MEDIATION ANALYSIS ON STRESS LEVELS OF BANK EMPLOYEES USING SEM APPROACH

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ABSTRACT

In today's modern era, stress is highly inevitable among bank employees. The stress may be positive or negative. The positive stress leads to an increase in employee productivity and commitment. The negative stress leads to work-life imbalance, increase in employee dissatisfaction and employee turnover. This paper tries to investigate the relationship between "Role Overload" which is considered as the independent variable and "Organizational Level Stress" as dependent variable which is mediated by individual-level stress and group level stress. The data is collected from a structured questionnaire provided to selected bank employees on a five-point Likert scale. A sample of 110 respondents was collected from Krishnagiri district in Tamil Nadu state in India using convenience and judgement sampling. Structural Equation Modeling (SEM) is used to analyze the collected data. The findings of the study show that the relationship between "Role Overload" and "Organizational Level Stress" is fully mediated by "Individual-Level Stress" and "Group Level Stress".

KEYWORDS: *Stress, Bank Employees, Role Overload, Mediation Analysis and SEM*

INTRODUCTION

In today's competitive scenario, the banking sector places a vital role in the economic development of a country. In the past 7 years, the banking industry has undergone various transformations and changes. Bank employees are special workgroup who undergo various levels of stress in the workplace. They cannot afford the time to relax as they are generally loaded with work variety, multi-tasking, and conflicting tasks. Workload beyond one's capacity, ambiguity in defining duties & responsibilities, lack of support from superiors, lack of authority to control resources, an absence of autonomy in taking decisions, work-life imbalance etc. are some of the sources of stress in organizations which affects the mental and physical wellbeing of the employees. The association of elements such as role overload, role conflict, and role ambiguity among employees was found to play a significant role in determining various levels of stress.

The service sector employees are generally more stressed than those in other sectors. It involves interaction with different customers who come for various services provided by public or private sector banks. In fact, interaction with people is likely to be more stressful than jobs that involve dealing with entities. Banks provide the most effective and least expensive services which serve customers with friendly, dedicated and well-motivated employees. Organizations are becoming complex due to urbanization, industrialization, and increase in the scale of operations which lead to an increase in the stress level of employees. The critical problem for employees, employers and the society is due to inevitable workplace stress. Optimum stress is essential for job performance. But once stress increases a certain limit it causes burnout and drastically affects job performance. The study on bank employees of Krishnagiri district, Tamil Nadu has provided greater significance than earlier.

REVIEW OF LITERATURE

Erkutlu & Chafra (2006) defined stress as the reaction of individuals to demands (stressors) imposed upon them. It refers to situations where the well-being of individuals is harmfully affected by their failure to cope with the demands of their environment. According to **ILO (1986)**, the stress is recognized worldwide as a major challenge to individual mental, physical health, and organizational health. Stressed workers are also more likely to be unhealthy, poorly motivated, less productive and less safe at work. And their organizations are less likely to succeed in a competitive market. **Palmer et al. (2004)** explained that work-related stress costs the national economy a staggering amount in sick pay, lost productivity and health care costs. Studies conducted on service sectors concluded that service-oriented jobs, which involve a direct interaction with customers, are prone to creating relatively greater stress levels for employees.

Caral Lopes, Dhara Kachalia (2016) conducted a study in private and public banks. They found that there is a significant relationship between the type of the banks, age, gender and education, job role, interpersonal relationship, the impact of occupational stress. They also suggest that the banking sector employees should adopt new coping strategies for maintaining good physical and mental condition to improve productivity. **Dr. Kannan P. & Suma U (2015)** explains that the stress in the banking sector is mostly due to excess of work pressure and work-life imbalance. So, the organization should support and encourage taking up roles that help them to balance work and family.

