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"Impact Of Rank, Demographics, And Work Environment on Work-Life Balance: A Multivariate Approach"

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Abstract: *The main objective of this study is to examine the influence of rank/position, demographic and work environment on the work-life balance of the 15th Mahila Battalion, Chumukedima, a district of Nagaland. An attempt has been made to explore how the rank of the personnel influences job demands and how it affects the individual's ability to manage work and personal responsibilities. This study also examines how the combined effect of demographic, occupational, and environmental conditions influences work-life balance. Data for the study were collected through a structured questionnaire and were analysed using ANOVA and regression to identify significant relationships and patterns. The findings of the study are expected to provide insights into how structural and demographic factors shape work-life balance, which may be helpful to policymakers in framing more inclusive and effective strategies.*

Background: *Work-life balance has been increasingly gaining the interest of researchers and organisations in recent years. Employers have realized its importance, as an imbalance in work-life balance often affects job satisfaction and increases turnover intention among employees, making them less committed to the organization. Post COVID-19, there has been a shift in the conventional 9-5 job where employees can now work remotely from home with the use of technology. There is a blurring of lines between personal and professional responsibilities. This holds especially true for working women as they are expected to be homemakers even though they might be gainfully employed outside. This study is an attempt to study the impact of demographic variables on the work-life balance of women police of the 15th Mahila Battalion, located in Chumukedima, which is a district of Nagaland in India.*

Materials and Methods: *This study adopts a quantitative, cross-sectional design using a multivariate approach to assess the impact of rank, demographic characteristics, and work environment on work-life balance. A sample of 350 respondents has been considered for the study, and the sampling technique used is simple random sampling to ensure representation across different ranks and demographic categories.*
Results *The regression model indicates that certain factors like educational qualification, accommodation, working hours, shift patterns, and location of work significantly influence the work-life balance of personnel. However, other factors like age, marital status, length of service, and salary do not show a significant impact in this model. The overall model is statistically significant but explains only about 12.94% of the variability in work-life balance, suggesting that additional factors may be influencing work-life balance.*
Conclusion: *Organisational support as well as social and family support will also help the employees to reduce stress associated with job and life responsibilities. Organisations can develop effective strategies and policies to accommodate challenges in managing work-life balance.*
Key Word*:* ***Work-life balance, demographic variables, women police, policies***

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I. Introduction

An individual can have a good work-life balance when they are able to manage their time well and don't let problems in one part of life affect another (Delecta, 2011). There are variations in the way people manage work and personal lives. It is influenced by culture, environment, and various demographic factors (Crompton & Lyonette, 2006). In today's world, it has become very challenging to achieve work-life balance due to increasing pressure from long work hours, technology, and rising expectations in both professional and personal spheres (Byrne, 2005). Work-life balance is no longer a personal issue but a societal issue tied to

economic productivity and quality of life (Houston, 2005). Hence, maintaining a healthy work-life balance is essential for enhancing employee productivity, satisfaction, and overall well-being (Meenakshi et al., 2013). Organisations play an important role in implementing supportive work-life balance measures as poor balance might lead to lower productivity, burnout, and other health issues (Babin Dhas, 2015).

Work-life balance is not the same across different demographic groups, and is to a large extent influenced by personal and social characteristics (Prithi & Vasumathi, 2018). Female employees are found to have lower work-life balance and higher stress levels compared to their male counterparts, even though they are working in the same work environment (Ip et al., 2018). Demographic variables have a significant influence on an employee's perception and experience of work-life balance. Employees who are married and have children are found to have greater challenges in balancing life and work responsibilities (Warrier, 2013). Married and female employees face more difficulties in balancing personal and professional responsibilities (Padmasiri & Mahalekamge, 2016). In comparison with senior and married personnel, the lower-ranked and younger personnel experienced more work-life balance challenges (Kaushal & Parmar, 2019).

HR policies should be tailored to accommodate employees from diverse backgrounds to improve satisfaction and productivity (Thakur & Sharma, 2019). A positive and supportive work environment combined with effective work-life practices reduces turnover intention in employees (Sriram et al., 2022).

