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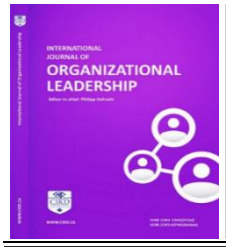

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A Multi-Level Study of Competencies, Leadership Styles, Job Satisfaction and Performance in an Organization Using Structural Equation Modeling

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ABSTRACT

The purpose of this study is to determine the influence of conceptual, personal, and technical leadership competencies on transformational and transactional leadership styles, as well as the relationship of these two leadership styles with job satisfaction and job performance, through a multilevel analysis of each of the strategic, operational, and tactical leadership levels in the military organization in Ecuador. To test the hypotheses, a structural equation model was developed and tested using data from 361 respondents nationwide. The MLQ Multifactor Leadership Questionnaire was employed to identify leadership styles. The results show that personal and technical competencies have statistically significant and positive relationships with the two leadership styles, which in turn influence job satisfaction and performance. The significant relationships at each leadership level are different, and some are consistent with existing literature. One of the practical implications is the analysis and training of organizational leaders, highlighting their need for development at each organizational level. This research offers originality and value by examining relationships through a multilevel analysis of variables that have not been previously combined in the literature on this topic. The study carried out can be useful for any type of organization. Discussions, implications, and limitations are presented, and future research is proposed.

In organizations, leadership is considered a key factor in the management of teams and the achievement of objectives (Avolio & Gardner, 2005). Therefore, a common theme in leadership

research is the positive influence of leadership style on subordinates and its benefit to the organization (Northouse, 2021; Sefidan et al., 2021), which depends on the competencies of the leader (Mohamud et al., 2024). Transformational and transactional leadership are key areas of study when researching highly reliable organizations, like the military (Sefidan et al., 2021).

Modern leaders perform multiple roles, so competency-based leadership approaches have become increasingly important. The importance of this approach lies in its focus on developing a leader's competencies throughout their military career (Meerits & Kivipõld, 2020).

Leaders are increasingly stratified according to different organizational levels in leadership development due to differences in work at each hierarchical level (Kaiser et al., 2011). Therefore, the multilevel models are increasingly important in organizational studies (Klein & Kozlowski, 2000). Our research employs a multilevel model to investigate organizational leadership, with the goal of understanding how organizational complexity impacts employee satisfaction and performance. While organizational performance relies on many elements, employee performance is paramount (Kumari et al., 2021).

In the Ecuadorian military organization, roles vary or increase due to the complex challenges of the operational environment, where threats to national security (regular, irregular, and criminal elements) are widespread (Kayaalp, 2018). This worsens working conditions, affecting the satisfaction and performance of the institution's personnel, which increases the intention to leave their positions. Therefore, it is essential to establish strategies aimed at improving job satisfaction and peak performance, which are crucial to the organization's success, in order to retain employees with the competencies, knowledge, experience, and responsibility (Kumari et al., 2021). Therefore, it is crucial to identify the relationships between competencies and leadership styles that positively influence job satisfaction and performance.

Megheirkouni et al. (2018) examines the relationship between transformational and transactional leadership with conceptual, human, and technical competencies, briefly analyzing different organizational levels. Further studies present the relationships between leadership styles and job satisfaction and/or performance (Ali & Tang, 2016; Berson & Linton, 2005; Kim & Lee, 2011; Laglera et al., 2013; Saleem, 2015). Likewise, the influence of satisfaction with performance is analyzed (Judge et al., 2001; Maheshwari, 2022; Wong & Laschinger, 2013). Nevertheless, a comprehensive study that incorporates all variables and employs multilevel analysis is essential. Therefore, this study addresses this gap by investigating, through an interconnected model, the entire organization and each level of organizational leadership, the relationships between: 1) Leadership competencies and styles; 2) Leadership styles and job satisfaction; and 3) Job satisfaction and job performance.

The research was conducted in a military context; however, the study model is perfectly applicable to other non-military organizations. The results provide insight into the relationships that contribute to greater job satisfaction and performance, promote better goal achievement, and establish a strategy for developing leaders at all organizational levels.

Literature Review and Hypothesis Development

Leadership Levels

The complexity of conceptualizing leadership as a component of organizational science necessitates a multilevel understanding to deepen theoretical and methodological development at each level (Batistič et al., 2017; Dionne et al., 2014; Wart et al., 2012; Reeves-Ellington,

2009). Multilevel theoretical models are gaining more importance in organizational studies.

Our research starts from the identification of three levels of leadership, based on the position and function that the leader develops in the organization. Hunt and Ropo (1995), Reeves-Ellington (2009), and DeChurch et al. (2010) agree on a multilevel model of organizational leadership, which encompasses three interrelated levels of leadership. The lowest level designed as: direct or production level, junior or low, respectively, is related to production, administrative or operational processes, and assigned tasks. The following level, known as the organizational, middle, or medium level, respectively, seeks the interaction of organizational elements to fulfill the given mission and objectives. The final level, strategic, senior, or high-level, establishes the planning of organizational systems, mission, objectives, and strategic management (Dionne et al., 2014; Puga et al., 2019; Wart et al., 2012).

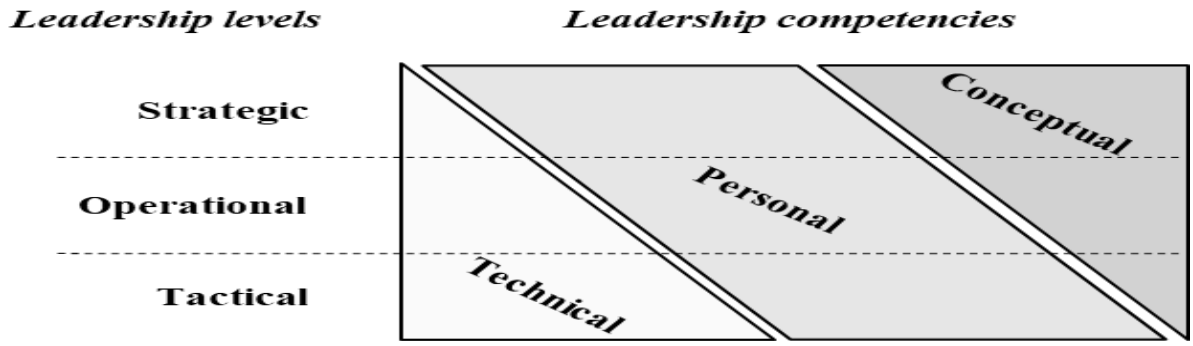
Kaiser et al. (2011) described three levels: bottom, middle management and executive. One method of differentiating between leadership and management levels involves the skills or competencies required at each level, which are classified into three general domains: conceptual, human, and technical.

