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Interval estimation of the variance of two management dimensions for the characterization of the strategic leader.

Estimación por intervalo de la varianza de dos dimensiones gerenciales para la caracterización del líder estratégico

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ABSTRACT

Keywords:

management dimension,
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decision making.

The phenomenon of transculturation in different countries is a very complex reality, it is a challenge for the organizational system because it has to adapt a strategic direction under a multicultural framework, therefore the development of this research allows us to analyze two management dimensions: the profile of strategic leadership and management skills, assessing factors such as different leadership styles, decision making, teamwork, and motivation, among others. A simple random sampling of a determined population was used, central tendency and dispersion measures were calculated, obtaining confidence interval estimators for the sample variance as a parameter of interest. A research instrument (questionnaire) was designed and applied, which was developed from the systematization and operationalization of variables. The mechanism of expert judgment was used to validate the instrument and a pilot test was developed to establish its reliability. The instrument was applied to a sample of hundred twenty small and medium enterprises located in the city of San José de Cúcuta, Colombia and peripheral areas. The participants established that the most suitable skills in management are those of the motivational factor, teamwork, decision-making and the profile of strategic transformational leadership. At the same time, it is deduced that the managers who participated in the study exercise transformational and transactional leadership, based on a balance between contingent rewards and intellectual stimuli in order to achieve the goals established in the organization.

RESUMEN

Palabras clave:

Dimensión gerencial,
habilidades gerenciales,
liderazgo,
perfil gerencial,
toma de decisiones.

El fenómeno de la transculturización en distintos países es una realidad muy compleja, supone un reto para el sistema organizacional debido a que se tiene que adecuar un direccionamiento estratégico bajo un marco pluricultural, por ende el desarrollo de esta investigación permite analizar dos dimensiones gerenciales: el perfil del liderazgo estratégico y las habilidades administrativas, evaluando factores como; los diferentes estilos de liderazgo, toma de decisiones, trabajo en equipo, y la motivación, entre otros. Se empleó un muestreo simple aleatorio de una población determinada, se calcularon medidas de tendencia central y dispersión, obteniendo estimadores de intervalo de confianza para la varianza muestral como parámetro de interés. Se diseñó y aplicó un instrumento de investigación (cuestionario) el cual se desarrolló a partir de la sistematización y operacionalización de variables, para la validación del instrumentó se empleó el mecanismo de juicio de expertos y para establecer la confiabilidad del mismo se desarrolló una prueba piloto. El instrumento fue aplicado a una muestra de 120 pequeñas y medianas empresas ubicadas en la ciudad de Cúcuta, Colombia y zonas periféricas, los participantes establecieron que las habilidades más idóneas en la gerencia son las del factor motivacional, trabajo en equipo, toma de decisiones y el perfil del liderazgo estratégico transformacional. A la vez se deduce que los gerentes que participaron en el estudio, ejercen un liderazgo transformacional y transaccional, basado en un equilibrio entre recompensas contingentes y estímulos intelectuales con el fin de lograr las metas establecidas en la organización.

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Introduction

The globalization process has been one of the most relevant events since the second half of the 20th century, influencing commercial exchange accompanied by cultural changes, political changes and the labor market. Likewise, the globalization process has influenced national and local cultures through the way people interact with society, as well as the companies with which they interact. Under this scheme, business management must face new challenges by assimilating new management paradigms that contribute to achieving business success.

Today's organizations are in a globalized context, characterized by competitiveness, new technologies and the proliferation of complex and unpredictable environments. This is due to the continuous growth in the migratory flow at world level which is influencing the transculturation of the concepts, principles and values of public relations that have permeated an organizational culture within the administrative sphere, forcing organizations to adapt in order to compete, both in the international market and in domestic markets, Considering this situation, new directions must be analyzed and implemented that lead to the search for a differentiating factor by promoting a positive organizational culture that is sustainable over time and that in turn allows organizations to mesh the different cultural levels in their organization to successfully insert themselves in the market [1], [2].

Business management is a strategic factor in the management of human resources because the way they are administered, they adapt it to the changes in the environment. New organizational situations have a great impact on staff performance, and there is abundant research indicating that the management style used by managers affects the organizational climate perceived by their subordinates, which impacts work performance [3].

