Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 6 Issue 1 (2026)

"Exploring The Key Antecedents of Burnout in Women Police: An Interpretative Structural Modeling Approach"

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Abstract

Burnout is a critical occupational hazard within policing, often leading to diminished well-being and professional effectiveness. On examining the considerable research, burnout in general police populations, less focus is showered to the unique experiences of women police officers, who frequently encounter gender-specific stressors. This research emphasizes on exploring and analyzing the key antecedents of burnout among women police personnel in India, using an Interpretive Structural Modeling (ISM) approach to understand the hierarchical structure and interrelationships among these factors.

The research adopts a mixed qualitative-quantitative methodology. Through in-depth review of literature and specialist's interviews, and Delphi technique, a comprehensive list of burnout antecedents relevant to women in policing was identified and refined. The ISM methodology was then employed to develop a structural model that delineates the contextual relationships among the identified factors, categorizing them into driving, dependent, and linkage variables.

The findings reveal that burnout in women police officers is not only influenced by conventional occupational stressors but is significantly shaped by socio-cultural and gender-related factors. Key driving antecedents include lack of institutional support, organizational culture, gender bias, and work-life conflict. These foundational elements contribute to secondary outcomes such as emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment.

The research aims at providing theoretical understanding of burnout through a gendered lens and gives a framework which is structured for addressing burnout in women police. The model which is developed, provides worthy views for policymakers, police administrators, and HR professionals to design more inclusive and supportive interventions expected to promote psychological resilience and job well-being among women police personnel.

Keywords: Burnout, Women Police, Interpretive Structural Modeling (ISM), Occupational Stress, Gender Bias, Police Well-being.

1. Introduction

The word Burnout is considered as a psychological syndrome emerging as an extended response to long lasting interpersonal stressors upon the job, marked by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment (Maslach, Schaufeli, & Leiter, 2001). Burnout being popularly studied across various professions, its implications within

law enforcement—particularly among women police officers—remain insufficiently understood. Policing is inherently a high-stress occupation, involving exposure to violence, irregular work schedules, hierarchical organizational structures, and public scrutiny (Violanti & Aron, 1995). For women in policing, the stressors are always combined by gender-specific problems like occupational discrimination, tokenism, sexual harassment, work-family conflict, and limited upward mobility (Brown & Heidensohn, 2000; Silvestri, 2003).

Although women represent a growing segment of police forces globally, their experiences and stressors are frequently overlooked or subsumed under broader gender-neutral studies of police stress and burnout. The observational research shows, women officials experiencing greater emotional exhaustion and compared to male counterparts in role conflicts, primarily because of the dual burden of professional and domestic responsibilities (Morash, Kwak, & Haarr, 2006; Burke & Mikkelsen, 2005). These conditions can create a cumulative stress load that increases susceptibility to burnout, impacting not only individual well-being but also organizational efficiency, public safety, and long-term retention.

In spite of the enhanced popularity of occupational burnout in policing, it is found that there is hindrance in comprehensive frameworks that map out the interrelationships among the diverse antecedents of burnout in women officers. Most existing models adopt a linear approach, failing to capture the complex, systemic interactions among factors such as organizational culture, gender dynamics, leadership support, coping mechanisms, and personal resilience. In this context, the Interpretive Structural Modeling (ISM) system showcasing a robust methodological framework to explore and trace the hierarchical and contextual relationships among these variables (Warfield, 1976; Sushil, 2012). ISM enables in developing a structured model based on expert input, enabling researchers to identify key driving and dependent factors that shape burnout experiences.

This research emphasizes on exploring the key antecedents of burnout in women police personnel using ISM, providing a nuanced understanding of how these factors interact in a systemic context. By doing so, the research not only contributes to theory-building in occupational stress and gender studies, by providing practical suggestions for law enforcement agencies which seek to implement highlighted interference for psychological support and organizational reform. The study's findings will support in tracing the influencing points to mitigate burnout, improving workplace equity, and enhancing the well-being and performance of women in policing roles. In sum, this research addresses a critical gap at the intersection of gender, occupational stress, and organizational behaviour, contributing to a comprehensive and systems-based understanding of burnout. Through the application of ISM, the study offers a inclusive system which guides future empirical investigations and inform evidence-based policy interventions tailored to the unique challenges faced by women in law enforcement.

2. Scope Of The Research

This research aims to systematically explore and model the key antecedents of burnout, specifically in women police personnel, using the Interpretive Structural Modeling (ISM) methodology. While the phenomenon on burnout is studied highly across various high-stress

professions, there remains a significant gap in understanding the unique constellation of stressors that impact women in law enforcement roles [9]. The research is limited to the context of women police officers in India, recognizing the intersection of occupational stressors, gender-based challenges, and organizational dynamics.

The scope includes the identification, classification, and structuring of key factors contributing to burnout in women police officers. These factors are derived through a combination of literature review, expert inputs, and qualitative validation processes such as the Delphi method. The ISM technique is applied to model the hierarchical relationships among these factors, highlighting both driving and dependent variables [10][11]. The study emphasizes the systemic interactions among the factors like emotional labour, organizational culture, gender bias, work-life conflict, leadership support, and personal resilience [12][13].