This connects to our research because, in military organizations, leadership is segmented into three different organizational levels, due to the varying tasks and responsibilities at each level, as well as the length of time, experience, and maturity required for each organizational level. The three levels of military leadership from lowest to highest are tactical, operational and strategic (Air-University, 2015; Lucchesi, 2013; Nissinen, 2001; Puga et al., 2019). The tactical leadership level develops the skills to execute actions in pursuit of fulfilling objectives with available means. It has more certainty and less complexity than the higher levels. At the next level, the operational level, the guidelines and complex decisions of the strategic level are articulated with the tasks to be fulfilled at the tactical level. The leader at this level must possess sufficient knowledge of the organization's systems to ensure their correct interaction and provide appropriate advice to senior-level personnel. At the highest level, the strategic level sets organizational objectives and goals, with decisions that impact the entire organization.

Within the multilevel classification, the three different levels require specific competencies, which were initially proposed by Katz (1974, 2009). This literature has been accepted and remains valid. Fundamentally, three general domains are encompassed: conceptual, personal, and technical competencies (Liu, 2024; Pedersen, 2020; Roennfeldt, 2019; Rowlands, 2024). See Figure 1.

Figure 1

Leadership Levels and Competencies (Adapted from Kang et al.*, 2017; Daft, 2003; Ghalandari, 2012; Katz, 1974, 2009; Moore, 2003; Puga, 2020; Rowlands, 2024)*



Competencies and Leadership Styles

Conceptual competencies involve analytical and logical abilities, systemic thinking, reasoning, integration of concepts, and anticipation of various courses of action. These skills should be further developed at the strategic leadership level to enable a forward-looking vision and plan that adequately shapes the organization. Regarding personal competencies, these involve the ability to interact with people through effective communication, emotional intelligence, and self-control, creating an environment that fosters motivation and empowerment, which in turn contributes to achieving goals. These competencies are specifically required at all levels of leadership. Strategic leaders must possess the ability to collaborate, persuade and negotiate within a framework of respect and trust, establishing relationships inside and outside the organization. The tactical level establishes personal relationships of subordination. Finally, technical competencies refer to specialized knowledge, methods, and techniques. These competencies are specific to each leadership level. At the strategic level, they facilitate decision-making by analyzing information from a large system composed of systems. At the operational level, it facilitates the creation of a network of systems. At the tactical level, they can assist in solving specific problems, accomplishing defined missions and tasks, and the operation or technical maintenance of equipment and systems (Ghalandari, 2012; Kaiser et al., 2011; Meerits & Kivipõld, 2020; Megheirkouni et al., 2018; Moore & Rudd, 2004; Puga et al., 2020; Rowlands, 2024; Yukl, 2008).

Our study analyzes the relationship among the aforementioned competencies and leadership levels and styles. Concerning leadership styles, Bass and Avolio proposed the Full-Range Leadership Model (FRLM), or multifactorial leadership theory. This model includes three types or styles of leadership: transformational, transactional, and laissez-faire. They also developed a tool to determine the predominant leadership style, its components, characteristics, and effects. The Multifactor Leadership Questionnaire (MLQ) has been used in numerous studies (Van Jaarsveld et al., 2019).

The leadership styles have specific characteristics. Transformational leadership is based on transforming, motivating, inspiring, and paying attention to followers, placing organizational benefit over personal interests, seeking to achieve the organization's objectives. It transforms the attitudes, values, and beliefs of subordinates to achieve optimal performance and has five components: attributed influence, idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. (Antonakis et al., 2003; Avolio et al., 1999; Lussier & Achua, 2011; Megheirkouni et al., 2018; Mohamud et al., 2024; Parco-Tropicales & Guzman, 2014; Puga et al., 2019). Transactional leadership is characterized by compliance, the achievement of objectives, or good performance, resulting in a positive action or reward from the leader. The three components are: contingent reward, active management by exception, and passive management by exception (Lussier & Achua, 2011; Megheirkouni et al., 2018; Puga et al., 2019). The third style, Laissez-Faire ("let do") leadership is characterized by a lack of leadership, considered the least effective. The leader is passive, avoids guiding his/her people and avoids making decisions or acting on matters of organizational importance.

Megheirkouni et al. (2018) examined the relationship between transformational and transactional styles, focusing on technical, human, and conceptual competencies, in sports stadiums. They surveyed 212 people in five countries and found positive relationships between both leadership styles and their competencies. Results varied by each management level.

This research is an approximation of the first part of our study. We expand upon this investigation by filling the existing gap by analyzing the impact of three specific competencies on both leadership styles, ultimately determining their effect on employee satisfaction and job performance. Another gap that will be filled is to empirically validate whether the influence of each competency remains consistent at every leadership level, as the literature suggests (see Figure 1).

This unprecedented study model allows us to analyze all relevant variables simultaneously. These results will improve decision-making within the organization, prioritizing the competencies required by leaders, according to their level, to develop their leadership and improve job satisfaction and performance. The organization could develop strategies to improve competencies that are not positively related to job performance, in order to achieve this in the future.

The following hypotheses are proposed:

H1a: There is a significant relationship between conceptual competencies and transformational leadership.
H1b: There is a significant relationship between conceptual competencies and transactional leadership.
H2a: There is a significant relationship between personal competencies and transformational leadership.
H2b: There is a significant relationship between personal competencies and transactional leadership.
H3a: There is a significant relationship between technical competencies and transformational leadership.
H3b: There is a significant relationship between technical competencies and transactional leadership.

Leadership Styles and Job Satisfaction

Job satisfaction can be considered a feeling resulting from the perception of how work satisfies material and psychological needs (Kumari et al., 2021). It relates to the emotional state, affective reaction, or positive attitude toward work, its evaluation, results, or experiences (Laglera et al., 2013; Wong & Laschinger, 2013). Ali and Tang (2016) consider job satisfaction a crucial factor for the success of an organization, as it can affect efficiency, productivity, participation in decision-making, staff turnover, and performance.