Dr. Vishal Samartha (2014) found that factors such as performance pressure, inadequate planning at the workplace, changes to adaptability, family demands and lack of efficient manpower caused more stress among the bank employees. **Tatheer Yawar Ali & Atif Hassan et al. (2013)** explained the bankers are facing high stress in their job and the reasons for this is stress include long working hours, improper reward system, lack of job autonomy, organizational culture, role conflict and the main reason is lack of management support to employees.

Sharmila A. and Poornima J. (2012) found that a majority of the employees face severe stress-related ailments and a lot of psychological problems. The management must take initiatives in helping employees to overcome its disastrous effect. In an age of highly dynamic and competitive world, employees are exposed to all kinds of stressors that can affect them in all realms of life. The growing importance of interventional strategies is felt more at the organizational level.

According to **Tyagi (1985)**, people face multiple obligations, role demands which likely to enhance the stress due to role overload. **Marshall and Cooper (1979)** also differentiate between quantitative overload which is about too much to

do and qualitative overload which is about the difficulty of the tasks and accountability of the role. **Kahn and Quinn (1970)** suggest that role overload may happen in conditions when there is 1) absence of role integration 2) when large variations exist in the expected output 3) absence of role power and 4) when duties cannot be delegated.

MEDIATION ANALYSIS

Mediation analysis is used to provide causal inferences about the influence of a treatment on an outcome via one or more mediators. It is not a prerequisite for each and every empirical research report that it should include mediation analysis. However, establishing replicable effects of treatments on outcomes may be important by itself, and there are the alternative, sometimes superior approaches to providing process evidence. Yet, if research relies on mediation analysis to make inferences about causal processes, its findings need to be meaningful and meaningfully reported (Rik Pieters 2017).

According to Baron and Kenny (1986), An independent variable X affects a distal dependent variable Y through a mediating variable M as shown in figure1, Baron and Kenny(1986) recommend three tests: A variable functions as a mediator when it meets the following conditions: (a) variations in levels of the independent variable significantly account for variations in the presumed mediator (i.e., Path a), (b) variations in the mediator significantly account for variations in the dependent variable (i.e., Path b), and (c) when Paths a and b are controlled, a previously significant relation between the independent and dependent variables is no longer significant, with the strongest demonstration of mediation occurring when Path c is zero. Perfect mediation exists if the independent variable has no effect on the dependent variable when the mediator is included. That is called complete mediation or full mediation. The independent variable exerts its total influence through the mediating variable. Partial mediation exists if the independent variable exerts some of its influence on the dependent variable through the mediating variable, and it also exerts some of its influence directly on the dependent variable.
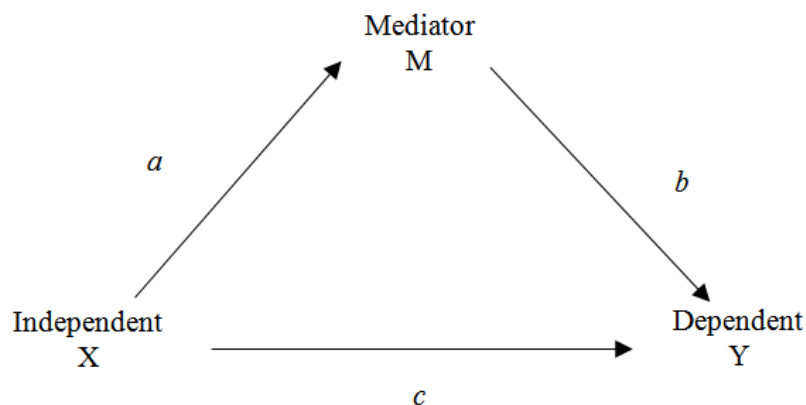

