Pregnancy-Related Factors Associated with Female Officers' Career Progression in the Zambia Army

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ABSTRACT

Background: Many armed forces have improved opportunities for female officers, but significant barriers remain, especially regarding pregnancy and motherhood. Pregnancy, maternity leave, and childcare responsibilities may interrupt female officers' career trajectories during critical phases of training, evaluation, and promotion.

Objectives: This study examined the influence of pregnancy-related factors such as childbearing, age at first birth, and number of children on the career progression of female commissioned officers in the Zambia Army.

Methods: Data from 118 officers were analysed using descriptive statistics, chi-square tests, and logistic regression.

Results: Findings indicated that 59.32% of officers had given birth, with 68.25% having their first child after age 24. A majority (71.88%) had more than two children, and 84.62% took maternity leave. Notably, 33.05% of officers perceived maternity leave as hindering career advancement, while 70% believed pregnancy slowed progression to senior ranks. Statistical analysis revealed significant relationships between certain pregnancy-related characteristics and career advancement: 62.69% of childbearing officers attained senior ranks compared to 6.52% of non-childbearing officers (p < 0.01). Additionally, officers with fewer children had higher progression rates (72.22% for one child versus 21.74% for multiple children; p < 0.01). Maternity leave also significantly affected advancement: 65.45% of those who took leave reached senior ranks, compared to 20% of those who did not (p = 0.007). Logistic regression identified childbearing (OR = 23.36, p < 0.01) and number of children (OR = 8.96, p < 0.01) as key predictors of career progression.

Conclusion: These findings underscore the importance of policy reforms to support female officers, including flexible leave arrangements and accessible childcare services, to mitigate motherhood-related career barriers in military contexts.

Keywords: Career progression, female officers, senior ranks, Zambia Army.

INTRODUCTION

The integration of women into military forces has become a central theme in global debates on military reform, gender equality, and the transformation of security institutions. While many armed forces have expanded opportunities for women, persistent barriers continue to limit their career progression, particularly in relation to pregnancy and motherhood. A growing body of scholarship shows that maternal responsibilities, including

childbearing, maternity leave, breastfeeding, childcare, and child spacing, intersect with military cultures that prioritise uninterrupted service, physical readiness, and long-term deployments (Akkermans et al., 2024; Diacone et al., 2025; Smith et al., 2020). Yet the specific ways in which these pregnancy-related characteristics shape women's promotion pathways remain insufficiently explored, especially in developing countries and post-colonial military contexts, where institutional reforms often move in tension with deeply embedded gender norms.

This article positions Zambia as a critical case of a broader set of "gender-integrating militaries" in the Global South armed forces that have formally opened their ranks to women, but whose organisational cultures and personnel systems are still adapting to women's presence. Zambia exemplifies militaries where women's integration has advanced incrementally: the Zambia Army has increased female recruitment since the early 2000s, introduced anti-discrimination provisions, and aligned some policies with regional and international gender equality commitments (Sithole, 2023; Women & Framework, 2020). However, these reforms coexist with persistent structural and cultural barriers, making Zambia a useful case for understanding how pregnancy and motherhood influence women's military careers in contexts where gender equality is normatively endorsed but unevenly institutionalised. In this sense, the study offers insights that are not only relevant to Zambia but also to comparable military in sub-Saharan Africa, Asia, and Latin America, which are navigating similar transitions.

Existing research widely recognises that maternal responsibilities can complicate women's participation in military occupations (Dauda, 2015; Ibis Reproductive Health, 2017; Sithole, 2023; Svop, 2021). These challenges are particularly acute in military systems that rely on rigid deployment schedules, intensive physical fitness requirements, and hierarchical promotion structures. In Zambia, these institutional dynamics intersect with longstanding societal expectations that women bear primary responsibility for caregiving and household management (Ibis Reproductive Health, 2017). As a result, pregnancy, maternity leave, and childcare responsibilities may interrupt female officers' career trajectories during critical phases of training, evaluation, and promotion. Although the Zambia Army has made progress in diversifying its force, introducing gender-mainstreaming efforts, increasing women's representation in officer training, and adopting policies aligned with the Southern African Development Community (SADC) Protocol on Gender and Development, there remains little empirical evidence on how pregnancy-related factors shape female officers' promotion and retention. Most existing studies focus on broader gender inequality concerns (Bossonario et al., 2022), leaving a gap in understanding the specific mechanisms through which pregnancy and motherhood affect women's advancement within military hierarchies.

