



Article

# Development and Validation of Psychosocial Immunity Scale for Job Professionals

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**ABSTRACT**

**Background:** In the context of increasing occupational stress and burnout, the need for comprehensive assessment tools that capture both psychological resilience and social coping mechanisms has become critical. Existing scales often address these domains in isolation, failing to account for their dynamic interaction in shaping professional well-being and performance. **Objective:** This study aimed to develop and validate the Psychosocial Immunity Scale for Job Professionals (PSIS), designed to assess the dual dimensions of psychological and social immunity in the workplace, with the goal of identifying protective factors against burnout and stress-related dysfunction. **Methods:** A cross-sectional study was conducted across multiple professional sectors in urban Pakistan. A total of 153 participants were recruited for Exploratory Factor Analysis (EFA), followed by 238 participants for Confirmatory Factor Analysis (CFA). Inclusion criteria included adults aged  $\geq 18$  years with at least one year of continuous job experience; those with known psychiatric illness were excluded. Items were generated via systematic literature review and validated by subject matter experts. Statistical analysis was performed using SPSS v26 and AMOS v28, evaluating construct validity, internal consistency, and model fit. Ethical approval was granted by the GIFT University IRB in accordance with the Helsinki Declaration. **Results:** EFA revealed a two-factor structure (psychological and social immunity) with 16 retained items, explaining 50.5% variance ( $KMO=0.82$ ,  $\alpha=0.817$ ). CFA confirmed model fit with  $CFI=0.936$ ,  $TLI=0.925$ ,  $RMSEA=0.056$ . PSIS scores showed positive correlations with cognitive crafting ( $r=0.46$ ) and flow state ( $r=0.53$ ), and negative correlation with work-life imbalance ( $r=-0.34$ ), all statistically significant ( $p<0.001$ ). **Conclusion:** The PSIS is a valid, reliable tool for assessing psychosocial resilience among professionals. Its application can enhance early identification of stress vulnerability and support evidence-based interventions in occupational health and mental well-being.

**Keywords:** Psychological Resilience, Social Support, Occupational Stress, Burnout, Mental Health Assessment, Psychometrics, Workplace Well-being

**INTRODUCTION**

In contemporary occupational psychology, increasing attention has been given to the concept of psychosocial resilience, particularly how psychological and social resources buffer professionals against the adverse effects of stress, burnout, and workplace adversity (1). This evolution in psychological research stems from the growing recognition that emotional and social capacities play pivotal roles in sustaining individual wellbeing beyond the absence of pathology (2). Unlike traditional disease-centered models, recent frameworks emphasize psychological assets and social integration as promotive agents of health, longevity, and productivity (3). The intertwined nature of mental, physical, and social health underscores the importance of holistic models that account for both internal psychological resources and external relational support in shaping work-related outcomes (4,5).

Despite this paradigm shift, the empirical measurement of these psychosocial buffers remains scattered across diverse, often fragmented constructs such as resilience, social support, job engagement, and emotional stability (6). While existing models like the Job Demands-Resources (JD-R) theory provide a scaffold to understand burnout and wellbeing, they seldom incorporate an integrated, operationalized measurement tool that quantifies both psychological and social immunity collectively (7). The concept of "psychosocial immunity," although thematically present in resilience research, lacks a validated psychometric scale that systematically evaluates how professionals resist and recover from psychosocial stressors in work environments (8).

Professionals across fields such as healthcare, education, engineering, and civil services are increasingly exposed to high job demands, inadequate supervisory support, overcommitment, and evolving organizational pressures, which contribute to chronic fatigue, emotional exhaustion, and job turnover (9,10). These occupational hazards necessitate a valid and reliable instrument that can identify both strengths and vulnerabilities within professionals' psychosocial defense systems. While psychological immunity has been previously conceptualized as a personal system of adaptive coping mechanisms and positive personality characteristics acting as "psychological antibodies" (11), its synergistic integration with social immunity—defined as collective or contextual buffers like coworker support and organizational adjustment—has not been quantified in a unified tool (12).

