

Revista Científica General José María Córdova

(Colombian Journal of Military and Strategic Studies)

Bogotá D.C., Colombia

ISSN 1900-6586 (print), 2500-7645 (on line)

Journal homepage: www.revistacientificaesmic.com

From theory to practice: assessing leading by example in military leadership

De la teoría a la práctica: evaluando el liderazgo mediante el ejemplo en el ámbito militar

Maite Regina Beramendi 

Universidad de Buenos Aires - Consejo Nacional de Investigaciones Científicas y Técnicas, Buenos Aires, Argentina
beramendimaite@psi.uba.ar

Cynthia Frascaroli 

Universidad de la Defensa Nacional - Colegio Militar de la Nación, Buenos Aires, Argentina
cfrascaroli@siedcmn.undef.edu.ar

How to cite in APA: A Beramendi, M. R., & Frascaroli, C. (2025). From theory to practice: assessing leading by example in military leadership. *Revista Científica General José María Córdova*, 23(51), 547-563. <https://doi.org/10.21830/19006586.1460>



Published online: July 1, 2025



Submit your article to this Journal

Responsibility for content: The contents of the articles published by the Revista Científica General José María Córdova (Colombian Journal of Military and Strategic Studies) express the views of the authors exclusively; therefore, they are their complete responsibility. The positions and assertions presented are the result of academic and research exercises that do not represent the official or institutional position of the Escuela Militar de Cadetes “General José María Córdova” (Colombian Army Military Academy - ESMIC), the National Army of Colombia, the Colombian Military Forces, or the Colombian Ministry of Defense.



The articles published by the Revista Científica General José María Córdova (Colombian Journal of Military and Strategic Studies) are Open Access under a Creative Commons license: **Attribution - Non Commercial - No Derivatives**.



Revista Científica General José María Córdova
(Colombian Journal of Military and Strategic Studies)
Bogotá D.C., Colombia

Volume 23, Issue 51, July-September 2025, pp. 547-563
<https://doi.org/10.21830/19006586.1460>

From theory to practice: assessing leading by example in military leadership

De la teoría a la práctica: evaluando el liderazgo mediante el ejemplo en el ámbito militar

Maite Regina Beramendi 

Universidad de Buenos Aires - Consejo Nacional de Investigaciones Científicas y Técnicas, Buenos Aires, Argentina

Cynthia Frascaroli 

Universidad de la Defensa Nacional - Colegio Militar de la Nación, Buenos Aires, Argentina

ABSTRACT. One of the Armed Forces' primary goals is to train leaders for varied and challenging missions. Given the diversity of tasks and contexts, definitions of military leadership are often broad, reflecting generic conceptualizations. Consequently, much research has analyzed the traits that make a military leader effective. However, one crucial aspect has not yet been independently examined: leading by example. Based on this oversight, the objective of this study was to construct and validate a scale to assess Leading by example in military institutions. The sample was composed of 460 cadets from an Argentinean Military Institution. The results show that the scale fits well, and the reliability coefficients reflect acceptable internal consistency levels for each dimension. This instrument becomes a valuable tool to distinguish between commanders who merely hold positions of authority and those who inspire, motivate, and serve as genuine role models through exemplary leadership.

KEYWORDS: leadership, leading by example, military, scale, validation.

RESUMEN. Uno de los principales objetivos de las Fuerzas Armadas es formar líderes para misiones diversas y desafiantes. Dada la diversidad de tareas y contextos, las definiciones de liderazgo militar suelen ser amplias, reflejando conceptualizaciones genéricas. En consecuencia, numerosas investigaciones han analizado los rasgos que hacen a un líder militar eficaz. Sin embargo, un aspecto crucial aún no se ha examinado de forma independiente: liderar con el ejemplo. Con base en esta omisión, el objetivo de este estudio fue construir y validar una escala para evaluar el liderazgo con el ejemplo en instituciones militares. La muestra estuvo compuesta por 460 cadetes de una Institución Militar Argentina. Los resultados muestran un buen ajuste de la escala y que los coeficientes de confiabilidad reflejan niveles aceptables de consistencia interna para cada dimensión. Este instrumento se convierte en una herramienta valiosa para distinguir entre comandantes que simplemente ocupan puestos de autoridad y aquellos que inspiran, motivan y sirven como auténticos modelos a seguir mediante un liderazgo ejemplar.

PALABRAS CLAVE: escala; liderar con el ejemplo; liderazgo; militares; validación

Section: DOSSIER • Research Article

Received: February 18, 2025 • Accepted: May 26, 2025

CONTACT: Maite Regina Beramendi  beramendimaite@psi.uba.ar

Introduction

A single model or style does not define military leadership due to the diverse and extreme contexts it must navigate. However, it is characterized by a core set of essential competencies, values, and knowledge. Among these competencies, *Leading by Example* (LE) is a prominent place, regarded as a key tool for influencing, motivating, and shaping subordinates. Although this principle is widely recognized in the doctrines and manuals of armed forces across various countries, it has rarely been assessed as a standalone construct within social or military psychology. Instead, it has often been addressed as a component within broader leadership models—such as transformational or embodied leadership—without specific operationalization or dedicated measurement tools.

