









ORIGINAL

Transformational leadership and organizational culture: a study in dental centers

Liderazgo transformacional y cultura organizacional: un estudio en centros odontológicos

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ABSTRACT

Introduction: to analyze transformational leadership and organizational culture in Ocaña, Norte de Santander, Colombia dental offices.

Method: the study has a quantitative approach and descriptive design. A questionnaire was used to analyze the relationship between transformational leadership and organizational culture in 20 dental offices in Ocaña. A Spearman correlation analysis is applied based on data collected through a Likert scale, identifying patterns and relationships between key variables.

Results: the study's results reveal a high correlation between organizational culture and transformational leadership in dental offices in Ocaña, especially in communication ($p < 0,001$). Other dimensions, such as personal identity, quality, contribution, and recognition, also show significant correlations but of lower intensity, characterized by transformational leadership, which is considered "good" according to the mean and median of the data analyzed. These findings suggest improving communication and strengthening organizational culture can enhance practice leadership.

Conclusions: the study allows us to conclude that there is a significant correlation between transformational leadership and organizational culture in dental offices in Ocaña, highlighting that communication is a key factor. In addition, identity, quality, and personal recognition should be strengthened to improve work performance and employee satisfaction. These findings highlight the importance of developing leadership competencies and optimizing organizational culture.

Keywords: Communication in Organizations; Organizational Culture; Management.

RESUMEN

Introducción: analizar el liderazgo transformacional y la cultura organizacional en los consultorios odontológicos en el municipio de Ocaña, Norte de Santander, Colombia.

Método: el estudio es de enfoque cuantitativo y diseño descriptivo. Se utiliza un cuestionario para analizar la relación entre el liderazgo transformacional y la cultura organizacional en 20 consultorios odontológicos de Ocaña. Se aplica un análisis de correlación de Spearman con base en datos recogidos mediante una escala de Likert, identificando patrones y relaciones entre variables clave.

Resultados: los resultados del estudio revelan una correlación alta entre la cultura organizacional y el liderazgo transformacional en los consultorios odontológicos de Ocaña, especialmente en la dimensión de la comunicación ($p < 0,001$). Otras dimensiones, como la identidad, calidad, contribución y reconocimiento personales, también muestran correlaciones significativas, pero de menor intensidad, caracterizados por un liderazgo transformacional considerado como "bueno" según el promedio y la mediana de los datos analizados. Estos hallazgos sugieren que mejorar la comunicación y fortalecer la cultura organizacional pueden potenciar el liderazgo en los consultorios.

Conclusiones: el estudio permite concluir que existe una correlación significativa entre el liderazgo transformacional y la cultura organizacional en los consultorios odontológicos de Ocaña, destacando que la comunicación es un factor clave. Además, se evidencia que se debe fortalecer la identidad, calidad y reconocimiento personal de cara a mejorar el desempeño laboral y la satisfacción de los empleados. Estos hallazgos resaltan la importancia de desarrollar competencias de liderazgo y optimizar la cultura organizacional.

o no estructurado, con una extensión no mayor a 250 palabras; redactado en pasado y en tercera persona del singular.

Palabras clave: Comunicación en las Organizaciones; Cultura Organizacional; Gestión.

INTRODUCTION

In the past, organizations perceived workers as rational beings limited to doing what they were ordered, following the law of minimum effort. Their motivation was based solely on salary, linked to the production level.⁽¹⁾ However, when analyzing work environments, it is almost impossible not to consider organizational culture since it is considered one of the most significant factors that allow for deep and lasting changes in institutions.⁽²⁾ The relationship between organizational culture and managerial leadership has been studied individually, trying to establish a connection between both categories. However, it is important to consider that their interaction involves internal elements in the organization.⁽³⁾

In some cases, the aim is to identify how a type of leadership fits the type of existing culture. However, two aspects are often overlooked. First, the relationship between culture and leadership can be recursive and dialogic, constantly influencing each other.⁽⁴⁾ Secondly, organizational culture, as an external but determining category, also exerts influence since individuals are not machines that can be programmed to act in a certain way upon entering an organization.⁽⁵⁾