Figure 1: A Three-Variable Non-Recursive Causal Model

According to Rik Pieters (2017), Mediation analysis decomposes the total effect that an input variable (X) has on an outcome variable (Y) into an indirect effect that is transferred via a mediator (M) and a conditional direct effect. The focus here is on natural or controlled experiments with random assignment of participants to one or more treatment and control conditions. The terms treatment (X), mediator (M), and outcome (Y) denote the three key variables. The figure 2 is a multiple mediation models with two mediators. In multiple mediation models, all paths between treatment, mediators, and outcomes are estimated to appropriately decompose the total treatment effect (Preacher and Hayes 2008).
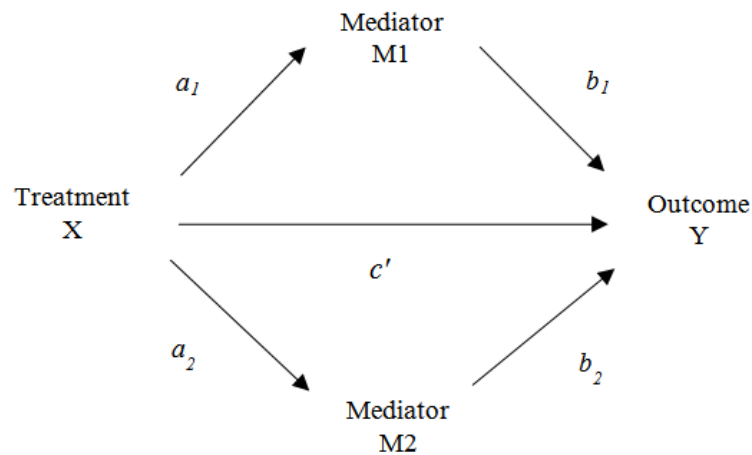
Figure 2: Multiple Mediation Model

Based on the review of the literature discussed above, the following research model is proposed in the present study (Figure 3).
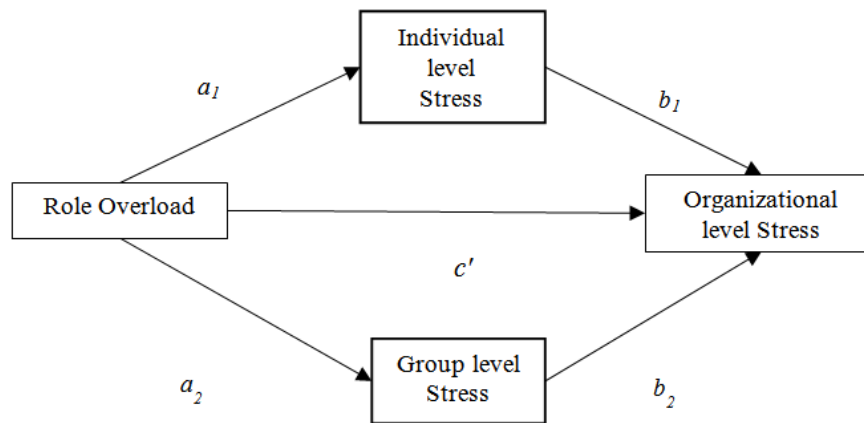

Figure 3: Proposed Model

OBJECTIVES

The objective of this study is to understand the relationship between role overload of employees with individual level stress, group level stress, and organization level stress.

- To develop a structural equation model using role overload as the independent variable, organization level stress as outcome variable and individual level stress and group level stress as mediating variables.

- To identify the type of mediation caused by individual-level stress and group level stress as a mediating variable for role overload as independent variable and organization level stress as the outcome variable.

HYPOTHESIS

Based on the reviews collected the following hypothesis is formulated for the present study.

H_1: Role overload significantly influences stress at the Individual level.

H_2: Individual level stress significantly influences stress at an organization level.

H_3: Role overload significantly influences stress at the group level.

H_4: Group-level stress significantly influences stress at the organization level.

H_5: Individual level stress mediates the relationship between role overload and organization level stress.

H_6: Group-level stress mediates the relationship between role overload and organization level stress.