In the case of the border between Colombia and Venezuela, it is considered that the region may have its own distinct transnational culture, mixing characteristics between both countries in a new distinct hybrid [4],[5]. Thus, cultural diversity is transmitted in both directions, and it is not known to what extent behaviors are mixed, transforming the border. Although the border culture may be different, many workers travel through it, generating a cultural exchange that could be impacting business management. As a result, the globalization process has expanded the borders, adding more cultural characteristics to those of the border area [6]-[8].

Organizations require managers with multiple knowledge and skills, and it is a requirement that professionals be able to lead highly trained groups who, because of the situations that surround them, are obliged to manage a high level of efficiency and effectiveness [9]-[12], the land port between Colombia and Venezuela has become a multicultural region, which has led to a heterogeneous business model. Therefore, it is important to find and identify a model that is homogeneous and in keeping with the organizational environment and culture that will allow us to better carry out our diverse organizational activities, thereby obtaining personal and organizational benefits [13]-[15].

Considering the above, we are going to focus on two elements of strategic direction, namely identifying the profile of strategic leadership and administrative skills in small and medium enterprises (SMEs) in the city of Cúcuta as a subject of study, and analyzing the impact that this phenomenon of transculturation generates. This situation in the city induces the generation of questions such as: What is the profile of the strategic leader in the medium-sized company? What administrative skills are identified in the medium-sized company? [16]-[20].

The research tries to contribute by means of a theoretical contribution concerning the social, cultural, industrial and economic aspect, considering the strategic importance that the companies have in the economic system of the country, due to this it is considered important to advance studies related to the styles of strategic leadership and administrative abilities linked to the process of transculturation, therefore it is proceeded to carry out investigations related to the topic, where it is looked for to contrast findings with the local reality. The relevance of the study becomes a competitive advantage considering the theoretical aspect validated by empirical evidence with the transculturation process currently being experienced in the region [16].

Finally, this research aims to analyze two management dimensions: the profile of strategic leadership and management skills, assessing factors such as different leadership styles, decision making, teamwork, and motivation, among others. Once the management styles

for transculturation in the medium company have been evaluated, organizational forms can be chosen that allow adaptation to competitive changes, generating organizational innovations by considering the relevant factors that can affect management. The aim is to identify an organizational concept that makes sense and responds to personal aspirations in a project as a professional challenge.

Based on the results of the study, we can choose to develop new organizational proposals through management guidelines based on strategic leadership profiles and administrative skills that allow adaptation to organizational changes caused by the intensification of markets and in turn by transculturation, generating organizational innovations promoting greater competitiveness by taking advantage of the opportunities of the environment, promoting economic, social and technological improvement in the medium enterprise.

Methodology

The present study involves a descriptive research with two dimensions of one variable, non-experimental, transactional and field. The descriptive research consists of getting to know the situations, customs as well as the predominant attitudes by means of the exact description in their activities, objects, processes next to the people. This type of research describes what exists and can help discover new facts and meanings. Descriptive research works on realities or facts, where the fundamental characteristic is to present a correct interpretation [21]. This involves collecting data that will provide a description related to individuals, groups or situations.

The descriptive character indicates the depth with which the study initiated will be treated, measuring the variables independently [22]. On the other hand, the descriptive level allows us to characterize the universe to be investigated. This allows an association to be established between the variables studied, which in turn allows the structure of the problem to be revealed [23]. For this purpose, specific techniques are used by means of systematic criteria, relating the variables without establishing causal relationships between them. In this context, the purpose of descriptive research is to interpret facts and realities. To this end, the characteristics are described, recorded, analyzed and interpreted along with the factors present in the object under study [24].

In short, the descriptive type is framed in characterizing the factors present at the present time. In this case, a diagnosis is made of the situation in the medium-sized company in Cúcuta, with an analysis of the main variable, strategic management styles and their dimensions, the profile of the strategic leader and management skills. For this study, the data collected represent the answers of the companies' managers to a series of questions (items) that are organized by categories, with which we intend to obtain numerical information on the profile of the strategic leader and his or her management skills.

The research has a transversal or transactional design, that is, when the information obtained is only valid at the time it was collected [22]. This is because the characteristics or opinions may vary over time. In other words, the variables studied were measured at a single moment in time. In this perspective, the present study focuses on studying the incidence or relationship of the variable under study at a specific moment in time. For this reason, it is confirmed that the instrument used to collect the data is closely linked to the type of research, which is why the survey is conceived as an instrument for the development of research with a cross-sectional or transectional design [22].

