

Development and Validation of the Perceived Problems Scale for Female Police Officers

Aahana Saha^{1*}, Rubina Anjum¹, D.J Singh¹

¹ CT University, India

Corresponding Author's email address: aahana.saha30@gmail.com

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Abstract:

The "Perceived Problems Scale" (PPS) is a robust psychological assessment tool designed to measure the subjective challenges faced by female police officers in their professional environment. These perceived problems encompass workplace integration, career advancement, work-life balance, training and resources, and organizational support and culture. This scale highlights critical factors such as gender discrimination, lack of resources, and work-life conflicts that uniquely affect female officers in a traditionally male-dominated profession. Developed through rigorous content validation and reliability analysis, the PPS is a 25-item, 5-point Likert scale questionnaire. The tool's internal consistency is demonstrated by a Cronbach's Alpha of 0.932, ensuring high reliability. The scale facilitates the identification of problem areas, guiding targeted interventions and policy development aimed at improving mental well-being, workplace efficiency, and gender equity. By quantifying these issues, the PPS provides actionable insights for police departments to foster a supportive and inclusive work environment. This scale serves as a vital resource for practitioners, researchers and policymakers seek for addressing gender-specific challenges within law enforcement, ultimately contributing to the overall efficiency and well-being of police personnel.

Keywords: workplace challenges, gender discrimination, work-life balance, organizational support, law enforcement, gender equity, psychological assessment.

1. Introduction

At present, the occupation of police work has become the more stressful profession That requires the police officers for coping up with unpredictability uncertainty and danger (Queirós et al., 2020). Therefore, the job stress increase day by day that leads to psychological/mental disorders, burnout or even suicide of police that makes the officers to be more resilient by force as well as developing of coping strategies to face the demands of the job (Violanti et al., 2019).

Despite of stress experienced by the police officers it can be multiplied and divided into various categories based on the organisational and operational stressors. Being organisational and operational stressors to specific under distinct constructs for the police force. According to few authors operational stressors are related to the specificity of policing including work family conflict, aggressive interactions, excessive force usage and fear of using it, societal perception of policing, criticism by citizen about the police officers, traumatic events, critical incidents, risk and danger of injury, and shift-based work Purba and Demou (2019). Additionally, the organisational stresses related to

organisation or institution of Police Department that include stressors like leadership problems, extensive administrative tasks, work overload, human or material resources, lacking conflicts with colleagues or supervisors, specific functioning method of police station command of each police.

The job stress is considered to be more chronic since it affects the mental and physical health strongly Carleton et al., 2020 and at present stress is referred as the psychological risk in the work environment EU-OSHA (2019); (Kubiceket al., 2019). Inadequate response for the chronic job stress and burnout appears to be the occupational phenomena and it can be defined as the “prolonged response to chronic emotional and interpersonal stressors on the job, expressed on three dimensions of exhaustion, cynicism and inefficacy”.

The most frequently examined factors are age and gender that shows the experience of women like more stress, less depersonalisation and more emotional exhaust Purvanova and Muros (2010). The strategies focused on emotion usage are seemed and preferred by the female officers when compared to men police officers Lakomý and Kafková (2017). More resilience is showed by the older people and senior offices. Few studies found no differences among both gender police officers (Luceño-Moreno et al., 2016); Kurtz (2012)., some researchers found that more burnout more stress less depersonalization feel polishing and more emotional exhaust differently than men by the female police officers McCarty (2013); Valieiev (2019).

The main aim of the study is the development of psychological assessment tool designed to measure the subjective challenges faced by female police officers.

2. Review of Literature

The literature review discusses about the related studies about the problems faced by the police officers.

Clean sanitation access is considered to be more essential and the dignity for women, over wellbeing and health and significant challenges are possessed in absence. This study examines the perceptions of on-duty female police officers working in off-site locations regarding inadequate sanitation facilities and its impact on their health, behaviour and social lives. A substantial proportion of 69% female police officers reported lacking access to toilets while on duty at off-site locations, with 80% reducing water intake to avoid the need for toilets. Limited access to proper sanitation was strongly associated with 95% CI as 1.05 to 5.48; OR is 2.5 urinary tract infection and 95% CI as 0.96 to 4.83; OR is 2.1 of risk of genital urinary symptoms. Additionally, 11% of participants refrained from working during menstruation due to discomfort caused by the lack of toilet facilities, leading to wage losses and significant negative social impacts (Venugopal et al., 2023).