RESEARCH METHODOLOGY

The type of research is explorative, descriptive, and causal in nature. The study was carried out in the Krishnagiri district among selected bank employees in the state of Tamil Nadu, INDIA. A survey method was carried out for primary data collection using a structured questionnaire with 5 points Likert scale. The secondary data was collected from journals using EBSCO and Google Scholar. The sampling method used for the study is convenience and judgement sampling. The sample size for the study is 110. The questionnaire contains three items for Individual level stress, four items for Organizational level stress and five items describing the group level stress.

ANALYSIS AND FINDINGS

The collected data were analyzed using the software package Statistical Package for Social Science (SPSS) and Analysis of Momentum Structure (AMOS) 21 version. Statistical techniques like reliability analysis, construct validity, convergent validity, and discriminant validity, confirmatory factor analysis was used for analysis. Structural equation modeling (SEM) was used for testing the hypothesis formulated for mediation analysis.

Reliability

Reliability refers to the consistency of a concept (Bryman and Bell, 2011). It is important to calculate the Cronbach's alpha coefficient for reliability and consistency of the constructs when Likert scales are used in the study (Joseph et al., 2003). It also refers to the scope to which a scale produces consistent results if repeated measurements are used in the constructs. Generally, Cronbach's alpha (Cronbach, 1951) is used to assess the reliability (internal consistency) of the construct and the value of alpha coefficient should be more than 0.7 (Nunnally, 1978; George and Mallery, 2003; and Hair et al., 2010). Table 1 shows the results of reliability analysis for the individual factors and overall dimensions used in the study.

Table 1: Reliability Analysis Results

Factors / Dimensions	Number of Attributes		Cronbach's Alpha Value
	Before Reduction	After Reduction	
Individual level stress	3	3	0.811
Group level stress	5	3	0.645
Organization level stress	4	4	0.840
Overall reliability analysis for the stress level of bank employees	12	10	0.830

The findings show that Cronbach's alpha for all dimensions except for "Group level stress" is above 0.70 which indicates a high level of internal consistency for the scale. Moreover, overall Cronbach's alpha value for the stress level dimensions is 0.830. The Cronbach's alpha values for the individual level stress, organizational level stress dimensions are 0.811 and 0.840. The reduction of the attributes before and after the reliability analysis is also mentioned.

Construct Validity

According to Hair et al. (2010), "Construct validity is the extent to which a set of the measured items accurately reflects the theoretical latent construct those items is designed to measure." One of the primary objectives of conducting a Confirmatory Factor Analysis (CFA) is to assess the construct validity which includes convergent validity and discriminant validity.

Convergent Validity

Convergent validity shows the degree to which indicators of a specific construct has a high proportion of variance in common (Hair et al. 2010). Generally, convergent validity is assessed using Average Variance Extracted (AVE). AVE is the mean of squares of standard loading of each item in a construct. The AVE for each construct should be more than 0.5 (Fornell and Larcker, 1981; and Hair et al., 2010). Table 2 shows the AVE values for each construct is quite higher than the suggested value which confirms the convergent validity of the constructs.

Table 2: Composite Reliability and Discriminant Validity

Factors / Dimensions	CR	AVE	Individual level stress	Group level stress	Organization level stress
Individual level stress	0.807	0.584	-	0.078	0.185
Group level stress	0.706	0.566	0.078	-	0.221
Organization level stress	0.845	0.647	0.185	0.221	-

Discriminant Validity

Discriminant validity shows the extent to which a construct is truly distinct from other constructs (Hair et al., 2010). A commonly used statistical measure of discriminant validity is a comparison of the AVE value with Squared Inter Correlation (Fornell and Bookstein, 1982). The value of AVE for each factor should be greater than the Squared Inter Correlation (Fornell and Larcker,1981; and Hair et al., 2010) which indicates that each construct is connected and correlated more with its observed variables as compared to other constructs, therefore discriminating itself from other constructs. Table 2 shows that the value of AVE is greater than the Squared Inter Correlation (SIC) values for corresponding factors like Individual level stress, Group level stress, and Organization level stress. Hence, the Discriminant validity is achieved for the constructs.