Furthermore, in the South Asian context, especially within Pakistani organizational structures, psychosocial stressors are exacerbated by hierarchical rigidity, limited decision-making autonomy, and cultural stigmatization of emotional expression, leading to compromised professional wellbeing (13). Although research on burnout and job stress in Pakistan is emerging, a gap remains in the development of localized, culturally responsive instruments that assess professionals' resilience through the dual lens of psychological and social immunity (14). Existing global scales fail to capture the nuances of collectivist work cultures, role ambiguity, and managerial disengagement prevalent in this context.

Given these theoretical and contextual gaps, this study aims to develop and validate a Psychosocial Immunity Scale (PSIS) specifically designed for job professionals. The tool is intended to measure both psychological resilience traits (e.g., self-efficacy, emotional stability, change orientation) and social coping capacities (e.g., coworker support, job control, perspicacity) that contribute to resistance against workplace-induced stress and burnout. Through a systematic literature review, item generation, and psychometric validation involving exploratory and confirmatory factor analyses, the study addresses a critical need in occupational health measurement.

The objective is to create a statistically robust and contextually relevant scale that identifies psychosocial vulnerabilities and strengths within professional populations, thereby enabling practitioners, organizational leaders, and therapists to design targeted interventions for sustained mental wellbeing and performance optimization. Thus, the guiding research question is: Can an integrated psychosocial immunity scale be developed and validated to reliably assess psychological and social resilience factors in job professionals within a culturally specific organizational context?

## MATERIALS AND METHODS

The study employed a cross-sectional observational design to develop and validate a psychometric instrument measuring psychosocial immunity among working professionals. This design was selected to capture a snapshot of psychological and social resilience attributes across a diverse occupational population, facilitating the exploration of latent constructs within a naturalistic professional setting. Data collection was conducted in multiple urban centers across Pakistan, including Gujranwala, Lahore, Islamabad, Rawalpindi, Okara, Multan, Peshawar, and Karachi, between January and June 2024. This wide geographical scope was intended to enhance the generalizability and cultural relevance of the scale across varied organizational structures.

Participants were included if they were currently employed professionals aged 18 years or older and had at least one year of continuous employment in their current field. Exclusion criteria were incomplete work history, self-reported psychological diagnosis, or employment gaps exceeding six months in the past year. Participants were selected through purposive and snowball sampling methods. Initial contacts were made within professional circles, and these participants were encouraged to share the survey link with eligible colleagues. Recruitment occurred through workplace visits, email invitations, and electronic messaging platforms. Informed consent was obtained from all participants prior to data collection, with clear instructions and assurances regarding confidentiality and the voluntary nature of participation.

The process of data collection involved two sequential phases. The first phase consisted of a systematic literature review and item pool generation, which yielded 34 preliminary items representing two broad constructs: psychological immunity and social immunity. The items were drafted based on core themes identified from literature in resilience, occupational psychology, and psychosocial health (1-6). These items were further categorized into 14 subscales, each representing discrete dimensions such as self-efficacy, goal orientation, change orientation, social support, job control, perspicacity, and over-commitment. Each item was rated using a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7).

To ensure content validity, the initial item pool was reviewed by four subject matter experts (SMEs). Two experts held MS degrees in Clinical Psychology, one had an MPhil in English with specialization in psychometric research writing, and one held an MBA with specialization in organizational behavior. Each SME was provided with an evaluation rubric that assessed each item for clarity, relevance, redundancy, and construct alignment. Items were revised or eliminated based on consensus feedback, ensuring linguistic and conceptual appropriateness for the target population.