The study doesn't emphasize to measure burnout levels quantitatively across departments or regions, nor does it seek to provide generalizations applicable to all law enforcement contexts globally. Instead, the focus is on developing a structured framework that captures the complexity and contextuality of burnout antecedents in women police personnel, thereby enabling targeted policy recommendations and interventions.
Through this approach, the research aims at contributing to both theoretical understanding and practical strategies for mitigating burnout, improving retention, and enhancing the well-being of women in policing roles [14][15].

Research Questions

- What are the key antecedents of burnout among women police personnel, and how are these factors structurally interrelated?
- What individual, organizational, and socio-cultural factors contribute to burnout in women police officers?
- How do these antecedents interact with one another to influence burnout outcomes such as emotional exhaustion, depersonalization, and reduced personal accomplishment?
- Which antecedents act as driving (root cause) factors and which are dependent outcomes in the burnout experience of women police personnel?
- What is the graded construction of the antecedents relating to the issue of burnout among women police as revealed by the ISM model?
- What are the applied results given by ISM-based model for designing burnout mitigation strategies within police organizations?

Literature Review

- Burnout has arisen as a most important occupational health concern over decades, seeking the consideration from psychologists, organizational researchers, and healthcare professionals. Various scholars have contributed to defining and conceptualizing burnout, each offering unique perspectives and models.
- Herbert Freudenberger (1974): The Pioneer: Herbert Freudenberger was the first to coin the term burnout. He defined it as a situation of psychological and corporal tiredness caused by one's professional life, particularly in service-oriented roles. He emphasized, stress/burnout as a

gradual process of energy depletion resultant from lasting overcommitment and idealism that fails to meet reality (Freudenberger, 1974). His early work laid the base for the upcoming observed researches in this field.

- Christina Maslach (1982): The Classic Three-Dimensional Model Christina Maslach introduced the most influential conceptualization of burnout, viewing it as a psychological syndrome involving , motional exhaustion, Depersonalization (or cynicism), Reduced personal accomplishment
- Maslach also developed the Maslach Burnout Inventory (MBI), which became a broadly known tool to measure the burnout in human services (Maslach & Jackson, 1981). She highlighted burnout as a response to chronic interpersonal stressors at work, particularly in helping professions such as nursing, teaching, and social work.
- Wilmar Schaufeli & Dirk Enzmann (1998): A Broader Framework Schaufeli and Enzmann argued that burnout is not limited to human service professions. They defined it as a persistent, negative work-related state of mind, primarily characterized by exhaustion and mental distancing from work (Schaufeli & Enzmann, 1998). They introduced the Oldenburg Burnout Inventory (OLBI), broadening the measurement beyond emotionally labour-intensive roles.
- Ayala Pines & Elliot Aronson (1988): The Emotional and Existential View Pines and Aronson conceptualized burnout as a state of physical, emotional, and mental exhaustion due to long-term involvement in emotionally demanding situations. They emphasized the loss of meaning and emotional depletion, framing burnout as not only a workplace issue but also an existential one (Pines & Aronson, 1988).
- Cary Cherniss (1980): Organizational Influences Cherniss viewed burnout from an organizational psychology perspective. He defined it as a gradual process of emotional withdrawal and disillusionment with reference to chronic job-related stress (Cherniss, 1980). He focused on the influence of unmet expectations, lack of support, and organizational stressors, particularly among young professionals.
- Michael Leiter & Christina Maslach (2000s): Areas of Work Life Model Building on the original three-dimensional model, Leiter and Maslach introduced the "Areas of Work Life" model. They proposed that burnout results from mismatches between the individual, job environment in six areas: job, rheostat, prize, public, justice, and morals (Leiter & Maslach, 2004). This model shifted the focus from individual failure to organizational misalignment.
- Arnold Bakker & Evangelia Demerouti (2007): The Job Demands–Resources Model Bakker and Demerouti developed the Job Demands–Resources (JD-R) model, explaining burnout as an output of more demands of the job mutual with insufficient job resources. Their model is flexible and applicable across all occupations, emphasizing that both personal and environmental factors contribute to burnout (Bakker & Demerouti, 2007).
- The World Health Organization (WHO) (2019): Formal Classification In 2019, the World Health Organization (WHO) recognized burnout/exhaustion to a work-related phenomenon in the International Classification of Diseases (ICD-11). The WHO defines burnout as, a condition consequential from long-lasting stress at the workplace that are not successfully managed, characterized by feelings of energy exhaustion, enhanced psychological distance or cynicism toward one's job, depleted occupational efficacy (World Health Organization, 2019) Although, not bifurcated as a therapeutic condition, the WHO's inclusion of burnout highlights its significance and global relevance.