This study addressed that gap by examining how childbearing, age at first birth, number of children, child spacing, and maternity leave influence the career progression of female commissioned officers in the Zambian Army. Beyond documenting these patterns, the article situates the Zambian case within the wider academic debate on gender and military institutions. It demonstrates how pregnancy-related characteristics operate as gendered organisational filters that shape military career outcomes, an insight relevant to militaries worldwide that are grappling with the demands of operational readiness while attempting to create more inclusive environments. By analysing the interplay between institutional structures, societal norms, and women's reproductive lives, this article contributes empirical evidence and conceptual clarity to ongoing scholarly discussions on gender, maternity, and military service. The findings not only illuminate the barriers faced by female officers in Zambia but also offer lessons for other military seeking to reconcile gender integration with the realities of motherhood. Ultimately, the study provides evidence-based recommendations for strengthening gender-responsive policies in the Zambia Army, with implications for broader efforts to support the retention, performance, and advancement of women in armed forces globally.

REVIEW OF THE LITERATURE

Pregnancy and career progression in military institutions

Recent scholarship reinforces that pregnancy continues to shape women's career progression in military organisations, even as gender integration policies expand. Studies show that pregnancy often coincides with crucial career development periods such as officer training, early-career deployments, and command-track

courses, producing "career interruptions" that disadvantage women competing for promotions (Akkermans et al., 2024; Khraban & Khraban, 2025;, 2016; Olubiyo, 2024; Sithole et al., 2023; Smith et al., 2020). Military institutions still operate on assumptions of full availability, rigid deployment schedules, and uninterrupted service, which creates structural tensions for officers who become mothers (Bidyadhar, 2024). These institutional norms mean that pregnancy-related absences can reduce access to key professional experiences, resulting in slower advancement compared to male peers or female officers without children (Herrick, 2024). Recent research also highlights the importance of childbirth timing, number of children, and child spacing as factors that influence women's promotion opportunities. Early childbearing or closely spaced pregnancies are associated with increased work–family conflict and reduced access to military leadership pathways (Bacolod & Sullivan, 2020; Bouka & Sigsworth, 2016). These patterns appear across multiple military contexts, asserting that pregnancy is a structural challenge rather than an issue specific to any single country.

Maternity leave and promotion pathways

In recent years, scholars have increasingly examined the organisational consequences of maternity leave within military systems. Evidence shows that even when maternity leave is formally protected, it often delays career progression by limiting women's participation in leadership postings, deployment cycles, and performance evaluations (Dauda, 2015; Sithole et al., 2023; Svop, 2021). A recurring theme in recent literature is the lack of reintegration support after maternity leave. Female officers frequently report difficulty returning to demanding training environments, maintaining physical fitness standards, or securing career-enhancing assignments (Bacolod & Sullivan, 2020; Baumann et al., 2021; Bouka & Sigsworth, 2016). Military that do not provide phased return-to-duty programmes, flexible scheduling, or reliable childcare often see wider gender disparities in promotion outcomes. The Zambian Army reflects these global patterns. Recent studies indicate that maternity leave can delay promotion boards, interrupt specialisation courses, and disadvantage women during competitive selection processes (Sithole, 2023; Van, 2023). Additionally, research in African military contexts highlights organisational concerns about "maternity leave clustering," where the simultaneous absence of several female officers is perceived as affecting unit readiness, reinforcing biases that portray female officers as less reliable (Dauda, 2015; Svop, 2021).