Ali and Tang (2016) show a positive relationship between transformational and transactional styles and job satisfaction and performance in Malaysian multinational companies. We believe that a transformational style generally influences employee satisfaction through its employee-centered characteristics and the satisfaction of employees' needs (Alamri, 2023; Norena-Chavez et al., 2022; Northouse, 2021).

The relationship between transactional style and job satisfaction requires further analysis. The results indicate a positive relationship (Ali & Tang, 2016; Berson & Linton, 2005), which can be attributed to the reward component of the transactional style for achieving goals (Norena-Chavez et al., 2022; Özer & Tınaztepe, 2014). However, it can be linked to policies and procedures that lead to negative outcomes (Maheshwari, 2022), which is characteristic of

several organizations, including the military. Our study addresses this gap by examining the characteristics of each leadership style that predominate in job satisfaction, particularly at each level, recognizing that results at the strategic level can differ significantly from those at the operational or tactical level.

H4: There is a significant relationship between transformational leadership and job satisfaction.
H5: There is a significant relationship between transactional leadership and job satisfaction.

Job Satisfaction and Job Performance

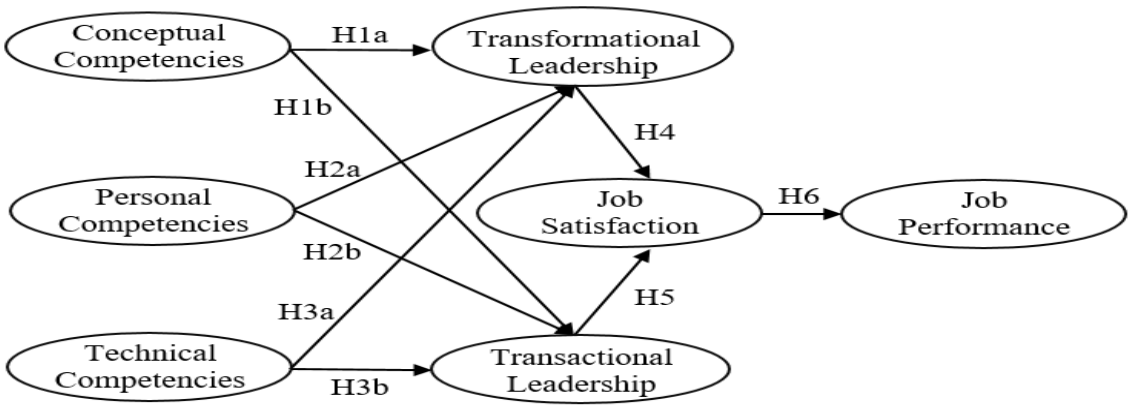
Job performance is considered the behaviors and actions of individuals that contribute to the fulfillment of organizational goals. Leaders encourage their followers' participation and work engagement, which improves work and performance outcomes (Wong & Laschinger, 2013). Job performance is a highly relevant topic in organizational behavior research, but its assessment is complex. Therefore, employee performance data available within the organization can be used as internal evaluation methods (Laglera et al., 2013).

Maheshwari (2022) demonstrates that teacher job satisfaction in Vietnamese schools, in relation to factors such as school culture, affects job performance. Ali and Tang (2016) found a positive relationship when analyzing multinational companies operating in Malaysia; however, other studies present an insignificant or weak relationship (Alsafadi & Altahat, 2021), since other factors, such as work environment, commitment, and motivation, can influence performance (Kumari et al., 2021; Schleicher et al., 2004). Our study completes the analysis of leadership competencies and styles that can influence job performance, in addition to analyzing the results obtained at each level of the organization.

H6: There is a significant relationship between job satisfaction and job performance.

Our research proposes a new model to investigate this topic further. The conceptual model of this research is presented in Figure 2.

Figure 2
Conceptual Model of the Research



Method

Data collection for this research used a measurement instrument developed according to the multifactorial leadership questionnaire MLQ-6s, based on the full-range leadership theory of Bass and Avolio (Avolio et al., 1999). This instrument is one of the most widely used to

determine leadership styles, their factors, and their relationships with other variables, due to its empirical validity (Antonakis et al., 2003). Prior to using the questionnaire in this study with the Ecuadorian armed forces, it was adapted to the setting (Samanta & Lamprakis, 2018), undergoing validation by experts. The adapted questionnaire, called the Skills Inventory (Northouse, 2021), was also used to measure conceptual, personal, and technical competencies.

The questionnaire used in this study has a total of 43 questions: 21 related to leadership styles, 16 related to competencies, and six corresponding to job satisfaction. These questions have 5 Likert-type responses as follows: 1) never, 2) almost never, 3) sometimes, 4) frequently, and 5) very frequently. Additionally, job performance data were obtained from the officers' semi-annual evaluations, the value of which is an average of the rating for the psychosocial, technical-professional, and physical factors.

The questionnaire was made available to military officers of the Ecuadorian Armed Forces through a web link. We considered them the target population because they lead at different levels of the organization. In addition, they receive direct influence from their superiors, and their leadership influences their subordinates.

We obtained 361 responses from a total of 6000 officers (the population), resulting in a maximum overall sampling error of 5%, with a 95% confidence level. Likewise, the maximum sampling error obtained in each of the three strata considered (strategic, operational, and tactical) is also 5%, with a 95% confidence level. This guarantees the statistical validity of the sample and the inferences made subsequently.

We emphasize that there are no gaps in the recorded responses and all questions were answered appropriately, demonstrating the commitment and seriousness of the respondents.

Demographic Data

Information of interest was obtained through nine questions on the characteristics of the respondents, including gender, age, academic level, corresponding military force, officers' specialty, work region in the country, length of military service, length of time working under the current superior, and rating in the semiannual evaluation. The data are shown in Table 1.

The majority of the personnel surveyed are men (96.12%), aged between 30 and 50 years (76.18%), and hold a Bachelor's degree (59.00%). Regarding their military profession, most are in the Air Force (73.68%), with service or technical specialties (47.65%), working in the mountainous region of the country (60.67%), with 10-22 years of service (41.83%), working less than one year under the current superior (60.11%) and with a semiannual evaluation of 19.50-20.00 (53.19%).