II. Material And Methods

Research Questions

Based on the review of the literature, the following research questions are stated:

- To what extent does rank or hierarchical position influence job demands and work-life balance among personnel?
- What are the combined effects of demographic variables (such as age, gender, and marital status), occupational roles, and environmental conditions on the overall work-life balance of employees?
- Which demographic and organizational factors are the most significant predictors of work-life balance?

Objectives

The following are the objectives of the study:

1. To study the role of rank or position in influencing job demands and work-life balance.
2. To investigate the combined effect of demographic, occupational, and environmental factors on the overall work-life balance of personnel.

Hypothesis

The following hypotheses are proposed for the study:

H_0 1: There is no significant difference in work-life balance based on rank or position.

H_0 2: There is no significant combined effect of demographic, occupational, and environmental factors on the overall work-life balance of personnel.

Methodology

Research Design: This study adopts a quantitative, cross-sectional design using a multivariate approach to assess the impact of rank, demographic characteristics, and work environment on work-life balance.

Population, Sample, and Sampling Technique: The study has been done in the 15th Mahila Battalion, Chumukedima, which is a district of Nagaland. The target population is the women police in the battalion.

A sample of 350 respondents has been considered for the study, and the sampling technique used is simple random sampling to ensure representation across different ranks and demographic categories.

Data Collection Tool: A structured questionnaire was developed, comprising three sections: (i) demographic information, (ii) occupational and environmental factors, and (iii) a customised Work-Life Balance Scale.

The instrument was pre-tested, and a Cronbach's Alpha of 0.89 was calculated, which indicates strong internal consistency among the items. This further supports the reliability and robustness of the tool.

Data Analysis: Descriptive statistics were used to summarize demographic data. ANOVA was done to find the influence of rank/ position on work-life balance. Regression analysis was conducted to examine the combined influence of variables on work-life balance. Analyses were performed using Statistical analysis in excel.

Limitations of the study

Due to time constraints, the number of respondents has been limited to 350, and data has been collected from lower-level employees. More respondents would have brought to light more issues relating to work-life balance, work stress, and its challenges.

Another limitation is that some respondents were reluctant to participate in the study for fear that their response might have a negative impact on them.

III. Result and Discussion

Demographic summary of respondents:

The demographic details of the respondents are given in Table 1. From the table we can see that more respondents fall below 25 years of age (59%), with basic education up to class 12 (93%). Majority of the respondents are married (76%) and have more than 10 years of service (83%). As the majority have long years of service so more respondents (74%) earn ₹35,000 or more and 67% of the respondents reside in a rented house. A majority of respondents (69%) work within 8 hours a day which indicates potentially manageable work schedules.

Table 1: Demographic summary of the respondents

	Number	Percentage
Total Respondents	350	100%
Age		
Below 25 yrs	205	59%
25 yrs & above	145	41%
Educational Qualification		
Upto 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 and above	290	83%
Salary		
Below ₹ 25000	43	12%
₹25000 to ₹35000	48	14%
₹ 35000 & above	259	74%
Accommodation type		
Quarters	28	8%
Rent	236	67%
Own house	86	25%
Working hours		
Upto 8 hrs	240	69%
More than 8 hours	110	31%

Source: Primary source

ANOVA on Women Police with respect to Rank/Position

ANOVA was done on women police to study the role of their rank/position in influencing job demands and work-life balance.

Table 2: Summary of ANOVA on Women Police with respect to Rank/Position:

Source of Variation	Sum of Squares	Df	Means of Squares	F-value
Between Groups(SSB)	882.7	2	441.35	2.80
Within Groups(SSW)	54577.6	347	157.39	
Total	55460.3	349		