Transformational leadership in the work environment is implemented using five fundamental principles: the ability to inspire, motivate, stimulate intellectually, exert idealized influence, and consider each individual in a personalized way.⁽⁶⁾ It involves acquiring knowledge that develops management skills, assuming roles and responsibilities, and using emotional intelligence to act innovatively and adaptively. It also involves acquiring communication and social skills related to leadership.⁽⁷⁾ In health institutions, specifically those dedicated to oral health, the existing leadership differs from the abovementioned approach. In this case, those responsible for dental clinics have administrative knowledge mostly based on practical experience, as they mostly lack formal training in this area.⁽⁸⁾

However, leadership is not the only driver of organizations since, without the collective contribution of workers, who make up an entity as a whole, the company cannot adequately stand out in its field of action.⁽⁹⁾ The interaction between organizational culture and managerial leadership has been independently studied to establish a connection between both categories.⁽¹⁰⁾ However, it is important to remember that a reciprocal and dialogic relationship between them is often overlooked.⁽¹¹⁾ In addition, the influence of an external but determining category, such as organizational culture, should not be ignored.⁽¹²⁾ Individuals who are part of an organization are not simple machines that can be programmed to act in a specific way when entering it.⁽⁵⁾

The field of dentistry in Colombia does not escape the above. Unlike other processes, the management of dental offices involves not only general business aspects but also the need to manage patients in the clinical setting and manage staff, including dentists, assistants, receptionists, and other employees.⁽¹³⁾ Coordinating appointment schedules, clinical treatments, compliance with quality standards according to Colombian regulations, and the general administration of practice require the Colombian dentist to have a broad vision of the project undertaking in this field beyond the technical aspects.⁽¹⁴⁾

According to the Ministry of Health and Social Protection, through different agencies, dental clinics are required to submit reports on various areas related to the general conditions of the establishment. These reports cover aspects such as human resources, waste management, Audit Plans to Improve Quality (PAMEC), and other commitments beyond the profession's technical aspects. It implies that professionals who wish to register and enable a dental office need to know the organizational environment in which they operate and develop leadership skills in the context of that organization.⁽¹⁵⁾

Knowledge of administrative processes, transformational leadership, and organizational culture is essential for the academic training of dentists since these aspects complement their technical and clinical skills. Understanding these principles allows professionals to face challenges within dental offices more effectively, optimizing resource management and patient care quality. Adequate transformational leadership management enables dentists to inspire and motivate their teams, promoting a collaborative work environment. Thus, this comprehensive training contributes to the success and adaptation of professionals in their work environment.⁽¹⁶⁾

Dental professionals must understand transformational leadership and organizational culture because they impact team management and create a positive and productive work environment. ⁽¹⁰⁾ This knowledge allows them to motivate, inspire, and intellectually stimulate their team, fostering a culture of collaboration and better performance in dental care. Furthermore, understanding organizational culture helps them adapt to environmental changes, leading effectively during transformation and optimizing resource management. ⁽¹⁷⁾ By applying these concepts, dental professionals can improve the quality of care, meet patient needs, and build a solid reputation in oral health.

The administrative study of dental offices is of utmost importance for graduate students interested in researching and developing management indicators. By focusing on administrative activities, these students can identify and analyze key aspects that impact the efficient operation of dental offices in their region. Understanding and measuring these indicators allows them to obtain valuable data on the effectiveness of administrative processes, resource optimization, service quality, and strategic decision-making. This research contributes to the advancement of dentistry by providing relevant and up-to-date information that can be used to improve the management and performance of dental practices, positively impacting both the patient experience and the sustainability and success of dental professionals. Therefore, this article aims to analyze transformational leadership and organizational culture in dental practices in the municipality of Ocaña, Norte de Santander.