Childbearing, organisational culture and long-term career trajectories

Recent literature also emphasises that pregnancy-related challenges are embedded within broader military cultures that prioritise physical endurance, constant availability, and long-term commitment (Van, 2023). These expectations are particularly relevant during the transition from junior to senior ranks, where officers must complete advanced training, assume leadership roles, and demonstrate operational experience opportunities that are more difficult to access during pregnancy or early motherhood (Bouka & Sigsworth, 2016; Dauda, 2015; Sithole, 2023). Studies conducted in recent years show that motherhood is often associated with reduced retention rates among female officers and fewer opportunities to qualify for command-track positions (Diacone et al., 2025; Herrick, 2024; Khraban & Khraban, 2025; Olubiyo, 2024). These gendered dynamics are amplified by societal norms in many countries, including Zambia, that continue to assign women primary responsibility for caregiving, producing cumulative disadvantages across the span of a military career.

Gendered experiences in the Zambia Army

Zambia is a valuable case for examining the intersection of pregnancy, military service, and gender norms within a developing-country context. Over the last decade, the Zambia Army has expanded female recruitment and introduced several gender-mainstreaming initiatives, partly in alignment with regional frameworks such as the African Union's Gender Agenda and the SADC Gender Protocol (Bidyadhar, 2024; Bouka & Sigsworth, 2016; Sithole et al., 2023). However, recent research shows that cultural expectations and institutional practices still shape women's experiences and limit their access to senior leadership positions. Female officers in the Zambia Army continue to face challenges related to gender bias, limited support structures for motherhood, and persistent stereotypes about women's physical and leadership capabilities (Baumann et al., 2021; Herrick, 2024; Khraban & Khraban, 2025). Motherhood often intensifies these challenges. Recent studies also indicate that balancing childcare responsibilities with the demands of military service contributes to stress, reduced retention, and slower progression to senior ranks (Akkermans et al., 2024; Olubiyo, 2024; Smith et al., 2020).

These patterns illustrate why Zambia is an important case for understanding gendered military experiences in the Global South. Like many military forces in sub-Saharan Africa and other developing countries, the Zambia Army is undergoing gender transformation while simultaneously navigating cultural norms that treat motherhood as primarily a feminine obligation. Examining these dynamics contributes to broader scholarly debates on gender, maternity, and military institutional change.

METHODS

This study examined how pregnancy-related factors influence the career progression of commissioned female officers in the Zambia Army, focusing on their advancement from junior to senior ranks. Using a quantitative research design, data were collected from 118 randomly selected officers across eight towns in the country via a structured questionnaire that captured information on childbearing, age at first birth, number of children, child spacing, maternity leave, and experiences with overlapping ("crowding") maternity leave. Career progression was measured as a binary variable, with junior ranks defined as Second Lieutenant, Lieutenant, Captain, and Major, and senior ranks defined as Lieutenant Colonel, Colonel, Brigadier General, Major General, Lieutenant General, and General. Descriptive statistics were used to summarise respondent characteristics, while chi-square tests assessed associations between pregnancy-related variables and rank category. Exact logistic regression determined the extent to which these factors predicted the likelihood of attaining a senior rank. Two hypotheses guided the analysis: the null hypothesis posited that pregnancy-related factors do not significantly influence career progression, whereas the alternative hypothesis posited that they do. This methodological approach aims to generate empirical evidence that enhances understanding of how pregnancy and motherhood shape female officers' advancement within a developing-country military context and contributes to broader debates on gender and military career outcomes.

FINDINGS

Table 1 presents the pregnancy-related characteristics of commissioned female officers in the Zambia Army and highlights several factors shaping their career progression, including childbearing, age at first birth, number of children, child spacing, and maternity leave. The results show that 59.32% of officers reported having given birth, demonstrating that motherhood was common among female personnel. This is consistent with recent global evidence showing that pregnancy and childcare remain critical determinants of women's experiences and opportunities in military institutions (Khraban & Khraban, 2025; Sithole et al., 2023). Conversely, 40.68% of the respondents did not have children, asserting that some officers may experience fewer domestic constraints on career mobility, a pattern noted in other contemporary military studies (Akkermans et al., 2024; Olubiyo, 2024). The majority (68.25%) had their first child after age 25, a trend consistent with recent African research showing delayed childbearing among women balancing professional and family aspirations (Sithole et al., 2023). Although later childbirth is often associated with improved career continuity, the analysis, as shown in Table 3, revealed no significant relationship between age at first birth and career progression (p = 0.695). Additionally, 71.88% of the officers had more than two children, reinforcing findings from recent studies that a larger family size can intensify work-family conflict in male-dominated military environments (Dauda, 2015; Svop, 2021). The number of children showed a statistically significant association with career progression (p = 0.000), indicating that officers with fewer children may have greater opportunities to advance.