Table 1

Demographic Characteristics of the Sample

Variable	Characteristic	Frequency	(%)
Gender	Male	347	96.12
	Female	14	3.88
Age	<30	81	22.44
	30-50	275	76.18
	>50	5	1.38
Academic level	High school degree	17	4.71
	Bachelor's degree	213	59.00
	Master's degree	129	35.73
	PhD degree	2	0.56
Branch of the military	Army	64	17.73
	Navy	31	8.59
	Air Force	266	73.68
Officer's specialty	Operations	161	44.59
	Service/Technical	172	47.65
	Specialist	28	7.76
Work region	Coast	126	34.90
	Mountains	219	60.67
	Amazon	16	4.43
Tenure of work	<10 years	112	31.02
	10-22	151	41.83
	>22	98	27.15
Years under current superior	<1	217	60.11
	1-2	97	26.87
	>2	47	13.02
Semiannual rating	<18.50	13	3.60
	18.50-18.99	29	8.03
	19.00-19.49	127	35.18
	19.50-20.00	192	53.19

Note. N=361

Results

Structural equation modeling was employed in this study to test its hypotheses, as it facilitates the modeling of complex relationships and their effects (Hair et al., 2010). Specifically, linear causal relationships are established between complex variables, latent variables, or constructs. Due to the sample size and the proposed constructs, covariance-based structural equation modeling (Jöreskog, 1967) was employed. Structural equation modeling was performed using SPSS Amos 26 and Statistics 26 software. For this, the measurement instrument was validated, and then the reliability and validity of the indicators to measure the hypothesized constructs were analyzed. The structural model analyzed the relationships between unobserved variables, and the significance of the causal relationships corresponding to those stated in the hypotheses was reviewed (Hair et al., 2010).

Measurement Model

Hair et al. (2010) indicate that the validity of the measurement model is associated with acceptable levels of model goodness of fit and construct validity. Convergent and discriminant validity were therefore conducted in this study (Al-husseini & Elbeltagi, 2018).

Convergent validity was assessed using confirmatory factor analysis in AMOS 26, where all factor loadings were significant, with loadings and their averages per construct exceeding .6 and .7, respectively (Hair et al., 2010; Bagozzi & Yi, 2012). Some items with factor loadings

lower than .5 were eliminated subsequent to the procedure of eliminating items that presented values that did not contribute to their intended constructs (Aldás-Manzano & Uriel Jiménez, 2017). The data obtained on the measurement scales presented adequate values (Table 2).

Reliability assessment revealed that the variables have appropriate Cronbach's α (CA) and Composite Reliability (CR) values, i.e., above the recommended value of .7 (Nunnally & Bernstein, 1994), and an Average Variance Extracted (AVE) above .5 (Fornell & Larcker, 1981).

The goodness of fit presented in Table 2 is adequate, as are the fit indices including χ^2 (414df) = 1087.62 (p = .00), the root mean square error of approximation RMSEA = .07, the normed fit index NFI = .89, the Tucker-Lewis index TLI = .92, the comparative fix index CFI = .93 and the standardized root mean square residual SRMR index = .05 (Hair et al., 2010).

Table 2

Reliability and Validity Results

Variable	Indicator	Factor loading		Robust *t*-value	CA	CR	AVE
Transformational Leadership	TFL_IC_4	.81	***	18.58	.93	.94	.67
	TFL_IS_10	.82	***	18.95			
	TFL_IS_3	.80	***	18.15			
	TFL_IM_9	.86	***	20.39			
	TFL_IM_2	.78	***	17.60			
	TFL_II_8	.83	***	19.34			
	TFL_II_1	.82	***	18.68			
Transactional Leadership	TSL_ME_20	.72	***	15.42	.89	.89	.67
	TSL_CR_19	.86	***	20.13			
	TSL_CR_12	.88	***	20.76			
	TSL_CR_5	.81	***	18.41			
Technical Competencies	TEC_1	.86	***	20.17	.93	.93	.74
	TEC_2	.85	***	19.86			
	TEC_3	.83	***	19.03			
	TEC_4	.88	***	20.95			
	TEC_5	.88	***	21.20			
Personal Competencies	PEC_8	.83	***	18.95	.87	.87	.69
	PEC_9	.84	***	19.19			
	PEC_10	.83	***	19.00			
Conceptual Competencies	COC_12	.80	***	17.95	.92	.92	.71
	COC_13	.87	***	20.65			
	COC_14	.82	***	18.73			
	COC_15	.90	***	21.68			
	COC_16	.82	***	18.63			
Job Satisfaction	JST_1	.86	***	19.87	.88	.88	.56
	JST_2	.80	***	17.96			
	JST_3	.61	***	12.41			
	JST_4	.76	***	16.63			
	JST_5	.73	***	15.62			
	JST_6	.68	***	14.19			

Note. χ^2(414df) = 1087.62 (p-value = 0.00); NFI = 0.89; TLI = 0.92; CFI = 0.93; SRMR = 0.05; RMSEA = 0.07; *** p < 0.01; CA, Cronbach's α; CR, Composite reliability; AVE, Average variance extracted; TFL_II, Idealized influence; TFL_IM, Inspirational motivation; TFL_IS, Intellectual stimulation; TFL_IC, Individual consideration; TSL_CR, Contingent reward; TSL_ME, Management by exception.

The discriminant validity results obtained express the extent to which a construct is different from other constructs. These results are presented in Table 3, as follows: above the main diagonal, the results of the application of the HTMT heterotrait-monotrait correlation ratio criterion proposed by Henseler et al. (2015) are presented. These values are adequately below the threshold of .9. Similarly, under the main diagonal, the 95% confidence intervals for the covariances between the constructs are presented (in square brackets).

Table 3

Validation of the Final Measurement Model: Discriminant Validity

	TFL	TSL	TEC	PEC	COC	JST
TFL		.90	.87	.88	.88	.81
TSL	[.85; .92]		.83	.89	.79	.81
TEC	[.84; .91]	[.75; .85]		.82	.89	.74
PEC	[.85; .92]	[.84; .92]	[.78; .87]		.89	.86
COC	[.85; .91]	[.72; .83]	[.86; .92]	[.86; .93]		.81
JST	[.74; .84]	[.72; .83]	[.65; .78]	[.81; .90]	[.73; .83]	

Note. Above the diagonal, the heterotrait-monotrait ratio is provided; below the diagonal, the 95% confidence interval for the covariance is shown. TFL, transformational leadership; TSL, transactional leadership; TEC, technical competencies; PEC, personal competencies; COC, conceptual competencies; JST, job satisfaction.

