A Factor Analysis Approach to Understanding Work-Life Balance Challenges Among Women in the Armed Police: A Study of the 15th NAP (IR) Mahila Battalion, Nagaland

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Abstract - Work-life balance (WLB) has emerged as a significant area of concern, particularly for women in law enforcement who face the dual challenge of fulfilling demanding professional responsibilities while managing societal and family expectations. In policing—characterized by physical intensity, irregular duty hours, and high emotional strain—these challenges are often magnified. In the context of Nagaland, where women's participation in armed police forces is relatively recent, understanding the factors influencing WLB is crucial for fostering both occupational efficiency and personal well-being.

Materials and Methods: This study focused on women personnel of the 15th Nagaland Armed Police (Indian Reserve) Mahila Battalion, Chumukedima. Primary data were collected from a sample of 350 respondents using a structured questionnaire comprising validated WLB-related scales. Data analysis was performed using Exploratory Factor Analysis (EFA) with Principal Component Analysis and Varimax rotation to extract latent dimensions influencing WLB. Reliability and validity tests were conducted to ensure robustness of findings.

Results: Factor analysis revealed six major dimensions that define the nature of work-life balance within the high-demand environment of the uniformed service: Emotional–Spiritual Self-Awareness, Role-Related Work Stress, Work–Life Conflict, Workload and Digital Overload, Perceived Organisational Indifference, and Job Engagement – Vigor and Absorption. Together, these factors explain 42.04% of the total variance, offering a meaningful representation of the underlying psychological and behavioural constructs that influence work-life balance among women police personnel.

Conclusions: The findings underscore the need for gender-sensitive human resource interventions that address both organizational and socio-cultural dimensions of WLB. Enhanced welfare programs, flexible duty rosters, counseling services, and community sensitization initiatives could substantially improve work-life integration for women in armed police forces. These insights not only contribute to academic understanding of gender-specific occupational challenges but also offer actionable policy recommendations for improving the well-being and retention of women personnel in law enforcement.

Keywords: Armed police, Factor analysis, Nagaland, Work-life balance, Women police.

I. INTRODUCTION

Work-life balance (WLB) has emerged as an important indicator of occupational health and organizational productivity, particularly for women in demanding sectors like policing. Balancing professional obligations with domestic responsibilities becomes challenging in armed forces, where personnel endure long hours, transfers, physical strain, and emotional pressure. The study focuses on the 15th Nagaland Armed Police (Indian Reserve) Mahila Battalion in Nagaland, exploring WLB from a gendered and occupational perspective. The research aims to identify major factors impacting WLB using factor analysis and t-test.

II. REVIEW OF LITERATURE

Work-life balance (WLB) has emerged as a pivotal area of research, particularly for professions characterized by demanding schedules, high emotional labor, and limited flexibility—such as policing. Researchers have explored

various dimensions of WLB, including its determinants, outcomes, and the moderating effects of gender, organizational support, and psychological resources.

Several studies highlight that policing, especially for women, presents unique challenges in maintaining a balance between work and personal life. In the Indian context, Mishra and Srivastava (2013) found that long and irregular working hours, limited family time, and inadequate organizational support contribute significantly to WLB dissatisfaction among policewomen. Similarly, Chaudhary and Verma (2016) emphasized that women in law enforcement often face a dual burden due to rigid patriarchal expectations and professional demands, leading to psychological strain and role conflict.

International literature corroborates these findings. Duxbury and Higgins (2001), in their study of Canadian police personnel, revealed that role overload and work-to-family conflict significantly impacted emotional well-being, particularly among women. In another study, McCarthy et al. (2012) found that supervisory and organizational support were key predictors of positive WLB outcomes in Irish public-sector employees, including police personnel.

Emotional intelligence (EI) has also emerged as a critical factor influencing WLB. Wong and Law (2002) suggest that individuals with higher emotional intelligence are better equipped to manage stress and conflicting demands. In a police context, Sharma and Sharma (2014) showed that emotional intelligence moderated the relationship between job stress and work-life conflict, suggesting that EI training can enhance coping capacity.

Spiritual intelligence (SI) has received relatively less attention but holds promise in high-stress professions. According to Emmons (2000), spiritual intelligence enables individuals to find meaning in their work, thereby reducing burnout and enhancing personal fulfillment. Punia and Kamboj (2013) applied this construct in a study of Indian police officers, noting that higher SI correlated with resilience and better work-life integration.