METHOD

This study is based on a quantitative approach to explore and measure the relationship between transformational leadership and organizational culture in dental offices in Ocaña, Norte de Santander. The research design is cross-sectional and correlational and seeks to identify successful practices and areas for improvement in these work environments. The following hypotheses are proposed for the analysis:

- H_1 : the organizational culture of dental offices in Ocaña is related to transformational leadership.
- H_2 : the identity of the workers in dental offices in Ocaña is related to transformational leadership.
- H_3 : the quality of the workers in dental offices in Ocaña is related to transformational leadership.
- H_4 : the communication of the workers in dental offices in Ocaña is related to transformational leadership.
- H_5 : the personal contribution of the workers in dental offices in Ocaña is related to transformational leadership.
- H_6 : the personal recognition of dental office workers in Ocaña is related to transformational leadership.
- H_7 : the managerial abilities of dental office workers in Ocaña are related to transformational leadership.

The sample was selected intentionally, covering 20 dental offices chosen for their accessibility and availability. Although it does not allow for generalizing the results, the sample provides a representative and valuable view of the study's objectives.

A structured questionnaire was developed for data collection and divided into three sections. The first section collected demographic information such as age, gender, and years of experience. The second section evaluated transformational leadership, measuring the ability to inspire and motivate employees. The third section focused on organizational culture, examining the office's values, norms, and practices. The dimensions of transformational leadership evaluated included idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Regarding organizational culture, aspects such as identity, quality, communication, personal contribution, recognition, and management skills were analyzed. ⁽¹⁸⁾

The information was analyzed using Microsoft Excel and the Statistical Package for Social Sciences (SPSS), which allowed the generation of tables and graphs to identify patterns and relationships between variables. Spearman's correlation was selected to examine the relationship between transformational leadership and the dimensions of organizational culture, given the ordinal nature of the data obtained through a Likert scale. The analysis considered two hypotheses: the null (H_0), which postulates the absence of correlation, and the alternative (H_a), which suggests the existence of correlation. Each hypothesis was accepted or rejected based on the value of p ; if $p < 0,05$, the alternative hypothesis was accepted, indicating a significant correlation (table 1).

In addition, the results were rated on the Likert scale for transformational leadership and organizational culture, and each of the dimensions was evaluated, classifying the results into three levels: low, medium, and high (table 2).

Table 1. Spearman analysis parameters

R	Relationship	Correlation
R = 0	Does not exist	None
0,00 < R ≤ 0,20	Very little intense	Small
0,20 < R ≤ 0,40	Small / noticeable	Low
0,40 < R ≤ 0,60	Considerable	Average
0,60 < R ≤ 0,80	Intense	High
0,80 < R ≤ 1,00	Very intense	Very high

Table 2. Results grading scale

Transformational leadership	Minimum	Maximum
Poor	20	47
Fair	48	73
Good	74	100
Organizational culture		
Poor	30	70
Fair	71	110
Good	111	150
Dimensions		
Poor	5	12
Fair	13	18
Good	19	25

RESULTS

Descriptive análisis

Using the Statistical Package for the Social Sciences (SPSS) software, both general and detailed results of the evaluated dimensions were obtained. Likewise, the general assessment results of the variables analyzed on transformational leadership and organizational culture were obtained (table 3).

Table 3. General grading for transformational leadership and organizational culture

Transformational leadership	Persons	%	Organizational culture	Persons	%
Poor	0	0,00	Poor	0	0,00
Fair	7	10,80	Fair	4	6,20
Good	58	89,20	Good	61	93,80

Table 4. Results of the evaluation of the dimensions of transformational leadership

	f	%		f	%
Idealized influence			Inspirational motivation		
Poor	0	0,00	Poor	0	0,00
Fair	6	9,20	Fair	6	9,20
Good	59	90,80	Good	59	90,80
Intellectual stimulation			Individualized consideration		
Poor	1	1,50	Poor	2	3,10
Fair	7	10,80	Fair	8	12,30
Good	57	87,70	Good	55	84,60

According to the established scoring parameters, the results for the dimensions of transformational leadership reflect three levels: low, medium, and high. These levels apply to the capabilities assessed by dental practice leaders. Low scores indicate a need for improvement in key areas, such as the ability to

inspire, motivate, or provide individual consideration. Medium scores suggest acceptable performance but with room for improvement, while high scores indicate a strong implementation of transformational leadership competencies, which promotes a more collaborative and efficient work environment (table 4).