As part of a broader research program on leadership in military institutions, previous qualitative studies conducted with officers and cadets identified Leading by Example (LE) as one of the primary characteristics of effective leadership. These studies consistently highlighted personal examples as a critical tool for influence and guidance (Torres, Beramendi, Sosa & Zubieta, 2010; Beramendi, Sosa, Frascaroli & Torres, 2011; Beramendi, 2019).

These findings align with international research showing that exemplary behavior strengthens trust and credibility (Fisher & Robbins, 2014), meets followers' expectations for consistency and Integrity (Lord & Maher, 1991), and forms a core dimension of transformational leadership (Podsakoff et al., 1990). However, despite this consensus, the concept is often treated as a subsidiary element within broader leadership models and remains difficult to operationalize as a standalone construct.

A military officer designed leadership circuits for infantry cadets to address this limitation within the framework of a collaborative project between military personnel and psychologists. Concurrently, the psychology team developed specific tools to assess the leadership competencies the officers deemed essential concretely. This initial effort represented a significant step in operationalizing key concepts such as LE and laid the groundwork for further research and applications to measure this critical aspect of leadership with greater precision and effectiveness (Beramendi, Muratori & Zubieta, 2015).

In this article, we present a conceptualization of LE within the context of military leadership, rooted in a deeper understanding of military contexts' unique characteristics and demands. Following a context-specific orientation (Wong et al., 2019), we seek to capture the essence of military leadership by examining LE as a core competency. To address the challenges posed by its abstract nature and generalized treatment in existing manuals, we develop and validate an instrument specifically designed to measure this critical competency. This work aims to enhance conceptual clarity and provide a practical and actionable framework for assessing and fostering this essential leadership quality in military settings.

Military leadership

Military forces have been pioneers in leadership. Considering the large military structure, complexity, and serious mission of fighting and winning a nation's wars, leadership is the primary tool to make military logistics work. Given these *in extremis* situations, military leaders are trained to influence, plan, coordinate, guide, and decide for their subordinates, while followers are indoctrinated in the chain of command to obey (Fisher et al., 2010; Hannah et al., 2010; Kaiser et al., 2008; Klitmøller & Obling, 2021; Squires & Peach, 2020).

Nevertheless, military doctrine does not commonly specify leadership styles to be used by their personnel because of the multiple and multifaceted extreme contexts they must deal with. On the contrary, leadership definitions are general and reflect generic conceptualizations often found in general leadership literature (Hannah et al., 2009). For example, the U.S. Army defines leadership as "the activity of influencing people by providing purpose, direction, and motivation to accomplish the mission and improve the organization" (U.S. Army, 2019, p. 1-3).

Because of this lack of a unanimous model, military leadership is defined through a core of competencies, values, and knowledge (e.g., Beramendi, 2019; Ejército Argentino, 1990; Ejército Chileno, 2014; Ejército Ecuatoriano, 2015; Fuerzas Armadas Españolas, 2018; U.S. Army, 2012). Among the characteristics described for a good leader, LE is prominently mentioned in almost every Army's handbook, and it occupies a privileged place within military leadership characterization (e.g., British Army, 2015; Ejército Argentino, 1990; U.S. Army, 2019). For example, the British Army (2015) considers it one of the seven leadership behaviors in its leadership code. In this vein, the U.S. Army also recognizes it as a vital leading competence. In *Army Leadership and the Profession Handbook*, the U.S. Army (2019) specifies: "The Army expects leaders selected for the command to lead beyond the mere exercise of formal authority. They lead by example and serve as role models. Their example and actions carry tremendous weight" (pp. 1-9). Following this characterization, the Argentinean Army states that Leading by example is the primary tool to persuade, train, and motivate subordinates and, finally, to become a leader.

Leading by Example

LE is understood as the cornerstone to building subordinates' trust in their leaders, and trust is a crucial factor in a military context for two main reasons (Fors Brandebo et al., 2013; Sweeney et al., 2009; Yeşilbaş & Çetin, 2019). Firstly, militaries often perform tasks in life-or-death situations, where the risk of being injured is tangible; even during peacetime and training, they have a high probability of being wounded due to using weapons (Ford Brandebo et al., 2013). Secondly, military personnel need to trust their leaders more because they are asked to renounce their right to self-determination and to follow the chain of command, so their life depends on their leader's orders (Collins & Jacobs, 2002).

In this context, *Lead by Example* has also been conceptualized as a key component of Transformational Leadership models—particularly through the dimension of idealized influence (Bass, 1999). This dimension emphasizes the leader's ability to serve as a role model by aligning actions with shared values, inspiring respect, and gaining trust. Leaders who exemplify the values they promote are perceived as more authentic and credible, which enhances their ability to motivate and influence their followers. This theoretical framing resonates with military leadership expectations, where trust and moral authority are built not through rhetoric but through consistent, observable behavior.

This characteristic is also present in one of the six transformational leader behaviors identified by Podsakoff et al. (1990): *Providing an Appropriate Model*, which refers to leaders setting an example consistent with the values they promote. This behavior reinforces the idea that effective leadership is not only about verbal guidance but also about embodying the standards expected from followers.