Model Estimation

The measurement instrument was adequately evaluated, and the proposed model was estimated. The fit indicators showed a good model fit (see note in Table 4). The same table displays the results of the structural model, which show that seven proposed hypotheses are positively significant (H2a, H2b, H3a, H3b, H4, H5 and H6), whereas H1a is not significant and H1b is negatively significant.

H2a (β = .64, $p < .01$) and H3a (β = .36, $p < .01$) show that PEC and TEC are significant toward TFL. While tests of hypotheses H1b (β= -.58, $p <.01$), H2b (β = 1.14, $p < .01$) and H3b (β = .37, $p < .01$) demonstrate the significance of COC, PEC, and TEC relative to TSL.

Regarding JST, both TFL and TSL have significant effects on JST, as shown in hypotheses H4 (β = .49, $p <.01$) and H5 (β = .37, $p < .01$). Something similar occurs with JST on JPR, the effect of which is significant, as shown in H6 (β = .11, $p < .10$).

Regarding the goodness of fit and fit indices presented in Table 4, as well as in Tables 5, 6 and 7, corresponding to each of the leadership levels, the χ^2 to degrees of freedom ratio (also called CMIN/DF) values less than 3 (Bollen, 2014) or less than 5 (Hooper et al., 2008) indicate a good fit. The TLI and CFI indices range from 0 to 1, representing a poor fit to an optimal fit, with values close to .9 indicating an adequate fit (Gefen et al., 2011; McDonald & Ho, 2002; Schermelleh-Engel et al., 2003). The RMSEA has acceptable values in the range of .05 to .10 (Browne & Cudeck, 1992).

Table 4

Hypotheses Testing

H	Hypotheses	β	*t*
H1a	Conceptual competencies → Transformational leadership	-.21	-.21
H2a	Personal competencies → Transformational leadership	.64***	7.13
H3a	Technical competencies → Transformational leadership	.36***	4.75
H1b	Conceptual competencies → Transactional leadership	-.58***	-3.61
H2b	Personal competencies → Transactional leadership	1.14***	7.84
H3b	Technical competencies → Transactional leadership	.37***	3.63
H4	Transformational leadership → Job satisfaction	.49***	5.22
H5	Transactional leadership → Job satisfaction	.37***	4.01
H6	Job satisfaction → Job performance	.11*	1.95

Note. $\chi^2(423) = 1139.09$; $\chi^2/DF = 2.69$; p-value = 0.00; RMSEA = 0.07; CFI = 0.93; TLI = 0.92; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

After testing the hypotheses of the full model using data from all respondents, we conducted a multilevel analysis, that is, an analysis of each of the three levels: strategic, operational, and tactical, which is one of the objectives and significant contributions of this study. Due to the number of respondents for each level of leadership, the bootstrapping technique was used with

5000 interactions, which is essentially a technique whereby, when it is not possible to obtain more data from the population, additional samples are created by resampling data with replacements of the initial sample, as if it were a finite population. This facilitates the estimation of confidence intervals, statistical significance tests or other statistics that need to be obtained (Chernick & LaBudde, 2011; Ledesma, 2008; Roff, 2006; McCormick & Salcedo, 2017).

Table 5 presents the results specific to the strategic level. Three hypotheses are positively significant (H2a, H2b, and H4), while three are negatively significant (H1a, H1b, and H5). Finally, H3a, H3b, and H6 are not significant.

H2a (β = 3.00, $p < .01$) and H2b (β = 3.08, $p < .01$) show that PEC has significant effects toward the two leadership styles. Similarly, H1a (β = -1.89, $p < .05$) and H1b (β = -2.05, $p < .05$) determine that COC is significantly negative toward TFL and TSL.

Both TFL and TSL have significant effects on JST, as shown by hypotheses H4 (β = 3.81, $p < .05$) and H5 (β = -2.99, $p < .1$).

Table 5

Hypotheses Testing (Strategic level)

H	Hypotheses	β	*t*
H1a	Conceptual competencies → Transformational leadership	-1.89**	-2.02
H2a	Personal competencies → Transformational leadership	3.00***	2.62
H3a	Technical competencies → Transformational leadership	-0.18	-0.47
H1b	Conceptual competencies → Transactional leadership	-2.05**	-2.34
H2b	Personal competencies → Transactional leadership	3.08***	2.96
H3b	Technical competencies → Transactional leadership	-0.16	-0.39
H4	Transformational leadership → Job satisfaction	3.81**	2.31
H5	Transactional leadership → Job satisfaction	-2.99*	-1.82
H6	Job satisfaction → Job performance	0.03	0.27

Note. $\chi^2(423) = 766.48$; $\chi^2/DF = 1.81$; p-value = 0.00; RMSEA = 0.09; CFI = 0.89; TLI = 0.88; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

The results of the hypotheses for the operational leadership level are presented in Table 6, where six hypotheses are positively significant (H2a, H2b, H3a, H3b, H5, and H6), one is negatively significant (H1b), and two are not significant (H1a and H4).

PEC and TEC have positive significance towards TFL and TSL, according to H2a (β = .53, $p < .01$), H2b (β = 1.22, $p < .01$), H3a (β = .41, $p < .01$), and H3b (β = .33, $p < .1$). This is also the effect of TSL on JST given by H5 (β = .70, $p < .01$) and of JST on JPR presented in H6 (β = .20, $p < .05$). The effect of BCC on TSL is negative H1b (β = -.62, $p < .05$).

Table 6

Hypothesis Testing (Operational level)

H	Hypotheses	β	*t*
H1a	Conceptual competencies → Transformational leadership	0.05	0.32
H2a	Personal competencies → Transformational leadership	0.53 ***	4.92
H3a	Technical competencies → Transformational leadership	0.41 ***	3.21
H1b	Conceptual competencies → Transactional leadership	-0.62 **	-2.43
H2b	Personal competencies → Transactional leadership	1.22 ***	6.71
H3b	Technical competencies → Transactional leadership	0.33 *	1.96
H4	Transformational leadership → Job satisfaction	0.16	1.33
H5	Transactional leadership → Job satisfaction	0.70 ***	4.69
H6	Job satisfaction → Job performance	0.20 **	2.30

Note: $\chi^2(423) = 925.51$; $\chi^2/DF = 2.19$; p-value = 0.00; RMSEA = 0.09; CFI = 0.88; TLI = 0.86; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

Finally, the hypothesis tests at the tactical level are presented in Table 7, where four hypotheses are significant (H2a, H2b, H3b, and H4), while another reveals a negative

relationship (H1b), and the remaining four are not significant (H1a, H3a, H5, and H6).