Female and male police officers reported for job satisfaction at higher levels in the category of “people on your present job,” while the lowest levels were associated with “opportunity for promotion,” followed by “pay.” No significant differences were observed in the job satisfaction subscales among the female and male officers. The experienced and older officers reported lower satisfaction in “job in general” but higher satisfaction in “pay.” A comparison between the internal services and patrol officers revealed that patrol officers reported greater satisfaction in “job in general,” “work in the present job,” “opportunity for promotion,” and “supervision” compared with the counterparts for internal role. No significant correlation was there between subscales of job satisfaction and experiences

from “gender-based harassment”. There are vast number of stressors among that negatively impacted three job satisfaction domains with organizational stress: “job in general,” “pay,” and “supervision.” Analysis of hierarchical multiple regression further identified organizational stress as the most consistent predictor of job satisfaction across multiple domains for police officers (Rostami et al.,2022).

Patriarchal ideologies and ongoing efforts to maintain male dominance over females were significant contributors to women’s stress and mental health challenges. The study’s theoretical contributions involve the application and expansion of anti-oppressive concepts within the context of policing. Incorporating these concepts, along with a gendered perspective, provides a strong foundation for creating, implementing, and evaluating policies and programs that accurately address and represent the needs of policewomen. This approach can help reduce oppressive practices and minimize potential harm. Additionally, the findings highlight the importance of policing organizations thoroughly assessing and interviewing potential therapists to ensure they possess the necessary skills and sensitivity to address these challenges effectively Hair (2006).

3. Methodology

3.1 Research Design

This chapter explains the techniques used to construct this tool. Benson and Clark (1982) introduced the implication of tool construction diagram with generalized steps. After identification of research objective, the literature and construct were formulated. The initial items were developed and their content validity was assessed. In the next step, the tool was constructed, which involved pre-testing the items, conducting the survey, refining the number of items, and determining the variables captured by the scale. During the third stage, the tool underwent evaluation, including testing the number of measurements, assessing reliability, and verifying validity. In summary, this guide equips both researchers and practitioners with the knowledge to understand and validate the processes of ontology development, scale creation, and validation, thereby enhancing our understanding of police personnel and their perceived challenges.

3.2 Research Methodology

The procedure will be divided as two sections of research. The first section involves proposed the PPS scale for Validation of the Perceived Problems Scale. The second section includes the collection of Literature review for the various researchers were studied. The data collection is performed using the tools for collection of variables from data. Then the formulation of hypothesis is performed for identification of expected outcomes. The psychometric assessment tool for police personnel is given in Figure 1.

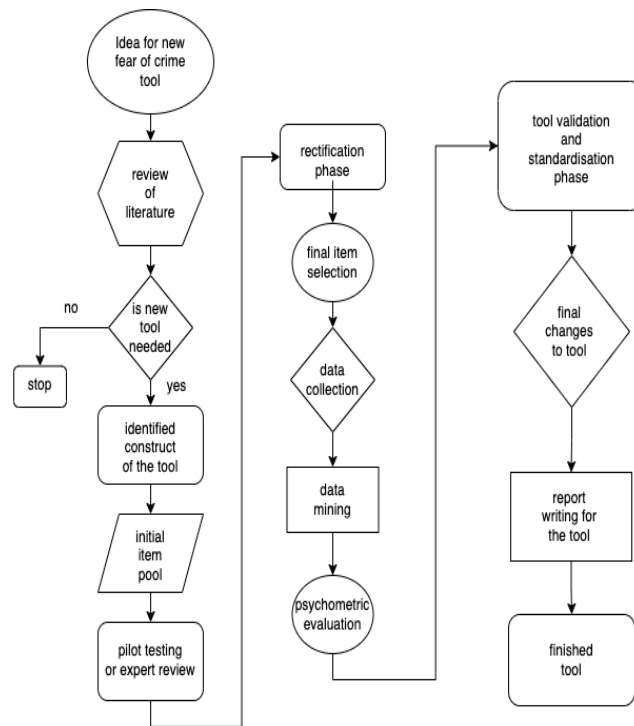


Figure 1. Psychometric assessment tool for police personnel

The content validity and items processing are given in Figure 2.