Confirmatory Factor Analysis

According to Ahire et al. (1996), as cited by Seth et al. (2008) Confirmatory Factor Analysis (CFA) provides enhanced control for assessing unidimensionality (i.e., the extent to which items on a factor measure one single construct) than exploratory factor analysis and is more in line with the overall process of construct validation. In the present study, CFA was run using Amos 21 version. Table 3 provides the key indices showing the model fit for the proposed measurement model.

Table 3: Model Fit Summary for Confirmatory Factor Analysis (CFA)

Fit Indices	Results	Suggested Values
Chi-square (CMIN)	20.89 (0.104) df - 14	P-value > 0.05
CMIN/df	1.492	≤ 5.00 (Hair et al., 1998)
Comparative Fit Index (CFI)	0.979	> 0.90 (Hu and Bentler,1999)
Goodness of Fit Index (GFI)	0.957	> 0.90 (Hair et al., 2006)
Adjusted Goodness of Fit Index (AGFI)	0.889	> 0.80 (Hair et al., 2006)
Normated Fit Index (NFI)	0.942	≥ 0.90 (Hu and Bentler, 1999)
Incremental Fit Index (IFI)	0.980	Approaches 1
Tucker Lewis Index (TLI)	0.959	≥ 0.90 (Hair et al., 1998)
Root Mean Square Error of Approximation (RMSEA)	0.067	< 0.08 (Hair et al., 2006)
Root Mean square Residual (RMR)	0.056	< 0.08 (Hair et al., 2006)

Three types of fit indices used to check the model fit: absolute fit indices, incremental fit indices, and parsimony fit indices. Hair et al. (1995, 2006 and 2010) and Holmes-Smith et al. (2006) recommended the use of at least three fit indices by including one index from each category of model fit. All the indices are as per the threshold values suggested by Hair et al. (2006). Table 3 shows the value of absolute fit indices: CMIN/df = 1.492 (<3) with p > 0.05, Goodness of Fit Index (GFI) = 0.957 (>0.9) and Root Mean Square Error of Approximation (RMSEA) = 0.067 (< 0.08), incremental fit indices: Comparative Fit Index (CFI) = 0.979 (> 0.95), Normal Fit Index (NFI) = 0.942 (> 0.9), and Adjusted Goodness of Fit Index (AGFI) = 0.889 (> 0.8). The values of these fit indices confirm the fit of the measurement model and suggest that the constructs are valid. The Figure 4 shows the AMOS output of the measurement model.
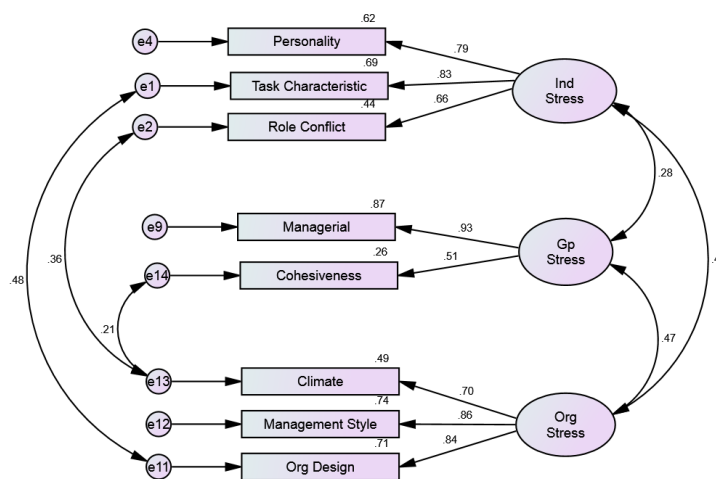