The significant positive influence is shown in the relationships of PEC towards TFL in H2a (β = .68, $p < .01$), PEC to TSL through H2b (β = .93, $p < .01$), TEC on TSL in H3b (β = .40, $p < .1$), and TFL with respect to JST (β = .63, $p < .01$). The relationship COC on TSL shows negative significance across H1b (β = -.44, $p < .1$).

Table 7

Hypothesis Testing (Tactical level)

H	Hypotheses	β	*t*
H1a	Conceptual competencies → Transformational leadership	.01	0.04
H2a	Personal competencies → Transformational leadership	.68 ***	2.89
H3a	Technical competencies → Transformational leadership	.26	1.50
H1b	Conceptual competencies → Transactional leadership	-.44 *	-1.77
H2b	Personal competencies → Transactional leadership	.93 ***	2.89
H3b	Technical competencies → Transactional leadership	.40 *	1.85
H4	Transformational leadership → Job satisfaction	.63 ***	4.15
H5	Transactional leadership → Job satisfaction	.23	1.63
H6	Job satisfaction → Job performance	.13	1.29

Note. $\chi^2(423) = 889.68$; $\chi^2/DF = 2.10$; *p*-value = 0.00; RMSEA = 0.10; CFI = 0.86; TLI = 0.84; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

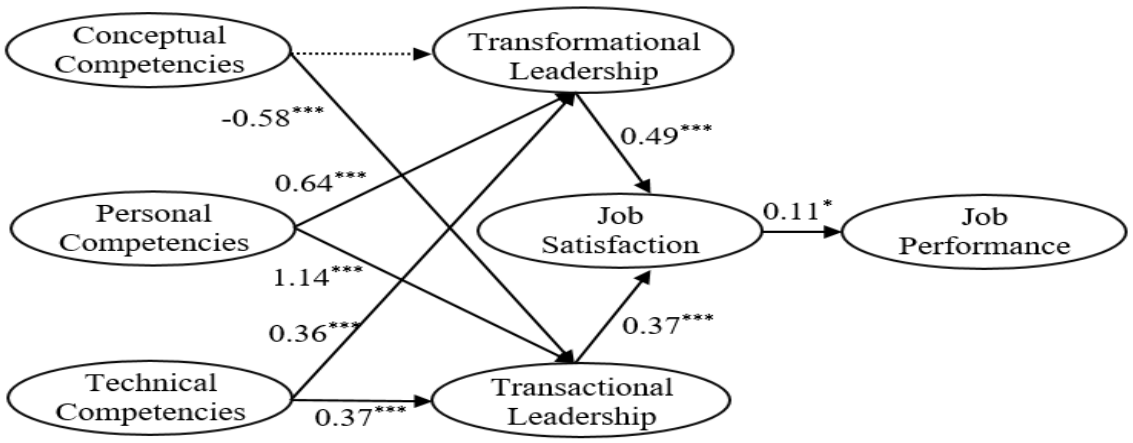
Discussion

The purpose of this study is to examine the relationships among managerial competencies, leadership styles, job satisfaction, and job performance. These relationships are analyzed in two ways: first, at the organizational level (Table 4), and second, at the multilevel level (Tables 5, 6, and 7), to obtain useful and specific results at each level of organizational leadership (strategic, operational, and tactical).

Regarding the organizational level, the significant relationships are shown in Figure 3. Conceptual competencies do not show a significant positive relationship with either transformational or transactional leadership. It is evident that conceptual competencies are considered "essential competencies" in leaders (Meerits & Kivipõld, 2020), as they involve the ability to analyze, conceptualize, and think logically. However, our analysis focuses on job satisfaction and performance; therefore, conceptual competencies that focus on how processes are executed do not relate to transformational leadership, which emphasizes the development of people (Lussier & Achua, 2011).

Figure 3

Significant Global Relationships



In addition, conceptual competencies are negatively related to transactional leadership; that is, conceptual thinking does not necessarily focus on achieving goals, while the transactional style seeks to obtain results through transactions, rewards or punishments (Gal-Arieli et al., 2020).

Our analysis of the relationship between personal competencies and the two leadership styles was significantly positive, confirming the findings of Megheirkouni et al. (2018), who agree that the development of these personal competencies allows the leader to listen to employees, their needs and points of view, thus improving job satisfaction (Ahmed & Mohamad, 2016; Akdere & Egan, 2020). Some researchers suggest that transformational and transactional leadership are human skills (Lussier & Achua, 2011; Megheirkouni et al., 2018).

We observed that technical competencies have a significant positive relationship with the transformational and transactional styles. Our explanation is that specific techniques for planning and executing the necessary activities and tasks directly impact the development of both styles (Yukl, 2008).

We found that both leadership styles positively influence job satisfaction. Transformational leaders build employee trust, motivate them toward greater responsibility and a sense of accomplishment, and seek to satisfy their needs (Alamri, 2023; Ali & Tang, 2016; Norena-Chavez et al., 2022; Northouse, 2021). Regarding the relationship between transactional leadership and satisfaction, Maheshwari (2022) reports negative results when relating it to policies and procedures; however, the positive relationship obtained in our research confirms the results of previous studies (Ali & Tang, 2016; Berson & Linton, 2005). We consider that satisfaction with goal achievement and performance improvement is linked to the rewards associated with the transactional style (Norena-Chavez et al., 2022; Özer & Tınaztepe, 2014).

Regarding the effect of job satisfaction on job performance, some authors consider it to be positive (Ali & Tang, 2016; Maheshwari, 2022). It is mentioned that satisfied employees tend to perform better (Kumari et al., 2021). In our study, the relationship is positive, but not strong, in line with studies where the relationship is insignificant or weak (Alsafadi & Altahat, 2021). Other elements may influence performance, such as commitment, motivation, personality, work environment, etc. (Kumari et al., 2021; Schleicher et al., 2004). Studies like ours make it possible to analyze the competencies and leadership styles that can influence an organization.