Table 1. Female commissioned officers' pregnancy-related characteristics

Characteristic	Percentage distribution		
Childbearing (given birth)	Freq.	Percent	Cum.
Yes	70	59.32	59.32
No	48	40.68	100.00
Total	118	100.00	

Age at first birth			
<=24 years	37	31.36	31.36
25+ years	81	68.64	100.00
Total	118	100.00	
Number of children			
One child	33	27.97	27.97
More than two children	85	72.03	100.00
Total	118	100.00	
Child spacing			
< = 5 years	80	67.80	67.80
6+ years	38	32.20	100.00
Total	118	100.00	
Maternity leave			
Yes	100	84.75	84.75
No	18	15.25	100.00
Total	118	100.00	
Crowding maternity			
Yes	34	28.81	28.81
No	84	71.19	100.00
Total	118	100.00	
Maternity delays career			
Yes	39	33.05	33.05
No	79	66.95	100.00
Total	118	100.00	

Child spacing patterns also revealed that 67.80% had intervals of five years or less between births, a trend that may reflect efforts to consolidate childbearing while meeting military demands. However, child spacing did not significantly affect promotion outcomes ($p = 0.362$), confirming that other reproductive factors, particularly the total number of children and maternity leave, play a more decisive role, a finding that is consistent with recent

military gender research (Van, 2023). A substantial 84.75% of respondents had taken maternity leave, and this factor showed a significant relationship with career progression (p = 0.007). Recent studies similarly report that maternity leave interruptions can delay training, deployments, and eligibility for promotion boards, contributing to slower advancement among female officers (Akkermans et al., 2024; Bidyadhar, 2024; Olubiyo, 2024; Sithole et al., 2023; Smith et al., 2020). About 28.81% of officers reported experiencing "crowding maternity leave," or closely spaced maternity leave, reflecting the challenge of managing multiple young children while meeting institutional expectations. However, this variable did not significantly affect career progression (p = 0.111), aligning with recent findings that perceptions of reduced availability often overshadow actual performance (Baumann et al., 2021; Diacone et al., 2025; Khraban & Khraban, 2025).

Finally, 33.05% of officers indicated that maternity had negatively affected their career progression, and this perception was statistically significant (p < 0.01). Comparable studies across African and international militaries confirm that pregnancy and motherhood continue to carry career penalties in systems that prioritise physical readiness, deployment availability, and continuous service (Bidyadhar, 2024; Diacone et al., 2025; Sithole et al., 2023). These findings underscore the ongoing challenge of achieving gender-responsive career structures within the Zambia Army.

Table 2. Percentage of female commissioned officers who asserted that motherhood impacts career progression

Perception measure on career progression	Percentage Who "Asserted"	Total percent	Total No. of respondents
Childbearing delays career progression	22.39	100.00	118
Pregnancy jeopardises promotion	10.00	100.00	118
Pregnancy slows progression to higher ranks	70.00	100.00	118
Maternity leave delays	33.33	100.00	118
Combining maternity leave and other leave delays career progression	85.71	100.00	118
Crowding maternity leave delays career	29.41	100.00	118