Job engagement (JE), a positive psychological state characterized by vigor and dedication, has also been linked to better WLB outcomes. Schaufeli et al. (2006) reported that employees with higher engagement levels were more likely to perceive their work as meaningful and less likely to experience role conflict. In a study of Indian women professionals, Baral and Bhargava (2010) found that engaged workers reported higher life satisfaction, even in demanding work settings.

Lastly, organizational factors such as workload, technological intrusion, and lack of support are repeatedly cited as barriers to WLB. Arief et al. (2021) demonstrated that excessive job demands and blurred boundaries due to technology significantly reduced job satisfaction among Indonesian public-sector employees. In the Indian police context, Rani and Singh (2015) noted that lack of institutional support, absence of family-friendly policies, and pressure from superiors severely hamper WLB for female personnel.

In summary, the literature underscores that work-life balance among women police personnel is influenced by a complex interplay of personal, psychological, and organizational factors. Addressing these through supportive policies, training in emotional and spiritual intelligence, and workload management can enhance both personal well-being and professional performance.

III. OBJECTIVES OF THE STUDY

The following are the objectives of the study:

1. To analyze the impact of demographic and work-related variables on Work-Life Balance (WLB).

2. To identify latent factors influencing WLB.

IV. METHODOLOGY

Research Design: The study employs a descriptive and analytical research design to systematically examine the underlying dimensions influencing Work–Life Balance (WLB) among women police personnel. The descriptive aspect focuses on profiling the socio-demographic and occupational characteristics of the respondents, while the analytical component aims to identify latent constructs through statistical modelling and to assess the influence of rank, demographic, and work-related variables on WLB outcomes.

Population, Sample, and Sampling Technique: The research was conducted within the 15th Mahila Battalion located at Chumukedima in the state of Nagaland. The target population comprised all women police personnel serving in the battalion across various ranks, including constables, head constables, assistant sub-inspectors, sub-inspectors, and inspectors.

A sample size of 350 respondents was determined, deemed adequate for factor analysis based on the rule of thumb of having at least 5–10 respondents per variable. The simple random sampling technique was adopted to ensure unbiased representation across different hierarchical levels, years of service, educational backgrounds, and marital statuses. This approach enhanced the generalisability of findings to the wider population of women police personnel within the battalion.

Data Collection Tool: A structured questionnaire was designed as the primary data collection instrument. It consisted of three sections:

1. Section I – Demographic and personal background

information (age, education, marital status, dependents, etc.).

2. Section II – Occupational and environmental factors (rank, length of service, shift patterns, work location, workload, etc.).

3. Section III – A customised Work–Life Balance Scale adapted from established WLB frameworks and tailored to the police work context, including items related to personal well-being, family relationships, emotional and spiritual resources, organisational support, workload, and stress.

Prior to the main survey, the questionnaire was pre-tested on a pilot group of 30 women police personnel from the same battalion. Based on feedback, minor revisions were made to improve clarity and contextual relevance. Reliability analysis of the final instrument yielded a Cronbach's Alpha coefficient of 0.89, indicating high internal consistency and strong reliability.

Data Collection Procedure: Data collection was carried out during duty breaks and non-operational hours to minimise disruption to work schedules. Informed consent was obtained from all participants, and confidentiality of responses was assured. Respondents were briefed on the purpose of the study, and participation was voluntary.

Data Analysis: The collected data were coded and entered into SPSS for statistical analysis. The analysis followed a multi-step procedure:

- Descriptive statistics (mean, standard deviation, frequencies, and percentages) were used to profile respondents' demographic and occupational characteristics.

- Exploratory Factor Analysis (EFA) using Principal Component Analysis (PCA) with Varimax rotation was conducted to uncover latent factors influencing WLB. Factor extraction was guided by eigenvalues greater than 1 and the interpretability of the factor structure.

- Independent sample t-tests were performed to examine whether specific work-related factors—such as working hours, shift schedules, length of service, and workplace location—had a statistically significant effect on the ability of respondents to maintain work–life balance.

This comprehensive methodological approach ensured that both the structural dimensions of WLB and the influencing demographic and occupational variables were rigorously assessed.