In addition to its presence in transformational leadership theory, the principle of leading by example has been analyzed from the perspective of embodied leadership. Drawing on a phenomenological approach, Fisher and Robbins (2014) emphasize that in military contexts—especially under extreme conditions like combat—the leader's physical body becomes a crucial site of leadership performance. "Leading from the front," sharing physical risks, and displaying visible, exemplary behavior are symbolic gestures essential to building trust and credibility among followers. In life-threatening environments, where verbal communication is often limited or ineffective, the leader's embodied actions—how they move, act, and face danger—speak louder than words and become central to motivating and guiding the group. As the authors argue, this kind of leadership cannot be faked: it must be consistently performed through congruence between speech, action, and presence.

However, because LE is a ubiquitous concept, millions of actions can embody it, and this factor makes definitions too abstract and difficult to operationalize. On the one hand, we can find short definitions. For example, Lundqvist (2014) found that for Swedish cadets, leading by example means that the leader should act as he/she wants subordinates to act. Lapidot et al. (2007, p. 24) define it as "following the same code of conduct as required from the soldiers." On the other hand, we can find more extended and more detailed definitions in military handbooks. For instance, the Chilean Army (2014, p. 12) describes it as follows:

We are not only referring to the physical aspect but also to the set of actions that we carry out and that, in synthesis, generate a general image of our person. This is where BEING is mixed with DOING, where our speech becomes valid, generating our followers' confidence through a precise emotional balance, military bearing, military security, and physical capacity. In short, it forms the basis of the "personal example."

Continuing with another definition, the Argentinean Army (1990, pp. 46-47) states in its command handbook that:

Exemplary actions will always have the virtue of awakening or giving birth to unsuspected powers in subordinates by bringing into play the psychological factors of affective contagion, imitation, and elevation of aspiration levels. When this happens, they will model characters and perfect behaviors, draw men, and be decisive in increasing the commander's ascendancy. Men will never usually be guided by the abstract precepts of pure reason. They will need to see their ideal embodied in a man, which prompts them to follow them through the seduction of example (...) The leader who sets the example will be able to ask his men for everything because he will always conquer and deserve their trust (...) The example must be given both inside and outside service because the leader's life will speak to his men louder than his voice. When his life contradicts his words, a lack of logic will negatively impact his ascendancy.

The British Army (2015) provides us with another example in these terms:

You cannot lead people beyond where you can and are willing to go yourself. All leaders are role models, and as an Army leader, you must actively demonstrate our Values in everything you do. On operations, on exercise, in camp, on the sports field, and off-duty, you must demonstrate behavior that aligns with our six values. By consistently doing so, you will be considered an authentic leader who 'Walks the Walk' as well as 'Talking the Talk' – this promotes Integrity. Leaders who lead by example also inspire Courage and Selfless (p. 16).

Finally, when specifying leadership strategy, U.S. Army (2019, p. 10-2) highlights that "(...) Like direct and organizational leaders, strategic leaders lead by example and exert indirect leadership by communicating, inspiring, and motivating."

Reframing Lead by Example: Our Conceptual Approach

In this study, we propose a conceptualization of *lead by example* that integrates two essential components: *consistency* and *role modeling*. Consistency ensures alignment between what leaders demand and what they practice, reinforcing their integrity and moral authority in the eyes of their subordinates. On the other hand, role modeling emphasizes vicarious learning, where a leader's actions serve as a tangible guide for internalizing appropriate values and behaviors.

Consistency is the congruence between what leaders believe or demand and what they demonstrate through their actions. It reflects the alignment between a leader's values, principles, and commands and their observable behavior. In a military context, this characteristic translates into the leader's ability to act according to the standards they expect from their team, thereby fostering mutual trust, motivation, and respect. For example, a leader who promotes courage must be the first to face risks; a leader who values sacrifice must endure the same hardships as their subordinates, such as adverse weather conditions or resource shortages. Consistency ensures that the orders given by leaders are balanced and well-founded, avoiding disproportionate or unreasoned decisions in concrete situations.

Moreover, consistency is also linked to the concept of integrity, understood as the leader's ability to act ethically and by their principles in both formal and informal contexts. In a military setting, integrity strengthens the leader's moral authority and inspires respect and commitment from subordinates. For instance, a leader who promotes mutual respect must embody this principle in their interactions with superiors and subordinates, even under high-pressure circumstances.

The *role-modeling* component focuses on the leader's ability to serve as a reference point for their subordinates' learning. Rooted in Bandura's (1972) theory of vicarious learning, this concept implies that subordinates observe their leader's behavior and learn from their decisions, reactions, and values in action. This process allows subordinates to identify essential attributes across different situations and derive principles that guide their conduct, even in complex or uncertain contexts.

The significance of role modeling lies in its ability to foster practical and lasting learning, especially in military environments where abstract norms and values must be translated into concrete actions under pressure. By serving as a model, the leader imparts knowledge, shapes attitudes, and reinforces desirable behaviors within their team. This directly impacts cohesion, morale, and trust—critical factors for success in challenging missions.

Furthermore, LE enables subordinates to internalize organizational values such as discipline, respect, and responsibility by observing their direct application in the leader's conduct. In this sense, the leader becomes both a pedagogical and moral agent, capable of influencing not only the operational performance of their team but also their personal development. This influence facilitates the achievement of immediate objectives and cultivates a strong and resilient organizational culture.