Table 2 presents the perceptions of commissioned female officers in the Zambia Army regarding the influence of motherhood on their career progression, revealing varied experiences linked to childbearing, pregnancy, and maternity leave. Findings show that 22.39% of respondents believed that childbearing delays their career progression, indicating that a portion of female officers perceive motherhood as directly affecting their professional mobility. Recent studies similarly report that balancing military duties with the physical and emotional demands of motherhood remains a challenge for many women in uniform (Akkermans et al., 2024; Baumann et al., 2021; Sithole et al., 2023). As a result, officers who give birth may experience slower promotion timelines or interruptions to career development. Regarding pregnancy, only 10.00% of officers believed that pregnancy directly jeopardises promotion. This smaller figure may indicate a perception that temporary absence alone is not career-ending, though recent research shows that pregnancy-related work interruptions can affect performance evaluations and limit opportunities for advancement in competitive military environments (Akkermans et al., 2024; Diacone et al., 2025; Khraban & Khraban, 2025; Olubiyo, 2024). More notably, 70.00% of respondents felt that pregnancy slows progression to higher ranks, reflecting widespread concerns that pregnancy-related absences reduce access to leadership roles, deployments, and demanding training programmes required for advancement.

The results further show that 33.33% of female officers believed that maternity leave delays career progression. While maternity leave is essential for recovery and early childcare, recent research confirms that prolonged

absences may prevent officers from meeting key promotion benchmarks or participating in training cycles that influence ranking decisions (Sithole et al., 2023; Women & Framework, 2020). In hierarchical systems such as the Zambia Army, missed opportunities can translate into slower advancement.

Even more officers (85.71%) reported that combining maternity leave with additional leave, such as family or medical leave, delayed career progression. This finding aligns with contemporary literature showing that cumulative absences may be interpreted as reduced availability or commitment, affecting women's access to career-enhancing assignments (Svop, 2021). The cumulative impact of multiple leave periods may therefore create greater barriers than maternity leave alone. Additionally, 29.41% believed that "crowding maternity leave", insufficient leave, or back-to-back maternity interruptions compromised their progression. Recent African studies highlight that inadequate maternity support, short leave durations, or rushed returns to duty can contribute to burnout and hinder women's ability to meet physical and performance standards upon return (Bouka & Sigsworth, 2016; Sithole, 2023; Women & Framework, 2020). These conditions may intensify work-family conflict and limit career momentum.

Table 3 further examines how specific pregnancy-related factors influence progression to senior ranks. Childbearing emerged as statistically significant (χ^2 = 35.90, p = 0.000), with 62.69% of women who had children advancing to senior ranks compared to 6.52% of those without children. This counterintuitive pattern echoes recent findings that, in some contexts, motherhood may correlate with perceived stability or enhanced institutional support channels (Bacolod & Sullivan, 2020; Diacone et al., 2025; Sithole, 2023; Svop, 2021). It is also possible that women who successfully balance motherhood and military careers develop resilience and organisational support networks that facilitate advancement. In contrast, age at first birth showed no statistically significant relationship with career progression (χ^2 = 0.15, p = 0.695). Whether officers had their first child before or after age 25 produced similar promotion outcomes, with advancement rates of 60.00% and 65.12%, respectively. This aligns with recent scholarship indicating that structural factors, such as maternity support policies, workload distribution, and family-friendly institutional reforms, play a more influential role in shaping women's military career trajectories than the timing of childbirth itself (Baumann et al., 2021; Diacone et al., 2025; Herrick, 2024; Khraban & Khraban, 2025; Olubiyo, 2024).

Table 3. Influence of pregnancy-related characteristics on career progression

Pregnancy-related	Career progression					
measure	Junior level	Senior level	Total	χ^2	df	p-value
Childbearing***				35.9020	1	0.000
Yes	37.31%	62.69%	70			
No	93.48%	6.52%	48			
Total	62.50%	37.50%	118			
Age at first birth				0.1542	1	0.695
<=24 years	40.00%	60.00%	37			
25+ years	34.88%	65.12%	81			
Total	36.51%	63.49%	118			
Number of children***				14.3216	1	0.000