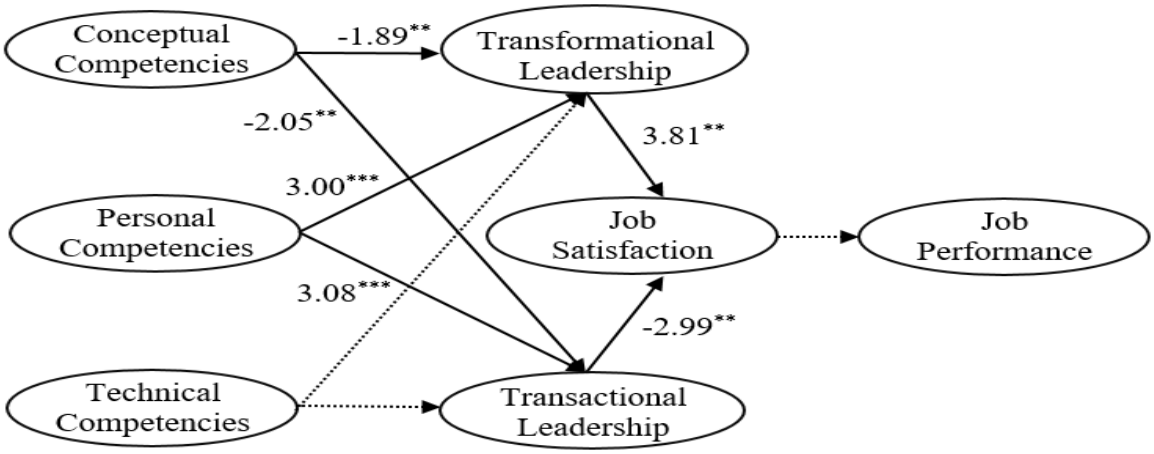
One of the strengths of this work is the multilevel analysis, which allows us to analyze and discuss the results obtained at each level in depth.

Starting with the *strategic level*, some authors (Ghalandari, 2012; Kaiser et al., 2011; Katz, 1974, 2009; Liu, 2024; Meerits & Kivipõld, 2020; Megheirkouni et al., 2018; Moore & Rudd, 2004; Pedersen, 2020; Puga et al., 2020; Rowlands, 2024; Yukl, 2008) indicate that the most important competencies at this level should be conceptual competencies; nevertheless, the results show that the conceptual competencies have negative significance with respect to the two leadership styles, demonstrating that these competencies do not influence these styles as would be expected at this strategic level (see Figure 4). This could be explained by the fact that some organizations, such as the military, have a fully structured strategic plan, vision, and strategies, which limit the freedom to apply these competencies at the strategic level. In another aspect, personal competencies consistently influence both leadership styles, as expected (see Figure 1). Technical competencies are not significant and therefore do not influence this level.

Transformational leadership is positively related to satisfaction, as explained; however, the negative relationship with transactional leadership is attributed to the punishments or policies it entails. Finally, the relationship between job satisfaction and job performance is not significant at this level because the influence of other external elements is more evident, as previously mentioned.

Figure 4

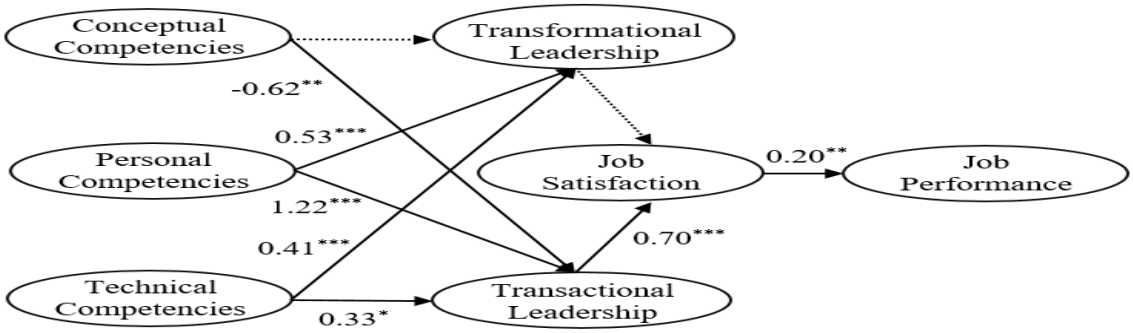
Significant Strategic Level Relationships



At the *operational level*, according to the authors previously mentioned, conceptual and technical competencies are expected to have medium importance, while personal competencies have a permanent influence. However, in our research, conceptual competencies do not have a positive correlation with either leadership style, in line with the results from the strategic level (see Figure 5). Furthermore, personal competencies affect both leadership styles, which is confirmed by the literature (see Figure 1), as do technical competencies, which influence both styles. At the operational level, which connects the other two levels, personal and technical competencies are vital for organizational decisions to be transformed into effective actions. Therefore, the importance of transactional leadership becomes more evident (Megheirkouni et al., 2018), which leads to greater job satisfaction, as supported by the results obtained. Furthermore, the relationship between job satisfaction and job performance is significant at this level due to the lesser influence of external factors, as important decisions are made at the strategic level.

Figure 5

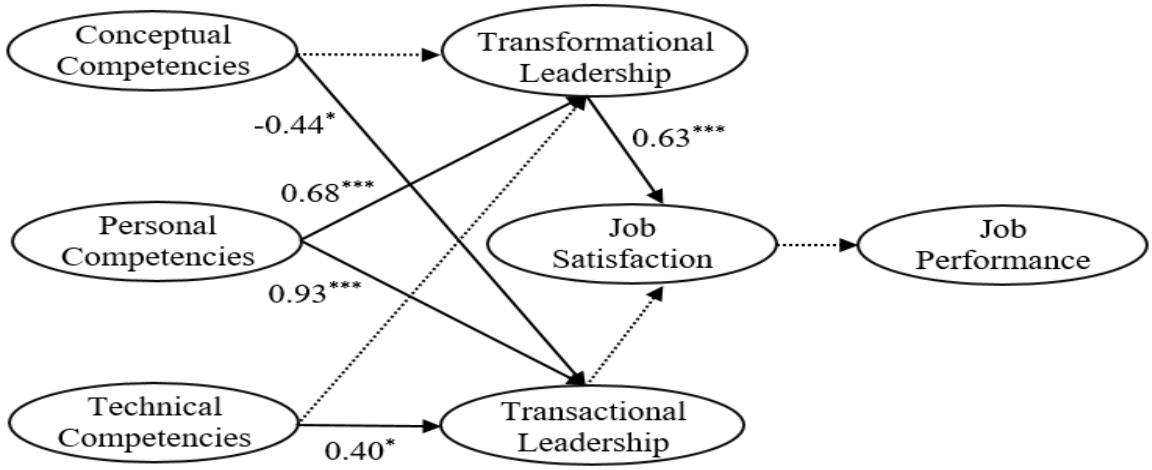
Significant Operational Level Relationships