Based on its conceptualization, this article's objective is to construct and validate a scale to assess leading by example in military leadership.

Method

Participants

The sample was composed of 460 cadets from an Argentinean Military Institution. 81.1% (n=373) were male, and 18.9% (n=87) were female, with a mean age of 22.10 years ($SD=2.72$, $Min=17$, $Max=29$). Regarding the cadets' career development, 34.3% (n=158) were taking first-year courses; 18.7% (n=86), second-year courses; 10% (n=46), third-year courses; 6.3% (n=29), fourth-year courses; 28.5% (n=131), fifth-year courses, and 2.2% (n=10) did not answer.

A random sample was selected to conduct an Exploratory and Confirmatory Factor Analysis to split the original group into two. Finally, the Exploratory Factor Analysis sample consisted of 189 participants, while the Confirmatory Factor Analysis sample consisted of 271 participants.

Instrument

A self-questionnaire was designed with socio-demographic questions and the following scale:

Military Leading by Example Scale (MILES): This scale was designed jointly with three of the project members. It assesses the importance that subordinates attach to the leader's example when commanding, and it is composed of two main characteristics: (a) Consistency, congruence between what leaders believe or order and what they do or act, (b) Role-modelling, the ability to learn to act appropriately observing the leader's behavior. The scale description and its psychometric characteristics are detailed and analyzed in the Results section of this study. Its final version is exhibited in Appendix 1.

Procedure

As an initial step in designing the scale, definitions of leading by example were identified by reviewing prior research, military psychology, and military literature. Most of these definitions were in Armed Forces leadership handbooks. However, much of this information was challenging to access due to the limited availability of the manuals and the complexity of their language. Based on accessible information, an analysis was conducted to identify common denominators that capture the essence of leading through personal example. This analysis revealed several key attributes, such as integrity, which were further synthesized into broader conceptual categories. Ultimately, two core components were extracted from the definitions: (a) Consistency and (b) Role-modeling.

Drawing on this conceptualization, a pool of 60 items was initially developed to reflect the two proposed dimensions of Leading by Example. From this pool, 17 items were selected for the initial version of the scale. Conceptual criteria guided the selection: We prioritized items that (a) reflected core aspects of Consistency and role modeling, (b) were well-formulated and easy to understand, and (c) showed diversity in wording and behavioral expression to avoid redundancy and ensure comprehensive coverage of the construct.

For data collection, a paper version was designed, and the questionnaire was applied collectively in the Military Institution. Along with the questionnaire, the participants completed an informed consent form. This document explained that their participation was voluntary and anonymous and that it would only be used for academic purposes. It was also stressed that participants could stop collaborating at any point in time.

We used the statistical packages SPSS version 21 and AMOS.24 for data analysis.

The datasets generated and/or analyzed during the current study are available in the Open Science Framework repository at the following link: <https://tinyurl.com/2u7726ja>.

Data Analysis

Regarding missing data treatment, scale items were imputed because no item exceeded 1.8% of uncompleted data (Rial Boubeta et al., 2001). Substitution was not performed for gender and age variables, and incomplete questionnaires were excluded.

An Exploratory Factor Analysis with an Unweighted Least Squares extraction method (ULS) was performed using oblique rotation (Promax with Kaiser normalization), which allows for testing correlation between subscales (Costello & Osbourne, 2005). The criteria for an acceptable factor solution suppose: (a) that factors have a minimum eigenvalue of 1 and screen tests, (b) exclusion of coefficients pattern below .40, and (c) a minimum of three items on each factor (Tabachnick & Fidell, 2007).

Confirmatory Factor Analyses of NAS using the Unweighted Least Squares estimation method were conducted. To determine the model's adequacy, Goodness-of-Fit statistic (GFI), Adjusts Goodness-of-Fit statistic (AGFI), and Standardized Root Mean Square Residual (SRMR) were examined. GFI and AGFI values above .95 and SRMR values as high as 0.08 indicate well-fitting models (Hooper et al., 2008; Hu & Bentler, 1999; Kline, 2011; Wang, 2015; Widaman & Thompson, 2003). Both factorial analyses were conducted using the unweighted least squares method because, as Forero et al. (2009) stated, this estimating method is appropriate for calculating an ordinal factor analysis model. According to the authors, ULS provides more accurate and less variable parameter estimates and more precise standard errors.

Results

As a first step in the validation process, an Exploratory Factorial Analysis was carried out to extract the underlying factors. The statistical procedure was divided into four sequential phases: (a) data evaluation, (b) factor analysis, (c) internal consistency, and (d) dimensions interpretation.

Phase 1: Data set appropriateness evaluation

The Kaiser-Meyer-Olkin (KMO) and Bartlett's sphericity test were run to analyze partial correlations with the originals and matrix identity. Tests indicated that the data was appropriate for carrying out a factor analysis. Bartlett's sphericity test was significant $\chi^2 = 643.480$, $df = 55$, $p < .001$. Likewise, the KMO sampling adequacy measure was .75 (Hutcheson & Sofroniou, 1999).

Phase 2: Unweighted least squares using Promax with Kaiser normalization rotation

Components were identified based on the Kaiser rule (eigenvalues > 1.00) and scree plot analysis. The Unweighted Least Squares (ULS) extraction method revealed that the most parsimonious and theoretically meaningful solution consisted of two components, which together explained 26% of the total variance. The initial item pool included 17 items.

