

Organizational Role Stress Among Public and Private Sector Employees: A Comparative Study

Bushara Bano and Rajiv Kumar Jha*

Abstract

The aim of this study is to explore the differences in job-related stress, if any, between public and private sector employees, based on ten role stressors. It also examines the role of demographic variables on the stress levels of both public and private sector groups. Our methodology entails a survey of 182 public and 120 private sector employees in Uttar Pradesh, India, whose responses are measured according to an occupational role stress scale. We also use secondary data provided by the literature review. The sample was collected through convenience sampling. On applying the t-test and ANOVA test to the data, we find that both public and private sector employees face moderate levels of stress. While there is no significant difference overall between public and private sector employees in terms of total stress levels, certain individual stressors—such as work experience and educational qualifications—do yield differences. The major limitation of this study is that it was conducted in Uttar Pradesh alone, while the work culture of organizations other than in Uttar Pradesh may be different.

Keywords: Role stress, public sector, private sector.

Classification: M10, M12, M14

1. Introduction

Stress has become a very common phenomenon of routine life, and an unavoidable consequence of the ways in which society has changed. This change has occurred in terms of science and technology, industrial growth, urbanization, modernization, and automation on one hand; and an expanding population, unemployment, and stress on the other. The term “stress” was first used by Selye (1936) in the literature on life sciences, describing stress as “the force, pressure, or strain exerted upon a material object or person which resist these forces and attempt to maintain its original state.” Stress can also be defined as an adverse

* Ms Bano is a research scholar at the Department of Business Administration at Aligarh Muslim University in India; she can be contacted at syedabushara@gmail.com. Mr Jha is a quality manager at Medica Synergie Pvt. Ltd. in Aligarh, India.

reaction that people experience when external demands exceed their internal capabilities (Waters & Ussery, 2007).

Organizations are an important source of stress, and employees' workloads and professional deadlines have increased manifold. These advancements have created stress among employees in the form of occupational stress, which Sauter, Lim, and Murphy (1996) define as the harmful physical and emotional responses that arise when the demands of a job do not match the worker's abilities, resources, or needs. Occupational stress is further defined as a condition arising from the interaction of people and their jobs, and characterized by changes within people that force them to deviate from their normal functioning (Beehr & Newman, 1978).

The perception of the effects of stress on an individual has changed. Stress is not always dysfunctional in nature, and, if positive, can prove one of the most important factors in improving productivity within an organization (Spielberger, 1980). If not positive, stress can create a number of physical and psychological disorders among employees, and can be responsible for frustration, haste, and job dissatisfaction. As a result, the lack of work may cause complacency within the organization. Stress is, therefore, multidimensional, and its results depend on whether employees perceive it as a problem or a solution.

For our purposes, public sector organizations are considered those that are government-owned and -operated. Such organizations are considered to focus primarily on the administration of essential services and the control and maintenance of a country's social and economic conditions. In contrast, private sector organizations are considered either profit-making enterprises or community service groups that operate independently of the government (Macklin, Smith, & Dollard, 2006).

Different studies have classified occupational stress in terms of physical environment, role stressors, organizational structure, job characteristics, professional relationships, career development, and work-versus-family conflict (see Burke, 1993). Cooper and Marshall (1976) add to this list factors intrinsic to a job, the management's role, and professional achievements. Based on these complexities, stressors can be grouped into two main categories: (i) job-related stressors, and (ii) individual-related stressors.

Stress is measured using a number of instruments. Our focus, however, is organizational role stress (ORS), which measures total role stress. We use Pareek's (1983) scale, which evaluates respondents' quantum

of stress in terms of total ORS scores. It also measures the intensity of the following ten role stressors that contribute to the total ORS score:

1. Inter-role distance (IRD): Conflict between organizational and nonorganizational roles.
2. Role stagnation (RS): The feeling of being “stuck” in the same role.
3. Role expectation conflict (REC): Conflicting expectations and demands between different role senders.
4. Role erosion (RE): The feeling that functions that should belong to the respondent’s role are being transformed/performed or shared by others.
5. Role overload (RO): The feeling that more is expected from the role than the respondent can cope with.
6. Role isolation (RI): Lack of linkages between the respondent’s role and that of other roles in the organization.
7. Personal inadequacy (PI): Inadequate knowledge, skills, or preparation for a respondent to be effective in a particular role.
8. Self-role distance (SRD): Conflict between the respondent’s values/self-concepts and the requirements of his or her organizational role.
9. Role ambiguity (RA): Lack of clarity about others’ expectations of the respondent’s role, or lack of feedback on how others perceive the respondent’s performance.
10. Resource inadequacy (RIn): Nonavailability of resources needed for effective role performance.

