

The Influence of Leadership on the Performance of PNTL Border Patrol Personnel: The Mediating Role of Intrinsic Motivation and Organizational Culture

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ABSTRACT

Timor-Leste is a nation located in the eastern part of Timor Island, sharing a direct land border with Indonesia to the west and maritime boundaries with Australia to the south. Since gaining independence in 2002, Timor-Leste has continuously strived to strengthen its governance system, economic development, and national security stability. This study analyzes how leadership influences Timor-Leste's Border Patrol Unit performance, mediated by personnel's intrinsic motivation and the organization's culture. This quantitative study uses a cross-sectional survey of 175 UPF personnel. Data analyzed via PLS-SEM (WarpPLS 7.0) evaluates the causal relationships between leadership, intrinsic motivation, organizational culture, and performance, ensuring robust validity and reliability. The study confirms that leadership significantly enhances UPF personnel performance, both directly and through the dual mediation of intrinsic motivation and organizational culture, which collectively explain 63% of the performance variance.

INTRODUCTION

Timor-Leste is a nation located in the eastern part of Timor Island, sharing a direct land border with Indonesia to the west and maritime boundaries with Australia to the south. Since gaining independence in 2002, Timor-Leste has continuously strived to strengthen its governance system, economic development, and national security stability. In the context of a relatively young nation, security stability serves as a critical factor in supporting sustainable national development, safeguarding state sovereignty, and creating an environment conducive to social and economic growth (Jinping, X. 2022) . One of the crucial aspects of maintaining national security stability is the management of border regions. Timor-Leste's border areas, particularly the land border with Indonesia, possess complex characteristics in terms of geography, social dynamics, and economics. These conditions frequently give rise to various issues, such as illegal crossings, smuggling, cross-border social conflicts, and limited territorial surveillance. This situation demands the presence of a professional, responsive security institution with adequate operational capacity.

In response to these challenges, the National Police of Timor-Leste (Polícia Nacional de Timor-Leste/PNTL) established the Border Patrol Unit (UPF), which is specifically tasked with maintaining security and order in border regions. The formation of the UPF represents a strategic government move to strengthen the border security system, enhance the effectiveness of territorial surveillance, and prevent various forms of cross-border legal violations. The UPF is expected to optimally perform both preventive and repressive functions through patrolling, monitoring, and law enforcement in the border sectors.

However, in its implementation, the UPF faces various complex operational challenges. Timor-Leste's border region is characterized by difficult geographical conditions, including mountainous terrain, limited transportation access, and numerous unofficial paths that can be used as entry and exit points. These geographical conditions make border surveillance more difficult and require high operational capabilities from the personnel on duty. Beyond geographical factors, the complexity of issues in the border region is also linked to the social dynamics of cross-border communities. Social and economic ties between communities on both sides of the border often lead to high population mobility, both legal and illegal. This situation can trigger various illicit activities, such as smuggling, human trafficking, irregular migration, and other forms of transnational crime, which require effective surveillance by security forces

On the other hand, the organization's ability to manage border security is also influenced by various internal constraints (Arieli, T. 2016). Several reports and observations indicate that the Border Patrol Unit still faces limitations regarding human resources, operational facilities, and technological support. The limited number of personnel with specialized training in border security, the scarcity of operational equipment, and the lack of surveillance technology support are challenges that can affect the effectiveness of field operations .

Another issue frequently encountered is the lack of supporting infrastructure and adequate operational facilities. Monitoring vast border areas requires sufficient transportation, communication tools, and surveillance equipment. In practice, however, these facility limitations often force personnel to work under sub-optimal conditions, potentially impacting the effectiveness of their duty performance.

Beyond leadership, the intrinsic motivation of personnel is also a critical factor influencing organizational performance. Intrinsic motivation refers to an individual's internal drive to perform tasks well due to personal satisfaction, a sense of responsibility, and commitment to the duties assigned. In a high-risk work environment such as border security, intrinsic motivation is essential to ensure that personnel maintain enthusiasm, integrity, and dedication in carrying out their duties. Another factor that significantly impacts organizational performance is organizational culture. Organizational culture reflects the values, norms, and behavioral patterns that develop within an organization, serving as a guide for members in their actions. A strong organizational culture can foster discipline, teamwork, loyalty, and an orientation toward achieving better performance (Schein, 2010; Denison, 2000).