Following the Exploratory Factor Analysis, six items were removed because they did not meet the minimum pattern coefficient threshold of .40 (Tabachnick & Fidell, 2007), which is commonly used to ensure adequate factor loading. These items either loaded weakly across all factors or showed substantial cross-loadings, thus undermining the structure's interpreta-

bility. As a result, the final version of the scale retained 11 items that demonstrated adequate psychometric performance and conceptual coherence. Table 1 presents the factor loadings for the retained items across the two dimensions.

Table 1. Exploratory Factor Analysis of NAS with the normative proposal taxes using Promax with Kaiser normalization rotation

N°	Items	Structural Matrix			
		M	DS	Factor 1	Factor 2
5	When I see that the leader does the same thing he asks of me, I admire him.	4.51	.84	.631	
4	I understand the feeling of camaraderie when I see that the leader is the first to care about his subordinates.	4.65	.76	.540	
9	I trust the leader who does what he thinks.	4.09	1.05	.469	
1	It is important that a leader can do what he demands.	4.75	.63	.461	
2	Watching a leader suffer hunger or inclement weather beside me fills me with pride.	4.37	1.14	.419	
8	If the leader treats me fairly, I will learn to do the same with my subordinates.	4.34	1.11	.410	
11	The leader must perfectly combine ideas and actions to influence me.	4.12	.99	.409	
10	I am demotivated when the leader gives orders that he is not able to carry out.	4.12	1.23		.640
7	It demotivates me when I see that the leader does not apply the values he instills in me.	4.29	1.13		.605
3	I lose credibility in the leader when he promises us something and does not fulfill it	3.89	1.29		.512
6	I am demotivated when the leader expresses concern for me or a comrade but never finds a moment to talk to us	3.25	1.33		.394
% variance explained by each factor				18.5	7.62
% total explained variance: 26.13					

Phase 3: Internal consistency

Internal consistency analysis of factors 1 ($\alpha = .65$) and 2 ($\alpha = .61$) revealed satisfactory levels.

Phase 4: Factors interpretation

The scale assesses LE from its two components: (a) Consistency and (b) Role-modeling. Consistency refers to the assumption that leaders must act congruently with their values and beliefs and that their subordinates' demands must be consistent with their actions. Being consistent will be reflected in a myriad of actions within the military. For example, if leaders encourage sacrifice on a mission or in military training, they should suffer the same harsh conditions as their subordinates. As another example, if leaders demand their men and women to be brave, they must be the first to face a problem or endanger their lives to save them.

Role modeling implies that subordinates learn to act appropriately by observing leaders' behavior. Their conduct becomes a parameter that guides subordinates' behavior. Consequently, leaders' actions function as a learning instrument for people to absorb abstract concepts vicariously and as a display to show how to do things. All these things considered, leading by example involves leaders being consistent and setting an example to drive subordinates to accomplish a mission or educational training. LE makes subordinates recognize their leaders as consistent, empathetic, reasonable, and trustworthy; therefore, their orders will be respected and more easily followed.

The scale's first dimension was coined as *Expectations of LE* because the items describe desirable actions that reflect leaders' congruence between what they think and act and between what they demand and what they do, as well as the importance of the leader's ability to teach, instill, or demonstrate abstract concepts in concrete actions. The second dimension was labeled *Frustration due to a lack of LE* because it refers to negative emotions, such as demotivation or loss of trust, that subordinates experience when leaders do not act consistently or become role models to follow.

In the first dimension, the importance that subordinates attach to leading by example in leadership is evaluated, while the second dimension represents the extent to which it affects them emotionally that the leader does not set his/her personal example. A CFA analysis with a two-dimensional model was carried out as a second step in the validation and considering the EFA results.

Confirmatory factor analysis

The CFA results showed a satisfactory model ($GFI = .992$; $AGFI = .985$; $SRMR = .039$). However, two more items were excluded (6 and 16) because their regression weights were less than .40. Figure 1 shows standardized parameter estimates in which the item's regression weights were acceptable (between .44 to .82). Internal consistency for Expectations ($\alpha = .64$) and Frustration ($\alpha = .64$) exhibits satisfactory levels.

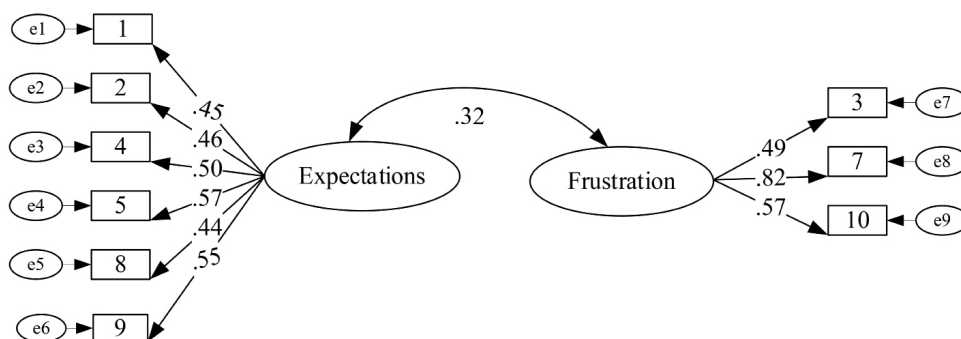


Figure 1. MILES Confirmatory Factor Analysis

Discussion and conclusions

This study aimed to reconceptualize the notion of *Lead by example*, transforming it from an abstract and broadly recognized principle into a concept that can be systematically defined and evaluated. By critically analyzing existing definitions and perspectives, we sought to address the challenges of its operationalization, ensuring a more precise understanding of its core components. This process involved identifying the essential attributes of LE and synthesizing them into a cohesive framework that captures its significance in military leadership.

