

CHARACTERIZING THE MILITARY CAREER OF ARTILLERY OFFICERS AND SERGEANTS IN THE PORTUGUESE ARMY: DETERMINANTS, CHALLENGES AND OPPORTUNITIES

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This study explores the main contingencies, challenges, and opportunities associated with the military careers of Artillery Officers and Sergeants in the Portuguese Army. Using a mixed-methods approach, it triangulates qualitative and quantitative data to enhance analytical depth. The findings reveal significant associations between years of service, unit of origin, and perceptions of organizational culture, motivation, and career retention. Participants emphasized the importance of close leadership, international missions, ongoing training, and institutional recognition as key motivators. Conversely, a lack of personnel, excessive workloads, and outdated infrastructure emerged as substantial barriers to motivation and retention. The study highlights the critical role of organizational reforms, continuous investment in training and well-being, and fostering a culture of trust and recognition to enhance career sustainability and operational excellence in the Artillery branch.

Key words: Artillery, Military Career, Motivation, Organizational Culture, Retention.

1. INTRODUCTION

Military careers within the Artillery branch of the Portuguese Army are shaped by a complex interplay of sociocultural and organizational factors. These dimensions influence motivation, performance, job satisfaction, and retention. As Rijo et al. (2018) emphasize, unexpected personnel departures not only represent a loss

of specialized human capital but also disrupt the accumulation of critical knowledge and operational experience. Conversely, positive leadership practices, international deployments, ongoing training opportunities, and institutional recognition serve as key facilitators of professional development and operational effectiveness. Research plays a vital role in understanding

such social phenomena, offering a systematic and objective method that encourages critical reflection, practical debate, and innovation (Coutinho, 2015).

To explore these dynamics, the present study adopts a mixed-methods approach, as recommended by Yin (2005) and Flick (2004), which allows for a more comprehensive understanding of multifactorial phenomena. Combining qualitative interviews and quantitative survey data, the study investigates how specific sociocultural and organizational determinants shape the professional trajectories of Artillery Officers and Sergeants, with particular emphasis on motivation, well-being, and career sustainability in operational contexts.

The findings aim to inform military leadership and defense policymakers by offering evidence-based insights to enhance personnel retention, improve career development strategies, and optimize human resource management within the Armed Forces.

A well-formulated research question guides the entire investigative process by clarifying the researcher's focus (Campenhoudt, Marquet, & Quivy, 2019). In line with Fortin (1999), the general objective of this study is to explore, identify, and assess the main contingencies, challenges, and opportunities that affect the career paths of Artillery

Officers and Sergeants. The central research question is: “What are the main contingencies, challenges, and opportunities related to the military careers of Artillery Officers and Sergeants?”.

To address this question, the study is structured around three specific objectives (SO) and corresponding derived questions (DQ), which provide a logical and integrated framework for data collection and analysis:

- SO1 / DQ1: Identify the sociocultural and organizational determinants associated with military careers in the Artillery branch;
- SO2 / DQ2: Analyze how these determinants influence career trajectories and professional development;
- SO3 / DQ3: Propose strategic recommendations to mitigate the negative effects of these determinants and enhance retention and commitment.

2. LITERATURE REVIEW

2.1. Sociocultural Determinants

Sociocultural factors shape how military institutions anticipate and adapt to shifting social expectations (Redko et al., 2020). Organizational culture, though widely debated, remains difficult to define because it simultaneously guides behavior and resists change (Whelan, 2016).

In the Portuguese Army, these cultural foundations are deeply rooted in historical and institutional evolution, reflected in shared values that express what is considered important and how strongly such convictions are held (Rosado et al., 2017; Robbins, 2005).

Military culture remains distinct from civilian culture, prioritizing hierarchy, self-sacrifice, and operational readiness over individual freedom and flexibility (Grilo, 2004). Despite increased integration of women and minorities, military environments still exhibit masculine and heteronormative traits, often lacking structured inclusion strategies (Alves, 1999; Azevedo & Pereira, 2025). Although progress has been made - particularly in gender representation and shared parenting policies (Gonçalves, 2013) - confusion between gender integration and gender equality persists, hindering policy implementation (Morais, 2016).

2.2. Organizational Determinants

Organizational determinants refer to internal structures and practices that shape military performance. Organizational culture operates at multiple levels and influences how knowledge is shared and applied, affecting adaptability and institutional effectiveness (Adams, 1993; Belkhouja et al., 2007). In modern warfare, the rapid

pace of technological innovation - highlighted by recent conflicts such as in Ukraine - requires military structures to evolve and anticipate change, particularly in areas like electromagnetic operations and the integration of disruptive technologies (Costa, 2024).

