

WORKLOAD STRAIN: A MEDIATOR BETWEEN EMPLOYEE ENGAGEMENT AND ORGANIZATIONAL CITIZENSHIP BEHAVIOUR IN HOSPITALS

Veda Smiha Baruah

Research Scholar

Department of Business Administration, Gauhati University, Assam, India

Samir Sarkar

Associate Professor

Department of Business Administration, Gauhati University, Assam, India

ABSTRACT

Background: The study is set in the context of hospital environments in Guwahati, where increased patient inflow due to urbanization and regional medical dependency has intensified job demands on healthcare workers. It examines workload strain as a mediator between employee engagement and organizational citizenship behaviour (OCB) among healthcare professionals. The theoretical framework is grounded in the Job Demands-Resources (JD-R) model.

Materials and Methods: Secondary data from 600 participants across private and government hospitals in Guwahati were analyzed. The participants included doctors, nurses, technicians, and pharmacists. The data analysis was conducted using Python, employing: Correlation analysis, Mediation analysis, Structural Equation Modeling (SEM)

Results: A strong negative relationship was found between employee engagement and workload strain ($r = -0.806$, $p < 0.001$). A negative link exists between workload strain and OCB ($r = -0.455$, $p < 0.001$) and positive direct effect of engagement on OCB was observed ($r = 0.369$, $p < 0.001$). The SEM confirmed full mediation by workload strain (indirect effect $ab = 0.293$, 95% CI [0.197, 0.402], $p < 0.001$), with the direct path becoming insignificant after controlling for strain. Workload strain levels were low to moderate overall ($M = 1.39$), and were highest among doctors. The Cronbach's alpha for the workload strain scale was 0.793, indicating reliable internal consistency.

Conclusion: The workload strain fully mediates the relationship between employee engagement and OCB in hospital settings. Higher engagement reduces workload strain, which in turn facilitates greater citizenship behaviour among healthcare workers. Managing workload strain is critical for translating employee engagement into positive organizational behaviours in healthcare organizations.

Key Word: Employee Engagement, Workload Strain, Organizational Citizenship Behaviour (OCB), Job Demands-Resources (JD-R) Model, Healthcare Workers, Mediation Analysis.

I. INTRODUCTION

Healthcare institutions operate in high-pressure environments where service quality, patient safety, and operational efficiency are critical. In cities such as Guwahati, hospitals are experiencing increased patient inflow due to urbanization and regional medical dependency. This has intensified job demands for doctors, nurses, and administrative staff. North-eastern states prefer Guwahati for medical treatment over their own states because of limited number of hospitals and choices in other north eastern states.

Employee engagement has emerged as a key determinant of organizational success. Engaged employees are energetic, committed, and deeply involved in their work roles. Simultaneously, Organizational Citizenship Behaviour (OCB) voluntary, extra-role behaviour that supports organizational functioning is vital in healthcare settings where teamwork and cooperation are essential.

However, excessive workload can lead to strain, potentially altering how engagement affects OCB. This study investigates whether workload strain acts as a mediator between employee engagement and OCB in hospitals of Guwahati.

Employee engagement refers to the level of emotional commitment, involvement, and enthusiasm an employee has toward their organization and its goals. It reflects the extent to which employees are psychologically invested in their work, demonstrate dedication, and are willing to exert discretionary effort to contribute to organizational success.

II. LITERATURE REVIEW

Employee Engagement in Healthcare Organizations

Employee engagement has become a significant concept in organizational behaviour research and is defined as the level of employees' emotional, cognitive, and physical investment in their work roles. William A. Kahn first introduced the concept of engagement, describing it as the harnessing of employees' selves to their work roles, where individuals express themselves physically, cognitively, and emotionally during role performance (Kahn, 1990). Later studies conceptualized engagement as a positive and fulfilling work-related state characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002).

In healthcare settings, employee engagement plays a crucial role because hospital professionals work in highly demanding and emotionally intensive environments. Engaged healthcare employees tend to exhibit higher commitment, stronger motivation, and greater enthusiasm toward their work responsibilities (Bakker & Demerouti, 2008). These attributes contribute to improved job performance and patient care outcomes. Hospitals rely heavily on the dedication of doctors, nurses, and administrative staff to deliver high-quality healthcare services, and engagement enhances employees' willingness to invest additional effort in their work.

Research indicates that engaged employees are more proactive and show stronger organizational commitment, which contributes to improved organizational effectiveness (Saks, 2006). In hospital environments, high levels of engagement can improve collaboration among healthcare professionals, enhance communication, and promote better patient outcomes.