- Burnout in lady police officers has become a significant area of study because of the unique encounters faced by female personnel in the enforcement of law. Several scholars have explored the causes, manifestations, and implications of burnout, emphasizing the interplay between organizational factors, gendered experiences, and work–family conflict.
- Bhuvaneswari and Thiru Moorthi (2023) examined how work–family conflict contributes to burnout among lady police personnel. The study conducted by them initiated that women experiencing greater heights of conflict between professional and familial responsibilities are more susceptible to burnout. This effect is intensified in stressful work environments, highlighting the critical want for caring organizational policies like, elastic arrangements at workplace, mental health initiatives. The authors argue that creating a work place culture which is sensitive to women's dual roles can reduce emotional exhaustion and improve well-being.
- Similarly, Raj and Ashifa (2021) documented the prevalence of job-related burnout amongst the lady police officers, identifying emotional exhaustion, depersonalization, and diminished personal accomplishment as key symptoms. They emphasize that female officers face a double burden of professional demands and societal expectations related to family care. Their findings underscore the necessity for improved workplace welfare, better communication channels for women to voice concerns, and equitable career advancement opportunities to mitigate burnout.
- McCarty, Garland, and Zhao (2006) conducted a comparative study on occupational stress between male and female officers. Although stress and burnout levels appeared similar across genders, the factors influencing these outcomes differed. For female officers, involvement in violent incidents and the fear of using force were significant predictors of burnout, suggesting gender-specific stress pathways. This differentiation points to the importance of personalized involvements considering gendered experiences within policing roles.
- Pandemic COVID-19 has introduced new stressors for women police officers, as reported by Fleming and Brown (2021). Their study of policewomen in England and Wales during lockdown revealed increased domestic and caregiving responsibilities, which exacerbated work–life conflict. Despite greater acceptance of flexible working throughout the said span of time, most females struggled to balance these demands, leading to elevated stress and burnout. This highlights how external crises can amplify existing gendered challenges in policing.
- A recent meta-ethnographic review published in BMC Public Health (2024) synthesized qualitative evidence across various countries to reveal organizational injustices faced by women in policing. The review highlighted persistent gender bias, limited support for reproductive health issues, and inadequate mentoring opportunities as systemic barriers contributing to poor wellbeing and burnout. The authors recommend comprehensive organizational reforms, including transparent policies, gender-sensitive support services, and peer networks to foster healthier work environments.
- Lastly, Sundaram and Jeyakumaran (2012) focused on female police constables in Tamil Nadu, India, identifying workplace stressors such as gender discrimination, lack of autonomy, and insufficient social support. The insights given by them advise for occupational redesign and policy changes to enhance women's decision-making power and reduce bias most necessary for improving the job satisfaction and reducing the burnout among lower-ranked female officers.
- EXPERT PANEL AND DELPHI METHOD: An expert panel consisting of 15–20 participants was formed, including: Senior women police officers, Police psychologists,

Academics in policing and organizational behavior, and Gender studies experts. A Delphi technique was used in two rounds to achieve consensus on the most relevant burnout antecedents. The first round involved open-ended inputs, while the second round involved rating and refining the factors.

Research Methodology

The research here, imbibes a qualitative exploratory design integrated with a systemic Modeling approach, specifically Interpretive Structural Modeling, to examine and structure the key antecedents of burnout in women police personnel. Given the complexity and context-specific nature of burnout, particularly as experienced by women in a male-dominated profession, the ISM method is ideal for uncovering the hierarchical and interrelated nature of contributing factors. The article focus is to explore and model the key antecedents of burnout among women police personnel using the Interpretive Structural Modeling approach. Tha article emphasises to identify and categorize the critical factors contributing to burnout among women police officers. Also to analyze the interrelationships among identified antecedents of burnout. The paper aims to classify the antecedents into driving, dependent, and linkage variables using MICMAC analysis and develop a structured model representing the hierarchical influence of antecedents of burnout in women police. Also it provide theoretical and practical recommendations for mitigating burnout in women police personnel. The study conducted here is exploratory in nature and follows a multi-phase methodology, combining: Literature review for conceptual grounding, Expert interviews, and Delphi method for factor identification and validation, Interpretive Structural Modeling (ISM) for structural analysis and model building.

Data Analysis:

a. INTERPRETIVE STRUCTURAL MODELING (ISM)

ISM was used to establish relationships among the identified antecedents and construct a hierarchical model. The steps involved:

1. Developing a Structural Self-Interaction Matrix (SSIM) based on expert judgments
2. Converting the SSIM into a Reachability Matrix
3. Partitioning the levels through iterative matrix analysis
4. Developing a directed graph (digraph) to illustrate interdependencies
5. Creating an ISM-based model showing the hierarchy of burnout antecedents.

b. Micmac Analysis

To further classify the antecedents based on their driving and dependence power, MICMAC (Matrix of Crossed Impact Multiplication Applied to Classification) analysis was conducted. This step identifies:

- Driving variables (high influence)
- Dependent variables (highly influenced)
- Linkage variables (unstable)
- Autonomous variables (weak links)

Altogether, the above studies/researches demonstrate the factor burnout among women police officers arises from a complex combination of individual, organizational, and societal factors. Addressing this issue requires multifaceted strategies, including flexible work policies, mental

health support, gender-sensitive training, and structural reforms to eliminate bias and promote equity within police departments.

