
67	PALOMA LTDA	KR 60 # 22 - 75 BG 2	1
68	CARDENAS SALINAS JOSE HORACIO	KR 28 A #49 A - 60	1
69	KARYTEX CONFECTIONMENTS S	CL 53 #18 A - 19	1
70	GOMEZ NOREÑA FREDY ARLEY	KR 19 A #9 - 08 AP 101 LC 101	1
71	CHANUBS Y CIA LTDA	KR 29 # 11 - 62	1
72	GOMEZ GOMEZ YOHANY ANTONIO	CL 10 #20 - 35 LC 31	1
73	BERNAL PANTOJA MARCIAL GILBERTO	CL 10 #15 A - 23	1
74	CI UNICORN TEXTILE INTERNATIONAL S A S	CL 18 OF #24 B - 15 FT 2	1
75	COMERCIALIZADORA Y CREACIONES RAFERTY CIA S.A.S	CL 18 OF #24 D - 14	1

76	TEXTILES DAMATEX S A S	KR 24 H#20 - 34 SUR	1
77	ZIPPER S SUPPLIES S A S S	CL 18 OF #24 - 25	1
78	REATAS DE COLOMBIA S A S	KR 24 G #18 SUR – 42	1
79	INDUSTRIAS REAL S.A. - IN REORGANIZATION	KR 68 # 17 - 20	1
80	TEXTURIZADORA WIN-LON S.A.S.	KR 62 # 11 - 16	1
81	TOMKER S.A.S	KR 44 # 12 A - 64	1
82	MARTE DE COLOMBIA LTDA	CL 22 #40 - 37	1
83	TELARES DE COLOMBIA COLTELARES S A S	KR 62 # 12 - 58 IN 6	1
84	GREAT TEXTILE OF 50 SAS	KR 52 C#42 B SUR – 03	1
85	HERNANDEZ URIBE DIEGO ALEJANDRO	KR 52 C#42 B SUR – 47	1
86	URIBE PAEZ LUZ MERY	KR 52 C#43 SUR – 85	1
87	UNIVERSAL OF INPUTS FOR CLOTHING	CL 4 C #53 D - 06	1
88	RODRIGUEZ DE LANCHEROS MIRIAM	CL 3 #30 - 47	1
89	CADOSCH DELMAR LEVY SIDNEY	KR 9 # 12 B - 47	1
90	ALVAREZ VILLEGAS S A S AND/OR TELINDA S A S	KR 9 #11 - 74 LC 01	1
91	ALMACEN BOTONIA LTDA	KR 9 # 12 - 71	1
92	MIKEKIDS LTDA	KR 9 #11 - 02	1
93	SOLANO GONZALEZ LUIS ERNESTO	CL 12 #8 - 59	1
94	PERCOL GROUP S A S	KR 31 BIS #39 SUR – 80	1
95	SESCODECOR SAS	KR 28 A #40 OF - 15	1
96	QS INVERSIONES LTDA	KR 27 # 42 SOUTH - 47	1

Table 1. Population distribution
Source: Chapinero Chamber of Commerce, Bogotá, Colombia (2020)

3.3.2 Sample

With respect to the sample, it is necessary to develop in an investigation the universe that will really contribute the precise data to achieve the objectives set out in this

research. The sample is a subset of the population. Based on the data of the same variable obtained from it (statistical), the estimated values of these same variables for the population are calculated.

In this regard, Arias (2016) refers to the sample as a representative and finite subset that is extracted from the accessible population. Therefore, Monje (2011) states that the sample is a set of objects and subjects from a population; that is, a subgroup of the population, when it is defined as a set of elements that meet certain specifications. In turn, Bernal (2010) defines the sample as the part of the population that is selected, from which the information for the development of the study is actually obtained and on which the measurement and observation of the variables under study will be carried out.

By virtue of the small and accessible nature of the population under study, the sampling technique was not used, but the entire universe that makes up the population was considered, adopting the characteristic of a Population Census. Which, according to Parra (2012), consists of studying all the elements that make up the universe, taking advantage of small nature from a geographical point of view. From the population census and through the application of the data collection instrument to the reporting units, the data that will allow the necessary information to be obtained will be obtained.

3.4 Data collection techniques and instruments

To obtain information on the variables, instruments such as observation, existing documents, questionnaires and interviews were used. It is essential to use techniques that ensure adequate data collection that contribute to the progress of research. According to Hernández et al. (2014), data collection techniques require a detailed plan of procedures that allow information to be gathered for a specific purpose. Among the most common are direct observation, survey, and interview.

Tejada (2014) points out that, when selecting the best way to collect information, it is necessary to have a plan and adequate tools to record responses, descriptions or observations, using questionnaires, interview guidelines and observation sheets, among others. Monje (2011) adds that data collection, depending on whether it is quantitative or qualitative, can be carried out through direct methods such as observation and interview, or indirect methods such as questionnaires.

In this research, the survey will be used as the main technique. Lerma (2016) defines it as a document that can be verified from a scientific approach, since it can be evaluated by experts and consists of open or closed questions. In this case, the survey will be descriptive and will be applied through a questionnaire with a Likert-type scale, consisting of 60 items covering two research variables, five dimensions and 20 indicators. Each answer choice will receive a score of between 1 and 5 points, organized according to the content of the options.

The questionnaire will be aimed at managers of SMEs with the aim of obtaining relevant information to develop a neuromanagement model as a strategic skill in decision-making.