2. A Review of the Literature

2.1. *Studies at the National Level*

Sharma (1987) focuses on the managers and supervisors of public and private pharmaceutical organizations to ascertain the role of a motivated climate on four psychological variables: (i) job satisfaction, (ii) participation, (iii) alienation, and (iv) role stress. The study’s sample comprises 150 respondents, including 75 managers and 75 supervisors. Sharma’s findings indicate that employees of public sector organizations score lower than and differ significantly from those of private sector organizations. However, public sector employees score significantly higher in terms of role stagnation.

Ahmad, Bharadwaj, and Narula (1985) assess stress levels among 30 executives from both the public and private sector, using an ORS scale to measure ten dimensions of role stress. Their study reveals significant differences between public and private sector employees in three dimensions of role stress—role isolation, role ambiguity, and self-role distance. The authors also establish the insignificant effect of several background factors, such as age, level of education, income, marital status, and work experience.

Jha and Bhardwaj's (1989) empirical study of job stress and motivation among 120 frontline managers from both the public and private sector finds that the latter score more than the former in factors such as the need for achievement and total motivation. Chaudhary (1990) probes the relationship between role stress and job satisfaction among bank officers. The author's results indicate that role erosion and resource inadequacy act as dominant stressors while role ambiguity and role expectation conflict are remote contributors to role stress in the sample population.

Srivastava (1991) surveys 300 employees of the Life Insurance Corporation and reports that there is a significant positive correlation between various dimensions of role stress and symptoms of mental ill health. Stress arising from role ambiguity and role stagnation is the most intensively correlated with anxiety. Finally, Dwivedi (1997) assesses the magnitude of trust, distrust, and ORS to determine the extent of this relationship among public and private sector organization. Surveying 55 executives from the public sector and 62 from the private sector, the author finds that stress levels are low in high-performance organizations and high in low-performance organizations.

2.2. Studies at the International Level

Lewig and Dollard (2001) find that public sector employees are subject to greater work-related stress than private sector employees. Dollard and Walsh (1999), however, report that private sector workers in Queensland, Australia, had made twice as many stress claims as public sector workers. Macklin et al. (2006) survey 84 public and 143 private sector employees to assess any significant difference in their stress levels. They conclude that there is no significant difference between employees on the basis of sector, but that there is a significant difference between genders, i.e., female employees are subject to greater stress than males.

D'Aleo, Stebbins, Lowe, Lees, and Ham (2007) examine a sample of 559 public and 105 private sector employees to assess their respective risk profiles. They find that public sector employees face more stress than private sector employees. Malik (2011) collects data on 200 bank employees in Quetta, Pakistan, of which 100 work in public sector banks and the remaining 100 in private sector banks. The author finds that there is a significant difference in the level of stress to which both groups are subject, and that public sector bank employees face a high level of occupational stress.

It is clear that different studies have generated different results on the basis of their particular contexts. Some studies argue that public sector employees are subject to greater stress while others argue the opposite. The literature review shows that work-related stress is almost equal in both the public and private sector, and that research on this topic remains a popular field of enquiry.

3. Objectives and Hypotheses

This study's aims are to (i) examine the difference in stress levels between public and private sector employees, and (ii) assess the impact of socio-demographic factors on employees' stress levels. To do so, we propose the following hypotheses:

- H01: There is no significant difference in ORS among different age groups of employees.
- H02: There is no significant difference in ORS among employees of different marital status.
- H03: There is no significant difference in ORS among employees with different levels of work experience.
- H04: There is no significant difference in ORS among employees with different educational qualifications.
- H05: There is no significant difference in ORS between public and private sector employees.

4. Research Methodology

The sample population for this study comprises a total of 302 employees drawn from different public and private organizations—182 from the former and 120 from the latter. The public organizations

sampled include the Archaeological Survey of India, the District Treasury Board, and Hindalco; the private organizations sampled include Tata Motors, TELCO, and Pashupati Oil Mills. The sample was collected on the basis of convenience sampling, and is located in the Agra and Aligarh districts of Uttar Pradesh in India.

4.1. Reliability of ORS Scale

ORS is measured on a five-point Likert scale with values ranging from 0 to 4. The scale is used to investigate the ORS arising from ten different role stressors. Table 1 shows that the Cronbach's alpha value of the ORS scale is 0.932, indicating that the scale is highly reliable for this particular study. The table also gives Cronbach's alpha values for the different dimensions of ORS, showing that all the stressors, apart from SRD, have a high Cronbach's alpha value. We can thus eliminate SRD from further study, and examine the remaining nine dimensions of the ORS scale.