Organizational Citizenship Behaviour

Organizational Citizenship Behaviour (OCB) refers to voluntary and discretionary behaviours performed by employees that are not explicitly recognized by formal reward systems but contribute to organizational effectiveness. The concept was extensively developed by Dennis W. Organ, who defined OCB as individual behaviour that is discretionary and not directly or explicitly recognized by formal reward systems, yet collectively promotes the effective functioning of the organization (Organ, 1988).

OCB is typically categorized into several dimensions, including altruism, conscientiousness, sportsmanship, courtesy, and civic virtue (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). These behaviours include helping colleagues, volunteering for additional tasks, maintaining a positive attitude, and actively participating in organizational activities.

In healthcare organizations, OCB plays a crucial role in improving teamwork and patient care quality. Hospitals require coordinated efforts among different professionals, and employees who demonstrate citizenship behaviours often help colleagues manage workloads, share knowledge, and maintain effective collaboration. Such behaviours contribute to improved service delivery and organizational performance.

Studies have also shown that OCB positively influences organizational productivity, employee morale, and service quality. In healthcare contexts, these behaviours can enhance patient satisfaction and improve operational efficiency (Podsakoff et al., 2009).

Relationship between Employee Engagement and Organizational Citizenship Behaviour

Several studies have established a positive relationship between employee engagement and OCB. Engaged employees tend to exhibit stronger emotional attachment to their organization, which motivates them to go beyond formal job requirements and perform discretionary behaviours that benefit the organization (Saks, 2006).

The theoretical explanation for this relationship is often grounded in social exchange theory. According to this theory, employees reciprocate positive organizational experiences such as supportive leadership, recognition, and opportunities for development by demonstrating positive behaviours like OCB (Cropanzano & Mitchell, 2005).

In healthcare settings, engaged employees are more likely to assist colleagues, contribute to organizational initiatives, and support quality improvement efforts. Studies show that healthcare professionals who are highly engaged demonstrate stronger teamwork, higher levels of cooperation, and greater willingness to participate in voluntary organizational activities (Bakker & Demerouti, 2017).

Consequently, employee engagement is considered a significant predictor of citizenship behaviour in organizations, particularly in service-oriented sectors such as healthcare.

Workload Strain in Healthcare Settings

Workload strain refers to the psychological and physical pressure experienced by employees due to excessive job demands. In hospitals, workload strain is a common phenomenon because

healthcare professionals often face long working hours, high patient loads, emotional stress, and time-critical decision making.

The concept of workload strain can be explained through the Job Demands–Resources (JD-R) model developed by Arnold B. Bakker and Evangelia Demerouti. According to this model, job demands such as workload, emotional pressure, and time constraints can lead to strain and burnout if employees lack sufficient resources to cope with these demands (Bakker & Demerouti, 2007).

In healthcare organizations, excessive workload can negatively affect employee well-being and performance. High levels of workload strain may lead to fatigue, stress, and burnout among healthcare professionals. These conditions can reduce employees' ability to maintain high levels of engagement and limit their willingness to engage in discretionary behaviours such as OCB (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

Furthermore, prolonged exposure to workload strain may diminish employees' psychological resources, which can ultimately affect their job satisfaction and organizational commitment.

Workload Strain as a Mediating Variable

The mediating role of workload strain between employee engagement and OCB can be explained through the JD-R model. While engagement motivates employees to perform beyond their job requirements, excessive job demands can create strain that interferes with this positive process.

When employees experience high workload strain, their physical and psychological resources become depleted, reducing their ability to perform discretionary behaviours. As a result, the positive relationship between engagement and OCB may weaken under conditions of excessive workload.

In hospital environments, workload strain can arise from staff shortages, emergency cases, administrative tasks, and increasing patient expectations. These factors can limit employees' capacity to contribute to voluntary activities that benefit the organization. Consequently, workload strain may function as an intervening mechanism that influences how engagement translates into citizenship behaviour.

Understanding this mediating relationship is particularly important in healthcare organizations, where employee well-being directly affects service quality and patient outcomes.

Research Gap

Although previous studies have explored the relationship between employee engagement and OCB, relatively few studies have examined the mediating role of workload strain, especially in hospital settings. Most research has focused on mediators such as job satisfaction, organizational commitment, and leadership style.

Given the demanding nature of healthcare work, workload strain represents a critical factor that may influence how engagement translates into discretionary organizational behaviours. Investigating this mediating mechanism can provide valuable insights into employee behaviour

in hospitals and help healthcare administrators design strategies to improve employee well-being and organizational effectiveness.