Table:1 Significant factors for feeling Burnout as per Literature

S. No.	Factor	Definition	Reference(s)
1	Peer support	It is a system of giving and receiving help founded on key principles of respect, shared responsibility and mutual agreement of what is helpful.	Mead S., Hilton D. and Curtis L. (2001)
2	Child care responsibilities	It refers to the legal, moral and practical duty of caregivers-primarily parents and guardians-to ensure safety, well-being and development of children.	Baker M. (2015)
3	Organizational support	This concept emphasizes the importance of employee's beliefs that the efforts put by them are realised, that their socio emotional needs are considered by the organization.	Kossek E.E. Pichler S. Bodner T.and Hammer L.B. (2011)
4	Family support and understandability	It refers to the range of resources provided by the family members that facilitate individual functioning, emotional well-being, resilience during the time of need or distress.	Choi S. (2011)
5	Gender bias	It refers to unequal treatment/discrimination based on an individual's gender.	Corrigall E.A. and Konrad A.M. (2007)
6	Long and irregular working hours	It is defined as work duration that exceed standard threshold set by labour regulations or international guidelines	Maslach C. and Leiter M.P. (2016)
7	Access to mental health	It refers to individual's emotional, psychological and social well-being which affects how they think, feel and behave.	World Health Organization (WHO) (2001)
8	Access to leaves	It refers to an employee's entitlement and practical ability to utilize time-off benefits like sick leave, parental leave without undue restrictions or penalties.	Berg P. (2002)
9	Shift duties	It means responsibilities and tasks assigned to employees working within a designated time block or shift which may occur during the day, evening or night depending on the organizational schedule.	Smith L. Folkard S. and Poole C.J. (1994)

10	Training	It is a systematic process designed to improve specific job-related competencies of individuals.	Ford J.K. and Quinones M.A. (2014)
11	Spousal support	It refers to the emotional, practical, and sometimes professional support that a person receives from their spouse or partner, which enables them to better manage needs of both job and individual life.	Wani (2023)
12	Transport and commuting	commuting refers to regular, repetitive travel undertaken by individuals between their homes and workplace. Transportation refers to movement of people, goods, and services across various geographical location.	Banister D. (2008)
13	Burnout	refers to a psychological syndrome emerging as a prolonged response to chronic interpersonal stressors on the job, characterized by exhaustion, cynicism and reduced professional efficacy.	Maslach C. & Leiter M.P. (2016)
14	Emotional exhaustion	It is a state of chronic physical and emotional depletion that occurs as a result of prolonged exposure to stress or overwhelming emotional demands.	Barreto, M., & Salazar, M. (2021)
15	Supportive leadership	It refers to a leadership style where leaders prioritize creating a positive, inclusive, and empowering environment for their team members.	Muller, A., & Kottwitz, M. (2022)
16	Training on stress	Stress management training is a structured program designed to help individuals recognize, understand, and cope with stress, both in their personal and professional lives.	Mousavi, S. M., & Khodadadi, M. (2022)
17	Time management	The procedure involving planning and exercising conscious rheostat on the amount of time spent on specific activities.	Khodadadi, M., & Mousavi, S. M. (2023)
18	Social expectations	Social expectations are the societal norms, rules, behaviours, people are anticipated to follow within a particular culture, community, or social group	Kamyab, F., & Hoseinzadeh, A. (2023)
19	Job autonomy	It refers to the degree of control and independence an individual has over	Clausen, T., Nielsen, M. B., &

		their work and decision-making processes.	Borg, V. (2022)
20	Flexi options to work	it refers to various employment arrangements that allow employees in having more rheostat over and when, where, and how the employees accomplish their job duties.	Zhang, G., & Bhaumik, A. (2024)

Step 1: Identification of Variables (Antecedents of Burnout): To extract a list of key variables (antecedents) contributing to burnout in women police. Sample Antecedents**:**

1. Role conflict
2. Gender discrimination
3. Lack of work-life balance
4. Inadequate support from superiors
5. Exposure to violence
6. Long working hours
7. Organizational politics
8. Limited career growth
9. Lack of counselling services
10. Societal expectations (These variables will be finalized and validated through expert consensus.

Step 2: Establishing Contextual Relationships (SSIM): Experts are asked to compare each duo of variables (i and j) and define the route of influence. Symbols used in SSIM:

Symbol	Interpretation
V	i influences j
A	j influences i
X	i and j influence each other
O	No relation between i and j