Between 2006 and 2013, Europe saw a sharp decline in defense investment (fundings fell by over 27%), raising concerns about a growing capability gap and the risk of deindustrialization in the sector (Correia, 2017). In this context, military education institutions are critical hubs for cultivating strategic thinking and preparing personnel to operate in technologically complex environments (Vicente, 2007).

2.3. Quality of Work Life

The quality of work life significantly influences well-being and organizational performance (De Greef & Van den Broek, 2004). Walton (1973) highlights core dimensions such as remuneration, safety, work-life balance, and meaning at work. As noted by De Greef and Van den Broek (2004), aligning human resources with innovation and health promotion improves workplace effectiveness. Job satisfaction, defined as one's general attitude toward work (Robbins, 2005), is shaped by these factors. Although military and civilian contexts differ, both face similar human resource

challenges, including recruitment, retention, and training (Romão et al., 2020).

Dissatisfaction with remuneration remains a central issue, with pay levels often lagging civilian equivalents, compromising the attractiveness of military careers and fueling personnel shortages (Ferrão, 2024; Mandeiro, 2024). Although recent legislation has introduced financial incentives and updates to allowances (Repartição de Abonos, 2025), the wage gap continues to erode institutional loyalty.

Safety and occupational health are growing concerns in military settings due to their impact on well-being (Pereira & Eusébio, 2021). Burnout - marked by exhaustion, detachment, and reduced efficacy (Ahola et al., 2005; Enzmann et al., 1998; Honkonen et al., 2006) - is often linked to poor leadership and work-life imbalance (Brooks & Greenberg, 2018).

Skill development is vital for operational adaptability. While training enhances both technical and theoretical competencies (Billett, 2011), shortcomings in program design still limit effective knowledge transfer (Loureiro, 2023). The rise of advanced technologies and Artificial Intelligence intensifies the need for continuous upskilling within the Armed Forces (Frey & Osborne, 2013; Ferrão, 2024).

Staff shortages remain a critical constraint, limiting the ambition levels that units can realistically pursue, as highlighted by Ferrão (2024). This limitation compounds the difficulty in ensuring professional growth and career stability, often jeopardized by outdated promotion systems and stagnant career paths. Many military professionals seek early retirement or transition to the civilian sector in search of better pay and recognition (Rosado et al., 2017).

Furthermore, the balance between professional and personal roles is often compromised when the demands of one interfere with the performance of the other (Greenhaus & Beutell, 1985). In military settings, excessive demands divert time and energy from personal life, heightening emotional fatigue and health risks (Croon et al., 2005; Pereira & Eusébio, 2021). Ferrão (2024) also notes the decline of institutional support in areas like housing and welfare, which further undermines work-life integration.

Finally, organizational commitment continues to serve as a buffer against dissatisfaction. Military personnel often remain loyal due to a deep sense of purpose and institutional identity (Robbins, 2005). Nevertheless, when organizational support and recognition falter, this commitment weakens, leading to attrition. The Portuguese military's

international reputation and the sense of contributing to national defense help sustain motivation, but long-term engagement requires more than symbolic value - it depends on tangible improvements in quality of life and career conditions (Rosado et al., 2017; Ferrão, 2024).

3. METHODOLOGY

3.1. Study Design and Methodological Approach

This research follows a non-experimental, mixed-methods design, integrating qualitative and quantitative strategies - specifically interviews, questionnaires, and observation. This triangulated approach enhances data complementarity and strengthens the validity of findings (Flick, 2004; Paranhos et al., 2016; Yin, 2005). The epistemological approach supports the application of empirical tools from the natural sciences to the social sciences (Santos & Lima, 2019), and the inductive reasoning adopted allows for theoretical generalizations based on data analysis (Rosado, 2017).

3.2. Data Collection Techniques and Analysis

A structured questionnaire was used to collect quantitative data on perceptions of career determinants, challenges, and opportunities. The responses were analyzed using IBM

SPSS Statistics, applying descriptive statistics and inferential techniques to explore associations between variables such as rank, years of service, and unit (Campenhoudt, Marquet & Quivy, 2019).

To deepen the analysis, semi-structured interviews were conducted with five-unit commanders, allowing open-ended responses about organizational culture, personnel management, and policy challenges. Interview material was transcribed and coded using NVivo software.

3.3. Sample

The sample comprised officers and sergeants from four representative Artillery units: Anti-Aircraft Artillery Regiment No. 1 (RAAA1); Artillery Regiment No. 4 (RA4); Artillery Regiment No. 5 (RA5); and units stationed at the Military Field of Santa Margarida (CMSM). The units were selected for their relevance and diversity. Participation was voluntary and based on prior informed consent.