VARIABLE	ANSWER ALTERNATIVES	QUANTITATIVE ASSESSMENT
Neuromanagement Smart decision-making.	Always (S)	5
	Almost Always (CS)	4
	Sometimes (AV)	3
	Almost Never (CN)	2
	Never (N)	1

Table 2. Quantitative assessment of each of the response alternatives
Source: Own elaboration (2019)

4. Analysis and discussion of the results

In order to achieve the specific objectives of this research; Once the information obtained has been processed and tabulated, it is necessary from a logical point of view to carry out an analysis that consists of the decomposition of the data received into its constituent parts for a more detailed study that will allow finding a meaning to all the work previously carried out.

According to Sabino (2012), the analysis of the results is not a task that can be executed in an improvised way, on the contrary, it arises from the theoretical framework drawn up, being able to define in advance which data are capable of rejecting or affirming a hypothesis or which results will indicate one or another conclusion. Therefore, in order to carry out the analytical task, it is necessary to take the homogeneous data obtained by interrogating, exploring and examining them according to whether they are data obtained in documentary form or directly from reality.

Next, the analysis and interpretation of the results obtained is carried out, on the one hand, for the data that respond to the neuromanagement variable; on the other hand, for the variable of intelligent decision-making. These results are shown by means of explanatory tables, which allow a clear, precise and more explicit exposition of them, additionally they use inferential statistics, specifically the Kruskal-Wallis test, together they achieve a detailed description of the variables plus the analysis units that make up the research that leads to the achievement of the objectives set at the beginning of the study.

Components of the Multineurosensory Profile Dimension

Hypothesis:

H0: The components of the multineurosensory profile present in the managers of SMEs in the textile sector in Bogotá do not vary from each other.

Hi: The components of the multineurosensory profile present in the managers of SMEs in the textile sector in Bogotá vary from one another.

Ranges			
	Components	N	Average Range
Multineurosensory Profile	Visual perception.	96	275,81
	Auditory perception	96	263,84
	Sense of touch	96	176,88
	Sense of smell	96	232,69
	Sense of taste	96	253,28
	Total	480	

Table 3. Test for the ranges of the components of the Multineurosensory Profile dimension.
Source: Aragón (2020)

Table 3A **Test statistics for the components of the Multineurosensory Profile Dimension**	
	Multineurosensory Profile
Chi-square	31,806
Gl	4
Asymptotic sig.	,000

Tables 3 and 3A show the results obtained when applying the Kruskal-Wallis test for the components of the Multineurosensory Profile Dimension, in this sense it is observed that the significance is 0.00 < 0.05, so H0 is accepted and H1 is rejected, that is, there is a difference between the ranges of the components of the dimension.
In this sense, it is deduced that there are differences between the different levels of perception, noting the components visual perception, auditory perception, sense of smell and taste have high average ranges therefore they do not differ from each other, however, it is appreciated in the result that the component sense of touch has a low

average range compared to the previous four (4) so it differs from these from the point of view statistical. Likewise, it can be seen that the median of the Multineurosensory Profile dimension is located at 3, which indicates that half of the score is below three and the other half of the values are above this number.

From the above approaches, it is deduced that the visual and auditory perception indicators, as well as the sense of smell and taste, present cohesion in attention, consequently better understanding between manager, team, customer, product, negotiators and people of the same organization, where, the existence of a multineurosensory impact prevails to know how the brain encodes and transforms the information from the environment to create what is known as perceptual judgment, from there, generate strategies for a better disposition of the resource.

It is important to mention that the results obtained converge with what was established by Braidot (2016), when he exposed the construction of multineurosensory profiles to create successful business units, reposition the current ones, select people, optimize customer service and improve organizational management by creating more and better moments of understanding. For this to be possible, it is necessary to delve into the functioning of each of the senses, in turn, to know the main techniques that have been developed to obtain objective information, as well as subjective information that allows the construction of the multineurosensory profiles that are of interest to the organization.

It is appropriate to point out the lack of multineurosensory stimulus, particularly the sense of touch, as a frequent use in managers at the time of decision-making, sometimes preventing the selection of the correct alternative, although the perception of touch is present in everyday life when having contact with the environment that surrounds people, Infrastructure, furniture, this does not directly influence when selecting the best alternative, since the rest of the sensations coming from visual and auditory perception, as well as sense of smell and taste, present a cohesion with respect to the managerial issue where the decision-making processes allow organizational flow.

Components of the dimension Applications of Neuromanagement in Learning

Hypothesis:

H0: There are no differences in the applications of neuromanagement in the learning of managers of SMEs in the textile industry in Bogotá.

Hi: There are differences in the applications of neuromanagement in the learning of managers of SMEs in the textile industry in Bogotá.

Ranges

	Components	N	Average Range
Applications of neuromanagement in learning	Explicit learning	96	182,77
	Implicit learning	96	185,69
	Associative learning	96	185,69
	Non-associative learning	96	215,85
	Total	384	

Table 4. Kruskal-Wallis test for the ranges of the components of the dimension Applications of Neuromanagement in learning.

Table 4A
Test statistics for the components of the dimension Applications of Neuromanagement in Learning

Test Statistica,b	
	Applications of neuromanagement in learning
Chi-square	6,355
Gl	3
Asymptotic Sig.	,096

Source: Aragón (2020)

Tables 4 and 4A show the results obtained when applying the Kruskal-Wallis test for the components of the Dimension Applications of neuromanagement in learning, in this sense it is observed that the significance is 0.096 > 0.05, so H1 is accepted and H0 is rejected, that is, there is no difference between the ranges of the components of the dimension. Likewise, it can be seen that the median of the dimension Applications of Neuromanagement in Learning is located at 4, which indicates that half of the score is below four and the other half of the values are above that number.