V. RESULTS AND DISCUSSIONS

DEMOGRAPHIC SUMMARY

Variable		Category	Frequency (n)	Percentage (%)
Total Respondents			350	100%
Age		Below 25 years	205	59%
		25 years & above	145	41%
Educational Qualification		Up to Class 12	325	93%
		UG/PG	25	7%
Marital Status		Married	267	76%
		Unmarried	83	24%
Length of service		Less than 10 years	60	17%
		10 years & above	290	83%
Salary		Below ₹25,000	43	12%
		₹25,000-₹35,000	48	14%
		Above ₹35,000	259	74%
Accommodation Type		Quarters	28	8%
		Rented	236	67%
		Own House	86	25%
Working Hours		Up to 8 hours	240	69%
		More than 8 hours	110	31%

Table 1: Demographic Summary Table

Source: Primary data

The demographic profile of the 350 women police personnel of the 15th Mahila Battalion reveals a predominantly young and service-experienced workforce. A majority (59%) are below 25 years of age, and a significant 83% have over 10 years of service experience. Most respondents (93%) possess educational qualifications up to Class 12, with only 7% holding undergraduate or postgraduate degrees. Marital status indicates that 76% are married, which may have implications for their work-life responsibilities. In terms of earnings, the majority (74%) fall within the higher income bracket of ₹35,000 and above, while a small proportion earns below ₹25,000 (12%). Housing data shows that 67% live in rented accommodations, while only 8% reside in official quarters and 25% in their own homes. Work schedules indicate that 69% work up to 8 hours a day, while 31% exceed this duration. These demographic characteristics are crucial in understanding the various challenges and factors influencing their work-life balance.

Level of Work-Life Balance

Variable	N	Mean	Standard Deviation
Work-life balance	350	174.93	12.63

Table 2: Table showing the Level of WLB

Source: Primary data

The analysis of responses from 350 women police personnel in the 15th Mahila Battalion shows an average Work-Life Balance (WLB) score of 174.93 (out of the maximum possible score on the scale used), with a standard deviation of 12.63.

A mean score of 174.93 suggests that, on the whole, respondents report a moderately high level of WLB. Since the study population is drawn from a uniformed, high-demand profession, this score indicates that despite the challenges of shift work, long hours, and operational duties, respondents perceive themselves as maintaining a reasonable equilibrium between their work and personal life.

The standard deviation (SD) of 12.63 indicates the spread of scores around the mean. In this case, the relatively low SD shows that most respondents' scores are closely clustered around the mean, meaning that the perception of WLB is quite uniform across the group. There are no extreme variations that would suggest sharply different experiences between subgroups, although some minor deviations are expected due to personal circumstances (such as marital status, number of dependents, or shift timings).

From a statistical perspective, given the sample size (n = 350), the consistency in scores suggests homogeneity in WLB perceptions within this particular organizational and cultural context. This may be influenced by the regimented structure of the police service, standardised duty allocations, and shared exposure to similar stressors.

In practical terms, these results imply that any interventions aimed at improving WLB—such as more flexible duty rosters, enhanced organisational support, or stress management initiatives—could have a uniformly positive impact across the entire group, rather than benefiting only certain subgroups.

Results of t-test:

The following are the results of the t-test conducted to analyse work-related factors such as working hours, shift patterns, length of service, and location of work:

Working hours: The t-test shows that for working hours, the mean scores for up to 8 hours is 175.45 and for 8 hours and above is 173.8 with a t-value of 1.08 (NS). No significant difference is found between the mean scores of the respondents, and so the working hours of the respondents do not have any significant impact on the work-life balance of the women police.

Shift Patterns: For shift patterns, the mean value for regular shifts is 174.12 and for flexible shifts is 175.48 with a t-value of -0.99 (NS). We see no significant difference among the respondents on the basis of shift patterns and so the shift patterns of the women police does not have a significant impact on their ability to maintain work-life balance.

Length of service: The analysis shows that for length of service of the respondents, the mean score for those who've worked for less than 10 years is 171.15 and the mean for those respondents who worked for 10 years and above is 175.71, with t-value of -2.59 (S). There is a significant difference found, indicating that the length of service of the women police have an impact on their work-life balance. As an employee works in an organisation for many years, the employee gets a promotion, and more responsibilities/duties will be added up including mentoring young recruits. This might lead to a probability of work stress and work overload and the reduction of boundaries between their personal and professional life.

Location of work: Concerning location of work, the mean score for urban is 174.62, and for rural areas is 175.82, with a t-value of 0.783 (NS). This indicates that there is no significant influence of the location of work of the respondents on their work-life balance.