Similarly, according to the scoring parameters, the results for the dimensions of organizational culture were presented in three levels: low, medium, and high. Low scores reflect a poor organizational culture, with problems in key aspects such as communication, identity, and personal contribution. Medium results indicate acceptable functioning but with areas that require strengthening. High scores, on the other hand, demonstrate a solid organizational culture characterized by a positive, efficient work environment aligned with the values and objectives of the dental office (table 5).

Table 5. Results of the assessment of the dimensions of organizational culture

Persons			Persons		
Identity			Quality		
Poor	2	3,10	Poor	2	3,10
Fair	7	10,80	Fair	5	7,70
Good	56	86,20	Good	58	89,20
Communication			Personal contribution		
Poor	0	0,00	Poor	2	3,10
Fair	3	4,60	Fair	6	9,20
Good	62	95,40	Good	57	87,70
Personal recognition			Management skills		
Poor	2	3,10	Poor	1	1,50
Fair	6	9,20	Fair	5	7,70
Good	57	87,70	Good	59	90,80

Table 6. Results of dimensions of transformational leadership

No	1		2		3		4		5		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
Dimension: idealized influence												
1	0	0,00	0	0,00	5	7,70	18	27,70	42	64,60	65	100,00
2	0	0,00	1	1,50	4	6,20	19	29,20	41	63,10	62	100,00
3	0	0,00	1	1,50	10	15,40	25	38,50	29	44,60	65	100,00
4	0	0,00	0	0,00	3	4,60	14	21,50	48	73,80	65	100,00
5	0	0,00	0	0,00	5	7,70	17	26,20	43	66,20	65	100,00
Dimension: inspirational motivation												
1	0	0,00	0	0,00	4	6,20	22	33,80	39	60,00	65	100,00
2	0	0,00	0	0,00	6	9,40	20	32,80	36	57,80	62	100,00
3	0	0,00	0	0,00	5	7,70	14	21,50	46	70,80	65	100,00
4	0	0,00	1	1,50	2	3,10	11	16,90	51	78,50	65	100,00
5	0	0,00	0	0,00	5	7,80	21	32,80	39	59,40	65	100,00
Dimension: intellectual stimulation												
1	0	0,00	0	0,00	7	10,80	21	32,30	37	56,90	65	100,00
2	1	1,50	1	1,50	10	15,40	23	35,40	30	46,20	62	100,00
3	0	0,00	1	1,50	4	6,20	20	30,80	40	61,50	65	100,00
4	1	1,50	0	0,00	2	3,10	20	30,80	42	64,60	65	100,00
5	0	0,00	1	1,50	8	12,30	14	21,50	42	64,60	65	100,00
Dimension: individualized consideration												
1	0	0,00	3	4,60	10	15,4	19	29,20	33	50,80	65	100,00
2	0	0,00	3	4,60	12	18,5	24	36,90	26	40,00	62	100,00
3	1	1,50	2	3,10	5	7,7	22	33,80	35	53,80	65	100,00
4	0	0,00	1	1,60	5	7,9	12	19,00	46	71,40	65	100,00
5	0	0,00	1	1,50	6	9,2	11	16,90	47	72,30	65	100,00

The analysis of the dimensions of transformational leadership in dental practices in Ocaña, Norte de Santander, revealed a clear tendency towards strong transformational leadership, particularly in idealized influence and inspirational motivation. The first column presents, in order, the questions asked according to the dimensions analyzed according to the transformational leadership measurement instrument, while the rows correspond to the questions asked, evaluated using the Likert scale (table 6).

In the idealized influence dimension, the results showed that most respondents perceive a high degree of this type of leadership, with 64,60 % (score of 5) and 27,70 % (score of 4). It indicates that leaders in these practices are seen as role models, capable of generating trust and respect within their teams. Regarding inspirational motivation, the results show a positive perception, with 60,00 % (score of 5) and 33,80 % (score of 4). These results suggest that dental office leaders effectively inspire and motivate their employees, communicating a clear and stimulating vision for the future (table 6).