This aligns with previous international research highlighting the importance of exemplary leadership behavior. Within the framework of transformational leadership, the concept of *leading by example* is reflected in the dimension of idealized influence, which emphasizes the leader's ability to inspire trust and respect by acting consistently with shared values (Bass, 1999). Similarly, Podsakoff et al. (1990) identify "providing an appropriate model" as a key transformational behavior, underlining that effective leadership relies not only on verbal instruction but on visibly enacting the standards expected of followers. From an embodied leadership perspective, Fisher and Robbins (2014) stress that, especially in military contexts, leadership is communicated through actions and physical presence, particularly under extreme conditions where credibility must be demonstrated, not declared.

Building on this conceptual foundation, we developed and validated an instrument designed to assess the importance that subordinates attribute to this leadership competency. At a statistical level, EFA results show a satisfactory scale structure, and the dimensions present a moderate internal consistency (Loevinger, 1954; Santisteban Requena, 2009; Virila, 2010). CFA results exhibit an adequate fit for this scale, and the reliability coefficients indicated satisfactory levels of internal consistency for both dimensions.

Although the dimensions in both samples exhibit acceptable internal consistency, their alpha values are slightly below the commonly recommended threshold of .70. This can be explained by two factors: first, alpha values tend to be lower when dimensions contain fewer items (Argibay, 2006; Cortina, 1993); and second when the constructs being measured are conceptually heterogeneous (Tavakol & Dennick, 2011). In the case of MILES, the two dimensions—Consistency and Role-modeling—reflect distinct yet interconnected aspects of LE. Consequently, the diversity of elements these dimensions aim to capture likely contributes to the moderate internal consistency scores.

Despite this, the results of the Exploratory and Confirmatory Factor Analyses provide strong support for the structural validity of the scale. These findings indicate that the instrument effectively measures the intended dimensions and offers a meaningful framework for assessing the importance subordinates attribute to LE. While the moderate alpha values point to areas for potential refinement, they align with the theoretical diversity of the construct, highlighting the scale's capacity to operationalize a complex leadership competency.

This study has certain limitations. The sample is restricted to military cadets from the Argentine Army, which may limit the generalizability of the findings. In addition, while ade-

quate for initial validation, the sample size may not capture the full variability of perspectives across the military hierarchy. The absence of more experienced personnel, such as mid-level or senior officers, may also limit our understanding of how Leading by Example is interpreted and valued at different stages of a military career.

While military leadership is often guided by a core set of values that transcend national cultures and operate on a transnational level (Fisher et al., 2016), future research should aim to test the scale with cadets from other branches of the Armed Forces, as well as with officers. Additionally, to further establish the instrument's validity and applicability, it would be valuable to administer it in military contexts from different countries. Although our initial analysis of military manuals revealed strong similarities in how "leading by example" is defined across national contexts—particularly in terms of moral integrity, professionalism, and responsibility—it would be worthwhile for future studies to explore whether cultural or doctrinal differences shape the way this principle is interpreted or enacted in practice.

The findings of this study may contribute to enhancing military leadership training by offering a concise and targeted tool for assessing exemplary conduct. While existing leadership instruments often focus on broader constructs—such as transformational or transactional leadership—the MILES scale provides a complementary lens that zeroes in on the dimension of personal example. By integrating this scale into leadership development programs alongside more comprehensive evaluations, military institutions could better understand which individuals embody the values they promote. For instance, it could be implemented in officer commissioning courses or advanced command schools as part of peer or subordinate feedback exercises. It may also serve as a complementary tool during performance evaluations, helping to identify individuals who, beyond fulfilling formal responsibilities, are recognized as exemplary figures within their units.

In the military, attaining command positions is a natural consequence of career progression. However, not all commanders succeed in becoming true leaders. This instrument distinguishes between those who merely hold a position of authority and those perceived as genuine role models by their subordinates. A true leader exercises authority and inspires, motivates, and becomes an example to follow. By assessing leadership capacity from the perspective of peers and subordinates, MILES provides a key tool for identifying leaders who meet the formal demands of their role and embody the values and competencies essential for exemplary leadership.

In conclusion, this study offers an important step toward systematically conceptualizing and measuring Leading by Example in military contexts. By capturing how subordinates perceive and value exemplary conduct, the MILES scale provides theoretical insights and practical tools for leadership development. While further studies are needed to expand its use across diverse military populations, this research bridges the gap between normative leadership ideals and measurable, observable behaviors.

Acknowledgements

The authors thank the Universidad de la Defensa Nacional (University of National Defense) and Colegio Militar de la Nación (National Military College) of Argentina for their support in developing this article.