In the context of the PNTL Border Patrol Unit, leadership plays a vital role not only in directing operational tasks but also in building the intrinsic motivation of personnel and shaping an organizational culture that supports performance improvement. Effective leadership is expected to create a work environment that encourages personnel to work professionally, act responsibly, and adapt to the various challenges encountered in the border region (Bass & Avolio, 1994). This study offers significant novelty through both contextual and theoretical dimensions. Contextually, it is the first empirical investigation to examine the interplay between leadership, intrinsic motivation, organizational culture, and performance specifically within the Timor-Leste Border Patrol Unit (UPF). Given the unique operational environment characterized by porous borders and logistical constraints, this research provides critical external validity that distinguishes it from studies conducted in more stable or developed security settings (Nganga, E. M. 2021).

Theoretically, the study advances the literature by integrating a dual-mediation framework that simultaneously evaluates individual-level drivers (intrinsic motivation) and collective-level influences (organizational culture) within a single model. While previous research often treats these variables in isolation, this simultaneous approach allows for a nuanced comparison of which mechanism individual psychological drive or organizational systemic norms is more efficient in optimizing the performance of personnel operating in high-risk, resource-limited environments. By bridging these two pathways, the research provides a comprehensive understanding of how leadership translates into improved operational outcomes. Ultimately, this study contributes to the field of public sector management by offering a tailored model for security forces in post-conflict or emerging nations, providing both academic insights and practical implications for enhancing border security effectiveness.

Based on the aforementioned description, the objective of this study is to analyze and test the causal model of the influence of leadership on the performance of the Timor-Leste Border Patrol Unit (UPF) personnel, with intrinsic motivation and organizational culture as mediating variables.

LITERATUR REVIEW

Leadership

Leadership in border police organizations demands a combination of transformational (inspiring and motivating) and transactional (assertive instructions and rule enforcement) leadership styles. In isolated border areas, the leadership style of a unit commander highly determines the morale and actions of subordinates.

Motivation

Based on the *Self-Determination Theory*, intrinsic motivation refers to the internal drive of personnel to perform tasks optimally because they find value, meaning, and a sense of responsibility in the work itself, rather than merely fearing punishment or expecting material rewards. For border personnel facing limited facilities, intrinsic motivation is highly crucial.

The Mediating Role of Intrinsic Motivation

A transformational leadership style does not merely issue commands; it fosters internal awareness among personnel regarding the vital importance of their role in Timor-Leste's sovereignty. When leadership successfully ignites patriotism (intrinsic motivation), personnel will demonstrate performance that exceeds minimum operational standards, even when working under minimal direct supervision along the border line.

The Mediating Role of Organizational Culture

Leaders are the primary architects of organizational culture. Fair, disciplined, and principled leadership will foster a solid, transparent, and dedicated work culture within the patrol unit. A strong and healthy organizational culture, in turn, guides and compels all personnel to maintain their best performance to uphold the honor of the corps.

METHODOLOGY

This research employs a quantitative cross-sectional survey design to examine the causal relationships between leadership, intrinsic motivation, organizational culture, and the performance of the Timor-Leste Border Patrol Unit (UPF). The research instruments consist of structured questionnaires utilizing a 5-point Likert scale (1-5). Leadership (X) is measured through 12 items covering transformational and transactional dimensions, including idealized influence, inspirational motivation, intellectual stimulation, individual consideration, contingent reward, and active management by exception. Intrinsic motivation (Y1) is assessed via 8 items focusing on autonomy, competence, sense of achievement, and work enjoyment. Organizational culture (Y2) is evaluated through indicators such as adherence to regulations, individual initiative,

reporting accuracy, mission orientation, team solidarity, leadership support, and enforcement firmness.