4. RESULTS AND DISCUSSION

4.1. Interviews

Organizational Culture

While a shared base culture rooted in hierarchy and esprit de corps is recognized, the unique identity of the Artillery has weakened, primarily due to resource constraints, personnel turnover, and the diversion of focus to non-operational tasks. Commanders

emphasized the need for continuity, updated equipment, and leadership proximity to revitalize institutional identity.

Gender and Inclusion

All interviewees denied any discriminatory practices, affirming that gender and minority integration are normalized. However, proactive strategies are scarce. Only one unit reported awareness-raising activities, indicating that inclusion is often assumed rather than structured through policies.

Career Challenges and Opportunities

Retention difficulties, competitive civilian job markets, and technological demands were recurrent concerns. Nevertheless, commanders highlighted training, leadership development, international missions, and modernization as key opportunities. Clearer career paths and specialized training were considered essential.

Motivation and Retention

Motivation was viewed as dependent not only on salary but also on fair workload distribution, career development, recognition, and well-being. Structural reforms, such as improved housing and flexible schedules, were seen as more effective than operational incentives alone.

Work-Life Balance

All units acknowledged the impact of service frequency and

limited staffing. Commanders reported initiatives such as scheduled rest, cultural activities, flexible time arrangements, and the promotion of open dialogue. These practices aim to reduce stress and enhance emotional stability.

Well-being

Physical training, periodic medical evaluations, and psychological support were common. Nutrition improvements and sports activities were also mentioned. Despite existing initiatives, most commanders recognized the need to strengthen support mechanisms for mental health and stress prevention.

Organizational Policies

There was consensus on the need for strategic reform: modernizing infrastructure, updating employment doctrines, and integrating emerging technologies. Structural issues such as unclear progression systems and insufficient social support were seen as barriers to development and retention.

4.2. Questionnaire Results

A total of 97 Artillery personnel responded to the survey. The majority were sergeants (71.1%), followed by captains/junior officers (17.5%) and senior officers (12.4%). Most respondents had between 1 and 10 years of service (53.6%). The main units represented were RAAA1 (37.1%) and RA4 (27.8%).

Table 1 Key Dimensions by Unit

Organizational Culture	It was most positively rated in RA4 (88,4%), especially among those with 21-30 years of service. In contrast, CMSM and RA5 revealed more polarized perceptions, including negative and very negative assessments.
Inclusion Strategies and Well-being	Were acknowledged by the majority in CMSM (64.7%) and RA5 (70.6%), but significantly less so in RA4 (40%), where criticism of work-life balance was also more prevalent.
Technology Adaptation	Received favorable ratings from senior officers across units. However, critical views were more common among younger personnel and sergeants, particularly in RAAA1, where 50% rated the response as poor or very poor.
Career Challenges and Opportunities	Such as stagnated promotion, workload pressure, and outdated equipment were more frequently identified in RA5. Participation in international missions was the most valued opportunity across all units.
Retention Policies	Were broadly considered ineffective. RA5 recorded the most positive ratings (47% effective or moderately effective), while RA4 had the lowest (only 7.7% considered them effective).
Feedback Mechanisms	Were more appreciated in RA5 and CMSM, while RA4 stood out for its lower responsiveness, with 57.7% stating that feedback is rarely or never considered.
Organizational Reforms	Prioritized by respondents included improvements in infrastructure and personnel management. These needs were most prominently expressed in RA5 (82.4%) and CMSM (70.6%).

4.3. Integrated Analysis

The cross-analysis between experience, unit affiliation, and personal perceptions revealed consistent patterns. Personnel with more than 11 years of service tended to evaluate organizational culture, leadership practices, and retention policies more positively, suggesting that institutional commitment and job satisfaction increase with time. Conversely, military members with

less than 10 years of service were more critical, particularly regarding inclusion strategies, leadership effectiveness, and work-life balance, indicating a potential gap in early-career engagement and support.

Notable differences emerged between units. Respondents from RA5 and CMSM provided more favorable assessments of infrastructure conditions, emotional well-being support, and the responsiveness of leadership to

feedback. In contrast, those from RA4 reported lower levels of satisfaction across multiple dimensions, pointing to a more challenging organizational climate. These discrepancies suggest that unit-specific practices and environments play a decisive role in shaping motivation, commitment, and retention.

Data convergence across methods revealed that, while financial compensation is a critical factor, it is not sufficient on its own to ensure sustained motivation and institutional commitment. Both interviewees and survey respondents emphasized the importance of clear and achievable career pathways, access to specialized training, institutional recognition, fair workload distribution, and effective leadership. These elements emerged as central to preserving morale and encouraging long-term career investment. The evidence also highlights a general lack of structured and proactive inclusion policies, limited responsiveness to personnel feedback, and inconsistent implementation of well-being strategies. Nonetheless, the commanders interviewed identified realistic and actionable improvements, including infrastructure upgrades, modernization of operational equipment, and the adoption of more human-centered leadership models that value proximity, fairness, and adaptability.