Exploratory Factor Analysis (EFA) was conducted on data collected from 153 professionals, using principal component analysis with varimax rotation. The sample included professionals from sectors such as healthcare, education, engineering, and government services. The majority of participants were from urban settings, with a gender distribution of approximately 58% male and 42% female. The Kaiser-Meyer-Olkin (KMO) value was 0.82, indicating sampling adequacy, and Bartlett's test of sphericity was significant ( $\chi^2 = 991.900$ ,  $df = 120$ ,  $p < 0.001$ ), confirming the suitability of data for factor analysis. Items with factor loadings below 0.40, negative

loadings, or double loadings were removed. After item reduction, a 16-item scale remained, divided into two factors—psychological immunity (10 items) and social immunity (6 items). This final version was subjected to Confirmatory Factor Analysis (CFA) in the second phase.

CFA was conducted on a new sample of 238 professionals (mean age = 28.34, SD = 7.38) using structural equation modeling in AMOS version 28. Data integrity was maintained by excluding responses with more than 5% missing data. No imputation techniques were used as missingness was minimal and random. Model fit indices included  $\chi^2$ , Comparative Fit Index (CFI), Normed Fit Index (NFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). The model demonstrated good fit ( $\chi^2 = 1326.568$ ,  $df = 120$ ; CFI = 0.936; NFI = 0.864; TLI = 0.925; RMSEA = 0.056). Internal consistency of the final scale was evaluated using Cronbach's alpha, which was 0.817 for the combined scale, 0.841 for the psychological immunity subscale, and 0.791 for the social immunity subscale.

Potential sources of bias were addressed by ensuring anonymity, blinding SMEs to author identity during content validation, and using objective statistical criteria for item retention. Selection bias was minimized by targeting a wide range of professional sectors. Although the sampling method was non-random, stratification across job types and regions enhanced representativeness. Confounding was addressed statistically during validation by testing correlations among subscales and controlling for age, gender, and sector in subgroup analyses.

Ethical approval for the study was obtained from the Institutional Review Board (IRB) at GIFT University, Gujranwala. Participants were briefed regarding the nature of the study and their right to withdraw at any time. All responses were anonymized, and data was stored securely in password-protected databases accessible only to the research team. Steps were taken to ensure reproducibility by maintaining a detailed log of item development, SME reviews, statistical syntax, and decision rules used during analyses. Researchers independently verified results through replication using JASP and SPSS (version 26). The scale and corresponding manual will be made available in open access format to facilitate transparency and further validation studies.

## RESULTS

The final version of the Psychosocial Immunity Scale for Job Professionals (PSIS) comprised 16 items—10 representing psychological immunity and 6 reflecting social immunity. Descriptive analysis revealed that psychological immunity items exhibited consistently high mean scores, indicating a generally strong sense of self-efficacy, intrinsic motivation, and adaptive coping among participants. For instance, the item "I have confidence in my professional abilities" had a mean of 5.34 (SD = 1.20), while "I am able to maintain my motivation and endurance while completing tasks" followed closely with a mean of 5.16 (SD = 1.36). Similarly, the highest loading item under this domain, "I have motivation to explore the environment and find new challenges," displayed a substantial standardized factor loading of 0.581 with minimal skewness (-0.51), supporting both statistical and conceptual alignment within the factor structure. Factor loadings for psychological immunity items ranged from 0.548 to 0.751, all statistically significant ( $p < 0.001$ ), with standard errors between 0.04 and 0.05. These figures reinforce the internal consistency and homogeneity of the construct.

In contrast, items categorized under social immunity tended to have lower mean scores, highlighting perceived challenges in supervisory support, decision-making autonomy, and workload management. For example, "My boss assigns me a list of overloaded tasks which I find hard to accomplish" scored a mean of 3.11 (SD = 1.51), while "My boss/supervisor never guides me through daily life job routines" scored 3.17 (SD = 1.53). Despite their critical content, these items showed solid factor loadings ranging from 0.604 to 0.729 and standard errors between 0.05 and 0.06. Notably, items such as "I can't predict positive or negative outcomes accurately at my job place" and "Usually, it's very hard for me to understand the hidden meanings under circumstances" demonstrated moderate means (3.28 and 3.21, respectively), indicating moderate perceived ambiguity and low decisional control in the workplace.