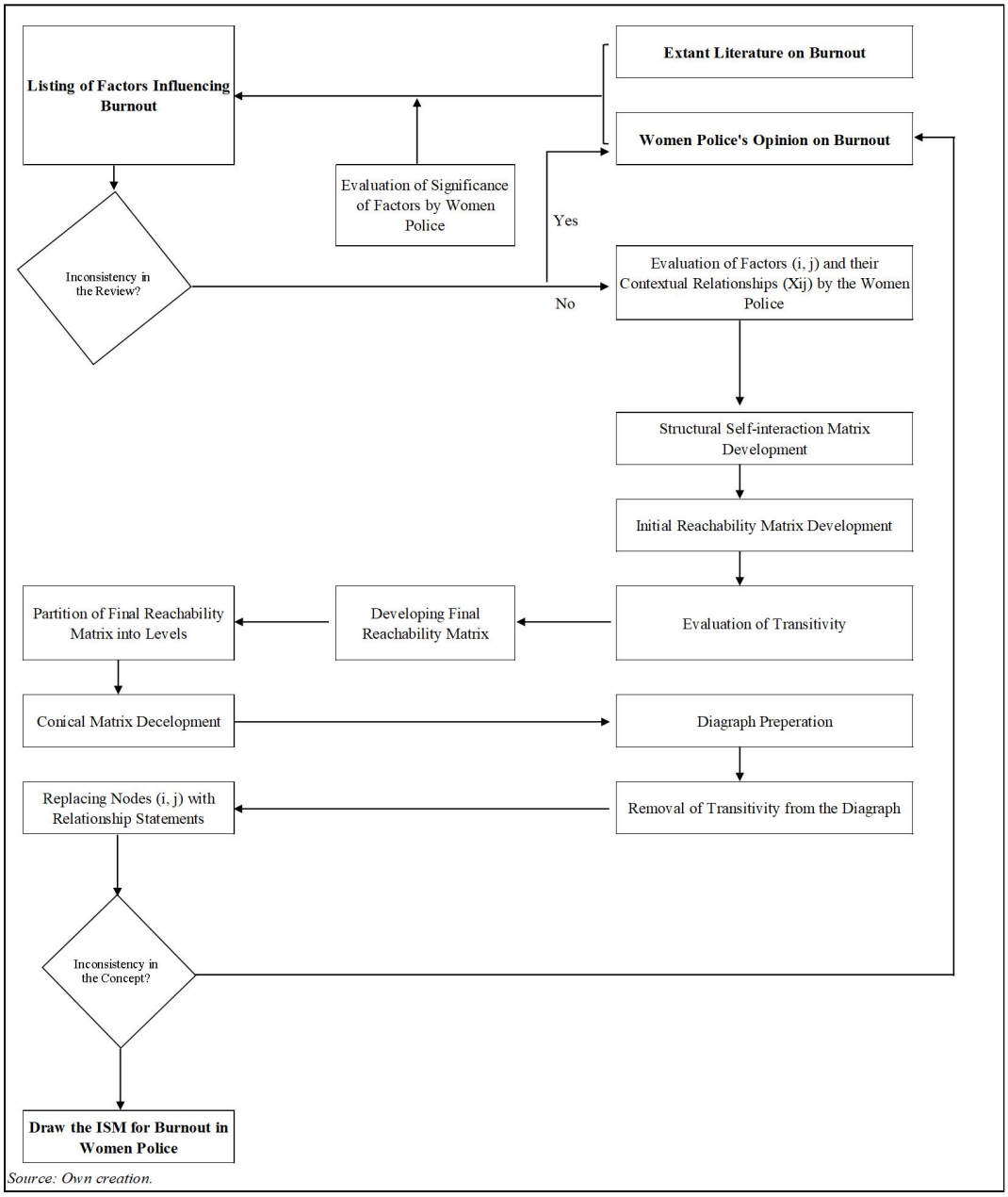
Step 3: Development of Reachability Matrix: Convert Structured Self Interaction Matrix into **Initial Reachability Matrix** (IRM)by replacing symbols with 1's and 0's using standard ISM rules. Include transitivity: If A → B and B → C, then A → C.

Step 4: Level Partitioning: Determine the **Reachability Set (RS)** and **Antecedent Set** (AS)for each variable. Identify Intersection Set. Variables with the same reachability, intersection set are assigned to the highest level. Repeat the process iteratively to define all levels of the hierarchy.

Step 5: Formation of ISM Model (Diagraph): Create a directed graph (digraph) showing the variables and their relationships. Eliminate transitive links for clarity. The final ISM model will display the structured multi-level hierarchy of antecedents.

Step 6: MICMAC Analysis: MICMAC Analyzes **driving power (DRP)** and **dependence** power (DNP) of each variable. Classifies variables into four clusters: Autonomous, Dependent**,**

Linkage**,** Driving. Data Collection Strategy: Expert panel: 10–15 experts with experience in police administration, occupational health, clinical psychology, and gender studies. The methods of data collection used here are Review of Literature, Delphi method (iterative surveys), Focus group discussions, Semi-structured interviews.



Source: Own creation.

Analysis:

Selection of factors impacting burnout in women police: As a preliminary step for ISM, the research has used 20 elements which are traced based from comprehensive literature review as participative elements for supplementary processing of ISM. A group of 20 experts from the

industry, everyone with ten or more years of experience, was used to inspect the significance level of each of the identified triggers in a Five-point Likert scale (Five is very significant and one is not significant, please go through Appendix 1).

Appendix 1. Significance of the triggers of BURNOUT IN WOMEN POLICE

Significance of the aspects for feeling Burnout. Please rate the following triggers for feeling burnout on a scale of FIVE points. 1-Not feel burnout, 2-Somewhat feel burnout, 3-feel burnout, 4-Very feel burnout, and 5-Extremely feel burnout. Please opt only ONE trigger in each row.

S. No.	Triggers	Case numbers	Ratings				
			1	2	3	4	5
01	Peer support	1					
02	Child care responsibilities	3					
03	Organizational support	4					
04	Family support and understandability	7					
05	Gender bias	11					
06	Long and irregular working hours	6					
07	Access to mental health	17					
08	Access to leaves	18					
09	Shift duties	28					
10	Training	41					

The 20 experts were selected from a total of 41 specialists to gather their decisions on the process of burnout. All the major 'points of consideration' of these 20 specialists on the different triggers for burnout were noted carefully. After considering the input (Appendix 1) from the specialists, the study considered triggers only with a mean score of 3 (three) or more (Rana et al., 2019). Accordingly, 11 factors: peer support, child care responsibilities, access to mental health, shift duties, spousal support, emotional exhaustion, supportive leadership, training on stress, time management, job autonomy, and flexible work options were not considered, resulting in the consideration of NINE factors for further processing of ISM (Table 2).