In addition, this research is considered field research because the designed instrument was applied to the object studied. In this way, the reality in medium-sized companies was identified in the face of the cross-cultural process. In this regard, by researching in the field, information is obtained without altering the conditions presented by the variables, giving it a non-experimental character. In this sense, by collecting data directly where the events occur without manipulation or control, the information is obtained without alteration [22].

For this purpose, a structured instrument was designed with eighteen (18) criteria organized into six (6) key indicators, which are Transactional Leader, Laissez Faire Leader, Transformational Leader, Decision-making, Teamwork and Motivation. These indicators were organized in a structured instrument, which was subjected to validation in two phases, in the first phase, divided into two sections as follows: a) Its content was validated, being submitted to the opinion of five (5) experts, who evaluated the relevance of the items, with the objective of the research, its relationship with the variable, the relationship with the dimension and the

indicator, the coherence, wording, conceptual clarity and, its scale and codification. Due to the quantitative approach of this research, the evaluation by the panel of experts is reflected through the content validity coefficient (cvc) since it allows to evaluate the degree of agreement among the experts [25]-[26]. This method recommends accepting items with a cvc ≥ 0.80. The results of the application of the method are shown in Table I below.

Table I. Coefficient of content validity for instrument items.

Item/Factor	cvc_i Relevance	cvc_i Conceptual clarity	cvc_i Drafting	cvc_i Scaling and coding
i1	0.920	0.840	0.880	0.880
i2	0.880	0.880	0.880	0.840
i3	0.960	0.840	0.920	0.840
i4	0.840	0.880	0.880	0.840
i5	1.000	0.880	0.960	0.800
i6	0.840	0.960	0.880	0.840
i7	0.840	0.920	0.700	0.960
i8	0.960	0.880	0.960	0.840
i9	0.880	0.920	0.840	0.760
i10	0.880	0.920	0.760	0.840
i11	0.920	0.960	0.800	0.800
i12	0.880	0.840	0.800	0.880
i13	0.960	0.960	0.880	0.920
i14	0.920	0.920	0.840	0.880
i15	0.880	0.920	0.840	0.840
i16	0.880	0.880	0.840	0.800
i17	0.960	0.960	0.840	0.800
i18	0.880	0.800	0.800	0.840
cvc_{total}	0.904	0.897	0.855	0.844

According to Table I, the values of the content validity coefficient were calculated according to the degree of agreement among the experts. This process allowed the researchers to evaluate the instrument as a whole and each item separately according to its relevance, conceptual clarity, wording, scale and coding, therefore, all the items are accepted for the application of the instrument; however, it is evident that items i7 and i10 require an adjustment in their wording, since they present a value of ≤ 0.800. This indicates that they must be modified and the other items are maintained.

Once the adjustments were made in terms of the drafting of items i7 and i10, and giving continuity to the second section of the first phase, a non-parametric test was performed on the basis of these assessments, the

binomial test being the one that best suits this case, in order to eliminate ambiguities, and make decisions based on statistical references, the test was applied to the two dimensions, as can be seen in Table II and 3, where the results for dimension 1 (Profile of the strategic leader) and dimension 2 (Management skills) are similar, and so it must be:

Table II. Dimension 1 binomial test.

		Category	N	Observed proportion	Proof Proportion	Exact significance (unilateral)
Expert Validation 1	Group 1	Yes	8	0.889	0.800	0.436
	Group 2	No	1	0.111	0.200	
Expert Validation 2	Group 1	Yes	9	1.000	0.800	0.134
	Grupo 2	No	0	0.000	0.200	
Expert Validation 3	Group 1	Yes	9	1.000	0.800	0.134
	Group 2	No	0	0.000	0.200	
Expert Validation 4	Group 1	Yes	8	0.889	0.800	0.436
	Group 2	No	1	0.111	0.200	
Expert Validation 5	Group 1	Yes	9	1.000	0.800	0.134
	Group 2	No	0	0.000	0.200	

Table III. Dimension 2 binomial test.