This analysis suggests that Length of Service with a p-value of 0.01 (p < 0.05) is the only factor among the four variables that have a meaningful impact on the work-life balance of the women police, while the other factors like Working Hours, Shift Patterns, and Location of work do not show significant differences leading to failure to reject the null hypothesis as their p-value were above 0.05.

Findings on Exploratory Factor Analysis

To identify the underlying dimensions influencing work-life balance (WLB) among women police personnel, Principal Component Analysis (PCA) was performed on 52 items representing various psychosocial constructs. The Kaiser-Meyer-Olkin (KMO) measure yielded a value of 0.756, indicating a meritorious level of sampling adequacy, while Bartlett's Test of Sphericity was significant (χ^2 = 11016.204, df = 1326, p < 0.001), justifying the appropriateness of factor analysis.

Thirteen components with eigenvalues greater than 1 were extracted, accounting for 70.28% of the total variance. The Rotated Component Matrix (Varimax) revealed meaningful factor loadings, each exceeding 0.5, confirming a strong association between items and respective latent constructs. The dimensions extracted were:

1. Work-Life Balance (WL)

2. Emotional Intelligence (EI)

3. Spiritual Intelligence (SI)

4. Job Engagement (JE)

5. Work Overload (WO)

6. Technology Advancement (TA)

7. Organizational Support (OS)

8. Work Stress (WS)

(plus additional components explaining smaller portions of variance)

Each factor showed internal coherence, with items such as *"My personal life suffers because of work"* (WL1) and *"I am quite capable of controlling my own emotions"* (EI2) loading strongly under their respective domains. The first component accounted for 14.53% of the variance and reflected core WLB issues, while subsequent components, such as Emotional Intelligence and Spiritual Intelligence, explained an additional 10.84% and 8.99%, respectively.

The factor analysis affirms that work-life balance among women police personnel is a multi-dimensional construct. The emergence of thirteen distinct components highlights the complex interplay between personal, emotional, organizational, and spiritual variables in shaping the well-being and professional life of women officers.

Work-Life Balance (WL) emerged as the strongest factor, underscoring the ongoing conflict women face between professional duties and personal life, a challenge common in paramilitary and policing roles where irregular hours and high demands are prevalent. Emotional Intelligence (EI) and Spiritual Intelligence (SI) were also found to be significant dimensions, indicating that personal resilience, emotional regulation, and existential meaning-making play critical roles in coping with occupational stress.

Factors like Job Engagement (JE) and Organizational Support (OS) further reflect that institutional climate and individual motivation significantly impact performance and satisfaction. Conversely, components such as Work Overload (WO), Technology Advancement (TA), and Work Stress (WS) represent key stressors that may impede WLB, particularly in law enforcement contexts where workload and connectivity blur personal-professional boundaries.

These findings are consistent with prior studies (, McCarthy et al., 2012; Muthukumar et al., 2014), emphasizing that interventions aimed at emotional and organizational support can substantially improve work-life integration. Importantly, the extracted factors offer a validated framework for designing policies and training modules tailored to the unique needs of women in uniformed services.

VI. LIMITATIONS, RECOMMENDATIONS FOR FUTURE RESEARCH AND CONCLUSION

A. Limitations of the study

This study, while offering important insights into work-life balance among women police personnel in the 15th Nagaland Armed Police (IR) Mahila Battalion, has certain limitations. The findings are context-specific and may not be generalizable to other battalions or regions. The use of self-reported questionnaires introduces potential response bias, and the cross-sectional design limits causal interpretations. The exclusion of male personnel restricts gender-based comparisons, and relevant external factors such as family responsibilities and commuting time were not considered. Additionally, the absence of qualitative data limits the exploration of deeper personal experiences and contextual nuances.

B. Recommendations For Future Research

Future research on work-life balance among police personnel could adopt broader and more inclusive frameworks. One useful direction would be to include male police personnel to facilitate comparative analysis between genders, helping to determine whether the challenges identified are gender-specific or organizationally systemic. Longitudinal studies may also be valuable, as they can track the evolution of work-life balance over different life stages, such as marriage, parenthood, and career advancement, offering insights into the dynamic nature of these challenges. Additionally, future research could explore organizational culture, particularly how gender sensitivity, informal norms, and access to support systems like mentorship or grievance redressal mechanisms impact women's ability to manage work and personal life.