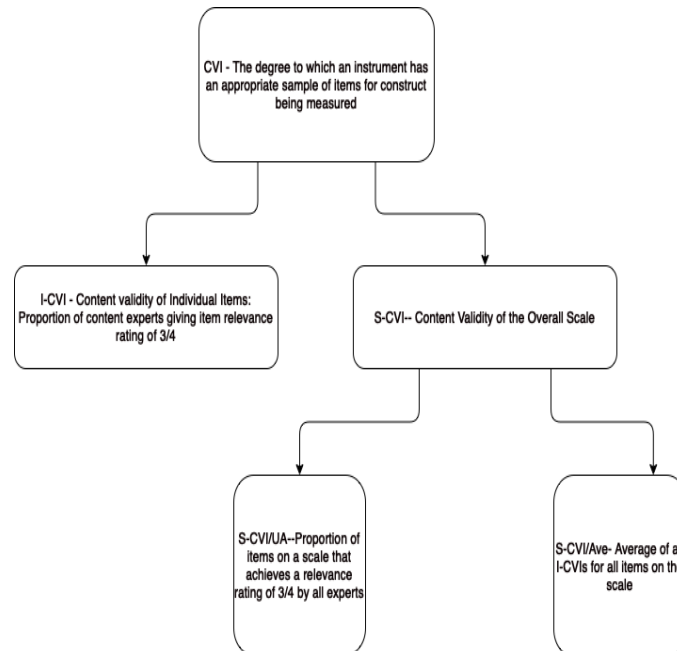


Figure 2. Content Validity

3.3 Research tools

The tool for the test is constructed with development of an item pool and basic test as building blocks. The inclusion criteria for item writing includes the theory-driven psychological variable that is being measured was clearly defined. Randomly selected items from published articles and available books

on the relevant topic and variable had generated. The statistical analysis is performed among the respondents using Likert scale with 5 points from strongly agree to strongly disagree.

3.4 Validity and Reliability

Face validity assesses an instrument's appearance by a jury of experts and potential participants. Test development results in a large number of items being produced. Fundamentally, choosing objects for a test is solved by item analysis such that the resulting test would have those defined characteristics. Analysis of items is the general term to collect data and used for analysing the test items. It is considered as the most critical aspect for construction of test. The analysis of item is the critical concern is constructed validity, i.e. whether the instrument being evaluated is sufficiently represented by each item individually and collectively. Confirmatory Factor Analysis is a specific factor analysis type and is commonly used in the analysis. It is used to assess whether a construct's measures are compatible with a researcher's perception of the existence of that construct. The description of major problems faced by female police officers is given in Table 1.

Table 1. Description of major problems faced by female police officers

S. No	Subscales	Description
1	Workplace Integration	The extent to which female police personnel feel included and integrated into the overall work environment, including being valued and respected by colleagues and superiors.
2	Career Advancement	The opportunities and support available for female police personnel to advance in their careers, including access to promotions, training, and mentorship.
3	Work-Life Balance	The ability of female police personnel to effectively balance their professional responsibilities with personal and family life, including access to flexible work arrangements and support for caregiving responsibilities.
4	Training and Resources	The availability and adequacy of training programs, resources, and tools necessary for female police personnel to perform their duties effectively and advance in their careers.
5	Organizational Support and Culture	The level of support and encouragement from the organization, including policies, practices, and cultural norms that promote gender equality, diversity, and inclusion within the police force.

4. Results and Discussion

This section includes the findings of the psychological assessment tool and the measurement of the subjective problems.

4.1 Reliability

The result of reliability test is given in Table 2. The result obtained was .934, this denotes excellent reliability (93.4%). The mean and SD values for items shown in Table 3.