With reference to the above, it is deduced that the explicit, implicit and associative learning indicators present a cohesion in terms of results, frequently occurring these types of acquisition of new information, being carried out thanks to the intervention of the entire aforementioned taxonomy, forming coherent and significant learning in the managerial field, the acquisition of this knowledge by managers is gradual, learning and perfecting through models, internships, training and experiences related to management in SMEs.

In this regard, it is necessary to bring up the results obtained by coinciding with the ideas of Braidot (2016), where neurosciences have taken up part of the theories on learning to explain what and how are the biological mechanisms that underlie the cognitive functions that they try to reveal, including memory processes. Therefore, studies reveal that many forms of learning and memory are related to changes in synaptic functionality.

In this purpose, it is essential to point out the prevalence of the non-associative type of learning, where it encompasses the simplest forms of learning: habituation and sensitization. Both change behavior after simple exposure to stimuli, considering learning is non-associative because it is not necessary to make an association between actions and consequences for learning to occur, both habituation and sensitization modify sensitivity to stimuli, although in opposite directions.

When extrapolating at the managerial level, SMEs in the textile industry managers present behaviors linked to non-associative learning, because as a result of the stimuli of the environment they have the capacity to establish adaptive teaching, in other words, the different situations of daily life, turbulent scenarios, volatile environments, changes in the market are known by those who exercise the role in decision-making, managing to exchange vital information for this type of learning within management processes.

Components of the dimension Levels of neural functioning

Hypothesis:

H0: There are no differences in the levels of neural functioning present in the managers of SMEs in the textile sector in Bogotá.

Hi: There are differences between the components and levels of neural functioning present in the managers of SMEs in the textile industry in Bogotá

Ranges			
	Factor3	N	Average Range
Levels of Neural Functioning	Reptilian system	96	133,18
	Limbic system	96	101,79
	Neocortex system	96	198,53
	Total	288	

Table 5. Kruskal-Wallis test for the ranges of the components of the dimension Levels of neural functioning.

Test statistics for the components of the dimension levels of neural functioning

Test Statistica,b	
	Levels of Neural Functioning
Chi-square	78,308
Gl	2
Asymptotic Sig.	,000

Tables 5 and 5A show the results obtained by applying the Kruskal-Wallis test for the components of the Dimension Levels of neural functioning in learning, in this sense it is observed that the significance is 0.000 < 0.05, so H0 is accepted and H1 is rejected, that is, there is no difference between the ranges of the components of the dimension. Therefore, it is accepted that there is homogeneity in the average ranges of the components. Likewise, it can be seen that the median of the dimension levels of neuronal functioning is located at 4, which indicates that half of the score is below four and the other half of the values are above this number.

From the above approaches, the reptilian system and neocortex have greater cohesion, being more related to each other, in relation to the instinctive part (reptilian) managers have an adequate adaptation to the environment, keeping the instinct of conservation awake, in relation to the thinking area (neocortex), they use it according to intellectual processes associated with logical reasoning for decision-making, in which associative, imaginative and creative processes take place, with the possibility of anticipating different situations in SMEs in the textile industry.

It is necessary to emphasize that the results obtained converge with the postulates of Braidot (2016), where the levels of neuronal functioning are based on the triune brain, elaborated in 1990 by Paul MacLean, this theory, in the human brain three levels have progressively overlapped that function in an interconnected way, each of them with its specific characteristics: The reptilian system (instinctive), the limbic system (emotional) and the cortex (thinking brain), these levels make up a whole and are interrelated, they are also capable of operating independently, where each of them has its own functions, in turn, a different physical and chemical structure.

In this sense, the levels of neural functioning formed in a system, interconnected with each other, allow us to work freely, whether instinctive, emotional or thinking, contrary to what has been expressed, particularly the limbic system, presents shortcomings by affecting the perceptions of managers in the organization, sometimes preventing making the right choices as a result of emotions linked to human capital.

Components of the Intelligent Decision-Making Process dimension

Hypothesis:

H0: There are no differences in the intelligent decision-making process used in the managers of SMEs in the textile sector in Bogotá.
Hi: There are differences between the components of the intelligent decision-making process used in the managers of SMEs in the textile sector in Bogotá.

Ranges			
	Components	N	Average Range
Smart decision-making process	Problem Identification.	96	225,51
	Goal Formulation	96	272,69
	Definition of Alternatives.	96	229,29
	Determination of consequences.	96	282,85
	Implement transactions	96	192,17
	Total	480	

Table 6. Kruskal-Wallis test for the ranges of the components of the Intelligent Decision-Making Process dimension.
Source: Aragón (2020)

Test Statistica,b	
	Smart decision-making process
Chi-square	32,004
Gl	4
Asymptotic Sig.	,000

Tables 6 and 6A show the results obtained by applying the Kruskal-Wallis test for the components of the Dimension Intelligent decision-making process, in learning, in this sense it is observed that the significance is 0.000 < 0.05, so H0 is accepted and H1 is rejected, that is, there is no difference between the ranges of the components of the dimension. Likewise, it can be seen that the median of the Intelligent Decision-Making Process dimension is located at 4, which indicates that half of the score is below four and the other half of the values are above that number.
In the analyzed table, a marked similarity is denoted between the indicators identification of problems, formulation of objectives, definition of alternatives and determination of consequences, where, the answers issued by the study subjects, gave

rise to the positioning of the indicators in the aforementioned table, through statistical treatment reveals equally are very effective in the population studied, indicative present and developed as an important part of intelligent decision-making in the leaders of the SMEs under study.