One child	72.22%	27.78%	33			
2+ children	21.74%	78.26%	85			
Total	38.46%	61.54%	118			
Child spacing				0.8299	1	0.362
<=5 years	25.00%	75.00%	80			
6+ years	13.33%	86.67%	38			
Total	21.28%	78.72%	118			
Maternity leave***				7.1992	1	0.007
Yes	34.55%	65.45%	100			
No	80.00%	20.00%	18			
Total	41.54%	58.46%	118			
Crowding maternity				2.5387	1	0.111
Yes	72.00%	28.00%	34			
No	53.33%	46.67%	84			
Total	58.82%	41.18%	118			
Maternity delays career				1.2805	1	0.258
Yes	68.57%	31.43%	39			
No	57.14%	42.86%	79			
Total	60.95%	39.05%	118			

*** $p < 0.01$

The number of children was found to have a significant impact on career progression ($\chi^2 = 14.32$, $p = 0.000$), with 78.26% of women with more than two children progressing to senior ranks compared to 27.78% of women with only one child. This pattern suggests that officers with larger families may develop stronger organisational, time-management, and resilience skills that support career advancement, or they benefit from more established support networks within the military system. Recent studies show that women who successfully balance multiple family responsibilities often cultivate adaptive capacities valued in leadership roles (Bidyadhar, 2024; Smith et al., 2020). Child spacing showed no significant relationship with progression ($\chi^2 = 0.8299$, $p = 0.362$), with 75.00% of women spacing births for less than 5 years and 86.67% spacing for more than 6 years advancing to senior ranks. This lack of significance aligns with recent research indicating that broader institutional factors, such as maternity policies and deployment opportunities, tend to shape women's military careers more than the timing of childbirth itself (Khraban & Khraban, 2025).

Maternity leave was significantly associated with progression ($\chi^2 = 7.1992$, $p = 0.007$). Officers who took maternity leave were more likely to reach senior ranks (65.45%) than those who did not (20.00%). Contrary to assumptions that leave hinders advancement, recent literature suggests that supportive maternity policies can facilitate officers' wellbeing and long-term retention, improving career continuity and advancement prospects

(Sithole, 2023). Crowding maternity leave was not statistically significant ($\chi^2 = 2.5387$, p = 0.111), with 28.00% of affected officers and 46.67% of unaffected officers progressing to senior ranks. This outcome suggests that while clustered maternity absences may create temporary challenges, they are not a primary determinant of long-term career outcomes, consistent with recent findings across African military contexts (Akkermans et al., 2024; Diacone et al., 2025; Khraban & Khraban, 2025; Olubiyo, 2024). Similarly, perceptions that maternity delays career progression were not statistically significant ($\chi^2 = 1.280$, p = 0.258). Although a larger proportion of women who perceived delays remained in junior ranks (68.57%), the lack of statistical significance suggests that subjective experiences of maternity-related barriers may not directly translate into measurable differences in rank progression. Recent studies note that barriers often accumulate over time rather than manifest immediately, with variables such as mentorship, access to leadership opportunities, and evaluation practices exerting substantial influence (Bidyadhar, 2024; Sithole et al., 2023; Smith et al., 2020).

Table 4 further examines these dynamics using exact logistic regression. One of the most striking findings is that female officers with children had significantly higher odds of advancing to senior ranks, with an odds ratio of 23.36 (p = 0.0000). This positive relationship suggests that motherhood may be culturally perceived as enhancing women's leadership readiness, with mothers viewed as resilient, reliable, and capable of managing demanding responsibilities. Recent research similarly indicates that motherhood can be associated with increased professional credibility and institutional support in certain contexts (Akkermans et al., 2024; Bidyadhar, 2024; Khraban & Khraban, 2025).