Table:2 representing Factors (BURNOUT IN WOMEN POLICE) for ISM.

S. No.	Factor's Name	Factor's Code	Mean Score	Rank Basis Mean Score
1	Organizational support	OS	3.7	6
2	Family support	FS&U	4.7	12
3	Gender bias	GB	4	8
4	Working hours irregularity	L&IWH	3.5	4
5	Access to leaves	AL	4.8	13
6	Training	T	3.6	5
7	Transport	T&C	4	8
8	Burnout	BO	5	14
9	Social expectations	SE	3.7	6

Sampling technique and data gathered from the experts of the domain:

For this research, the sampling size consists of Indian based knowledge persons from the sector who are all having a minimum of 10 years of knowledge to find complete knowledge in this domain in the both knowledge experiences of the burnout and respective domain). This research uses sampling technique called Judgement and remains the sectors different types to be open in a wide range category. Experienced persons were personally approached to bring their notice about the purpose and study objectives of conducting survey with their permission. They use to provide with a questionnaire (see appendix 2) and followed with the experts to obtain the progress, further help. As most of them were seniors in the particular industry, a keen follow-up was done with those experts to solve their queries if they had anything. The current research visited 41 experienced persons in the respective sectors and got accurate instruments by 20 of them. Please find (Table 3) details of experts.

Table 3 representing demographics profiles:

Demographic Profile	Count	Distribution
Gender		
Male	0	0%
Female	20	100%
Age		
<30	0	0%
30-35	4	20%
36-40	7	35%
41-45	5	25%
>45	4	20%
Highest Qualification		
PUC	1	5%
UG	13	65%
PG	6	30%
Work Experience in years		
10	8	40%
10 to 14	5	25%
15 to 20	4	20%
>20	3	15%
Level		
Entry	8	40%
Mid	5	25%
Senior	7	35%

Self-structured interaction matrix (SSIM): The context relationship between the burnout factors were established by utilizing the experienced people's opinions as received by the series of structured questionnaire shown in Appendix 3 and the collective views and thoughts were presented in the SSIM (Table 4). Four codes are utilized to point out the way of the association between the triggers (I, J) (Ratan et al., 2019: Khan and Rahman 2015): 'V' is used for the relation by factor I to J; 'A' used for the relationship by J to I; 'X' to the association among I and J in both directions; 'O' for no associativity amongst I and J. Here the encrypting of V, A, X and O presents how a particular trigger shown influence on other trigger (Rana et al., 2019), and like in similar, it was prepared the SSIM set by considering the collection (20 experienced persons opinion on the relation among 9 Burnout triggers (Table 4).

Table 4 representing SSIM set.

SmartISM: Smart Interpretive Structural Modeling

	burnout	social expectations	family support	organizational support	training	Access to leaves	Gender bias	transport	Working hours irregularity
Working hours irregularity	O	V	V	V	O	O	O	O	
transport	O	V	V	V	O	O	O		
Gender bias	O	V	V	V	O	O			
Access to leaves	O	V	V	V	O				
training	O	V	V	V					
organizational support	V	O	O						
family support	V	O							
social expectations	V								
burnout									

Four codes were utilized for denoting the way of the association amongst the triggers (I, J) (Rana et al., 2019: khan and Rahman 2015); 'V' for the relation since factor I to j; 'A' for the relation from j to I; 'X' for the association amongst I and j in both directions; and 'O' for no associativity among I and j. In other words, encrypting of V, A. X, and O represents how a factor influences other factors (Rana et al., 2019), and accordingly, equipped the SSIM set capturing collection (20 experts) opinion on the pair-wise relationship among 9 BURNOUT factors (Table 4).

Initial reachability matrix (IRM) and final reachability matrix (FRM):
At the later stage, this research framed the Initial reachability matrix (IRM) by transforming 4 codes of SSIM to binary numbers i.e. (Yes is 1 and No is 0) as the stated rule. In the Table 5, further this research utilized the complete answers given by the experienced persons to finish the Initial reachability matrix (IRM) (Table 6). Next, the transitivity methodology is functional to IRM Initial reachability matrix to identify the transitive relation between those 9 triggers to get the FRM (Table 7). Transitivity is defined as that if factor 'A" leads to 'B' and 'B' leads to 'C', then 'A' leads to 'C'. This rule is to identified keenly for the complete entries in IRM, and selected cases were to be changed with 1*; or else it will be left as it is. The overall output is termed as (FRM) final reachability matrix (Table 7). Then the driving power (DRP) and (DNP)

Dependence power shall be analysed for individual trigger by summing up the digits of 1s in the rows for the suitable rows and columns (Table 7).

Table: 5 representing Coding rule for the SSIM inputs

Table 5				
Coding rule for SSIM inputs				
Entry code in SSIM (i,j)	**V**	**A**	**X**	**O**
For (i to j)	1	0	1	0
for (j to i)	0	1	1	0

Further, this study used the full response of experts to complete the IRM (Table 6).