It should be said, the managers of SMEs carefully identify the decision problems, recognizing the complexity of each situation, where they formulate objectives adequately to generate direction to the decisions, likewise, they define alternatives maintaining the commitment to execute it, by chronologically ordering the steps assigning the necessary resources, finally evaluating the consequence coming from the selected option.

In this regard, it is necessary to mention the results obtained by coinciding with the postulates of Hammond, Keeney and Raiffa (2007), conceptualizing it as an integral process that aims to solve a complex situation, separating each element from the context, systematically assessing each of them, concentrating on the key components for the particular situation that is interested, Making good decisions is the main determinant of how an individual fulfills his responsibilities, achieving the goals pursued.

It is appropriate to point out the Implement Transactions indicator, it is far from the trend of the rest of the indicators, where managers in the process of intelligent decision-making do not find a middle ground, in the most complex decisions, product of the lack of a perfect alternative, when presenting them in the different options they fulfill a set of purposes, they must learn to choose intelligently between possibilities that are not perfect, looking for a way to set priorities in the SMEs under study, openly attending to the need to make transactions between the various scenarios or situations presented.

Components of the Elements of Intelligent Decision-Making in Volatile Environments

Hypothesis:

H0: There are no differences in the elements of intelligent decision-making in volatile environments used by managers of SMEs in the textile sector in Bogotá.

Hi: There are differences in the elements of intelligent decision-making in volatile environments used by managers of SMEs in the textile sector in Bogotá.

Ranges			
	Component	N	Average Range
	Uncertainty.	96	157,68

Elements of Smart Decision-Making in Volatile Environments	Risk tolerance	96	112,55
	Related decisions	96	163,27
	Total	288	

Table 7. Kruskal-Wallis test for the ranges of the components of the dimension Elements of intelligent decision-making in volatile environments
Source: Aragón (2020)

Test Statistica,b	
	Elements of Smart Decision-Making in Volatile Environments
Chi-square	24,224
Gl	2
Asymptotic Sig.	,000

Kruskal Wallis Test

Tables 7 and 7A show the results obtained by applying the Kruskal-Wallis test for the components of the Dimension Elements of intelligent decision-making in volatile environments, in this sense the significance is 0.000 < 0.05, so H0 is accepted and H1 is rejected, that is, there is no difference between the ranges of the components of the dimension. Likewise, it can be seen that the median of the dimension Elements of intelligent decision-making in volatile environments is located at 4, which indicates that half of the score is below four and the other half of the values are above that number.

In the analyzed table, a marked similarity is denoted between the uncertainty and related decisions indicators, the answers issued by the study subjects, gave rise to the positioning of the indicators in the aforementioned table which through statistical treatment reveals equally are very effective in the studied population, indicative of the systematic process volatile elements are highly present and developed as an important part of decision-making managers.

From the above approaches, the following indicators can be deduced from the uncertainty indicators: the managers of SMEs in the textile industry determine what may happen in the future, as well as the possibilities of one or the other thing happening, as a result of constant and turbulent changes. On the other hand, the linked decisions indicator, in the subjects studied, it is evident that tomorrow's goals are influenced by today's decisions, where managers collect the necessary information to solve those that will be presented later.

The previous results issued by the managers of SMEs coincide with what was stated by the author with whom the position was set in the research, Hammond, Keeney and

Raiffa (2007) who believe that decisions are made in conditions of uncertainty, the desired consequence may not be the one that actually results, individuals vary in terms of their tolerance to risk, Depending on what is at stake, in terms of what they are willing to accept from one decision to another, having a clear awareness of the willingness to accept the rush will make the decision-making process smoother and more efficient, helping to choose an alternative with the expected level of risk.
However, the risk tolerance indicator is far from the trend of the rest of the indicators uncertainty and related decisions, where the managers of SMEs in the textile sector do not know exactly what state of nature will be presented, not knowing the types of situations to arise and the probability that each of them has of occurring. it is difficult for them to anticipate different situations of contingencies, complex or arduous, in order to choose the most suitable alternative, in order to respond to the context in which they develop.

Components of the variable Neuromanagement

Hypothesis:

H0: There are no differences between the components of neuromanagement in the managers of SMEs in the textile sector in Bogotá.
Hi: There are differences between the components of neuromanagement in the managers of SMEs in the textile sector in Bogotá.

Ranges

	Component	N	Average Range
Neuromanagement	Multineurosensory profile	96	104,97
	Applications of neuromanagement in learning	96	136,41
	Levels of Neural Functioning	96	192,11
	Total	288	

Table 8. Kruskal-Wallis test for the ranges of the components of the variable Neuromanagement.
Source: Aragón (2020)

Test Statistica,b	
	Neuromanagement
Chi-square	60,567

Gl	2
Asymptotic Sig.	,000

to. Kruskal Wallis Test

b. Grouping variable: factiv1

Source: Aragón (2020)

Regarding the study of the neuromanagement variable, it was developed on the basis of the three specific objectives that define each of the dimensions corresponding to it, it stands out when using the Kruskal-Wallis Test, it specifies the significance achieved by the variable which obtained 0.000, this value being less than 0.05 (0.000 < 0.05; referential significance level). where, there are no highly significant differences between the dimensions compared, which indicates that not all of them have the same degree of presence within the variable, so H0 is accepted and H1 is rejected.