		Category	N	Observed proportion	Proof Proportion	Exact significance (unilateral)
Expert Validation 1	Group 1	Yes	9	1.000	0.800	0.134
	Group 2	No	0	0.000	0.200	
Expert Validation 2	Group 1	Yes	8	0.889	0.800	0.436
	Grupo 2	No	1	0.111	0.200	
Expert Validation 3	Group 1	Yes	9	1.000	0.800	0.134
	Group 2	No	0	0.000	0.200	
Expert Validation 4	Group 1	Yes	8	0.889	0.800	0.436
	Group 2	No	1	0.111	0.200	
Expert Validation 5	Group 1	Yes	8	0.889	0.800	0.436
	Group 2	No	1	0.111	0.200	

Group 1: The expert accepts the validity of the instrument question for dimension 1/dimension 2.
Group 2: The expert does not accept the validity of the question of the instrument for dimension 1/dimension 2.

Statistical hypothesis.
H0: The proportion of questions accepted in the instrument is equal to 80%.
H1: The proportion of questions accepted into the instrument is different from 80%.

Decision criterion.
H0 is rejected if Sig < 0.05, otherwise accept H0, then, since, Sig = 0.436 > 0.05 and Sig = 0.134 > 0.05, then H0 is accepted.

The proportion of questions accepted by the experts for the dimension 1 and dimension 2 instrument is 80%.

Therefore, the items are kept in the instrument and were considered appropriate for application to the study population.

The second phase consisted in carrying out a pilot test, to companies under study through a simple random sampling, with the aim of determining the reliability of the instrument's construction, in other words, the reliability. Thus, the reliability associated to the eighteen (18) items was measured, calculating the Pearson's coefficient r, also known as the discrimination index for all the items of the instrument (see Table IV). On the other hand, to determine the homogeneity of the questions at the global level of the instrument, Cronbach's Alpha was calculated, and the analysis gives a result of 0. 847, whose value is considered "very good", according to the scale suggested by the literature [24] who interpret the results of the coefficient as follows: range 0.81 to 1.0 very high; range 0.61 to 0.80 high; range 0.41 to 0.60 medium; range 0.21 to 0.40 low, range 0.00 to 0.20 very low.

Validity and reliability refer to the fidelity with which the population responds to the questions asked [27]. Therefore, as can be seen in Table 4, the values of the Pearson's Coefficient r, for all items, range from 0.075 to 0.666. An item or question has a good relationship or discriminates very well if its discrimination index (Pearson's Coefficient r) is at least 0.40 [28]. That is, if they are between the ranges of 0.30 and 0.39 it discriminates well, while between 0.10 and 0.29 it should be revised, lower values question the item's discriminatory capacity. The average value of the instrument's discrimination index is 0.457, which denotes "good" discrimination power in items at the general level. As can be seen in Table IV, items i3, i6, i9, i12, i15, i18 are those that present the value of a minimum discriminatory index, however, according to the scale presented by these items, they present a high discriminatory power [28]. On the other hand, analyzing Cronbach's Alpha, the effect of excluding some items from the instrument will not increase their value, therefore, and according to the discrimination power of the 18 items, the authors of this research work conclude that all the items should participate in the test.

Table IV. Reliability analysis and Cronbach's Alpha coefficient.

	Scale average if the element has been deleted	Variance of scale if the element has been deleted	Corrected total element correlation	Cronbach's Alpha if the element has been removed
i1	70.700	49.114	0.638	0.828
i2	69.700	52.838	0.504	0.836
i3	70.300	61.045	0.169	0.868
i4	70.133	49.706	0.666	0.827
i5	69.733	53.582	0.472	0.838
i6	70.133	57.982	0.075	0.855
i7	70.133	49.706	0.666	0.827
i8	69.733	53.582	0.472	0.838
i9	69.533	56.809	0.279	0.845
i10	70.133	49.706	0.666	0.827
i11	69.733	53.582	0.472	0.838
i12	70.533	56.809	0.279	0.845
i13	70.133	49.706	0.666	0.827
i14	69.733	53.582	0.472	0.838
i15	69.533	56.809	0.279	0.845
i16	70.133	49.706	0.666	0.827
i17	69.700	52.838	0.504	0.836
i18	70.533	56.809	0.279	0.845
Cronbach's Alpha	0.847			
N° of elements	18			

To determine the population, the companies were classified according to total assets, the database of the Superintendencia de Sociedades de Colombia was filtered for the department of Norte de Santander and the area was geographically limited for the city of Cúcuta, considering the classifications of the International Uniform Industrial Code (ISIC), according to this criterion, a finite population of 214 medium-sized companies was obtained.