Table 1: Cronbach's alpha value of stressors

No.	Variable	Coefficient
1.	Inter-role distance (IRD)	0.800
2.	Role stagnation (RS)	0.717
3.	Role expectation conflict (REC)	0.719
4.	Role erosion (RE)	0.719
5.	Role overload (RO)	0.812
6.	Role isolation (RI)	0.617
7.	Personal inadequacy (PI)	0.720
8.	Self-role distance (SRD)	0.592
9.	Role ambiguity (RA)	0.767
10.	Resource inadequacy (RIn)	0.760
	ORS	0.932

Source: Authors' calculations.

4.2. Factor Analysis

The Kaiser-Meyer-Olkin (KMO) test provides a measure of sampling adequacy in which, generally, a value greater than 0.4 is desirable. In this case, the KMO measure is 0.812 (Table 2), implying that the correlation between pairs of variables can be explained to a great degree by other variables. The Bartlett's test value is 0.000, indicating that the value is highly significant.

Table 2: Results of KMO and Bartlett's test

Test	Test statistic	df	Significance value
KMO measure of sampling adequacy	0.812	-	-
Bartlett's test of sphericity	8.619	1225	0.000

Source: Authors' calculations.

Table 3 shows that the value of all components is far higher than 1, implying that they all converge on one overall stressor, i.e., ORS. We can, therefore, conclude that the scale is convergent.

Table 3: Eigenvalue of components

Component	Initial Eigenvalue
1	12.909
2	3.228
3	2.751
4	2.432
5	1.910
6	1.758
7	1.609
8	1.338
9	1.244

Source: Authors' calculations.

We use varimax rotation to carry out a factor analysis of the refined data. Factor loadings indicate the strength of the relationship between a particular factor and a particular variable. In a simple-component matrix, a particular variable may show higher loadings for many factors, making it difficult to determine the variables under any given factor. We solve this problem by rotating the matrix, making it easier to assign a number of variables with greater loading for a particular factor. The rotated-component matrix shows that most of the items load well (> 0.4) on nine factors of the ORS scale. Akinyokun, Angaye, and Ubaru (2009) argue that a value greater than 0.4 should be considered meaningful, allowing us to conclude that there is a strong relationship between the factors and variables on this scale.

5. Data Analysis

The data is analyzed in the form of variables such as ORS scores for public and private sector employees, in which we consider low, medium, and high levels of stress among public and private sector

employees, their educational qualifications, duration of service, marital status, and age. Table 4 groups employees by different variables. Using SPSS 16.0 to analyze the results, we tabulate our findings separately.

Table 4: Demographic profile of respondents

Variable	Description	Respondents
Educational qualifications	Group A (up to 12 th standard)	56
	Group B (graduate and postgraduate)	232
	Group C (doctorate)	14
Age	Group A (up to 35 years)	176
	Group B (36–50 years)	102
	Group C (more than 50 years)	24
Work experience	Group A (1–10 years)	164
	Group B (11–20 years)	84
	Group C (21–30 years)	42
	Group D (31–36 years)	12
Sector	Group A (public sector employee)	182
	Group B (private sector employee)	120
Marital status	Group A (unmarried)	80
	Group B (married)	222

Source: Authors' calculations.

6. Results and Discussion

In order to rank various stressors, we calculate their mean values and standard deviations, followed by those of the total ORS scale. Table 5 shows that all nine individual stressors give rise to moderate levels of stress among the employees sampled. The mean value of total role stress is 1.4913, implying that employees face moderate levels of total ORS. The highest mean value of role erosion is 1.778, implying that employees are subject to this stressor the most. The highest standard deviation value of role overload is 1.009, indicating that some groups experience role overload more than others.

In order to analyze the role of socio-demographic factors on employees' stress levels, we run a t-test and ANOVA test on the sample. The latter helps assess the difference in total stress between age groups. Table 6 indicates that the age factor is not significant. H01, which states that there is no significant difference in the stress levels of employees of different age groups, is therefore an acceptable hypothesis.

Table 5: Status of stressors

Stressor	Mean	Standard deviation	Rank	Status
IRD	1.675	0.972	2	Moderate
RS	1.597	0.931	4	Moderate
REC	1.358	0.820	8	Moderate
RE	1.778	0.890	1	Moderate
RO	1.365	1.009	7	Moderate
RI	1.562	0.820	5	Moderate
PI	1.393	0.911	6	Moderate
RA	1.112	0.926	9	Moderate
RIn	1.663	0.990	3	Moderate
ORS	1.491	0.654		Moderate

Note: We have calculated the mean score on a scale of 0 to 4, and divided stress levels into "low" (0-1), "moderate" (1-2), and "high" (more than 2 and up to 4).