Data collection processes will be conducted at the UPF Headquarters over a three-month period (December 2025 – March 2026). The population comprises 300 active personnel, with a sample size of 175 respondents determined by the Slovin formula and validated for Partial Least Squares Structural Equation Modeling (PLS-SEM) requirements. Participants will be selected using Simple Random Sampling (SRS) to ensure equal probability and representativeness. Data analysis and hypothesis testing processes will utilize PLS-SEM to evaluate the structural model, specifically testing the direct influence of leadership on performance and the dual-mediation effects of intrinsic motivation and organizational culture. Data display processes will involve presenting the findings through statistical tables, path diagrams, and structural model outputs, ensuring a clear visualization of the causal pathways and the significance of the mediating variables in optimizing the performance of UPF personnel.

The data analysis and hypothesis testing processes will be conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) via WarpPLS 7.0 software, chosen for its robustness in handling complex mediation models and its suitability for the study's sample size. The analysis begins with the evaluation of the outer model to ensure the validity and reliability of the research instruments. This process involves assessing convergent validity through factor loadings (ideally > 0.7) and Average Variance Extracted ($AVE > 0.5$), as well as internal consistency reliability using Composite Reliability and Cronbach's Alpha (both > 0.7). Discriminant validity will be confirmed by ensuring that the square root of the AVE for each latent variable exceeds its correlations with other latent variables.

Once the measurement model is validated, the inner model evaluation will be performed to test the research hypotheses. This involves assessing the goodness-of-fit indices, such as AIC, BIC, and the Tenenhaus Goodness of Fit (GoF), alongside the R-squared values to determine the predictive power of the model. Direct effects will be tested by examining path coefficients (β) and p-values, where a p-value < 0.05 indicates a significant positive influence. For the mediation hypotheses, the study will analyze indirect effects and determine the type of mediation—full, partial, or non-existent—by comparing the significance of direct and indirect paths. The data display processes will systematically present these findings through comprehensive statistical tables, path diagrams illustrating the structural relationships, and summary matrices of hypothesis testing results, ensuring a clear and transparent visualization of how leadership, intrinsic motivation, and organizational culture interact to influence the performance of the Timor-Leste Border Patrol Unit personnel.

RESEARCH RESULTH

The conceptual framework for this study is built upon the premise that leadership serves as the primary driver of organizational performance within the Timor-Leste Border Patrol Unit (UPF). Given the complex operational environment characterized by geographical challenges and logistical constraints, leadership is hypothesized to influence performance through two distinct but complementary pathways: an individual-level psychological path and a collective-level cultural path (Rego, A., et al, 2029).

Specifically, the framework posits that effective leadership – encompassing transformational and transactional behaviors – directly impacts the performance of UPF personnel. However, this relationship is not merely direct; it is mediated by Intrinsic Motivation and Organizational Culture. Intrinsic motivation acts as the individual-level mediator, where leadership fosters a sense of autonomy, competence, and achievement, thereby driving personnel to perform beyond standard expectations (Suprpto, H. A. et al 2026). Simultaneously, organizational culture serves as the collective-level mediator, where leadership shapes shared norms, discipline, and mission orientation, creating a cohesive environment that sustains operational effectiveness (Kristanto, S. D. et al, 2026).

By integrating these two mediators, the framework provides a comprehensive model to explain how leadership translates into improved field outcomes. This dual-mediation approach allows for a nuanced understanding of whether individual psychological drive or systemic organizational norms are more critical in optimizing performance within the unique, high-stakes context of the Timor-Leste border security sector.