Table 6 representing IRM:

Reachability Matrix(RM)

Variables	1	2	3	4	5	6	7	8	9	Driving Power
Working hours irregularity	1	0	0	0	0	1	1	1	0	4
transport	0	1	0	0	0	1	1	1	0	4
Gender bias	0	0	1	0	0	1	1	1	0	4
Access to leaves	0	0	0	1	0	1	1	1	0	4
training	0	0	0	0	1	1	1	1	0	4
organizational support	0	0	0	0	0	1	0	0	1	2
family support	0	0	0	0	0	0	1	0	1	2
social expectations	0	0	0	0	0	0	0	1	1	2
burnout	0	0	0	0	0	0	0	0	1	1
Dependence Power	1	1	1	1	1	6	6	6	4	

Then, on application of the transitivity rule to IRM in order to test the transitive associativity amongst the nine factors to reach the FRM (final reachability matrix) (Table 7).

Table 7 representing FRM

Final Reachability Matrix(FRM)

Variables	1	2	3	4	5	6	7	8	9	Driving Power
Working hours irregularity	1	0	0	0	0	1	1	1	1*	5
transport	0	1	0	0	0	1	1	1	1*	5
Gender bias	0	0	1	0	0	1	1	1	1*	5
Access to leaves	0	0	0	1	0	1	1	1	1*	5
training	0	0	0	0	1	1	1	1	1*	5
organizational support	0	0	0	0	0	1	0	0	1	2
family support	0	0	0	0	0	0	1	0	1	2
social expectations	0	0	0	0	0	0	0	1	1	2
burnout	0	0	0	0	0	0	0	0	1	1
Dependence Power	1	1	1	1	1	6	6	6	9	

The word Transitivity refers to that, if factor ‘A’ leads to ‘B’ and ‘B’ leads to ‘C’, then ‘A’ leads to ’C’. The rule of transitivity is to be verified cautiously for all the entries in IRM, and only the qualified cases are to be replaced with 1*; else, it is left as it is. The final output is termed FRM (Table 7). Thereafter, the driving power (DRP) and the dependence (DNP) power are to be considered for every individual trigger by summing all the number of 1’s in the rows of the corresponding rows and columns (Table 7).

Level partitions:

By this FRM, this research bifurcates complete triggers into reachability, antecedent and also into intersection. Initially the Reachability (RM) and Antecedent groups are brought for every individual trigger and then the intersection set was formed (Warfield, 1974). The reachability group is prepared and consists of the triggers itself and then altogether the triggers it has influence. Also, the antecedent group consists of all the triggers/factors that were similar to both the antecedent and reachability groups. In the ISM stages, the triggers that are identical in both the reachability and intersection groups were shown the position of first stage of factors (top). In the same way, the said triggers are removed with a purpose of further procedure of stage of level partitioning (LP). This procedure gets continued to separate the next stage of triggers and the repetition repeats till the stage of each trigger is identifies. By this research, the different level of stages (hierarchy level) for all the triggers as mentioned method. Trigger number 9 comes on the top, then trigger number 8 and so on. All the factors for the burnout in women police were classified into 3 different stages (Table 8 and Table 9).

Table: 8 representing Level partition iteration

Level Partitioning(LP)

Elements(Mi)	Reachability Set R(Mi)	Antecedent Set A(Ni)	Intersection Set R(Mi)∩A(Ni)	Level
1	1,	1,	1,	3
2	2,	2,	2,	3
3	3,	3,	3,	3
4	4,	4,	4,	3
5	5,	5,	5,	3
6	6,	1, 2, 3, 4, 5, 6,	6,	2
7	7,	1, 2, 3, 4, 5, 7,	7,	2
8	8,	1, 2, 3, 4, 5, 8,	8,	2
9	9,	1, 2, 3, 4, 5, 6, 7, 8, 9,	9,	1

Table: 9 representing Conical Matrix:

Conical Matrix(CM)

Variables	9	6	7	8	1	2	3	4	5	Driving Power	Level
9	1	0	0	0	0	0	0	0	0	1	1
6	1	1	0	0	0	0	0	0	0	2	2
7	1	0	1	0	0	0	0	0	0	2	2
8	1	0	0	1	0	0	0	0	0	2	2
1	1*	1	1	1	1	0	0	0	0	5	3
2	1*	1	1	1	0	1	0	0	0	5	3
3	1*	1	1	1	0	0	1	0	0	5	3
4	1*	1	1	1	0	0	0	1	0	5	3
5	1*	1	1	1	0	0	0	0	1	5	3
Dependence Power	9	6	6	6	1	1	1	1	1		
Level	1	2	2	2	3	3	3	3	3		

Conical matrix and development of the ISM model for BURNOUT IN WOMEN POLICE:

After framing conical matrix by setting all the triggers, respect to their stages and grouping the triggers as per the series of (DRP) Driving power and (DNP) Dependence power. The top ranks were assigned to the triggers having maximum number of 1's with the rows and columns (Table 10). By the partition level and Conical Matrix, an Interpretive Structured Model (ISM) was formed by representing the association with the triggers which are using a suitable direction (arrow) and the line graph. This graph is considered as diagraph and which represents the complete image of the experienced person's collective view. Thereafter digraph eliminates the transitivity chain or link and tends to ISM model (Fig. 3). By the end, model validity was observed by utilizing the specialists plan and solved accordingly.