Source: Authors' calculations.

Table 6: Impact of socio-demographic factors on ORS

Hypothesis	Stress	Demographic	Significance value	Remarks
H0 1	ORS	Age	0.280	Accepted
H0 2		Marital status	0.282	Accepted
H0 3		Work experience	0.005**	Not accepted
H0 4		Qualifications	0.002**	Not accepted

Note: ** = significant at 99-percent confidence level.

Source: Authors' calculations.

We use the t-test to analyze the role of marital status on employees' stress levels, and, again, find no significant value. Table 6 also shows that there is no significant difference in ORS among employees of a different marital status. Thus, H02, which states that there is no significant difference in ORS among employees of a different marital status, is an acceptable hypothesis.

Work experience, the third socio-demographic factor, does, however, affect employees' stress levels. Running an ANOVA test on the sample reveals that there is a significant difference in ORS between groups with different degrees of work experience. This implies that H03, which states that there is no significant difference in ORS among groups with different levels of work experience, is not an acceptable hypothesis.

Similarly, we use the ANOVA test to analyze the impact of educational qualifications on employees' stress levels. As Table 6 shows, there is a significant difference in ORS among groups with different levels of educational qualification groups. Thus, H04, which states that there is no significant difference in ORS among groups with different qualifications, is not an acceptable hypothesis.

Calculating the mean, standard deviation, and t-test values for different stressors allows us to compare role stress between the public and private sector. Table 7 shows that there is no significant difference between the two sectors in terms of employees' total stress level. H, which states that there is no significant difference between the two sectors with regard to total role stress, is an acceptable hypothesis.

Table 7: Comparative levels of stress among public and private sector employees

Stressor	Public sector		Private sector		Significance value
	Sample = 182		Sample = 120		
IRD	Mean	1.613	Mean	1.770	0.029*
	SD	0.911	SD	1.054	
RO	Mean	1.228	Mean	1.573	0.843
	SD	1.008	SD	0.980	
RI	Mean	1.534	Mean	1.606	0.000**
	SD	0.882	SD	0.718	
RE	Mean	1.806	Mean	1.736	0.441
	SD	0.919	SD	0.846	
REC	Mean	1.312	Mean	1.430	0.536
	SD	0.835	SD	0.795	
PI	Mean	1.470	Mean	1.276	0.000**
	SD	0.990	SD	0.765	
RS	Mean	1.492	Mean	1.756	0.698
	SD	0.909	SD	0.944	
SRD	Mean	1.362	Mean	1.420	0.788
	SD	0.788	SD	0.759	
RA	Mean	1.076	Mean	1.166	0.815
	SD	0.948	SD	0.893	
RIn	Mean	1.742	Mean	1.543	0.156
	SD	1.026	SD	0.923	
ORS	Mean	1.464	Mean	1.532	0.687
	SD	0.677	SD	0.618	

Note: ** significant at 99-percent confidence level, * significant at 95-percent confidence level.

Source: Authors' calculations.

However, on applying the t-test separately to different dimensions of ORS, we find that three factors reflect a significant difference among public and private sector employees. These factors include role isolation, personal inadequacy, and inter-role distance. Table 7 also shows that employees face a moderate level of total role stress, but that the mean values of most of the stressors—apart from role erosion, personal inadequacy, and resource inadequacy—to which private sector employees are subject, is greater than that of public sector employees.

7. Regression Analysis

We find that total role stress, i.e., ORS, is a dependent variable while its other dimensions—IRD, RS, REC, RO, RE, RI, PI, RA, and RIn—are independent variables, which generates total ORS. A regression analysis of the sample reveals that the adjusted R² value is 99.3, i.e., 99.3 percent of the variation in the dependent variable ORS is explained by independent variables (stressors). Further, the significant coefficient value of all the dimensions is 0.000, showing that the independent variables all have a significant impact on the dependent variable ORS.

The regression equation takes the form

$$y = ax_1 + bx_2 + cx_3 + \dots + jx_{10}$$

Based on the analysis, total stress (ORS) is written as

$$ORS = 0.158 IRD + 0.137 RS + 0.127 REC + \dots + 0.150 RIn$$

Table 8: Regression results

Stressor	Beta value	Significance value
IRD	0.158	0.000**
RS	0.137	0.000**
REC	0.127	0.000**
RE	0.146	0.000**
RO	0.162	0.000**
RI	0.106	0.000**
PI	0.134	0.000**
RA	0.143	0.000**
RIn	0.150	0.000**

Note: ** = significant at 99-percent confidence level.