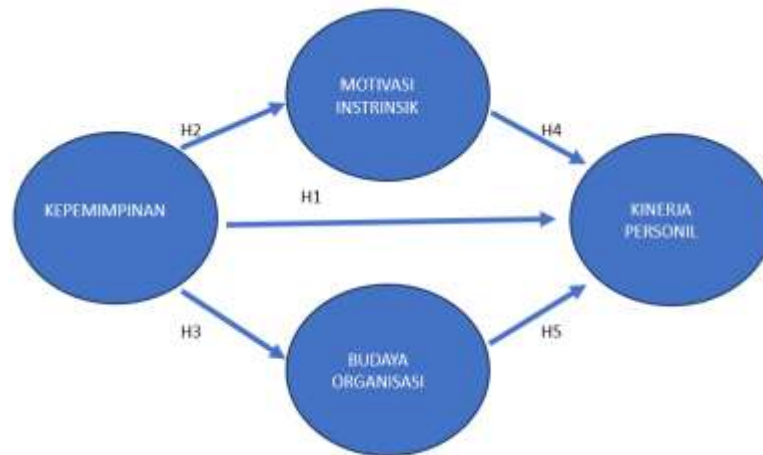


Figure 1. Conceptual Framework

Validity testing is conducted to determine the extent to which a measurement tool accurately measures what it is intended to measure. The validity test is performed by comparing the correlation coefficient of each item score with the total score against the critical value of the Pearson Product-Moment correlation. For a sample size of $n = 30$ at a 95% confidence level, the critical value is 0.361. Items are considered valid if their correlation value with the total score is greater than this critical value".

Table 1. Item Correlation

No. Item	Item correlation			
	Leadership	Intrinsic Motivation	Organization Culture	Performance of Personil
1	0,90	0,63	0,92	0,91
2	0,90	0,63	0,92	0,91
3	0,87	0,82	0,71	0,83
4	0,87	0,82	0,71	0,83
5	0,88	0,71	0,85	0,89
6	0,88	0,71	0,85	0,89
7	0,80	0,83	0,85	0,92
8	0,80	0,83	0,85	0,92
9	0,56		0,88	0,94
10	0,56		0,88	0,94
11	0,54		0,66	
12	0,54		0,66	
13			0,76	
14			0,76	

Table 1 presents the item-total correlation results for the four variables: Leadership, Intrinsic Motivation, Organizational Culture, and Personnel Performance. All items demonstrate correlation coefficients exceeding the critical value of 0.361. Specifically, the correlation values range from 0.54 to 0.90 for Leadership, 0.63 to 0.83 for Intrinsic Motivation, 0.66 to 0.92 for Organizational Culture, and 0.83 to 0.94 for Personnel Performance. These results indicate that all items used in the study are statistically valid."

The validity of the research instrument was assessed by examining the item-total correlation coefficients for each variable. As presented in Table 3.6, the analysis encompassed four primary constructs: Leadership, Intrinsic Motivation, Organizational Culture, and Personnel Performance. To ensure the instrument's validity, each item's correlation coefficient was compared against the critical value of 0.361, which was determined based on a sample size of $n = 30$ at a 95% confidence level.

The empirical findings demonstrate that all items across the four variables yielded correlation coefficients significantly higher than the established threshold of 0.361. For the Leadership variable, values ranged from 0.54 to 0.90, while Intrinsic Motivation items showed correlations between 0.63 and 0.83. Similarly, Organizational Culture items ranged from 0.66 to 0.92, and Personnel Performance items exhibited strong correlations between 0.83 and 0.94. These results provide robust evidence that the measurement items are internally consistent and accurately reflect the constructs they are intended to measure. Since every item surpassed the critical value, it can be concluded that the questionnaire is valid and suitable for further analysis. Consequently, all items were retained for subsequent reliability testing and hypothesis testing, ensuring that the data collected is both reliable and representative of the variables under investigation."

The item-total correlation values in Table 3.6 above are greater than the critical value of the Pearson product-moment correlation of 0.361. Thus, all items for the variables of leadership, intrinsic motivation, organizational culture, and personnel performance are considered valid. The reliability test of the questionnaire is conducted to assess the consistency of the measurement tool in measuring the same phenomenon. In this study, the reliability test is performed using the Cronbach's Alpha technique.