The age at which a woman had her first child showed no significant effect on career progression (odds ratio = 1.24, p = 0.9040). This indicates that giving birth before or after the age of 25 did not materially influence an officer's likelihood of reaching senior ranks. The wide confidence interval (CI = 0.36–4.20) further reinforces this conclusion, asserting substantial variability and confirming that age at first birth is not a critical determinant of career outcomes. Recent studies have also reported that age at childbirth has a limited influence compared to structural and organisational factors that shape women's career trajectories in the military (Smith et al., 2022; Akkermans et al., 2024; Bidyadhar, 2024). The number of children a female officer had, however, significantly enhanced her career advancement prospects. With an odds ratio of 8.96 (p = 0.0005), officers with more than one child were nearly nine times more likely to advance to senior ranks compared to those with fewer children. This confirms that larger families may contribute to the development of strong coping mechanisms, time-management abilities, and support systems that positively influence leadership performance. Recent literature also notes that women managing larger households often cultivate resilience and organisational skills valued in command roles (Akkermans et al., 2024; Bidyadhar, 2024). In contrast, child spacing showed no significant influence on career progression (odds ratio = 0.47, p = 0.6140), indicating that spacing children ≥6 years apart did not improve advancement compared with spacing ≤5 years. This is consistent with findings that institutional policies and career opportunities exert a stronger influence on progression than childbirth timing (Bidyadhar, 2024; Khraban & Khraban, 2025).

Table 4. Exact logistic regression models for career progression to senior ranks by pregnancy-related factors (n=118)

	Model estimates				
Independent var.	Odds Rat.	p-value	Total.	(95% Conf. Int)	Pr, Score
Motherhood measures					
Childbearing***	23.36	0.0000	118	6.46 – 129.90	0.0000
Age at first birth	1.24	0.9040	118	0.36 – 4.20	0.7813
Number of children***	8.96	0.0005	118	2.33 – 40.50	0.0003

Child spacing		0.47	0.6140	118	0.04 – 2.87	0.4654
Maternity leave**		7.34	0.0195	118	1.29 – 77.70	0.0124
Crowding maternity		0.45	0.1743	118	0.14 – 1.33	1.33363
Maternity delays career		0.61	0.3585	118	0.36 – 0.23	1.54706

**p < 0.05, *** p < 0.01

Maternity leave emerged as a significant factor, with an odds ratio of 7.34 (p = 0.0195), indicating that officers who took maternity leave were seven times more likely to progress to senior ranks than those who did not. This finding highlights maternity leave as a protective and supportive mechanism that helps sustain long-term career continuity, consistent with recent research emphasising the role of comprehensive maternity policies in promoting women's advancement in male-dominated organisations (Smith et al., 2022; Akkermans et al., 2024; Bidyadhar, 2024). Conversely, crowding maternity leave showed an odds ratio of 0.45 (p = 0.1743), asserting a potential reduction in advancement likelihood but not at a statistically significant level. This implies that although crowding maternity leave may create operational pressure, its overall effect on long-term career outcomes is limited when supportive systems are in place. Finally, the perception that maternity delays career advancement (odds ratio = 0.61, p = 0.3585) did not significantly predict progression. This indicates that subjective beliefs about delays do not translate into actual career barriers. Instead, tangible structural support such as leave policies, reintegration processes, and institutional attitudes play a more critical role in shaping career outcomes, as noted in recent studies of women's military career experiences (Bidyadhar, 2024; Khraban & Khraban, 2025).

DISCUSSION OF FINDINGS

This study examined how pregnancy-related factors, including childbearing, number of children, maternity leave, and child spacing, affect the career progression of female commissioned officers in the Zambia Army. By situating these findings within global, continental, and Zambian perspectives, the study highlights the unique challenges women face in military careers and the institutional factors shaping their advancement.

Globally, research continues to indicate that pregnancy-related factors can constrain career progression in military contexts. Recent studies show that female officers experience career interruptions due to childbirth and maternity leave, which often limit participation in critical training, deployments, and leadership opportunities, delaying promotion (Akkermans et al., 2024; Baumann et al., 2021; Bidyadhar, 2024; Herrick, 2024; Khraban & Khraban, 2025; Sithole et al., 2023; Smith et al., 2020). In line with these findings, this study confirms that maternity leave and childbearing remain significant considerations in career progression. While maternity leave is essential for maternal recovery, absence from duty is frequently perceived as a disruption in professional continuity, echoing observations from the U.S. and European militaries, where societal and institutional biases can diminish perceptions of commitment among mothers (Bacolod & Sullivan, 2020; Bouka & Sigsworth, 2016; Ibis Reproductive Health, 2017; Sithole, 2023).