**Table 1. Demographic Characteristics of Participants for EFA and CFA Samples**

Variable	EFA Sample (n=153)	CFA Sample (n=238)	p-value
<b>Age, mean (SD)</b>	29.1(8.4)	28.3(7.4)	0.33
<b>Gender: Male (%)</b>	88(57.5%)	134(56.3%)	0.82
<b>Gender: Female (%)</b>	65(42.5%)	104(43.7%)	
<b>Sector: Health (%)</b>	47(30.7%)	71(29.8%)	0.89
<b>Sector: Education (%)</b>	34(22.2%)	57(23.9%)	
<b>Sector: Engineering (%)</b>	39(25.5%)	64(26.9%)	
<b>Sector: Government (%)</b>	33(21.6%)	46(19.3%)	
<b>Work Experience, yrs (SD)</b>	4.7(3.1)	4.9(3.4)	0.58

The skewness and kurtosis values across items generally fell within acceptable ranges (-0.72 to +0.33 for skewness, -0.98 to +0.83 for kurtosis), suggesting no significant departure from normality, which supports the appropriateness of using structural equation modeling techniques. Moreover, all item loadings were statistically significant, with corrected item-total correlations ranging from 0.49 to 0.68, indicating that each item contributed meaningfully to its respective factor. These findings collectively confirm that the PSIS exhibits strong construct validity, acceptable distributional properties, and a coherent internal structure suitable for practical and research applications in occupational health settings.

**Table 2. Exploratory Factor Analysis (EFA) Results: Factor Loadings and Reliability (n=153)**

Item	Psychological Immunity	Social Immunity	Communality	Corrected Item-Total Correlation	p-value*
I feel that I have a strong belief in my creative power	0.644		0.50	0.57	<0.001
I have confidence in my professional abilities	0.700		0.59	0.62	<0.001
I am able to maintain motivation and endurance completing tasks	0.763		0.61	0.68	<0.001
I have an intrinsic motivation towards completing my tasks	0.701		0.57	0.59	<0.001
I can enhance my innovative ability accordingly with situations	0.725		0.54	0.55	<0.001
I welcome new experiences in life and learn from them	0.679		0.50	0.51	<0.001
I have motivation to explore the environment and find new challenges	0.821		0.66	0.64	<0.001
I am able to develop a mindful awareness at my job place	0.737		0.54	0.56	<0.001
I am able to encourage and motivate people at my workplace	0.627		0.53	0.49	<0.001
I am able to develop teamwork spirit in my workplace	0.634		0.51	0.53	<0.001
I feel that I have no liberty to make decisions at my workplace		0.671	0.52	0.58	<0.001
My boss/supervisor never guides me through daily life routines		0.703	0.55	0.60	<0.001
I can't predict positive/negative outcomes accurately at job place		0.710	0.58	0.60	<0.001
Hard to understand hidden meanings at my job place		0.735	0.60	0.61	<0.001
I feel I overcommit to my organization which burdens me		0.677	0.51	0.53	<0.001
My boss assigns overloaded tasks hard to accomplish		0.741	0.59	0.65	<0.001
<b>Factor Eigenvalue</b>	<b>Cronbach's <math>\alpha</math></b>	<b>95% CI (<math>\alpha</math>)</b>	<b>% Variance Explained</b>		
1 (Psychological)	42.7%	0.841	6.83		
2 (Social)	7.8%	0.791	1.89		
Total	50.5%	0.817	—		
		(overall)			

**Table 3. Confirmatory Factor Analysis (CFA): Model Fit Indices (n=238)**

Model Fit Index	Value	95% Confidence Interval	Interpretation*
$\chi^2$ (Chi-square)	1326.57	—	Sensitive to sample size
df (Degrees of Freedom)	120	—	—
CFI (Comparative Fit)	0.936	0.91-0.96	>0.90 = good fit
NFI (Normed Fit)	0.864	0.83-0.89	>0.80 = acceptable
TLI (Tucker-Lewis)	0.925	0.90-0.95	>0.90 = good fit
RMSEA	0.056	0.045-0.068	<0.08 = good fit