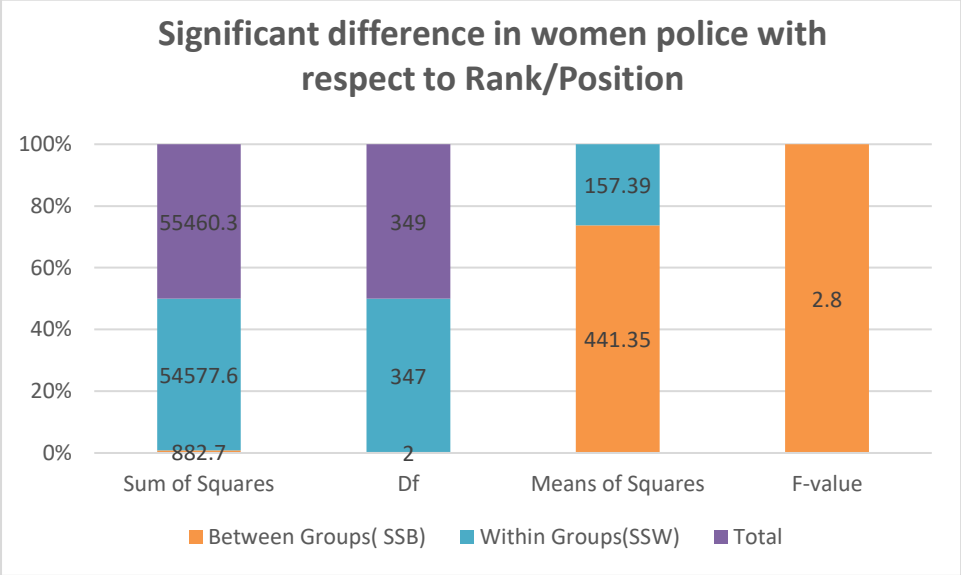
Source: Primary source

Result and interpretation:
The analysis table shows that the calculated F-value = 2.80. To determine if the difference between the means is statistically significant, we would compare this value with the critical F-value from the F-distribution table based on degrees of freedom (df1 = 2, df2 = 347) at a significance level of 0.05.

- Critical F-value: For df1 = 2 and df2 = 347 at a 0.05 significance level, the critical F-value is approximately 3.02 (based on standard F-distribution tables).
- Since 2.80 < 3.02, the F-value does not exceed the critical value, and we fail to reject the null hypothesis.

There is no significant difference in means across the Junior level (constables), Mid-Level position (lance naik and naik), and Senior level groups (Sub-inspector and Havaldar) based on the calculated F-value. The groups are likely to be similar in the measured variable, and any differences observed could be due to random variation.

Figure 1: Significant difference in women police with respect to Rank/Position



Source: Primary Source

The women police have a strict routine to be followed by all of them irrespective of their ranks/positions. Based on the analysis, it can be concluded that there is no significant difference in work-life balance based on rank or position of the women police. Thus, we accept the null hypothesis.

Regression Analysis
Regression Analysis has been conducted to examine the relationship and effect of demographic, occupational, and environmental factors (age, educational qualification, marital status, length of service, salary, accommodation, working hours shift pattern, location of work and working hours) on the overall work-life balance of the women police and to show whether these factors have a statistically significant impact on the work-life balance

Table 3 Regression Analysis Summary
Table 3 (a) Model Fit (Overall Regression Statistics)

Regression Statistics	
Multiple R	0.359778
R Square	0.12944
Adjusted R Square	0.10376
Standard Error	11.95219
Observations	350

Table 3 (b) ANOVA Table (Significance of overall model)

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	7200.558	720.0558	5.040471	7.53E-07
Residual	339	48427.8	142.8549		
Total	349	55628.35			

Table (c) Individual Predictor Analysis

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	196.3085	6.286681	31.2261	9.2E-102	183.9427	208.6744
Age	-0.72454	1.264225	-0.57311	0.566952	-3.21125	1.762178
Educational Qualification	-3.71605	1.143381	-3.25005	0.00127	-5.96506	-1.46704
Marital status	-0.56967	1.531714	-0.37192	0.710186	-3.58253	2.443188
Length of service	-0.97506	1.76204	-0.55337	0.580374	-4.44097	2.490847
Salary	-1.92302	1.489568	-1.29099	0.197587	-4.85298	1.006945
Accommodation	-2.01868	0.980059	-2.05976	0.040185	-3.94645	-0.09092
Working hours	-11.747	2.966956	-3.95928	9.16E-05	-17.583	-5.91104
shift patterns	3.298746	1.592759	2.07109	0.039107	0.165811	6.431681
location of work	10.2088	2.986242	3.41861	0.000706	4.3349	16.0827
Working hours	-2.3088	1.13684	-2.0309	0.043045	-4.54495	-0.07266