Figure 4: Confirmatory Factor Analysis

Structural Model and Hypothesis Testing

The proposed model is analyzed using AMOS software. Table 4 provides the various fit indices for the structural model (Model 2) of the study. It is observed that all the indices are well within the acceptable level. The chi-square value = 0.252, p = 0.616 > 0.05, and CIMN/df = 0.252 which is less than the threshold value of 3. Other fit indices like GFI = 0.999 > 0.9, RMR = 0.059 < 0.08, CFI = 1.000 > 0.9, NFI = 0.997 > 0.9, TLI = 1.061 > 0.9, and AGFI = 0.988 > 0.8 are also well above the acceptable values, indicating the fit of the structural model.

Hypothesis Testing of Mediation Analysis

The results of the structural model support hypothesis H_1 (p < 0.05, β= 0.532, Table 4) which specifies it is positively significant. Thus, we conclude that there is a strong positive influence of role overload on stress at individual level with 53.2% of the variance. The resulting support hypothesis H_2 (p < 0.05, β = 0.340) which indicates it is positively significant.Thus, individual level stress significantly influences stress at organization level with 34% of the variance.

Table 4: Fit Indices for Structural Model

	p value	R	CMIN	CMIN /df	GFI	RMR	CFI	NFI	TLI	AGFI
Model 1 (Without Mediators)	0.186		3.367	1.684	.986	.026	.990	.977	.970	.928
Role overload → Organization level stress	0.02	0.320								
Model 2 (With Mediators)	0.616		0.252	0.252	.999	.059	1.000	.997	1.061	.988
Role overload → Individual level stress	.000	0.532								
Individual level stress → Organization level stress	.000	0.340								
Role overload → Group level stress	.002	0.283								
Group level stress → Organization level stress	.000	0.303								
Role overload → Organization level stress	.666	.043								

The resulting support hypothesis H_3 (p < 0.05, β = 0.283) which says it is positively significant. Thus, role overload significantly influences stress at group level with 28.3% of the variance. The resulting support hypothesis H_4 (p < 0.05, β = 0.303) which says it is positively significant. Thus group level stress significantly influences stress at organization level with 30.3% of the variance.

The hypothesis H_5 and H_6 were checked using Baron and Kenny's (1986) approach. The direct relationship between role overload and stress at the organization level is found to be significant (p< 0.05, β = 0.320) when no mediator is present between the two variables. Figure 5 shows the structural model without mediators (Model 1).
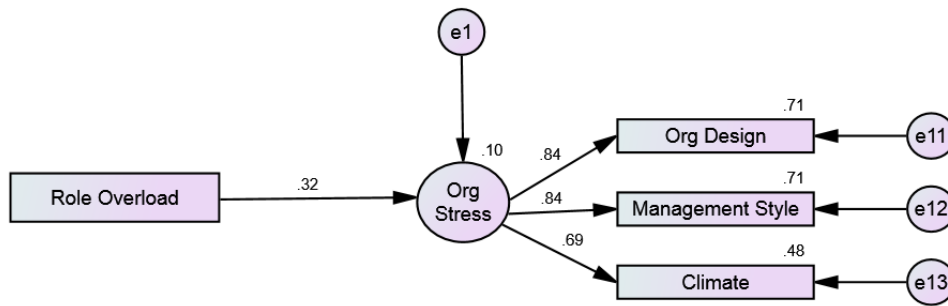
Figure 5: Structural Model without Mediators

When-individual level stress and group level stress (mediators) are introduced between the predictor variable (role overload) and the outcome variable (stress at organization level), the relationship between role overload and stress at the organization level becomes insignificant (Table 4), which indicates that the individual level stress and group level stress fully mediates the relationship between role overload and stress at organization level. Full mediation is the type of mediation got from the analysis. Hence the results support hypothesis H_5 and H_6. Figure 6 shows the structural model with mediators (Model 2) i.e., individual level stress and group level stress that is used for mediation analysis.