Disclaimer

The authors declare no potential conflict of interest related to the article. No artificial intelligence content generation tools were used in its preparation.

Funding

This article was funded by the University of National Defense, Argentina. Project UNDEFI-322/18: Analysis of Leadership Capabilities and Personal Example in Operational Management and Nursing Cadets at the National Military College. Director: Dr. Maite Regina Beramendi.

About the authors

Maite Regina Beramendi holds a PhD and a BSc in Psychology from the University of Buenos Aires, Argentina. She is a Specialist in Statistics from the Institute of Calculus at the Faculty of Exact and Natural Sciences of the same university. She conducts research at the University of Buenos Aires under the National Scientific and Technical Research Council (CONICET) and is affiliated with the University of Lausanne.

<https://orcid.org/0000-0002-6113-5529> - Contact: beramendimaite@psi.uba.ar

Cynthia Frascaroli is a PhD candidate in Educational Psychology and holds a BSc in Educational Psychology from Universidad Católica Argentina. She is a researcher and educational advisor at the National Military College of Argentina, focusing on leadership, military university adaptation, and stress. Responsible for evaluating and counseling human resources applying for admission to the National Military College.

<https://orcid.org/0000-0002-3906-7056> - Contact: cfrascaroli@siedcmn.undef.edu.ar

References

- Argibay, J. (2006). Técnicas psicométricas, cuestiones de validez y confiabilidad. *Subjetividad y Procesos Cognitivos*, 8, 15-33.
- Beramendi, M., Sosa, F., Frascaroli, C. & Torres, A. (2011). Representaciones sociales del militar y su relación con el género. *3er Congreso Internacional de Investigación de la Facultad de Psicología de la Universidad de La Plata: "Conocimientos y escenarios actuales"*. Universidad de La Plata.
- Avolio, B. J., Bass, B. M., & Jung, D. I. (1999). Re-examining the components of transformational and transactional leadership using Multifactor Leadership. *Journal of Occupational and Organizational Psychology*, 72(4), 441-462. <https://doi.org/10.1348/096317999166789>.

- Bandura, A. (1972). Modeling theory: Some traditions, trends, and disputes. In R. D. Parke, *Recent trends in social learning theory* (pp. 35–61). Academic Press. <https://doi.org/10.1016/B978-0-12-545050-8.50008-0>
- Bass, B. M. (1999). Two decades of research and development in transformational leadership. *European Journal of Work and Organizational Psychology*, 8(1), 9–32. <https://doi.org/10.1080/135943299398410>.
- Beramendi, M. (2019). Validación de la escala de Características de los líderes militares en el contexto local. *Defensa Nacional*, 2, 155–171. <https://tinyurl.com/5bn93b97>
- Beramendi, M., Muratori, M., & Zubieta, E. (2015). Análisis del liderazgo a partir de ejercicios de maniobra military. *Pensamiento Psicológico*, 13(1), 105–118. <https://doi.org/10.11144/javer1ianacali.ppsi13-1.alem>.
- British Army (2015). *The Army Leadership Code: An Introductory Guide*. Ministry of Defense.
- Collins, J. J., & Jacobs, T. O. (2002). trust in the profession of arms. In D. M. Snider & G. L. Watkins (Eds.), *The future of the army profession* (pp. 39–58). McGraw-Hill.
- Cortina J. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, 78(1), 98–104. <https://doi.org/10.1037/0021-9010.78.1.98>.
- Costello, A. B. & Osborne, J. (2005). Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most from Your Analysis. *Practical, Assessment Research & Evaluation*, 10(7), 1–9. <https://doi.org/10.7275/jyj1-4868>.
- Ejército Argentino (1990). *Manual del Ejercicio del Mando*. Instituto Geográfico Militar.
- Ejército de Chile (2014). *Modelo integral de liderazgo del Ejército de Chile* (RDE – 11). Comando de Educación y Doctrina.
- Ejército Ecuatoriano (2015). *Manual de Conducción Militar* (MI3-TASE1-02). Comando de Educación y Doctrina del Ejército.
- Fisher, D., & Robbins, C. (2014). Embodied leadership: Moving from leader competencies to leaderful practices. *Leadership*, 11(3), 281–299. <https://doi.org/10.1177/1742715014532726>.
- Fisher, K., Billing, T. y Chhina, H. (2016). Indian Military Leadership: An Exploratory Study. *International Leadership Journal*, 8(2), 3–37.
- Fisher, K., Hutchings, K., & Sarros, J. C. (2010). The “Bright” and “Shadow” Aspects of In Extremis Leadership. *Military Psychology*, 22(sup1), S89–S116. <https://doi.org/10.1080/08995601003644346>.
- Forero, C., Maydeu-Olivares, A. & Gallardo-Pujol, D. (2009). Factor Analysis with Ordinal Indicators: A Monte Carlo Study Comparing DWLS and ULS Estimation. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(4), 625–641. <https://doi.org/10.1080/10705510903203573>.
- Fors Brandebo, M., Sjöberg, M., Larsson, G., Eid, J., & Kjelleveold Olsen, O. (2013). trust in a military context: What contributes to trust in superior and subordinate leaders? *Journal of Trust Research*, 3(2), 125–145. <https://doi.org/10.1080/21515581.2013.820029>.
- Fuerzas Armadas Españolas (2018). Doctrina para el empleo de las Fuerzas Armadas (PDC-01 A). Ministerio de Defensa.
- Hannah, S. T., Campbell, D. J., & Matthews, M. D. (2010). Advancing a Research Agenda for Leadership in Dangerous Contexts. *Military Psychology*, 22(sup1), S157–S189. <https://doi.org/10.1080/08995601003644452>.