Source: Primary source

Results and Interpretation

1. Regression Statistics (Table 3 (a)):
   - Multiple R (0.3598): Indicates a weak positive correlation between the independent variables and the dependent variable.
   - R Square (0.1294): About 12.94% of the variation in work-life balance is explained by the combined effect of the independent variables (demographic, occupational, and environmental factors).
   - Adjusted R Square (0.1038): Adjusted value indicates a slightly reduced proportion of explained variance, accounting for the number of predictors in the model.
2. ANOVA Table (Table 3 (b)):
   - F-value (5.04): The overall model is statistically significant, as evidenced by the very small Significance F (p-value = 7.535×10^{-7}), which is less than 0.05.
   - This means at least one of the predictors significantly affects work-life balance.
3. Coefficients and Hypothesis Testing for Predictors (Table 3 (c)):
   - The significance of each predictor is evaluated using its t-statistic and p-value:
     - Educational Qualification ($p = 0.0013$): Significant negative effect.
     - Accommodation ($p = 0.0402$): Significant negative effect.
     - Working Hours ($p = 9.16 \times 10^{-5}$): Strongly significant negative effect.
     - Shift Patterns ($p = 0.0391$): Significant positive effect.
     - Location of Work ($p = 0.0007$): Strongly significant positive effect.
     - Age, Marital Status, Length of Service, and Salary ($p > 0.05$): These are not significant predictors.

Decision on Null Hypothesis:

- For the Overall Model: Since the Significance F (p-value) for the regression is much less than 0.05, we reject the null hypothesis and conclude that the combined effect of demographic, occupational, and environmental factors significantly affects work-life balance.
- For Individual Predictors:
  - Reject the null hypothesis for Educational Qualification, Accommodation, Working Hours, Shift Patterns, and Location of Work as they are significant predictors ($p < 0.05$).
  - Fail to reject the null hypothesis for Age, Marital Status, Length of Service, and Salary as they are not significant predictors ($p > 0.05$).

The regression model indicates that certain factors like educational qualification, accommodation, working hours, shift patterns, and location of work significantly influence the work-life balance of personnel. However, other factors like age, marital status, length of service, and salary do not show a significant impact in this model. The overall model is statistically significant but explains only about 12.94% of the variability in work-life balance, suggesting that additional factors may be influencing work-life balance.

IV. Conclusion

The main aim of this study was to examine the role of rank or position in influencing job demands and work-life balance, and to investigate the combined effect of demographic, occupational, and environmental factors on the overall work-life balance of personnel. From the findings and discussions, it can be concluded that the work-life balance of the respondents in the Mahila Battalion is not influenced by the rank/position that they hold. This could be due to various reasons, e.g., in the police, duties are usually distributed uniformly across ranks. Therefore higher rank may not reduce or increase job stress, time commitment or family interference. The police in the battalions have common challenges for working hours, shifts, etc. making everyone face similar constraints, regardless of position. Further, the study concludes that educational qualification, accommodation, working hours, shift patterns, and location of work significantly influence the work-life balance of personnel in comparison with other demographic variables because they directly affect time management, job expectations, stress levels, and personal responsibilities of the women police in the battalion.

Organisational support as well as social and family support will also help the employees to reduce stress associated with job and life responsibilities. Social and family support is crucial for work-life balance as it helps in dealing with stress, increases job satisfaction, and improves the overall well-being of the employee (Oludayo, 2020). Creating a supportive work environment, offering employee wellness programs, and establishing prompt promotion and transfer policies can help individuals achieve a balance between work and personal life (Bhuvaneswari & Thirumoorthi, 2019). Organisations can develop effective strategies and policies to accommodate challenges in managing work-life balance.

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