C. Findings

The factor analysis conducted in this study extracted thirteen significant components from the work-life balance data of women personnel in the 15th Mahila Battalion. These components accounted for over 70% of the total variance, confirming that work-life balance is a complex and multidimensional construct in the context of women in uniformed services. The results reveal several notable patterns regarding the personal, emotional, organizational, and societal dimensions of their work-life experiences.

One of the most prominent findings relates to the work-life balance (WL) component, which emerged as a dominant factor. Many respondents indicated that their personal and family life was frequently compromised due to the unpredictable and demanding nature of police duty, including irregular shifts and extended work hours. This

aligns with earlier research suggesting that women in law enforcement often struggle to reconcile the competing demands of work and home.

Another critical factor was emotional intelligence (EI), which emerged as a protective mechanism that helps personnel manage stress, control emotions, and interact effectively with peers and superiors. Women officers with higher emotional self-regulation and empathy reported better coping and adaptability in both personal and professional spheres.

Social and family support (SI) also played a vital role in enhancing the psychological resilience of respondents. Support from family members, community networks, and, in some cases, religious or spiritual engagement helped personnel manage occupational pressures. This form of support not only buffered them against emotional exhaustion but also provided a sense of purpose and connection outside of work.

The component related to job engagement (JE) suggested that women who were more involved and committed to their roles reported greater job satisfaction and perceived balance. Positive engagement with work seemed to mitigate the negative effects of work-related demands, implying that meaningful work can be an intrinsic motivator that enhances well-being despite structural stressors.

However, the analysis also highlighted work overload (WO) as a major area of concern. A considerable number of personnel reported feeling physically and emotionally drained due to continuous tasks, excessive expectations, and a lack of downtime. Similarly, the majority of respondents worked more than 8 hours a day, reinforcing the role of long working hours as a key contributor to fatigue and imbalance.

The study also identified a significant lack of organizational support (OS). Many women officers reported dissatisfaction with the institutional provisions such as accommodation, leave policies, and child-care facilities. A large percentage (67%) of the respondents lived in rented accommodations, while only 8% had access to government quarters. These structural inadequacies added further strain to their domestic responsibilities.

Work stress (WS) emerged as another critical dimension, with many officers admitting to experiencing high levels of psychological and physical stress. However, cultural expectations, stigma, and professional pride often led to the internalization and suppression of such stress, making it harder to seek help or relief.

Demographic analysis revealed that younger personnel under 25 years, who made up 59% of the sample, and those with less than 10 years of service, reported higher stress levels and difficulty adjusting to the discipline and demands of police work. Moreover, married women (76%)

faced additional challenges balancing professional duties with family obligations, particularly in the absence of supportive infrastructure.

The study also explored time allocation (TA) and the role of technology. While digital tools facilitated task management, the expectation to remain accessible beyond working hours contributed to blurred boundaries between personal and professional life. Many respondents expressed concerns about the lack of personal time for self-care, rest, or family.

Overall, the findings indicate that while women police personnel in the 15th Mahila Battalion show a high level of commitment and emotional resilience, they face significant challenges in achieving a healthy work-life balance due to workload, inadequate institutional support, and personal responsibilities. These findings underscore the need for gender-sensitive policies, flexible work arrangements, and psychological support systems within the police force to enhance the well-being and effectiveness of women officers.

D. Conclusion

For understanding the work-life balance of the 15th Mahila Battalion, Chumukedima, with the help of Exploratory Factor Analysis six primary constructs have been identified. These six factors explain 42.041% of the total variance in the study and is able to give a view of the multidimensional nature of work-life balance in the 15th Mahila Battalion.

The threshold for total variance explained is often deliberated in EFA. Human behaviour being complex and diverse, a variance as low as 40-50% may be considered (Hair et al. 2010).

The findings confirm that work-life balance in the context of women in uniformed services is multifaceted, shaped by personal, emotional, organizational, and societal dimensions. The most prominent contributors were work-life balance itself, emotional intelligence, social/family support, and job engagement—each acting as either a determinant or buffer in coping with occupational demands. Conversely, work overload, inadequate organizational support, and high work stress emerged as critical constraints, particularly affecting younger personnel, married women, and those without access to institutional facilities. The study also highlighted the impact of irregular hours, extended shifts, and blurred work–life boundaries exacerbated by digital connectivity. While emotional resilience and commitment to duty remain strong, these strengths are often undermined by structural and cultural barriers. The results underscore the urgent need for gender-sensitive policies, flexible scheduling, and enhanced support systems to promote the well-being, retention, and performance of women police personnel.

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