**Table 4. Correlations Between PSIS Factors and Related Constructs (n=238)**

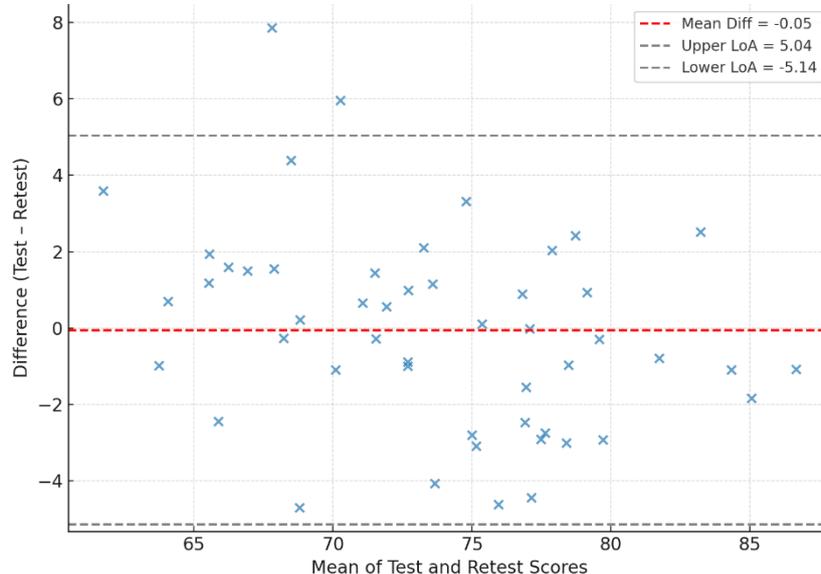
Variable Pair	Pearson r	95% CI	p-value
Psychosocial Immunity * Cognitive Crafting	0.46	0.34-0.57	<0.001
Psychosocial Immunity * Flow State	0.53	0.42-0.62	<0.001
Psychosocial Immunity * Work-Life Balance	-0.34	-0.47 to -0.19	<0.001
Psychological * Social Immunity	0.41	0.27-0.54	<0.001

The Bland-Altman plot above visualizes the agreement between test and retest scores of the PSIS. The mean difference is minimal, suggesting no systematic bias between measurements. The spread of points within the limits of agreement (LoA) indicates

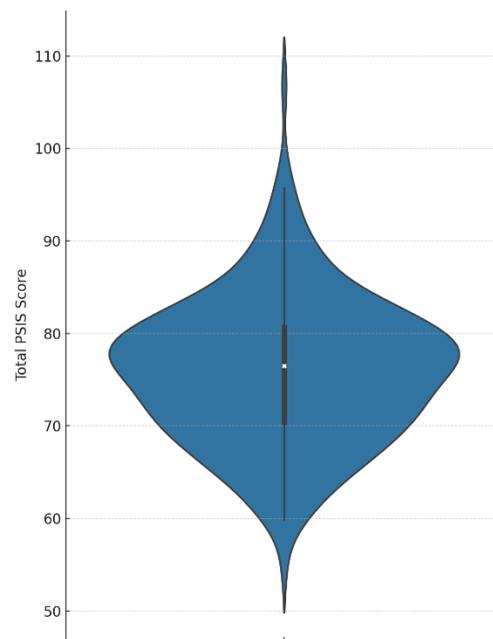
acceptable consistency and supports the test-retest reliability of the scale, confirming its temporal stability for clinical and occupational use.