For intellectual stimulation, respondents reflect a good level of this type of leadership, with 56,90 % (score of 5) and 32,30 % (score of 4). It suggests that leaders encourage creativity and innovation within teams, promoting the intellectual development of employees. Finally, in the dimension of individualized consideration, it is observed that 50,80 % (score of 5) and 29,20 % (score of 4). These results imply that leaders pay attention to the individual needs of their employees, adapting their approach according to the characteristics and needs of each team member (table 6).

Considering the new variable created in SPSS that groups the four dimensions of transformational leadership into a single variable called “transformational leadership,” a scoring process was carried out according to the Likert scale used in the measurement instrument. The scoring was carried out to categorize the results into performance levels according to the score obtained in table 2.

Based on the information in table 2, the statistical calculations of the data’s maximum, minimum, average, and median were analyzed. From these results, leadership in dental offices is considered good, with an average of 89 and a median of 92. These values reflect a positive performance in transformational leadership, indicating that leaders in these offices show adequate skills to inspire, motivate, and effectively lead their work teams (table 7).

Table 7. Descriptive statistics transformational leadership			
Minimum	Maximum	Average	Median
60	100	89	92

Hypothesis testing

In the second part of the analysis of results, the correlation between transformational leadership and the different dimensions of organizational culture is addressed by analyzing Spearman’s correlation hypotheses. This approach allows us to precisely identify in which aspects transformational leadership directly influences organizational culture in dental offices in Ocaña, Norte de Santander. First, a general analysis is carried out to establish the correlation between leadership and culture. Subsequently, this relationship is examined specifically by dimensions, thus allowing a deeper understanding of the interactions between transformational leadership and the various aspects of organizational culture (table 8). The results indicate that, in all cases, Spearman’s ρ value is less than 0,05, leading to accepting the alternative hypothesis and rejecting the null hypothesis. It implies that there is a significant correlation between the variables studied.

Table 8. Correlation analysis between transformational leadership and dimensions of organizational culture				
	Correlation variable	Spearman’s ρ	Spearman’s R	Correlation
Transformational Leadership	Organizational culture	< 0,001	0,737	Alta
	Identity	< 0,001	0,576	Regular
	Quality	< 0,001	0,534	Regular
	Communication	< 0,001	0,633	Alta
	Personal contribution	< 0,001	0,492	Regular
	Personal recognition	< 0,001	0,492	Regular
	Leadership skills	< 0,001	0,564	Regular

Based on this finding, the seven hypotheses proposed in the methodology are analyzed. This analysis shows a clear relationship between organizational culture and transformational leadership in dental offices in Ocaña. In particular, hypothesis H_1 , which evaluates the general relationship between organizational culture and transformational leadership, showed a high correlation with a Spearman coefficient of $\rho < 0,001$, indicating

a strong association between these variables. It suggests that offices that promote a strong organizational culture also present more effective transformational leadership. Similarly, a high correlation was observed in hypothesis H_4 , which evaluates the dimension of communication, confirming that effective communication is closely related to successful transformational leadership in offices.

In contrast, other dimensions such as identity, quality, personal contribution, personal recognition, and management capabilities (H_2 , H_3 , H_5 , H_6 , and H_7) showed regular correlations, indicating that, although these dimensions have a significant relationship with transformational leadership, the intensity of this relationship is moderate. These results suggest that, although transformational leadership influences multiple aspects of organizational culture, its impact is stronger in areas such as communication. In contrast, the relationship is less intense but still relevant in other dimensions, such as quality and recognition (table 9).