With reference to the above, the multineurosensory profile and applications of neuromanagement in learning are effective dimensions with respect to the values presented in the neuromanagement variable present in the managers of SMEs, where they conceive visual and auditory perception, as well as sense of smell and taste, generating a harmonious whole between manager, team, customer, product, negotiators and people from the same organization, from there generate strategies in SMEs in the textile industry.

In the same way, they conceive explicit, implicit and associative learning when acquiring new information, forms coherent learning in the managerial field, where the acquisition of this knowledge is progressive, learning through models, experiences and training from there generate strategies in SMEs in the textile sector. It should be added, managers present behaviors linked to non-associative learning, produced by the stimuli of the environment, they have the ability to adapt, in other words, within everyday life when turbulent scenarios arise, they are known by managers, where they adequately anticipate as a result of learning.

It is important to make special reference where the results obtained converge with the ideas of Braidot (2016), by conceptualizing it as the application of cognitive neurosciences to the management of organizations, allows access to new fields of knowledge to better lead work teams, make decisions with a greater degree of certainty, train and train people with more effective techniques, develop more effective commercial actions, establishing a better relationship with people in the market.

To conclude the discussion of results regarding the neuromanagement variable, it is important to note that the results obtained do not establish highly significant differences between the dimensions compared, therefore, the managers of SMEs build a multineurosensory profile, apply neuromanagement in learning and maintain the

levels of neural functioning by creating successful business units. optimizing customer service, improving organizational management and promoting understanding.

Components of the Intelligent Decision Making variable

Hypothesis:

H0: There are no differences between the components of intelligent decision-making used in the managers of SMEs in the textile sector in Bogotá.
Hi: There are differences between the components of intelligent decision-making used in the managers of SMEs in the textile sector in Bogotá.

Ranges				
	Component	N	Average Range	Sum of ranks
Decision-making Smart	Smart decision-making process	96	109,54	10515,50
	Elements of Smart Decision-Making in Volatile Environments	96	83,46	8012,50
	Total	192		

Table 9. Kruskal-Wallis test for the ranges of the components of the Intelligent Decision Making variable

Test statisticians	
	Compv2
U de Mann-Whitney	3356,500
W for Wilcoxon	8012,500
Z	-3,535
Asymptotic sig. (bilateral)	,000

to. Grouping variable: factv2

Source: Aragón (2020)

Regarding the study of the intelligent decision-making variable, developed on the basis of the two specific objectives of the intelligent decision-making process and intelligent decision-making in volatile environments, defining each of the dimensions corresponding to it, it stands out when using the Mann-Whitney U test and Wilcoxon's

W, where 0.000 < 0.05, so H0 is accepted and H1 is rejected, where there are no highly significant differences between the dimensions compared, thus indicating that not all have the same degree of presence within the variable.

Where, in the process of intelligent decision-making, the managers of SMEs identify the problem recognizing the complexity of the scenario, where, they formulate objectives appropriately to generate an orientation in the decisions, likewise, they define alternatives helping to execute it guaranteeing the necessary resources, finally, evaluating the consequence derived from the chosen option.

However, the average achieved in the dimension elements of intelligent decision-making in volatile environments shows that SME managers do not contribute to clarifying the decision in evolving environments, being a systematic and logical process with the intention of solving a problem through the choice of the best outcome taking into account uncertainty. risk tolerance and related decisions.

It is important to emphasize that the results obtained converge with the postulates of Hammond, Keeney and Raiffa (2007), conceptualizing it as an integral process that aims to solve a complex situation, separating each element from the context, systematically valuing each of them, concentrating on the key components for the particular situation that is interested, making good decisions is the main determinant of how an individual fulfills his responsibilities, achieving the goals pursued.

To conclude the discussion of results regarding the intelligent decision-making variable, it is important to note that the results obtained do not establish highly significant differences between the dimensions compared, therefore, the managers of SMEs apply the intelligent decision-making process, however, intelligent decision-making in volatile environments does not contribute to clarifying the decision in changing environments. critical scenarios, disruptive situations, where anticipation of the facts does not prevail.

5. Model proposal

This section seeks to respond to the general objective formulated in this study, regarding the generation of a neuromanagement model as a strategic skill for intelligent decision-making in the managers of SMEs in the textile sector of Bogotá, which arises, to correspond to the phenomenon raised in the research. For its structuring, a projective research was carried out, taking the field phase by applying a questionnaire to the main manager of SMEs in the textile sector of Bogotá, who provided relevant data to the study in reference to its own variables.

At the same time, a theoretical referential framework was formed that allowed the variables to be characterized precisely, with which it was possible to establish clear conceptual references for the design of this value-added proposal, which gives rise to the establishment of a model, together with key actions for the strengthening of the organizational processes implemented in the business entities studied.

Neurosciences have revolutionized the managerial world, today SMEs do not escape from this reality, for managers when directing companies in this field, it is useful to know a managerial model of neuromanagement as a strategic skill for intelligent decision-making, by granting postulates allowing to enhance their multineurosensory profile, applications of neuromanagement in learning and levels of neural functioning, this being a skill by allowing intelligent decisions to be made. To achieve this task, it is necessary to reform the theories of the variables studied from the managerial point of view.

Justification

The neuromanagement model as a strategic skill for intelligent decision-making in the managers of SMEs in the textile industry, tries to generate theories with the intention that managers know their composition, understand their operation and how they can be enhanced to improve the business decision-making process or the managerial management represented.