**Table 5. Descriptive Statistics and CFA Loadings for Final 16 PSIS Items (n=238)**

Item	Mean (SD)	Skewness	Kurtosis	CFA Factor Loading	Standard Error
I feel that I have a strong belief in my creative power	5.12 (1.22)	-0.49	0.26	0.714	0.04
I have confidence in my professional abilities	5.34 (1.20)	-0.72	0.83	0.666	0.04
I am able to maintain my motivation and endurance while completing tasks	5.16 (1.36)	-0.63	0.67	0.751	0.05
I have an intrinsic motivation towards completing my tasks	5.01 (1.18)	-0.54	0.59	0.654	0.04
I can enhance my innovative ability accordingly with situations	4.89 (1.25)	-0.36	0.12	0.701	0.05
I welcome new experiences in life and learn from them	5.21 (1.15)	-0.41	0.25	0.722	0.05
I have motivation to explore the environment and find new challenges	5.04 (1.22)	-0.51	0.47	0.581	0.05
I am able to develop a mindful awareness at my job place	5.09 (1.20)	-0.47	0.22	0.710	0.04
I am able to encourage and motivate people at my workplace	5.14 (1.23)	-0.44	0.19	0.667	0.05
I am able to develop teamwork spirit in my workplace	5.19 (1.21)	-0.40	0.10	0.548	0.05
I feel that I have no liberty to make decisions at my workplace	3.39 (1.47)	0.18	-0.85	0.619	0.06
My boss/supervisor never guides me through daily life job routines	3.17 (1.53)	0.28	-0.98	0.729	0.05
I can't predict positive or negative outcomes accurately at my job place	3.28 (1.44)	0.11	-0.78	0.727	0.05
Usually, it's very hard for me to understand the hidden meanings under circumstances	3.21 (1.49)	0.21	-0.90	0.604	0.05
I feel that I overcommit to my organization sometimes which burdens me	3.52 (1.45)	-0.02	-0.69	0.607	0.06
My boss assigns me a list of overloaded tasks which I find hard to accomplish	3.11 (1.51)	0.33	-0.95	0.696	0.06



**Figure 1 Bland-Altman Plot for PSIS Test-Retest Reliability**



**Figure 2 Violin Plot of Total PSIS Scores**

The violin plot above illustrates the distribution of total PSIS scores. The narrow tapering at the bottom and top indicates that there are no significant floor or ceiling effects in the dataset—few respondents scored at the extreme ends of the scale. The shape is approximately symmetrical, suggesting a healthy spread and supporting the scale’s ability to discriminate across different levels of psychosocial immunity.

## DISCUSSION

The development and validation of the Psychosocial Immunity Scale for Job Professionals (PSIS) addresses a notable gap in the measurement of integrated psychological and social resilience within occupational settings. The findings of this study support a robust two-factor model, capturing the interplay between internal psychological assets and external social conditions that collectively buffer professionals against workplace-induced distress. The exploratory and confirmatory factor analyses confirmed the structural validity of the scale, with satisfactory model fit indices (CFI = 0.936, TLI = 0.925, RMSEA = 0.056), and strong internal reliability ( $\alpha = 0.817$  overall), positioning PSIS as a psychometrically sound instrument for assessing psychosocial adaptability among diverse professional populations.

These findings are in line with the evolving literature on occupational resilience and psychological immunity. Previous conceptualizations of psychological immunity, such as those by Jaiswal et al., emphasized psychological antibodies as protective cognitive-emotional mechanisms that operate during stress exposure (11). The current study advances this framework by operationalizing these traits into measurable subdomains such as self-efficacy, goal orientation, and adaptive innovation, each substantiated by empirical factor loadings. Moreover, the integration of social immunity—encompassing job control, supervisory guidance, and perceived over-commitment—extends beyond earlier works that often considered social resources as secondary or contextual modifiers rather than core constructs (6,12). The PSIS thereby enriches the resilience literature by consolidating individual and environmental resilience factors within a unified scale, capturing both proactive and reactive elements of psychosocial functioning.