Source: Authors' calculations.

8. Conclusion

Our study has led us to conclude that employees in both the public and private sectors face moderate levels of stress, of which they are subject to role erosion the most and resource inadequacy the least. Further, there is no significant difference in total role stress among public and private sector employees. These results support the findings of a number of earlier studies, e.g., Macklin et al. (2006), although we have noted that private sector employees facing slightly more stress than those in the public sector. Our analysis of the impact of various socio-demographic factors on stress level reveals that educational qualifications and work experience have a significant impact on employees' stress levels.

References

- Agarwala, U. N., Malhan, N. K., & Singh, B. (1979). Some clarifications of stress and its applications at work. *Indian Journal of Industrial Relations, 15*(1), 41–50.
- Ahmad, S., Bharadwaj, A., & Narula, S. (1985). A study of stress among executives. *Journal of Personality and Clinical Studies, 1*(1–2), 47–50.
- Akinyokun, C. O., Angaye, C. O., & Ubaru, M. O. (2009). Factor analysis of the performance indices of information and communications technology projects in the public sector of the Nigerian economy. *Journal of Technology Research, 1*, 1–15.
- Beehr, T. A., & Newman, J. E. (1978). Job stress, employee health, and organizational effectiveness: A facet analysis model and literature review. *Personnel Psychology, 31*(4), 665–699.
- Burke, R. J. (1993). Toward an understanding of psychological burnout among police officers. *Journal of Social Behavior and Personality, 8*(3), 425–438.
- Chaudhary, A. (1990). *A study of the relationship between job satisfaction and role stress of bank officers*. Unpublished Master's thesis, University of Rajasthan, India.
- Cooper, C. L., & Marshall, J. (1976). Occupational sources of stress: A review of the literature relating to coronary heart disease and mental ill-health. *Journal of Occupational Psychology, 49*(1), 11–28.
- D'Aleo, N., Stebbins, P., Lowe, R., Lees, D., & Ham, D. (2007). Managing workplace stress: Psychosocial hazard risk profiles in public and private sector Australia. *Australian Journal of Rehabilitation Counselling, 13*(2), 68–87.
- Dollard, M. F., & Walsh, C. (1999). Illusory correlation: Is work stress really worse in the public sector? *Journal of Occupational Health and Safety, 15*(3), 219–231.
- Dwivedi, R. K. (1997). Trust and role stress. In D. M. Pestonjee & U. Pareek (Eds.), *Studies in organizational role stress and coping*. New Delhi: Rawat.

- Jha, P. K., & Bhardwaj, G. (1989). *Stress and motivation: An empirical study on front line managers*. Unpublished manuscript.
- Lewig, K. A., & Dollard, M. F. (2001). Social construction of work stress: Australian newsprint media portrayal of stress at work, 1997–98. *Work and Stress, 15*(2), 179–190.
- Macklin, D. S., Smith, L. A., & Dollard, M. F. (2006). Public and private sector work stress: Workers' compensation, levels of distress and job satisfaction, and the demand-control-support model. *Australian Journal of Psychology, 58*(3), 130–143.
- Malik, N. (2011). A study on occupational stress experienced by private and public sector bank employees in Quetta city. *African Journal of Business Management, 5*(8), 3063–3070.
- Pareek, U. (1983). *Role stress scale: ORS scales booklet, answer sheet, and manual*. Ahmadabad: Naveen Publications.
- Sauter, S. L., Lim, S.-Y., & Murphy, L. R. (1996). Organizational health: A new paradigm for occupational stress research at NIOSH. *Japanese Journal of Occupational Mental Health, 4*, 248–254.
- Selye, H. (1936). A syndrome produced by diverse noxious agents. *Nature, 138*, 32–35.
- Sharma, T. (1987). *Differential effects of organizational climate on job satisfaction, sense of participation, alienation and role stress*. Unpublished doctoral thesis, Gujrat University, India.
- Spielberger, C. (1980). *Preliminary manual for the state-trait anger scale*. Tampa, FL: University of South Florida.
- Srivastava, A. K. (1991). A study of the role stress-mental health relationship as a moderator by adopting coping strategies. *Psychological Studies, 3*, 192–197.
- Waters, J. A., & Ussery, W. (2007). Police stress: History, contributing factors, symptoms, and interventions. *Policing: An International Journal of Police Strategies and Management, 30*(2), 169–188.