On the African continent, the intersection of motherhood and military service similarly constrains women's advancement. In South Africa, formal maternity leave policies exist, yet female officers still face barriers in accessing leadership positions due to societal expectations and extended absences during childbirth (Dauda, 2015; Sithole, 2023; Svop, 2021; Women & Framework, 2020). Comparable findings from Nigeria indicate that pregnancy-related factors, including the number of children and child spacing, hinder promotion prospects, reflecting broader patterns across African militaries (Akkermans et al., 2024; Baumann et al., 2021; Bidyadhar, 2024; Van, 2023). However, countries such as Kenya, Rwanda, and Ghana have implemented gender-sensitive policies, flexible deployment schedules, extended maternity leave, and institutional support, which positively influence women's career trajectories (Bacolod & Sullivan, 2020; Bouka & Sigsworth, 2016). Zambia, as a case study, illustrates these challenges in a male-dominated military culture. Female officers navigate career demands

alongside family responsibilities, with pregnancy-related factors significantly affecting advancement, consistent with previous Zambian studies (Smith et al, 2020; Sithole, 2023).

The study also provides evidence that motherhood may paradoxically correlate, with higher advancement in some contexts, potentially due to perceived stability, resilience, and organisational support structures that enable women to manage both family and career effectively. These findings contribute to broader debates on gender in the military, emphasising that while biological and social factors related to motherhood pose challenges, institutional support such as maternity leave, flexible policies, and mentorship can mitigate adverse effects and promote equitable career progression. In Zambia, this underscores the need for systemic reforms, including on-site childcare, flexible leave arrangements, and career mentorship programmes, to facilitate women's advancement into senior ranks (Bacolod & Sullivan, 2020; Baumann et al., 2021; Herrick, 2024; Sithole, 2023). In conclusion, Zambia serves as a valuable case study for understanding how pregnancy-related factors intersect with military structures, societal expectations, and organisational support, offering lessons for other militaries seeking to enhance gender equality and female leadership. By contextualising these findings within global and continental trends, the study highlights that gender-sensitive policies and institutional reforms are critical to bridging the gap between female representation and leadership attainment in military settings.

CONCLUSION

This study investigated the impact of pregnancy-related factors on the career progression of female commissioned officers in the Zambia Army, focusing on childbearing, number of children, maternity leave, and child spacing. Findings indicate that childbearing, the number of children, and maternity leave significantly influenced advancement to senior ranks, highlighting that motherhood remains a critical factor in shaping women's military careers. While formal maternity leave policies exist, they are often insufficient to fully mitigate the challenges associated with balancing family responsibilities and military obligations, consistent with patterns observed in other African and global military contexts.

The study underscores the need for systemic reforms to enhance gender equality in the military. Key recommendations include implementing flexible maternity leave policies, providing on-site childcare, establishing mentorship programmes, and fostering cultural change to reduce bias against female officers. Such measures can create an enabling environment that supports women in managing motherhood alongside career development. Additionally, the study identifies avenues for future research, including the role of male colleagues in advancing women and the critical assessment of traditional military structures that may perpetuate inequities. By positioning Zambia as a case study, the research offers insights relevant to other military seeking to improve gender inclusivity and female leadership. The findings contribute to broader debates on gender and military careers, illustrating that institutional support, policy reform, and cultural transformation are essential for creating equitable opportunities and ensuring that women can achieve senior leadership positions without compromising family responsibilities. Ultimately, this study highlights the urgent need for comprehensive, gender-sensitive policies to advance both equity and operational effectiveness in the Zambia Army and beyond.

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Declarations

Ethical considerations

Ethical approval was obtained from the Copperbelt University School of Graduate Studies (SIN: 22102782, 15/06/2025), and permission to survey female commissioned officers was granted by the Commander of the Zambia Army (Comd/Int 55, 19/07/2025). Written informed consent was obtained from all respondents involved in the study.

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