Scope

The proposed neuromanagement model will indicate to the managers of SMEs constructs of knowledge, allowing them to enhance their multineurosensory profile, applications of neuromanagement in learning and levels of neural functioning of each of the managers or representatives who wish to opt for the model in order to convert them into a skill allowing them to make decisions with a higher degree of intelligence. directed to management processes, without ruling out its application in another context.

Purpose

To generate a neuromanagement model as a strategic skill for intelligent decision-making in the managers of SMEs in the textile industry in Bogotá.

Feasibility

The perspective of this absolutely viable model, when based on theoretical models, proven by different management trends, is additionally based on the administrative principles of management, the context under which this model will be developed, supported by the theoretical elements of neuromanagement and intelligent decision-making in the context of SMEs.

Impact

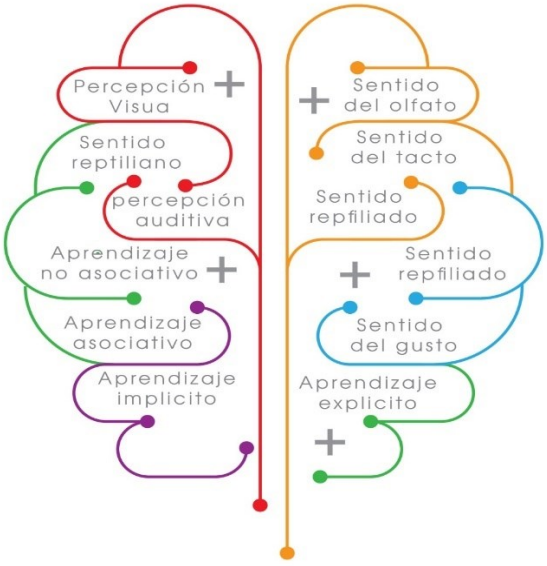
Applied the model will allow measuring its efficiency, making SMEs serve as a standard for other organizations, enhancing the multineurosensory profile, applications of neuromanagement in learning and levels of neural functioning of each of the managers, obtaining the achievement of the objectives, through intelligent decision-making

managing to understand the management of adversity, risk and uncertainty as an element of the organizations studied.

Neuromanagement model as a strategic skill for intelligent decision-making in managers of SMEs in the textile industry in Bogotá.

The construction of this new model based on the conjunction of theories, framed under the expertise of the researcher, as well as the organizational context, linked to research, will serve as the basis for it, this opportunity refers to the context of SMEs, this proposal is generated from assessing the need for a new paradigm in this millennium, linked to the challenges faced by the manager today.

These reasons make obsolete the old competencies of planning, organizing, directing and controlling that arose under the old Newtonian-Taylorian paradigm by predominating the mechanistic, deterministic and predictable model; focused on the operation of machinery, based on logical thinking, where chaos is synonymous with disorganization, prevailing "the doing", with respect to "the being", the latter, emerges as a new business paradigm in the twenty-first century, called quantum paradigm, characterized by focusing on self-knowledge, skills of the individual, emotional self-management, agent of change, paradoxical thinking, increase of consciousness, where chaos is handled as a source of opportunity.



Source: Aragón (2020). In original Spanish language

Starting from this situation, referring to breaking the old schemes where the discovery of the quantum leap by Einstein (1905), concerning a sudden change in the physical

state of a quantum system in a practically instantaneous way, where, the term "change" is applied in various situations particularly in organizations, when being proactive, planning or anticipating the facts in relation to the environment, they must take into account the potential of human intelligence, as a possibility of applying the conscious and unconscious capacities of the individual.

From the perspective of the organization as a living structure, therefore, unpredictable, where objectivity converges with subjectivity, order against chaos, the rational towards the illogical, linear even non-linear relationships, where observation affects what is observed, they must develop new competencies based on this new paradigm.

In this regard, the far-sighted manager must have a broad vision, paradoxical awareness, high vital energy, intuitive knowledge and integrated sensory development, which is why neurosciences allow the analysis of the physical brain mechanisms that explain the choices between one decision or another, between one path or another, leading neuromanagement in the application of cognitive neurosciences in the direction and management of organizations.

Model to enhance neuromanagement

As a fundamental part of this research is the generation of knowledge based on the previous theoretical contrast against the observed reality, in order to develop emerging theories by enriching the intellectual development of humanity, generating solutions to existing needs in the managers of SMEs.

To date, the development of neuromanagement from its beginnings based on the functioning of the brain, there is still a long way to go. For this reason, new research is carried out every day in an attempt to decipher which pieces contain various enigmas. In fact, not using these advances in organizations would be equivalent to postponing the launch of a rocket to the moon, because they do not know the law of gravity in its entirety.