In order to ensure that the results obtained are representative for the population, the study sample was calculated, using an error rate of 5%, a confidence level of 95%, and a success and failure probability level of 50% for each, respectively, applying Equation (1):

$$n = \frac{p * q * z^2 * N}{N * \varepsilon^2 * z^2 * p * q} \quad (1)$$

Where n is the number of elements in the sample, N is the number of elements in the population, p and q, are respectively the success and failure associated with

the event, Z is the critical value corresponding to the confidence level assuming a normal distribution and finally ε is the allowed margin of error.

In order to obtain information from the instrument, approaches and contact were initially made via e-mail, with the aim of raising awareness among the personnel under study, through a pedagogical approach, of the importance of the research study. The instrument was then applied via e-mail or in the form of a direct survey, either by telephone or visit to the company. In the present study, a structured questionnaire was applied, eighteen (18) closed questions, with response options of the Likert scale type, which is intended to measure the level of appreciation of the respondent, with respect to compliance with the statements that are posed as can be seen in Table V.

Table V. Scale used in the research study

Scale	Value
Totally agree (TA)	5
Agree (A)	4
Neutral (N)	3
Disagree (D)	2
Totally disagree (TD)	1

Thus, information from 120 companies was obtained. The analysis of the information was carried out by means of descriptive statistics, tabulating the data in the Microsoft Excel ® tool and with the SPSS software from which the reports were obtained for their respective characterization. In order to carry out this research and interpret the results obtained, a scale was drawn up for the interpretation of the study variables as shown in Table VI and Table VII, which relate, respectively, the group, the range of values and the attribute required for the [29] analysis of the average or mean ($\overline{x}$) and the coefficient of variation (cv) [30], considering the possibilities given.

Table VI. Scale for interpreting the average ($\overline{x}$)

Group	Rank	Attribute
5	$4.2 \leq R \leq 5.0$	Very good
4	$3.4 \leq R \leq 4.2$	Good
3	$2.6 \leq R \leq 3.4$	Regular
2	$1.8 \leq R \leq 2.6$	Deficient
1	$0.0 \leq R \leq 1.8$	Very deficient

Table VII. Scale for interpreting the coefficient of variation (cv)

Rank	Attribute
Up to 7%	It is considered accurate.
Between 8% and 14%	It means that there is acceptable accuracy.
Between 15% and 20%	It indicates regular accuracy and should therefore be used with caution.
Greater than 20%	Indicates that the estimate is not very accurate and therefore it is recommended to use it only for descriptive purposes (trends not levels).

Results and Discussion

The results are contrasted with the theoretical references that support the research, in order to diagnose the variables, dimensions and indicators studied.

Profile dimension of strategic leadership.

Some authors define the profile of strategic leadership as the ability to develop ideas, instill values, internalize them, and empower staff capacities by seeking to influence others to achieve the vision, allowing better decisions to be made. In addition, it requires the ability to build and lead effective teams, where the leader must be visionary, facilitator, transformational, and must also have administrative skills to develop skills along with knowledge [31].

Other authors [32] point out qualities that a leader should have, such as: a) social competence, i.e., collaborating with other people in a communicative way to build interpersonal understanding, b) competences related to achievement and action. Among these are: motivation for achievement, concern for order, quality, initiative and information, c) competence in assistance, as well as in services. Among them: interpersonal sensitivity, orientation to the service of the user, d) competencies in accordance with influence, e) managerial competencies, f) cognitive competencies, g) competencies of personal effectiveness.

On the other hand, other authors present the characteristics that in their opinion a strategic leader should have: intuitive, imaginative profile, creating his strategic thinking, seeking to develop competitive advantages in the organization he leads. All of this is framed in a culture focused on learning, where knowledge can be disseminated throughout the organization by exercising effective leadership [33]. As detailed in the literature,

there is a series of qualities that outline the strategic leader as a guide in the organization to make it successful in the competitive environment where it develops as a company.

Table VI and Table VII below provide an interpretation of the study variables and attributes for data analysis, the mean and the coefficient of variation, and calculate the confidence interval of the population average with an unknown (σ), For this, it is assumed that the sampled population is normal or approximately normal, according to the central boundary theorem, the population standard deviation (σ) was estimated with the sample standard deviation (s), and the distribution (t) was used instead of the distribution (z).