Table 2. Realibility

Variabel	Item	Total Varian Item	Varian Total	Reliability	Degree Reliability
Leadership	12	10,6	73,3	0,93	Very High
Intrinsic Motivation	8	6,24	28,00	0,89	Very High
Organization culture	14	7,44	67,20	0,96	Very High
Performance of culture	10	6,91	55,75	0,97	Very High

The reliability analysis of the research instrument, as presented in the table, confirms the internal consistency and stability of the questionnaire across all four variables: Leadership, Intrinsic Motivation, Organizational Culture, and Personnel Performance. Reliability was assessed using the Cronbach's Alpha technique, which measures the extent to which the items within each construct consistently reflect the underlying phenomenon. The results indicate exceptionally high reliability coefficients for all variables, demonstrating that the instrument is highly dependable for further empirical investigation. Specifically, the Leadership variable, consisting of 12 items, achieved a reliability coefficient of 0.93. Similarly, the Intrinsic Motivation variable, with 8 items, yielded a coefficient of 0.89. The Organizational Culture variable, comprising 14 items, reached a coefficient of 0.96, while the Personnel Performance variable, with 10 items, attained the highest coefficient of 0.97. According to the established criteria

for reliability, all these values fall into the "Very High" category, suggesting that the items within each scale are strongly correlated and effectively measure the intended constructs. These high reliability scores provide strong evidence that the data collected is consistent, minimizing measurement error and enhancing the overall quality of the research findings. Consequently, the instrument is deemed robust and suitable for subsequent statistical analysis and hypothesis testing, ensuring that the study's conclusions are based on reliable and accurate data.

DISCUSSION

To examine the complex relationships between the variables under investigation, this study employs path analysis (Setyastanto, A. M. et al, 2026). This statistical technique is essential for evaluating the structural model, as it allows for the decomposition of effects into direct and indirect pathways (Widiyanto, S. et al, 2026). By utilizing this approach, we can determine not only the immediate impact of the independent variable on the dependent variable but also the extent to which this influence is mediated by intermediate constructs (Namazi, M., & Namazi, N. R. 2016).

The following path diagram provides a visual representation of these structural relationships, mapping the causal links between the independent variable, the mediators, and the final outcome. The coefficients displayed on each path indicate the strength and direction of the relationships, while the R-squared values provide insight into the proportion of variance explained within the model. This analysis is critical for validating the theoretical framework and understanding the underlying mechanisms through which the variables interact, ultimately providing a comprehensive view of the research model's predictive power (Ro, H. 2012).

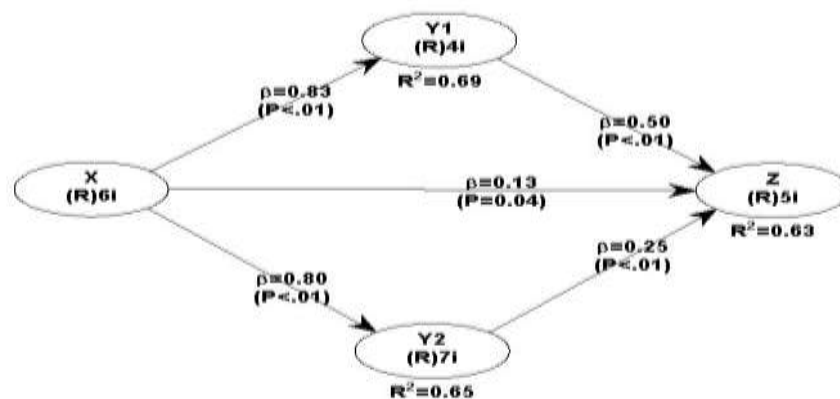


Figure 2. Path Analysis Diagram

The path analysis model presented in the figure illustrates the structural relationships between the independent variable leadership (X), the mediating variables intrinsic motivation and organization culture (Y1 and Y2), and the dependent variable Performance of personil (Z). The model demonstrates both direct and indirect effects, with all paths showing statistical significance ($P < .05$). The direct effect of X on Z is represented by a path coefficient (β) of 0.13 ($P=0.04$). Furthermore, X exerts a strong influence on the mediators, with $\beta = 0.83$ ($P<.01$)

for Y1 and $\beta = 0.80$ ($P < .01$) for Y2. In turn, both Y1 and Y2 significantly influence Z, with path coefficients of 0.50 ($P < .01$) and 0.25 ($P < .01$), respectively.