The study reveals that the role overload significantly influences stress at the individual level and individual level stress significantly influences stress at the organization level. The findings also reveal that role overload significantly influences stress at the group level and group level stress significantly influences stress at the organization level.
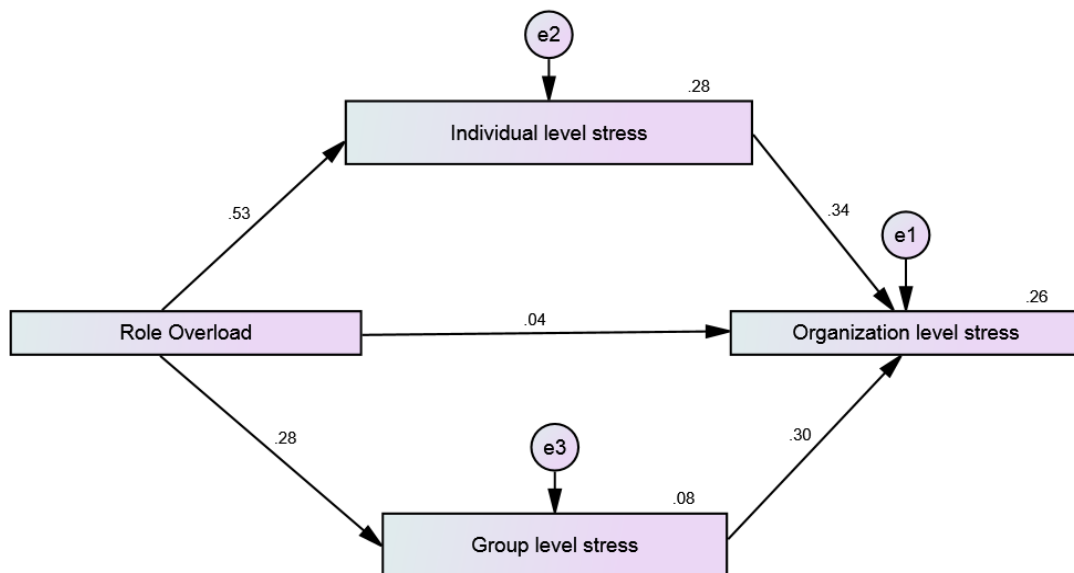

Figure 6: Structural Model with Mediators

The findings of the study disclose that the individual level stress and group level stress fully mediates role overload and stress at the organization level of bank employees. Table 5 provides the results of hypothesis testing.

Table 5: Results of Hypothesis Testing

Hypothesis	Result
H_1: Role overload significantly influences stress at the Individual level.	Supported
H_2: Individual level stress significantly influences stress at the organization level.	Supported
H_3: Role overload significantly influences stress at the group level.	Supported
H_4: Group-level stress significantly influences stress at the organization level.	Supported
H_5: Individual level stress mediates the relationship between role overload and organization level stress.	Supported
H_6: Group-level stress mediates the relationship between role overload and organization level stress.	Supported

CONCLUSIONS

The stress level of bank employees is increasing on a day to day basis due to the dynamic role performed by them. This study affirms and a structural equation model is developed interconnecting various stress level of bank employees using role overload as the independent variable, stress at organization level as the outcome variable and individual level stress and group level stress as mediating variable. The findings confirm that the individual level stress and group level stress fully mediates role overload and stress at the organization level. The type of mediation identified from the study is full mediation. Thus we can conclude that the role overload of employees affects stress at the individual level and stress at the group level that leads to the decrease in job performance, quality of work and increase in absenteeism, role conflict respectively. When individual-level stress and group level stress increases the organization level stress also increases which lead to a decrease in job satisfaction and an increase in employee turnover or attrition. The Banker has to pay attention to distribute the workload of employees equally which will reduce the individual stress level, group stress level. Once the stress at the individual level and group level are maintained, the stress at the organization level will also be maintained.

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