Hypothesis posed	Dimension of organizational culture	Spearman's ρ	Correlation
H_1 : the organizational culture of dental offices in Ocaña is related to transformational leadership.	Organizational culture	< 0,001	Alta
H_2 : the identity of the workers in dental offices in Ocaña is related to transformational leadership.	Identity	< 0,001	Regular
H_3 : the quality of the workers in dental offices in Ocaña is related to transformational leadership.	Quality	< 0,001	Regular
H_4 : the communication of the workers in dental offices in Ocaña is related to transformational leadership.	Communication	< 0,001	Alta
H_5 : the personal contribution of the workers in dental offices in Ocaña is related to transformational leadership.	Personal contribution	< 0,001	Regular
H_6 : the personal recognition of the workers in dental offices in Ocaña is related to transformational leadership.	Personal recognition	< 0,001	Regular
H_7 : the management skills of the workers in dental offices in Ocaña are related to transformational leadership.	Leadership skills	< 0,001	Regular

DISCUSSION

The discussion from the results highlights the importance of strengthening transformational leadership and its influence on the organizational culture in dental offices in Ocaña. The findings suggest that it is essential to develop training programs focused on the key competencies of transformational leadership, such as idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration to enhance leadership capabilities. These trainings should focus on theory and practical application through case studies and exercises that foster greater team cohesion and development. This type of leadership, as highlighted by,⁽¹⁹⁾ better responds to today's complex social and economic demands, as it is capable of articulating diverse actors and promoting effective collaboration.⁽²⁰⁾

Another relevant aspect identified is the dimension of communication, which showed the highest correlation with transformational leadership. Creating mechanisms that favor the flow of information and transparency in organizational interactions is essential to strengthen the relationship between leaders and collaborators. Effective communication is indispensable for the leader to transmit his vision and motivate the team toward achieving common goals.⁽²¹⁾ In this sense, implementing regular feedback meetings, using digital technologies for team management, and promoting an environment where employees feel comfortable expressing their ideas are key to cohesion and efficiency in consulting rooms.⁽²²⁾

In addition, staff recognition and motivation emerge as critical factors for improving organizational culture. Transformational leadership, focusing on motivation and inspiration, plays a fundamental role in the personal development of workers, which in turn positively impacts the organizational structure. The relevance of leadership that fosters individual growth and promotes an integrated and supportive work environment.⁽⁷⁾

Regarding managerial skills, it is advisable to establish mentoring and coaching programs in order to improve decision-making and resource management in consulting rooms. It is especially important to consider the influence of personality traits, such as extroversion and conscientiousness, on leadership success.⁽²³⁾

Initiatives of this type can strengthen leadership capabilities and foster an organizational culture aligned with transformational principles.

Finally, it is important to highlight that employee well-being and satisfaction should be priority aspects in organizational leadership, increasing employee happiness; this positively impacts individual performance and organizational success.⁽²⁴⁾ Therefore, involving staff in continuous improvement and patient care initiatives and establishing clear and achievable goals can reinforce the quality of service and consolidate transformational leadership capable of promoting innovation and collaboration within practices.⁽²⁵⁾

CONCLUSIONS

From the analysis of the dimensions of transformational leadership in dental offices in Ocaña, it was evident that there is a marked tendency towards strong transformational leadership. Leaders are perceived as role models capable of generating trust and respect, particularly in idealized influence and inspirational motivation. They also stand out for their ability to inspire and motivate employees, encouraging creativity and intellectual development. In addition, there is evidence of individualized attention to the needs of employees, which reinforces the effectiveness of this leadership style in creating a positive organizational environment aligned with the principles of transformational leadership.

The correlation between transformational leadership and organizational culture is significant, although not all dimensions present the same intensity. There is evidence of a marked influence of leadership on organizational culture, particularly in the dimension of communication, which plays a key role in the synergy between both factors. It highlights the importance of effective communication as a central element in strengthening the relationship between leadership and culture within dental offices.

Finally, the results highlight the need to foster transformational leadership in dental practice managers to strengthen the organizational culture. Recommended actions include ongoing training in key competencies, improved communication, staff recognition, motivation strategies, and the development of managerial skills through mentoring and coaching. In addition, prioritizing staff satisfaction and their participation in process improvement is essential to creating a positive and collaborative work environment. These measures will significantly contribute to a stronger organizational culture aligned with strategic objectives.

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CONFLICT OF INTEREST

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