Finally, at the tactical level, according to the aforementioned literature, our findings indicate that conceptual competencies are less important (see Figure 6). Personal competencies are influential, while technical competencies positively influence transactional style. At this lower level, transformational leadership gains importance, where leaders must motivate and inspire their subordinates to execute higher-level decisions. The relationship between job satisfaction and job performance is not significant, possibly due to other factors that influence performance, such as low commitment, motivation, the new work environment, etc. (Kumari et al., 2021).

Figure 6

Significant Tactical Level Relationships



Conclusion

The data obtained show that both transformational and transactional leadership styles are important in the organization, with a slight predominance of the transformational style. In the overall analysis, significant positive relationships are observed between the personal and technical competencies of the organization's leaders and both the transformational and transactional styles, while conceptual competencies have a negative relationship with the transactional style. Both leadership styles positively influence job satisfaction. Finally, job satisfaction is positively related to job performance.

The multilevel analysis at the strategic, operational, and tactical levels in relation to the existing literature on leadership competencies and leadership levels (Ghalandari, 2012; Kaiser et al., 2011; Katz, 2009; Meerits & Kivipõld, 2020; Megheirkouni et al., 2018; Moore & Rudd, 2004; Puga et al., 2020; Yukl, 2008) shows that, overall, conceptual competencies do not have a significant positive relationship with transformational or transactional leadership styles. Personal competencies do have a positive relationship with leadership styles at all levels. Technical competencies are related to both leadership styles at the operational level and transactional leadership at the tactical level.

The results confirm the validity of previous studies and provide conclusions not reflected in the reviewed literature. Given the positive relationships found, when selecting effective leaders, it is important to ensure they possess the personal and technical competencies that allow them to positively influence their team's job satisfaction and, consequently, their job performance.

These results can help improve decision-making in the Ecuadorian military organization and strengthen the development of leaders who engage, inspire, and motivate their subordinates.

Furthermore, the proposed model, unprecedented in the literature, as well as its application in this context, can be easily extrapolated to organizations in other countries to determine what types of competencies they should prefer in their leaders, according to their level, to develop their leadership and improve job satisfaction and performance.

Finally, this study is perfectly applicable to non-military organizations seeking to identify the relationships between job satisfaction and job performance at different organizational levels, which is key in any work environment.

Implications

The findings reveal that the personal competencies of transformational or transactional leaders must be permanently present at all organizational levels to influence job satisfaction and performance. To achieve this, it is suggested that they be strengthened through training (Alamri, 2023). Therefore, it is important for organizations to develop leaders with the ability to listen to employees' needs and opinions, which influences motivation and job satisfaction (Ahmed & Mohamad, 2016; Akdere & Egan, 2020) and is significant for improving their performance (Judge et al., 2001; Schleicher et al., 2004). Furthermore, listening to employees' different points of view broadens the leader's vision and understanding of the entire work environment, both professionally and personally, providing ideas for change or approaches that were not previously considered, which will allow for more informed and alternative decisions. A manager with genuine consideration for their collaborators will understand their personal ideals and priorities, empowering employees who feel that their opinions and experiences contribute to improved work results (Alamri, 2023; Wong & Laschinger, 2013).

In another aspect, developing leaders with conceptual competencies is essential for the future of the organization, due to their ability to analyze, conceptualize, and think logically in the development of the organization (Yukl, 2008). However, our results show that, with transformational and transactional leadership as mediators, conceptual competencies do not influence job satisfaction and performance, since surveyed individuals did not relate them at any level. Therefore, conceptual competencies should also be linked to employee satisfaction and performance (Pedersen, 2020).

The relative importance of each competency varies by position, project, and organizational level (Rowlands, 2024; Liu, 2024); therefore, in our multilevel analysis, at the operational or middle level, technical competencies have greater relative importance, as well as personal competencies generate greater results in employee satisfaction and performance. Technical competencies convey the operational essence of the institution—the specific way of carrying out tasks, activities, and responsibilities, which must be conveyed through both leadership styles (Yukl, 2008). Furthermore, this important middle level should have the most qualified personnel for leadership activities and develop the rest of the staff, considering that the organization's future leaders will emerge from this group. Middle-level leaders can be the most influential people in organizations (Megheirkouni, 2018; Schaefer & Guenther, 2016).

We analyze the importance of transformational and transactional leadership styles. Transformational leadership is the most desired in organizations; however, transactional leadership, when applied correctly, will generate beneficial results for the institution. For

example, if we apply the contingent reward component of transactional leadership, employees will seek recognition from the leader with some type of incentive that enhances their careers, encouraging positive competition among workers and striving for excellence in their work area. This benefits employees who aspire to promotions or better positions, resulting in positive effects on satisfaction and performance (Kim & Lee, 2011).

Limitations and Future Lines of Research

Despite the contributions of this study, there are limitations that could encourage future research. The model was applied to military officers; however, the research could be extended to enlisted military personnel or any type of organization, from any country.

When analyzing by levels (Batistič et al., 2017), the number of sample data per level may be small, so it would be advisable to increase the number of respondents or use techniques such as bootstrapping (Chernick & LaBudde, 2011; Ledesma, 2008) to minimize the effects of not very large samples.

Furthermore, the classification by leadership levels was based on the demographic data obtained and on the military rank or time in the organization, however, there may be other cases in which the leadership level is not related to the above, therefore it is proposed to establish alternative methods to identify the respondents within the corresponding organizational level (Klein & Kozlowski, 2000).

This study specifically selected transformational and transactional leadership styles; however, depending on the research requirements, other leadership types could be selected, or other study variables, such as organizational commitment and trust in the leader, could be incorporated to determine the causal relationship between them (Laglera, 2013).

Declarations

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Disclosure Statement

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Ethics Approval

Not applicable.

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