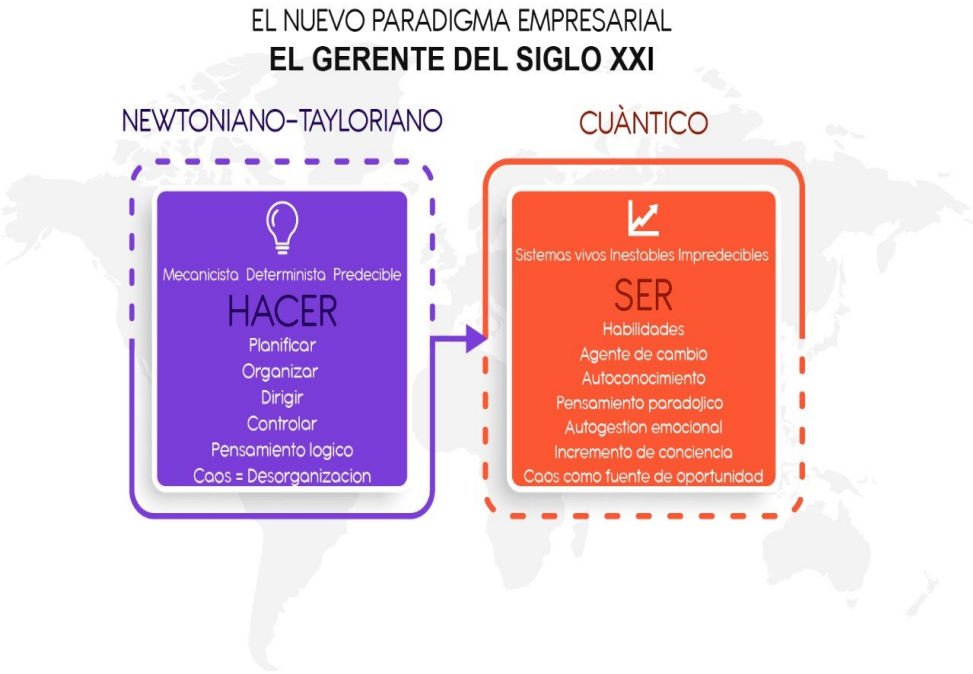
In these complex situations, Rock and Schwartz (2012) similarly in the field of neuroscience, discoveries about connections in cognitive-emotional functioning are extremely useful, as it is not necessary to fully understand how synapses or neurocircuits work, for this knowledge to be beneficial to those involved in decision-making.

Based on this situation, in the business world progress does not stop, while notable advances are added in the field of technology, managers work improving key areas: how to increase people's commitment, how to implement changes with a minimum of conflict, how to engage others to achieve better performance or simply, how to reduce stress at work and avoid conflict situations.

It is essential to have an interdisciplinary field, since acting separately no discipline has managed to generate significant progress, that is, that it is useful for organizations, which is why, as linking neuroscience with management, with this challenge implies,

above all things, the incorporation of the study of the brain to the key areas of business management acquires relevance.

The literature on Neuromanagement studied by Braidot (2016), Morris and Maisto (2013), Jodar (2013), Rock and Schwartz (2012), Cardona (2010) and Paul MacLean (1990), schematized in the present research through the multineurosensory profile represented in visual and auditory perception, sense of touch, smell and taste; applications of neuromanagement in learning constituted in the study as implicit, explicit, associative and non-associative learning; finally, the levels of neural functioning of each of the managers, related to the reptilian, limbic and neocortex systems, being particular elements of this variable. Therefore, this model is represented graphically as follows:



Source: Aragón (2020). In original Spanish language

Taking Braidot (2016) as a reference, the application of cognitive neurosciences to the management of organizations allows access to new fields of knowledge to better lead work teams, make decisions with a greater degree of certainty, train and train people with more effective techniques, develop more effective commercial actions and establish a better relationship with people and the market.

In this regard, it is necessary to refer in particular to the work of Cardona (2010), the brain directs all behaviors and thoughts, the way of understanding what happens around us generates decisions, neuromanagement helps to reflect on different situations. Through this, you will find reflections, as well as tools to give orders,

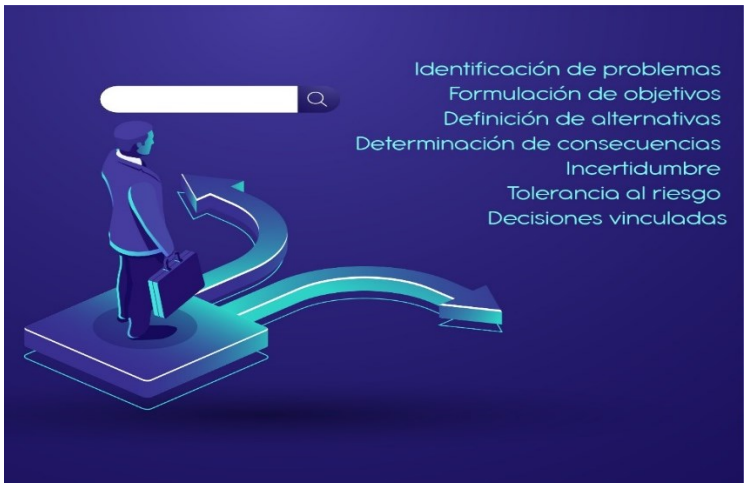
delegate, clarify misunderstandings, communicate better, make more effective and fair performance evaluations, all of which are linked from the brain's point of view.
In this sense, the theoretical construct of neuromanagement is based on a discipline that explores the intellectual and emotional mechanisms linked to the management of organizations and people from the development of cognitive neuroscience, aimed at neurobiological processes linked to decision-making, the development of organizational learning, planning and management of human capital; enhancing entrepreneurs' ability to see business. Aragón (2020).
From an individual's perspective, related to the training of the person so that he or she develops his or her cognitive, emotional and behavioral potential to achieve maximum performance in the work activity. From the organization, it studies brain processes defining behavior, increasing and guiding the development of leadership skills, learning and enhancing intelligent decision-making, increasing the creative potential of groups, helping to develop new alternatives in the creation of new products and services.