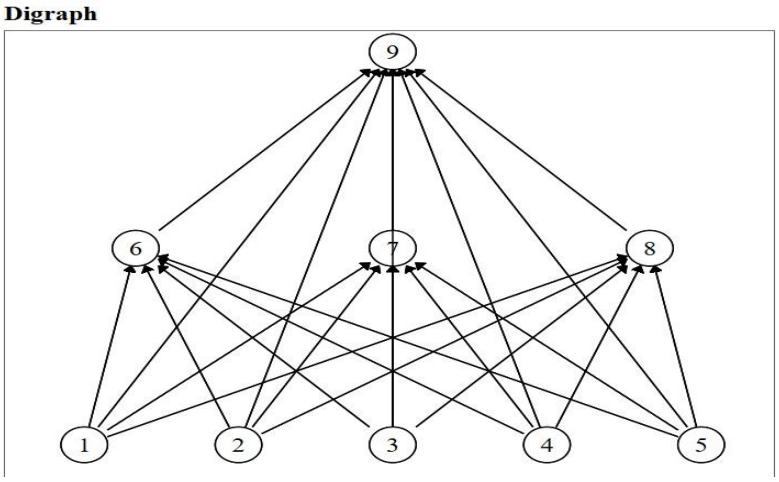
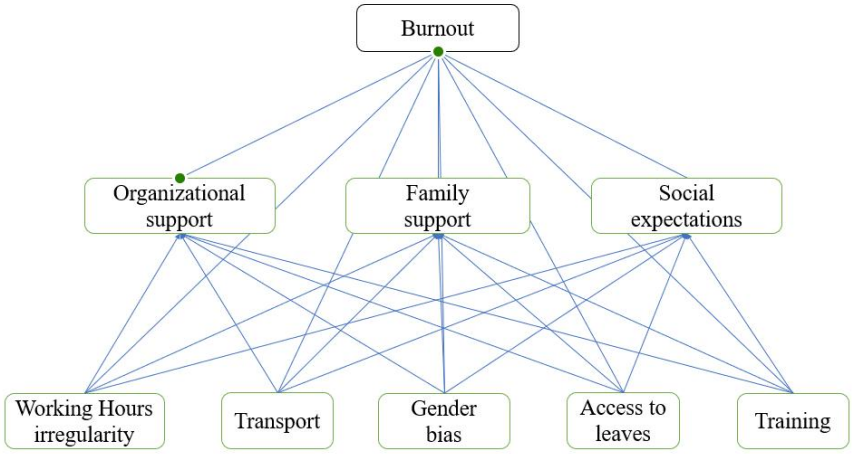


Fig3. Model of ISM for BURNOUT IN WOMEN POLICE

Lastly, the rationality of the model was tested by means of the estimation of the specialists and rectified.



Final model

Analysis of MICMAC for BURNOUT FACTORS IN WOMEN POLICE:

The output of the ISM (Interpretive Structural Modeling) acts as main constituent to the this system in identifying and analysing the DRP (driving power) and DNP (dependence power)(Mandal and Deshmukh, 1994), which effect the BURNOUT (Fig.4).

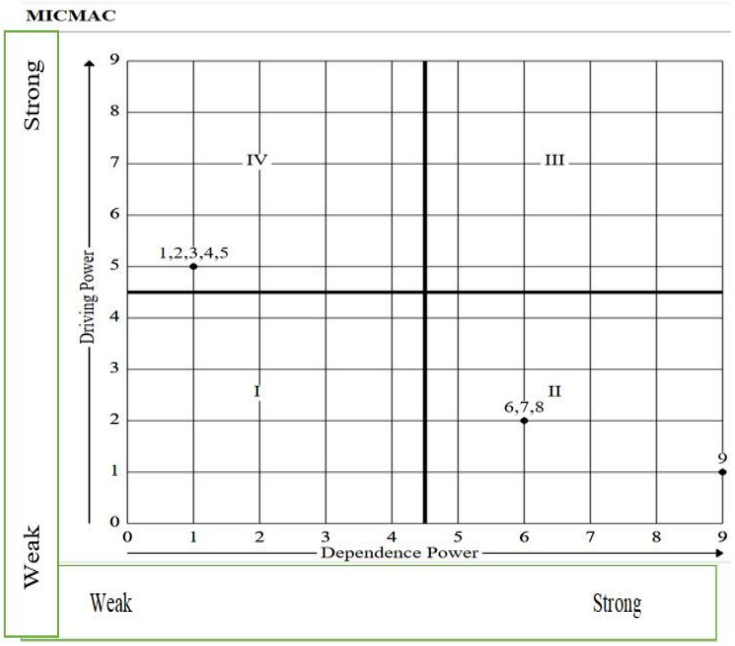


Fig. 4. DRP and DNP sketch

Conclusion:

This research aims at exploring the key antecedents of burnout among women police personnel using the Interpretive Structural Modeling (ISM) approach. Recognizing that women in policing face unique psychological, organizational, and socio-cultural pressures, this research developed a hierarchical structural model identifying and categorizing the variables that contribute to burnout. The study's findings reveal that burnout in women police is a multi-level phenomenon: The ISM model not only structures these variables hierarchically but also offers a systems-level understanding of burnout, showing the dynamic and interdependent nature of the antecedents. By grounding the findings in established theories such as the Maslach Burnout Theory, Gender Role Theory (Eagly, 1987), and the Demand-Control-Support Model (Karasek & Theorell, 1990), this study contributes theoretically and empirically to the fields of organizational behavior, policing, and gender studies.

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