Table 2. Test of Reliability

Cronbach's Alpha	Cronbach's Alpha
.932	.934

Table 3. Item Statistics

	Mean	SD
WI1	2.73	.826
WI2	2.86	.904
WI3	2.73	.893
WI4	3.09	.920
WI5	3.00	.939
CA1	4.03	.714
CA2	3.99	.701
CA3	3.99	.713
CA4	3.99	.687
CA5	4.04	.708
WL1	3.76	.775
WL2	3.87	.758
WL3	3.87	.772
WL4	3.74	.785
WL5	3.74	.741
TR1	3.46	.921
TR2	3.47	.927
TR3	3.53	.903

TR4	3.71	.820
TR5	3.38	.943
OS1	4.07	.705
OS2	4.10	.680
OS3	3.98	.761
OS4	3.64	.841
OS5	3.72	.852

4.2 Exploratory Factor Analysis

The maximum number of likelihoods using Varimax rotation is performed to analyse the factor correlation and structure between the items included in the measurement scale is referred as exploratory factor analysis. The findings of the rotated factor matrix are given in Table 5.

Table 4. KMO and Bartlett’s Test

KMO and Bartlett's Test		
KMO Measure for adequacy sampling		.922
Bartlett's Test of Sphericity	Approx. Chi-Square	7507.001
	df	300
	Sig.	<.001

The Data is evaluated for factor analysis using Kaiser-Meyer Olkin (KMO) sample adequacy measure and Bartlett's sphericity test. KMO index of 0.50 and above and a big Bartlett test is considered fit for factor analysis Hair (2006). The consequence of showing 0.922 is that the data is essential as shown in Table 4. The criteria for suitability can be met after performing factor analysis with the help of principle component method. The structure of initial factor can be further subjected with rotation method with use of varimax technique.

Table 5. Exploratory Factor Analysis

Rotated Component Matrix				
	Component			
	1	2	3	4
Items				
Workplace Integrity				
WI1				.741

WI2				.874
WI3				.821
WI4				.767
WI5				.785
Career Advancement				
CA1	.804			
CA2	.791			
CA3	.826			
CA4	.843			
CA5	.882			
Work-life Balance				
WL1			.717	
WL2			.834	
WL3			.872	
WL4			.800	
WL5			.791	
Training and Resources				
TR1		.713		
TR2		.852		
TR3		.813		
TR4		.841		
TR5		.832		
Organizational Support and Culture				
OS1	.790			
OS2	.743			
OS3	.786			
OS4		.827		
OS5		.864		
Rotation Method – Kaiser and Varimax Normalization				
Extraction Method - PCA				

a. Rotation converged in 5 iterations.

The exploratory factor analysis (EFA) results indicate that the solution aligns with the expected five-factor structure, with all items loading appropriately onto their respective factors. This five-factor solution accounts for 65.3% of the total variance, demonstrating a good level of validity for the identified factors. To further validate the model, confirmatory factor analysis (CFA) was conducted, which is discussed in the subsequent section.

4.3 Confirmatory Factor Analysis

AMOS version 18 (Arbuckle et al., 2009) was utilized to perform the Confirmatory Factor Analysis (CFA) in Table 6. The analysis evaluated the model for reliability, discriminant validity and convergent validity. Below is the graphical representation of the initial CFA model in Figure 3 and the final adjusted model, reflecting the calculated outcomes.

Table 6. Confirmatory Factor Analysis

Variables/ Constructs	Items	Standardized Factor Loadings	Cronbach Alpha	Composite Reliability	Average Variance Extracted	Maximum Shared Variance
Work Place Integration	WI1	.773	.910	.911	.632	.168
	WI 2	.856				
	WI 3	.771				
	WI 4	.768				
	WI 5	.844				
Career Advancement	CA1	.729	.772	.774	.534	.128
	CA 2	.781				
	CA 3	.678				
	CA4					
	CA5					
Work Life Balance	WL1	.815	.947	.947	.693	.356
	WL2	.875				
	WL3	.893				
	WL4	.912				

	WL5	.866				
Training and resources	TR1	.712	.915	.917	.615	.356
	TR2	.844				
	TR3	.888				
	TR4	.781				
	TR5	.827				
		OS1				
Organizational Support	OS2	.469				
	OS3	.757				
	OS4	.741				
	OS5	.780				
Model Fitness: $\chi^2=1270.52$, $df=424$, χ^2/df ratio of 2.99, 0.074 - RMSEA, 0.034 - RMR and 0.904 - CFI						