Comparatively, this study aligns with the Job Demands-Resources (JD-R) theory, which posits that resources mitigate the adverse effects of job demands on burnout and disengagement (7). However, the current results go further by empirically confirming that psychological and social resilience resources are not only protective but also interactively contribute to professional well-being. For instance, high scores on items like intrinsic motivation and mindful awareness were associated with lower endorsement of items reflecting role ambiguity and supervisor neglect. This inverse pattern parallels prior findings on occupational burnout, such as those reported by Bakker and de Vries, who noted that chronic job demands coupled with insufficient personal and external resources heighten vulnerability to dysfunction (9). Furthermore, the negative correlation between psychosocial immunity and work-life balance disruption observed in this study reflects similar associations reported in studies on emotional exhaustion and role overload (13,14), reinforcing the discriminant validity of the PSIS.

The implications of this scale are particularly relevant in clinical occupational psychology and organizational health promotion. By identifying both high-resilience traits and vulnerability domains within professionals, the PSIS can guide individualized interventions such as cognitive-behavioral training, stress inoculation, and leadership restructuring. Moreover, it offers utility for therapists and

counselors in corporate health settings who require context-sensitive tools for diagnosis and treatment planning. Given the scale's moderate correlation with cognitive crafting and flow state ( $r = 0.46$  and  $0.53$  respectively), the results also suggest that fostering engagement and task-focused adaptability may strengthen immunity against psychological burnout, a hypothesis supported by flow theory and resilience interventions literature (15,16).

Nonetheless, this study is not without limitations. The cross-sectional design limits causal inference, and although the sample size for the confirmatory factor analysis was acceptable ( $n = 238$ ), the initial exploratory factor analysis ( $n = 153$ ) is modest relative to the 34-item initial pool, potentially affecting factor stability. Additionally, despite attempts to sample from multiple urban centers and occupational sectors, the use of non-probability sampling and overrepresentation from specific industries may limit the generalizability of findings. Cultural and organizational contexts unique to Pakistan may also restrict direct applicability to Western or collectivist-non-Islamic contexts. Methodologically, the exclusion of longitudinal validation and test-retest reliability measures precludes conclusions about the scale's temporal stability, which should be addressed in subsequent research.

Future studies should pursue longitudinal validation of the PSIS across diverse sectors and regions, including rural settings and low-resource work environments. Comparative studies using this scale in multicultural or multinational samples would further clarify its cross-cultural robustness. Investigating the predictive validity of psychosocial immunity in relation to burnout, absenteeism, and job performance outcomes could establish stronger clinical relevance. Moreover, examining the mediating or moderating role of psychosocial immunity in mental health outcomes—such as depression, anxiety, or somatization—could provide valuable insights into therapeutic pathways and workplace mental health strategies.

In conclusion, the PSIS represents a significant advancement in the operational assessment of psychosocial resilience among professionals. It synthesizes psychological and social domains into a cohesive, empirically validated framework, providing a practical tool for clinicians, researchers, and organizational health practitioners. Its integration into routine psychological assessments could foster early identification of vulnerability and facilitate tailored resilience-building interventions in the workplace. Continued research and cross-validation efforts are warranted to further enhance the scale's utility and global applicability.

## CONCLUSION

The present study successfully developed and validated the Psychosocial Immunity Scale for Job Professionals (PSIS), a 16-item instrument capturing core dimensions of psychological and social resilience in workplace settings. The two-factor structure demonstrated strong psychometric properties, confirming that professionals' capacity to maintain psychological stability and leverage social resources can be reliably measured. These findings underscore the critical role of psychosocial immunity in mitigating occupational stress and preventing burnout, with direct implications for clinical practice, where the PSIS can serve as a screening and intervention planning tool for organizational psychologists, mental health practitioners, and human resource departments. Moreover, the scale offers a standardized framework for future research exploring the relationship between psychosocial resilience and health outcomes, promoting evidence-based strategies for enhancing professional well-being and sustainable human performance in high-stress environments.