In summary, the sustainability of military careers within Artillery depends on a delicate balance between institutional demands and individual needs. Units that foster an environment of trust, cohesion, and development - supported by inclusive policies, responsive leadership, and strategic modernization - demonstrate stronger levels of retention and motivation. Conversely, structural rigidity, operational overload, and insufficient recognition continue to pose significant risks to workforce stability and mission readiness.

5. CONCLUSION

This study examined the career trajectories of Artillery officers and sergeants in the Portuguese Army, revealing a complex interplay between sociocultural and organizational factors. Statistically significant associations were found between variables such as length of service, unit of assignment, and perceptions of organizational culture, equality, motivation, and performance. Military personnel placed high value on close leadership, international missions, training opportunities, and institutional recognition. In contrast, personnel shortages, work overload, and inadequate working conditions emerged as key challenges to motivation and retention. The quantitative findings added depth and context to the qualitative insights,

reinforcing the multidimensional nature of the career experience.

In addressing Research Question 1 - *What determinants shape the military careers of Artillery officers and sergeants?* - the findings point to a dual framework: organizational and sociocultural. On the organizational side, career development is influenced by factors such as institutional culture, retention strategies, leadership quality, work environment, and the structuring of tasks. Sociocultural influences include a sense of mission, equality of opportunity, perceived fairness, and work-life balance. These factors interact dynamically to shape commitment, job satisfaction, and the decision to remain in service.

Concerning Research Question 2 - *To what extent do these factors shape career trajectories?* - the evidence confirms a structural impact across the career span. Organizational culture plays a central role in early career stages, functioning as a key driver of integration and initial motivation. As service time increases, perceptions of recognition, career development opportunities, leadership quality, and working conditions become more decisive. Career trajectories are thus guided by a perceived equilibrium between expectations, demands, and rewards - a balance that varies according to rank, experience, and organizational setting. Units with

more supportive environments tend to foster stronger professional commitment, while those marked by overload and lack of recognition tend to undermine retention.

In response to Research Question 3 - *What measures can mitigate the effects of these determinants?* - the study proposes a set of structural and organizational interventions. At the structural level, investments in modernizing infrastructure, renewing equipment, and updating organizational frameworks are essential. Organizationally, recommendations include implementing flexible work arrangements, strengthening participative and fair leadership, clarifying career pathways, and ensuring sustained investment in training and specialization. Furthermore, policy reform must address salary structures and expand social support programs such as access to housing and family support. Finally, formal mechanisms of recognition are essential to reinforce morale and institutional commitment.

These findings directly address the Primary Research Question - *What are the main contingencies, challenges, and opportunities associated with the military careers of Artillery officers and sergeants?* The main contingencies include persistent personnel and equipment shortages, rigid structures, and the

accumulation of non-operational tasks. Key challenges involve the retention of qualified personnel, difficulty maintaining work-life balance, and increasing demands for technological adaptation. On the other hand, valued opportunities include access to advanced training, participation in international missions, proximity-based leadership, and a cohesive professional identity grounded in institutional pride and esprit de corps. These factors emerge as strategic priorities for ensuring the sustainability and attractiveness of military careers in Artillery.

The study acknowledges several limitations. First, the relatively small number of survey participants may limit the representativeness of the findings. While the data yielded statistically significant trends, the limited sample size may not capture the full spectrum of perceptions within the Artillery branch. Additionally, some ranks or demographic groups may have been underrepresented, potentially influencing internal trend interpretations. The exclusive focus on Artillery prevents generalization to other military branches. Finally, time and resource constraints restricted both the scope of data collection and the depth of some analyses.

Despite these limitations, this research provides a comprehensive and evidence-based contribution

to understanding the conditions shaping Artillery careers. The mixed-methods approach - and the inclusion of participant voices - adds depth and relevance, offering actionable insights for improving human resource policies and reinforcing the operational readiness of the Portuguese Armed Forces.

5.1. Directions for Future Research

Future studies could replicate this methodology across other countries, branches and services, enabling comparative analyses beyond the Artillery context. Repetition of the current study may also be valuable in the coming years, especially as the integration of enlisted personnel into the Permanent Staff becomes more structured in the Portuguese Army. Longitudinal studies would further enhance understanding of how perceptions evolve over time, particularly during periods of institutional reform. Additionally, focused evaluations on the impact of recently implemented policies - such as the new military compensation regime - would offer valuable insight into their effectiveness and long-term implications.

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Conflict of Interest Statement

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