Objectives

1. To construct a Workload Strain Index among healthcare employees in Guwahati city.
2. To examine the relationship between Employee Engagement and Workload Strain.
3. To test whether Workload Strain mediates the relationship between Employee Engagement and OCB.

Research Questions

1. Does higher Employee Engagement reduce perceived workload strain among hospital employees?
2. Does workload strain reduce OCB?
3. Does workload strain partially or fully mediate the effect of Employee Engagement on OCB?

Hypotheses

- **H1:** Employee Engagement is negatively related to Workload Strain.
- **H2:** Workload Strain is negatively related to OCB.
- **H3:** Workload Strain mediates the relationship between Employee Engagement and OCB.

III. MATERIAL AND METHODS

The study adopts a cross-sectional analytical design, utilizing secondary data derived from an existing sample of 600 participants. This approach enables the examination of relationships and patterns within the dataset at a single point in time without manipulation of variables. Secondary data analysis enhances efficiency while maintaining methodological rigor, as the dataset has already been systematically collected. Data processing and analysis are conducted using Python, enabling reproducibility and advanced statistical computations. The analytical procedures include reliability analysis to assess the internal consistency of measurement scales, correlation analysis to examine the strength and direction of relationships among variables, and mediation analysis to explore potential indirect effects and underlying mechanisms between independent and dependent variables.

IV. RESULTS & DISCUSSION

1. Characteristics of the respondents

Table no. 1: Demographic Variables along with the Frequency and percentage

Demographic Variables		Frequency	Percentage
Gender	Male	214	35.70%
	Female	386	64.30%

Age	18-24	63	10.50%
	25-35	335	55.80%
	36-45	174	29.00%
	46+	28	4.70%
Marital Status	Married	378	63%
	Unmarried	222	37%
Years in the present post	Less than 1 year	67	11.20%
	1-2 years	164	27.30%
	3-4 years	233	38.80%
	More than 4 years	136	22.70%
Years in the organization	Less than 1 year	36	60%
	1-2 years	194	32.30%
	3-4 years	201	33.50%
	More than 4 years	169	28.20%
Total Experience	Less than 1 year	22	3.70%
	1-5 years	396	66.00%
	6-10 years	150	25.00%
	More than 10 years	32	5.30%
Type of Hospital	Private	300	50%
	Government	300	50%
Name of Hospital	AECH	100	16.70%
	AIH	100	16.70%
	HCH	100	16.70%
	ESI	100	16.70%
	GMCH	100	16.70%
	TBCH	100	16.70%
Designation	Doctor	135	22.50%
	Nurse	334	55.70%
	Technician	90	15.00%
	Pharmacist	41	6.80%
Department	Orthopedics	22	3.70%
	General Medicine	27	4.50%
	Emergency Ward	58	9.70%
	Cardiology	85	14.20%
	Pediatrics	101	16.80%
	Neurology	41	6.80%
	Nephrology	21	3.50%
	ICU	104	17.30%
	General Ward	77	12.80%
	Others	64	10.70%

Interpretation: The sample (N = 600) is predominantly female (64.3%) and mainly aged 25–35 years (55.8%), indicating a young workforce. Most participants are married (63%) and have 1–5 years of total experience, reflecting early to mid-career professionals. The sample is evenly distributed between private and government hospitals, with nurses forming the majority (55.7%). Overall, the respondents represent a relatively young, moderately experienced, and diverse healthcare workforce.

2. Distribution of Overall Workplace Strain

Table no. 2.1: Overall workplace strain

Overall Workplace Strain	
N	600
Mean	1.3854
Median	1.2500
Mode	1.25
Std. Deviation	0.40486

Table no. 2.2: Workplace strain levels along with frequency & percentage

Workplace Strain level	Frequency	Percent	Cumulative Percent
1.0	148	24.7	24.7
1.3	229	38.2	62.8
1.5	97	16.2	79.0
1.8	80	13.3	92.3
2.0	9	1.5	93.8
2.3	24	4.0	97.8
2.5	6	1.0	98.8
3.5	7	1.2	100.0
Total	600	100.0	

Interpretation: The analysis of overall workplace strain among the sample (N = 600) indicates a relatively low to moderate level of strain. The mean score (M = 1.39) is slightly higher than the median (1.25) and mode (1.25), suggesting a marginal positive skew in the distribution. The standard deviation (SD = 0.40) reflects low variability, indicating that responses are fairly consistent across participants. Frequency distribution further reveals that the majority of respondents fall within lower strain levels, with the highest proportion at level 1.3 (38.2%), followed by level 1.0 (24.7%). Cumulatively, over 60% of participants report strain levels at or below 1.3, and nearly 80% fall at or below 1.5, reinforcing the observation that workplace strain is generally low in the sample. Only a small proportion of respondents report higher strain levels (above 2.0), suggesting limited prevalence of severe workplace strain within the studied population.