Model to empower smart decision-making

As a fundamental part of this research is the generation of knowledge based on the previous theoretical contrast against the observed reality, in order to develop emerging theories enriching the intellectual development of the participants of the research, generating solutions to existing needs in the managers of SMEs.
Some of the most important works developed on the decision-making process in modern management is Henri Fayol, with his work "General Industrial Administration" published in 1916, where he mentions authority and responsibility, unity of command and chain of scale all linked to decision-making today.
Other studies show that, although academic authors and theorists contributed very little to the study of management until the early 1950s (earlier writings come mostly from practitioners), the last few decades have seen a veritable deluge of texts from academic classrooms, the variety of approaches in the analysis of management, The amount of research and the large number of divergent points of view have led to a lot of confusion as to what management is, what management is, what decision-making looks like, as well as how managerial events should be analyzed.
Some of the most important works developed on the decision-making process found in the literature are those of Robbins, Decenzo and Coulter (2013), decision-making is usually described as a choice between alternatives, but this conception is too simplistic, as it is a process rather than a simple act of choosing between alternatives, As a set of steps that begins with the identification of a problem, it continues with the step of choosing an alternative capable of alleviating the problem, concluding with evaluating the effectiveness of the decision. Other studies show that decision-making, according to

Benavides (2014), is a process in which a course of action is identified and selected to solve a specific problem.

Based on the exhaustive review of the literature on intelligent decision-making studied by Flores (2018), Benavides (2014), Robbins, Decenzo, and Coulter (2013), Koontz, Weihrich, and Cannice (2012), Franklin and Krieger (2011), Trabal (2007), Hammond, Keeney, and Raiffa (2007), summarized in this research through the process of intelligent decision-making, together with elements that constitute it in volatile environments, such as uncertainty, risk tolerance and related decisions. These are particular elements of this variable. Therefore, this model is represented graphically as follows:



Source: Aragón (2020). In original Spanish language

In this regard, it is necessary to make particular reference to the work of Flores (2018), where business decisions are not always so transcendent, that is, they do not have to mean the life or death of a company, but it is always necessary to know how to choose the appropriate path just in case there is no second chance. In decision-making it is important to respect a series of steps, if you expect to be an intelligent leader these are to recognize the problem, act cohesively with the team, study the information, execute the action and evaluate the results.

From the literature review, it was found that intelligent decision-making, originally defined by Hammond, Keeney, and Raiffa (2007), conceptualizes it as an integral process that aims to solve a complex situation, separating each element from the context, systematically assessing each of them, concentrating on the key components for the particular situation that is of interest. Making good decisions is the main determinant of how an individual fulfills his responsibilities, achieving the goals pursued.

It is important to emphasize that most people are afraid to make difficult decisions, in organizations there is a lot at stake with serious consequences, requiring complex

considerations and exposing themselves to public ridicule. Particularly in SMEs, the need to make a difficult decision carries the risk of anxiety, confusion, doubt, error, regret, fear, loss. Affecting the emotions of the individual, presenting periods of excessive distrust and excessive optimism, laziness, hesitation, even despair, often favoring hasty decisions.

In this line, the theoretical construct of intelligent decision-making refers to the ability to make good decisions, determining success as the north in business management, particularly, intelligent companies are the most advanced, on the other hand, decisions made lightly will limit any management, even if it has enough resources and opportunities. harming the achievement of the desired results. Aragón (2020).

6. Conclusions

Based on the premises established in this research, all the analyses were based to obtain conclusions aligned with the specific objectives, in order to generate a neuromanagement model as a strategic skill for intelligent decision-making in the managers of SMEs in the textile sector in Bogotá. The conclusions are presented below in accordance with the proposed objectives:

With respect to the specific objective of knowing the multineurosensory profile of managers of SMEs in the textile sector, it is concluded that visual, auditory, olfactory and taste perceptions present greater cohesion, improving communication between manager, team, customer, and other actors. However, a lack of stimulus in tactile perception was identified, which affects the management process and can make it difficult to make correct decisions, generating interruptions in the organizational flow.

In relation to the objective of analyzing the application of neuromanagement in the learning of managers, it was observed that the subjects show difficulties in non-associative learning, which prevents them from developing adaptive responses. This affects their ability to handle relevant stimuli in management processes and limits the exchange of critical information.

In order to identify the levels of neural functioning in managers, it was determined that they function in an interrelated way, although with certain weaknesses. In particular, the limbic system presents deficiencies that affect emotional perception in decision-making, while the reptilian and neocortex systems show greater cohesion, favoring the instinctive and rational aspects of the decision-making process.

Regarding the objective of characterizing the intelligent decision-making process in managers, it is concluded that this process is effective in general organizational situations. However, in more complex decisions, managers face difficulties when they do not find a perfect option among the available alternatives, which forces them to prioritize and negotiate in dynamic situations.

With respect to the objective of examining intelligent decision-making in volatile environments, it is concluded that managers show effectiveness in disruptive scenarios.

However, they present difficulties in risk tolerance, since they do not always anticipate possible scenarios and do not adequately consider the factors involved.

Finally, the objective of designing a neuromanagement model concludes that it allows managers to visualize more accurate alternatives in decision-making, within a framework of rationality and discretion.

Regarding the neuromanagement variable, significant differences were observed between the dimensions evaluated. Managers develop a multineurosensory profile that allows them to apply neuromanagement to learning and assess neural functioning in various situations. This contributes to the creation of successful business units, improves customer service, and optimizes organizational management.

For the intelligent decision-making variable, managers are able to make informed decisions, although in changing or critical situations these do not always provide the necessary clarity. The decision-making process is still an intentional effort to solve problems, but risk tolerance is not considered significant.

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