Table VIII. Statistical analysis of factors.

Dimension	Indicator	Mean ($\overline{x}$)	Standard deviation (s)	Coefficient of variation	Average population confidence interval with an unknown (σ).		
					Confidence Interval	Lower Range Limit	Upper Range Limit
Strategic Leader Profile	Transactional Leader	2.936	1.343	0.458	0.243	2.693	3.179
	Laissez Faire Leader	2.972	1.369	0.461	0.247	2.725	3.219
	Transformational Leader	2.942	1.404	0.478	0.254	2.688	3.196
Management skills	Decision-making	2.975	1.450	0.488	0.262	2.713	3.237
	Teamwork	2.983	1.404	0.471	0.254	2.729	3.237
	Motivation.	2.944	1.414	0.481	0.256	2.688	3.200

Leading transactional indicator.

To evaluate the Transactional Leader Indicator, it was analyzed using items i1, i2, i3, analyzing the responses quantitatively (Table VIII) and, according to the scale for the interpretation of the mean ($\overline{x}$) (Table VI), for the Transactional Leader Indicator it is homogeneously regular with an average of 2.936. The indicator presents a standard deviation of 1.343, that is, it presents high dispersion in the responses, indicating little uniformity. This is affirmed by the coefficient of variation, whose value is 45%, due to the low frequency of occurrence of the phenomenon in the study sample. The extreme points of the confidence interval are 2.963 and 3.179, that is, if this study were repeated 100 times, calculating the 95% confidence interval with each sample mean and standard deviation, 95 intervals would include the population mean; 5 intervals would not; this is the effect of sampling error. In conclusion, the population mean is in that interval. Researchers can be confident (95% sure) that the leading transactional indicator ranges from 2.963 to 3.179. In other words, in the medium-sized company of

the city of Cúcuta, a transactional leadership is exercised in a regular and homogeneous way.

That is, because transactional leadership is linked to supervisory action, where control practices are the benchmark, directing their efforts at performance measurement by trading rewards for achievement. It should be noted that [34] the key characteristics of the transactional leader are: contingent reward, which allows control over the exchange of rewards for effort, promises rewards for good performance, and recognizes achievements; management by exception being active, where it takes corrective action by controlling and seeking deviations from rules and standards; management by exception where it is passive, intervening only if standards are not met.

Leading indicator Laissez Faire

To evaluate the leading Laissez Faire indicator, it was analyzed using items i4, i5, i6, analyzing the responses quantitatively (Table VIII) and, according to the scale for the interpretation of the mean ($\overline{x}$) (Table VI), for the leading Laissez Faire indicator it is homogeneously regular with an average of 2.972. The indicator presents a standard deviation of 1.369, that is, it presents high dispersion in the responses, indicating little uniformity. This is affirmed by the coefficient of variation, whose approximate value is 46%, due to the low frequency of occurrence of the phenomenon in the study sample. The extreme points of the confidence interval are 2.725 and 3.219. In conclusion, the population average is within this interval. Researchers can be confident (95% sure) that the leading Laissez Faire indicator ranges from 2.725 to 3.219.

In other words, in the medium-size company in the city of Cúcuta, where Laissez Faire type leadership is exercised [35], the leader's participation is minimal, his supervision is distant and he gives the group total freedom for decisions and does not attempt to evaluate or regulate actions. The leader with these characteristics only participates when requested to do so, avoiding intervention and not participating in group activities [36].

Leading Transformational Indicator

To evaluate the leading transformational indicator, it was analyzed through items i7, i8, i9, analyzing the responses

quantitatively (Table VIII) and, according to the scale for the interpretation of the mean ($\bar{x}$) (Table VI), for the leading transformational indicator it is homogeneously regular with a mean of 2.942. The indicator presents a standard deviation of 1.404, that is, it presents high dispersion in the responses, indicating little uniformity. This is stated from the coefficient of variation, whose approximate value is 48%, this is due to the low frequency of occurrence of the phenomenon in the study sample, then these estimates are not very precise, indicating that this information should be used for descriptive purposes. The extreme points of the confidence interval are 2.688 and 3.196. In conclusion, the population average is within this interval. Researchers can be confident (95% sure) that the leading transformational indicator is between 2.688 and 3.196

In other words, in the medium-size business of the city of Cúcuta, where transformational leadership is exercised, [37] the basic characteristics are: charisma, because by providing vision and a sense of mission, it instills pride in its followers, earning them respect and trust; inspiration, by communicating high expectations, focusing efforts in a simple manner; intellectual stimulus, by promoting rationality and effective problem solving; individualized consideration, by paying attention to each follower, training them and giving them advice.