To determine the indirect effects of X on Z through the mediators, we calculate the product of the path coefficients:

1. The indirect effect of X through Y1 is $0.83 \times 0.50 = 0.415$.
2. The indirect effect of X through Y2 is $0.80 \times 0.25 = 0.200$.

The total indirect effect of X on Z via both mediators is 0.615 ($0.415 + 0.200$). Consequently, the total effect of X on Z is the sum of the direct and indirect effects: $0.13 + 0.615 = 0.745$.

Regarding the explanatory power of the model, the R^2 values indicate that the independent variables account for a significant portion of the variance in the dependent constructs. Specifically, X explains 69% of the variance in Y1 ($R^2=0.69$) and 65% of the variance in Y2 ($R^2=0.65$). Collectively, X, Y1, and Y2 explain 63% of the variance in the final dependent variable, Z ($R^2=0.63$). These findings suggest that the proposed structural model is robust, as the mediators play a substantial role in transmitting the influence of X to Z, thereby confirming the importance of both direct and indirect pathways in this research framework.

The research findings provide a comprehensive understanding of the structural dynamics influencing personnel performance within the Border Patrol Unit. The analysis confirms that leadership serves as the primary catalyst for organizational success, exerting both direct and indirect influence on performance.

First, leadership significantly enhances intrinsic motivation and shapes organizational culture (Wibowo, A. N., et al, 2025). Effective leadership—characterized by mentorship and integrity—directly fosters a sense of responsibility and professional pride among personnel. Furthermore, leadership acts as the architect of organizational culture, which emerges as the most dominant factor influencing performance. This suggests that the values and norms established by leaders become the internal compass guiding personnel behavior (Suprpto, H. A. et al, 2025).

Second, both intrinsic motivation and organizational culture act as significant partial mediators between leadership and performance. The study reveals that approximately 40.43% of the leadership's impact on performance is channeled through intrinsic motivation, while 42.48% is mediated through organizational culture. This indicates that leadership does not merely rely on direct commands; rather, it transforms the internal psychological state of personnel and the collective work environment to ensure sustained high performance (Suprpto, H. A. et al, 2022).

Finally, the results highlight that in challenging border environments, where direct supervision is often limited, intrinsic motivation and a strong organizational culture are essential. Personnel driven by internal commitment and guided by internalized professional values demonstrate higher levels of discipline, initiative, and consistency. In conclusion, the study demonstrates that the synergy between effective leadership, motivated personnel, and a robust organizational culture is critical. By fostering these elements, the organization ensures that its personnel remain highly effective, resilient, and aligned with

national security objectives (Sugiyanto, S., & Utami, P. C. 2021), even under the most demanding field conditions. These insights validate the proposed structural model and underscore the importance of leadership development and cultural reinforcement as strategic priorities for enhancing operational performance.

CONCLUSIONS AND RECOMMENDATIONS

This study confirms that leadership is the primary driver of personnel performance within the Border Patrol Unit, operating through both direct and indirect pathways. The structural model reveals that leadership significantly influences performance by fostering intrinsic motivation and shaping organizational culture, which together account for 63% of the variance in performance outcomes. Notably, intrinsic motivation and organizational culture serve as crucial partial mediators, channeling over 80% of the leadership's total impact on performance. These findings demonstrate that effective leadership transcends direct supervision by cultivating a resilient internal psychological state and a cohesive work environment. In the demanding context of border security, where direct oversight is often constrained, the synergy between leadership, motivated personnel, and a strong cultural framework is essential. Consequently, prioritizing leadership development and cultural reinforcement is a strategic imperative to ensure sustained operational excellence, discipline, and alignment with national security objectives under challenging field conditions.

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