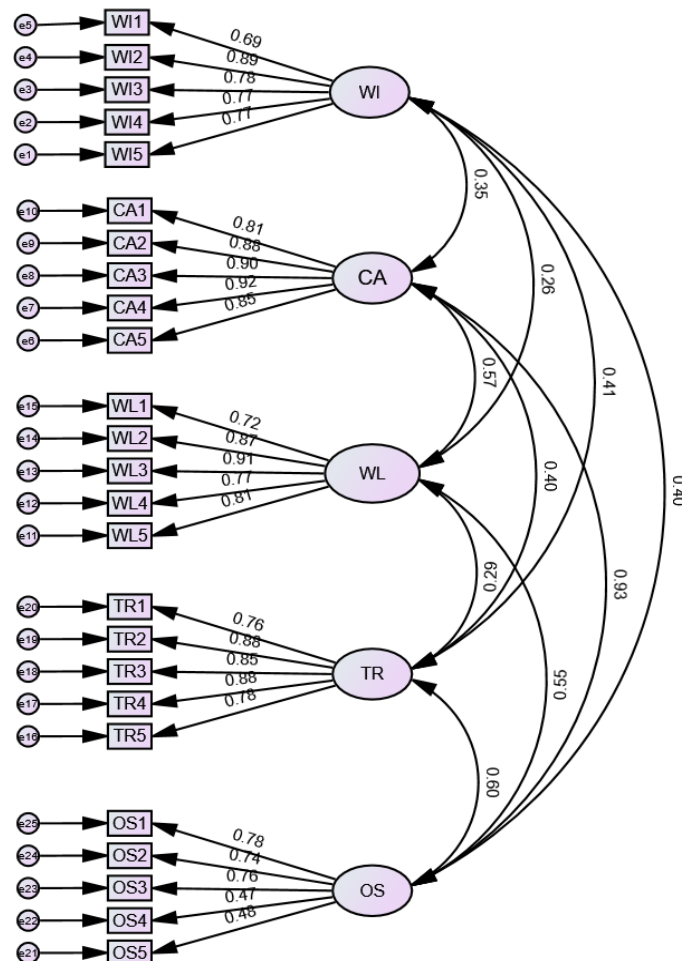


Figure 3. Confirmatory Factor Analysis

Convergent validity, a commonly used parameter in behavioural sciences, psychology and sociology, referred as the extent for theoretically related of the two construct measures with actually correlated. In short, convergent validity tests are in fact, correlated with constructs that are supposed to be related shown in Table 7. The results of the Confirmatory Factor Analysis (CFA) indicate that the model demonstrated good fit statistics, including a χ^2/df ratio of 2.99, 0.074 RMSEA (Root Mean Square Error), 0.034 RMR (Root Mean Sq. Residual) and 0.904 CFI (Comparative Fit Index).

Table 7. Convergent Validity

	CR	AVE	MSV	Max R(H)	TR	WI	CA	WL	OS
TR	0.917	0.689	0.358	0.925	0.830				
WI	0.865	0.618	0.172	0.887	0.415	0.786			
CA	0.942	0.764	0.874	0.948	0.405				
WL	0.908	0.666	0.325	0.925	0.295	0.260	0.570		
OS	0.821	0.418	0.874	0.871	0.496	0.396	0.935	0.318	
Validity Concerns									
Discriminant Validity: the AVE for Career Advancement is less than the MSV.									
Convergent Validity: the AVE for Organizational Support is less than 0.50.									
Discriminant Validity: the AVE for Organizational Support is less than the MSV.									

5. Conclusion

The research study concludes novel perceived problems scale of psychological assessment tool for measuring the subjective challenges faced by female police officers in the professional environment. The study involves reliability analysis and content validation with 25 items using questioner with 5-point Likert scale. The internal consistency achieved with 0.932 Cronbach's Alpha that shows high reliability. The factor analysis is performed for evaluating the data using KMO and Barlett's sphericity test and achieved 0.50 and 0.922 correspondingly. The consequence of showing 0.922 is that the data is essential. The findings shows that the total variance is 65.3% achieved using exploratory factor analysis. The result of CFA shows that 0.074 RMSEA, 0.034 RMR and 0.904 CFI. The scale facilitates the identification of problem areas, guiding targeted interventions and policy development aimed at improving mental well-being, workplace efficiency, and gender equity.

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