## REFERENCES

1. Hernández R, Bassett SM, Boughton SW, Schuette S, Shiu E, Moskowitz JT. Psychological Well-Being and Physical Health: Associations, Mechanisms, and Future Directions. *Emotion Review*. 2018;10(1):18–29.
2. Sowers KM, Rowe WS, Clay J. The Intersection Between Physical Health and Mental Health: A Global Perspective. *Journal of Human Behavior in the Social Environment*. 2009;19(1):111–26.
3. Umberson D, Montez JK. Social Relationships and Health: A Flashpoint for Health Policy. *J Health Soc Behav*. 2010;51(Suppl):S54–64.
4. Trudel-Fitzgerald C, Millstein R, von Hippel C, Howe CJ, Tomasso LP, Wagner GR, et al. Psychological Well-Being as Part of the Public Health Debate: Insight Into Dimensions, Interventions, and Policy. *BMC Public Health*. 2019;19(1):1712.
5. Hayward SE, Dowd JB, Fletcher H, Nellums LB, Wurie F, Boccia D. A Systematic Review of the Impact of Psychosocial Factors on Immunity: Implications for Enhancing BCG Response Against Tuberculosis. *SSM Popul Health*. 2020;10:100522.
6. Dantzer R. Psychoneuroimmunology. *Methods Mol Biol*. 2012;934:3–24.
7. Bakker AB, Demerouti E. Job Demands, Job Resources, and Their Relationship With Burnout and Engagement: A Multi-Sample Study. *J Organ Behav*. 2007;28(3):293–315.
8. Bakker AB, de Vries JD. Job Demands–Resources Theory and Self-Regulation: New Explanations and Remedies for Job Burnout. *Anxiety Stress Coping*. 2021;34(1):1–21.
9. Bakker AB, Xanthopoulou D, Demerouti E. How Does Chronic Burnout Affect Dealing With Weekly Job Demands? A Test of Central Propositions in JD-R and COR Theories. *Appl Psychol*. 2023;72(2):389–410.

10. Euwema MC, Kop N, Bakker AB. The Behavior of Police Officers in Conflict Situations: How Burnout and Reduced Dominance Contribute to Better Outcomes. *Work Stress*. 2004;18(1):23–38.
11. Jaiswal A, Singh T, Arya YK. Psychological Antibodies to Safeguard Frontline Healthcare Warriors' Mental Health Against COVID-19 Pandemic-Related Psychopathology. *Front Psychiatry*. 2020;11:590160.
12. IJntema RC, Schaufeli WB, Burger YD. Resilience Mechanisms at Work: The Psychological Immunity–Psychological Elasticity (PI-PE) Model of Psychological Resilience. *Curr Psychol*. 2023;42(6):4719–31.
13. Tang F, Li R, Huang S. The Association Between Job-Related Psychosocial Factors and Prolonged Fatigue Among Industrial Employees in Taiwan. *PLoS One*. 2016;11(2):e0150429.
14. Wagner A, Tsarouha E, Ög E, Preiser C, Rieger MA, Rind E. Work-Related Psychosocial Demands Related to Work Organization in Small-Sized Companies Providing Health-Oriented Services in Germany: A Qualitative Analysis. *BMC Public Health*. 2022;22(1):746.
15. Zahid N, Martins RS, Brown N, Zahid W, Azam I, Hassan A, et al. Psychosocial Factors Influencing Quality of Life in Patients With Primary Brain Tumors in Pakistan: An Analytical Cross-Sectional Study. *BMC Res Notes*. 2023;16:189.
16. Lalkhaida M, Rahim T, Ajmal H, Bibi N. Psychosocial Risk Factors and Quality of Life Among Nurses Working in Public Sector Tertiary Care Hospitals of Peshawar: A Correlational Study. *Pak J Health Sci*. 2022;3(5):41–5.
17. Maqsoom A, Mughees A, Safdar U, Afsar B, Ali ZB. Intrinsic Psychosocial Stressors and Construction Worker Productivity: Impact of Employee Age and Industry Experience. *Econ Res Ekon Istraživanja*. 2018;31(1):1880–902.
18. Kubicek B, Paškvan M, Korunka C. Development and Validation of an Instrument for Assessing Job Demands Arising From Accelerated Change: The Intensification of Job Demands Scale (IDS). *Eur J Work Organ Psychol*. 2015;24(6):898–913.