Management skills dimension

Management skills are abilities acquired through practice, which will allow the leader to face highly complex situations, empowering his followers with skills and knowledge. These skills can be classified as conceptual, interpersonal and technical, which together will influence the achievement of a more effective, efficient and efficient organization [31].

To this end [32], both the leader and the manager need to be competent and capable of dealing with the uncertainty of the environment, acting effectively when faced with problems that may arise. In this sense, the leader must have the ability to adapt the organization to the environment by adjusting to the context. Likewise [33] organizations today require people with skills that lead them to be more creative, flexible, making effective decisions, adaptable to different cultures, the changing environment. For this reason, when forming their human capital, organizations need to acquire management skills quickly and efficiently.

According to some authors [31]-[33], they agree on the importance of developing administrative skills in the supervisory area that will allow them to guide the organization in turbulent environments and to promote knowledge and self-improvement in their followers.

Decision-making indicator

To evaluate the indicator "decision making", it was analyzed using items i10, i11, i12, analyzing the responses quantitatively (Table VIII) and, according to the scale for interpreting the mean ($\bar{x}$) (Table VI), for the indicator in question, it is homogeneously regular with an average of 2.975. The indicator presents a standard deviation of 1.450, that is, it presents high dispersion in the responses, indicating little uniformity. This is affirmed by the coefficient of variation, whose approximate value is 49%, due to the low frequency of occurrence of the phenomenon in the study sample. The extreme points of the confidence interval are 2.713 and 3.237. In conclusion, the population average is within this interval.

In short, for the surveyed managers of the medium sized company in the city of Cúcuta, there are no recipes to guarantee success. However, there are techniques along with the development of skills to help management make more effective decisions, since decision making is a complex process that is faced daily given the uncertainty present throughout the process, because the subjective component will always be present.

Teamwork indicator

To evaluate the indicator "teamwork", the responses were analyzed quantitatively (Table VIII) and, according to the scale for the interpretation of the mean ($\bar{x}$) (Table VI), for the indicator in question, it is homogeneously regular with an average of 2.983. The indicator presents a standard deviation of 1.404, that is, it presents high dispersion in the responses, indicating little uniformity. This is stated from the coefficient of variation, whose approximate value is 47%, this is due to the low frequency of occurrence of the phenomenon in the study sample, then these estimates are not very precise, indicating that this information should be used for descriptive purposes. This is because, in medium-size companies in the city of Cúcuta, [38] they consider teamwork as the sum of their individual contributions generating superior performance, complementing all this with skills,

abilities and knowledge, through the coordinated effort of all members, allowing them to achieve the objectives set, leading the organization to be successful in the environment in which it operates.

Motivation indicator

To evaluate the indicator "motivation", the responses were analyzed quantitatively (Table VIII) and, according to the scale for the interpretation of the mean ($\overline{x}$) (Table VI), for the indicator in question, it is homogeneously regular with an average of 2.944. The indicator presents a standard deviation of 1.414, that is, it presents high dispersion in the responses, indicating little uniformity. This is stated from the coefficient of variation, whose approximate value is 48%, this is due to the low frequency of occurrence of the phenomenon in the study sample, then these estimates are not very precise, indicating that this information should be used for descriptive purposes. This means that, in the medium-sized company in the city of Cúcuta, [39] motivation and motivation are conditioned by the acts reflected together with the behaviors acquired within the framework of human psychology. Thus, in this context, motivation provokes, maintains and directs behavior towards an objective; it could be synthesized as motivation is passion for action.

Statistical dimensional analysis

Table IX. Statistical analysis of dimensions.