- Hannah, S. T., Uhl-Bien, M., Avolio, B. J., & Cavarretta, F. L. (2009). A framework for examining leadership in extreme contexts. *The Leadership Quarterly*, 20(6), 897–919. <https://doi.org/10.1016/j.leaqua.2009.09.006>.
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural Equation Modelling: Guidelines for Determining Model Fit. *Electronic Journal of Business Research Methods*, 6(1), 53–60. <https://doi.org/10.21427/D7CF7R>.
- Hu, L. & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>.
- Hutcheson, G. & Sofroniou, N. (1999). *The Multivariate Social Scientist: Introductory Statistics Using Generalized Linear Models*. Sage.
- Kaiser, R. B., Hogan, R., & Craig, S. B. (2008). Leadership and the fate of organizations. *American Psychologist*, 63(2), 96–110. <https://doi.org/10.1037/0003-066x.63.2.96>.
- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd edition). The Guilford Press.
- Klitmøller, A., & Obling, A. R. (2021). Collective Command: Problems and Perspectives for Military Operational Leadership in the 21st Century. *Scandinavian Journal of Military Studies*, 4(1), 244–255. <https://doi.org/10.31374/sjms.94>.
- Lapidot, Y., Kark, R., & Shamir, B. (2007). The impact of situational vulnerability on the development and erosion of followers' trust in their leader. *The Leadership Quarterly*, 18(1), 16-34. <https://doi.org/10.1016/j.leaqua.2006.11.004>.
- Loevinger, J. (1954). The attenuation paradox in test theory. *Psychological Bulletin*, 51(5), 493-504. <https://doi.org/10.1037/h0058543>.
- Lundqvist, A. (2014). *Military Leadership: A Swedish Leadership Theory Applied on French Perspectives in an Educational Setting* (Thesis). CREC.
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, 1(2), 107–142. [https://doi.org/10.1016/1048-9843\(90\)90009-7](https://doi.org/10.1016/1048-9843(90)90009-7).
- Rial Boubeta, A. R., Varela Mallou, J., y Tejada, A. J. R. (2001). *Depuración y análisis preliminares de datos en SPSS*. Ra-Ma.
- Santesteban Requena, C. (2009). *Principios de Psicometría*. Editorial Síntesis.
- Squires, E. C., & Peach, J. M. (2020). Effective military leadership: Balancing competing demands. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement*, 52(4), 314–323. <https://doi.org/10.1037/cbs0000179>.
- Sweeney, P. J., Thompson, V., & Blanton, H. (2009). Trust and Influence in Combat: An Interdependence Model. *Journal of Applied Social Psychology*, 39(1), 235–264. <https://doi.org/10.1111/j.1559-1816.2008.00437.x>.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon/ Pearson Education.
- Tavakol, M. & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55. <https://doi.org/10.5116/ijme.4dfb.8dfd>.

- Torres, A., Beramendi, M., Sosa, F. & Zubieta, E. (2010). Género y liderazgo, motivaciones y actitudes en un instituto de formación universitaria militar. *VI Jornadas sobre Etnografía y Métodos Cualitativos*. Instituto de Desarrollo Económico y Social. <https://tinyurl.com/mryeffrk>
- U.S. Army (2019). *Army Leadership and the Profession* (ADP 6-22). Department of the Army.
- Virla, M. (2010). Confiabilidad y coeficiente alpha de cronbach. *Telos*, 12(2), 248-252.
- Wang, J. (2015). *Globalization of Leadership Development. An Empirical Study of Impact on German and Chinese Managers*. Springer.
- Widaman, K. & Thompson, J. (2003). On Specifying the null model for incremental fit indices in structural equation modeling. *Psychological Methods*, 8(1), 16–37. <https://doi.org/10.1037/1082-989x.8.1.16>.
- Wong, L., Bliese, P., & McGurk, D. (2003). Military leadership: A context specific review. *The Leadership Quarterly*, 14(6), 657–692. <https://doi.org/10.1016/j.leaqua.2003.08.001>
- Yeşilbaş, İ., & Çetin, Ş. (2019). Trust in military leader: Scale development and validation. *Military Psychology*, 31(2), 147–159. <https://doi.org/doi:10.1080/08995605.2019.1578150>

Appendix 1

MILES English version

1	I consider it important that a leader can do what he demands.
2	Watching a leader suffer hunger or inclement weather beside me fills me with pride.
3	For me, a leader's credibility decreases when he promises us something and does not fulfill it.
4	I understand the feeling of camaraderie when I see that the leader is the first to care about his subordinates.
5	When I see that the leader does the same thing he asks of me, I admire him.
6	It demotivates me when I see that the leader does not apply the values he instills in me.
7	If the leader treats me fairly, I will learn to do the same with my subordinates.
8	I trust a leader who acts like he thinks.
9	I am demotivated when the leader gives orders that he is not able to carry out.