Dimension	Mean ($\overline{x}$)	Standard deviation (s)	Coefficient of variation	Average population confidence interval with an unknown (σ).		
				Confidence Interval	Confidence Interval	Confidence Interval
Dimension 1: Profile of the strategic leader.	2.950	1.399	0.474	0.253	2.697	3.203
Dimension 2: Management skills.	2.968	1.423	0.48	0.257	2.711	3.225

Dimension 1: profile of the strategic leader

In order to evaluate the dimensions "profile of the strategic leader" and "management skills", it was analyzed through the totality of the items, analyzing the answers quantitatively (Table IX) and, according to the scale for the interpretation of the mean ($\overline{x}$) (Table VI), it is presented that for dimension 1, it is homogeneously regular with an average of 2.950. The dimension presents a standard deviation of 1.399, that is, it presents high

dispersion in the responses, indicating little uniformity. This is affirmed by the coefficient of variation, whose value is 47%, due to the low frequency of occurrence of the phenomenon in the study sample. The extreme points of the confidence interval are 2.967 and 3.203, that is, if this study were repeated 100 times, calculating the 95% confidence interval with each sample mean and standard deviation, 95 intervals would include the population mean; 5 intervals would not; this is the effect of sampling error. In conclusion, the population mean is in that interval.

That is, for those surveyed in the medium-sized company in the city of Cúcuta, the elements that characterize the strategic leader are present. Now, what is the predominant profile in the medium-sized company in the city of Cúcuta? The results lean towards the transformational leader, followed by the transactional leader and in third place is the laissez faire leader, except that the laissez faire leader showed the highest percentage of rejection among those surveyed.

Dimension 2: Management skills

In order to evaluate the dimension "administrative skills", it was analyzed through the totality of the items, analyzing the answers quantitatively (Table IX) and, according to the scale for the interpretation of the mean ($\overline{x}$) (Table VI), it is presented that for dimension 2, it is homogeneously regular with an average of 2.968. The dimension presents a standard deviation of 1.423, that is, it presents high dispersion in the responses, indicating little uniformity, this is affirmed from the coefficient of variation, whose value is 48%, this is due to the low frequency of occurrence of the phenomenon in the study sample, then these estimates are not very precise, indicating that this information should be used for descriptive purposes. The extreme points of the confidence interval are 2.711 and 3.225, that is, if this study were repeated 100 times, calculating the 95% confidence interval with each sample mean and standard deviation, 95 intervals would include the population mean; 5 intervals would not; this is the effect of sampling error [40].

In conclusion, the population average is in this interval, therefore, within the perception of those surveyed, executives of the medium sized company of the city of Cúcuta, the administrative skills are capacities that are acquired with practice, through these the leader

faces situations of high complexity empowering skills and knowledge to his followers, so these skills can be classified in conceptual, interpersonal and technical, which together will influence the achievement of a more effective, effective and efficient organization [41].

Conclusions

With regard to the dimensions of leadership and management skills, and the perception of respondents corresponding to managers and employees of SMEs, it can be seen that the leadership that can be most adapted to changes in the global environment as a guarantee of success is transformational and transactional leadership, since these types of leadership drive and motivate staff through intrinsic and extrinsic rewards, Although both types of leadership are considered successful, it should be noted that transformational leadership works in the long term and, in turn, guarantees an ideal organizational culture. This is due to the relatively influential integration of their respective workers through compensation, which influences the worker to obtain better performance, through a culture of motivation, based on exchanges between the leader and the follower. On the other hand, the laissez faire leadership is presented in the medium company as an absence of leadership avoiding all types of communications with the workers, therefore, it is not a type of leadership that orients towards a strategic direction, lacking commitment by the organization, although this leadership, by many authors is considered as negative, Since subordinates have the power over decision making, therefore, it is to be considered that they change the goals of the organization for their own personal goals, therefore this type of leadership should not be implemented in small or medium enterprises, much less in business environments that require a proactive rather than reactive leader.

A large part of the statistical results illustrate a preference for the motivational factor as a basic administrative skill for driving all action corresponding to the functions. We can see that it has a broad relationship with transformational leadership, which had a greater statistical incidence, followed by teamwork and decision making, although both of these administrative skills are of great importance, it can be seen that decision making is of lesser relevance and importance, considering the cultural and organizational environment of the city of Cúcuta, because the object of study is a small and medium enterprise, therefore its decisions are not of great relevance because they do not cause a great organizational impact, in the vast majority of cases, therefore, it is directed towards an optimal organizational environment based on teamwork and the motivational factor.

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