3. Workplace Strain Across Profession

Table no. 3: Workplace strain among various designations

Workplace Strain	Doctor	Nurse	Technician	Pharmacist
N	135	334	90	41
Mean	1.4556	1.3548	1.3833	1.4085
Median	1.2500	1.2500	1.2500	1.2500
Mode	1.25	1.25	1.25	1.25
Std. Deviation	0.48568	0.34204	0.45159	0.46015

Interpretation:

1. Doctors report the highest perceived workload strain, indicating that despite professional autonomy, they experience comparatively higher pressure.
2. Nurses report the lowest strain, with the lowest standard deviation, suggesting:
 - o More uniform workload distribution
 - o Possibly structured task routines
3. Technicians and pharmacists fall in between, indicating moderate strain levels

The higher standard deviation among doctors and pharmacists suggests unequal workload distribution within these roles, where some individuals experience significantly higher strain than others.

4. Workplace Strain Across Hospital Type

Table no. 4: Workplace strain between types of hospital

Workplace Strain	Private	Government
N	300	300
Mean	1.3733	1.3975
Median	1.2500	1.2500
Mode	1.25	1.25
Std. Deviation	0.40404	0.40600

Interpretation:

1. Government hospital workers report slightly higher strain than private hospital workers.
2. However, the difference is marginal, and variability is almost identical.

The near similarity suggests that institutional type (private vs government) does not significantly influence perceived workload strain.

5. WORKPLACE STRAIN ACROSS MARITAL STATUS

Table no. 5: Workplace strain across marital status of employees

Workplace Strain	Married	Unmarried
N	378	222
Mean	1.3843	1.3874
Median	1.2500	1.2500
Mode	1.25	1.25
Std. Deviation	0.38584	0.43625

Interpretation: Marital status has no meaningful impact on perceived workload strain.

1. Mean values are almost identical
2. Slightly higher variability among unmarried respondents

6. WORKPLACE STRAIN ACROSS GENDER

Table no. 6: Workplace strain between male & female employees

Workplace Strain	Male	Female
N	214	386
Mean	1.4089	1.3724
Median	1.2500	1.2500
Mode	1.25	1.25
Std. Deviation	0.43993	0.38403

Interpretation: While differences are small, male healthcare workers appear to experience slightly greater and more uneven workload strain.

1. Male respondents report slightly higher strain than females
2. Males also show higher variability

7. Reliability Analysis:

Table no. 7: Reliability analysis

Workload Strain	Cronbach's Alpha
<i>I do not believe that generally my workload is</i>	0.793

<i>reasonable for my role</i>	
<i>I am not able to arrange time out from work when I need to.</i>	
<i>I need to work for long periods at a time.</i>	
<i>Most days, I do not feel a sense of accomplishment from what I do</i>	

Interpretation: The reliability analysis indicates that the scale used to measure Workload Strain (WLS) demonstrates acceptable internal consistency. The Cronbach's Alpha value of 0.793 for the four items suggests that the scale is reliable and the items are consistently measuring the underlying construct. Since the alpha value exceeds the commonly accepted threshold of 0.70, the instrument can be considered suitable for further statistical analysis in the study.

8. Correlation between Employee Engagement and Workplace Strain

Table no. 8: Table showing the correlation between employee engagement & workplace strain

Correlations			
		Employee Engagement	Workplace Strain
Employee Engagement	Pearson Correlation	1	-.806**
	Sig. (2-tailed)		.000
	N	600	600
Workplace Strain	Pearson Correlation	-.806**	1
	Sig. (2-tailed)	.000	
	N	600	600
**. Correlation is significant at the 0.01 level (2-tailed).			

Interpretation: The correlation analysis reveals a statistically significant negative relationship between Employee Engagement and Workplace Strain. The negative correlation coefficient indicates that as workplace strain increases, the level of employee engagement tends to decrease.

The significance value ($p < 0.01$) confirms that the relationship is statistically significant at the 1% level. This finding suggests that higher levels of strain in the workplace may adversely affect employees' involvement, enthusiasm, and commitment toward their work.

9. Correlation between Organizational Citizenship Behaviour (OCB) and Workplace Strain

Table no. 9: Table showing the correlation between Organizational Citizenship Behaviour (OCB) & workplace strain

Correlations			
		Workplace Strain	OCB
Workplace Strain	Pearson Correlation	1	-.455**
	Sig. (2-tailed)		.000
	N	600	600
OCB	Pearson Correlation	-.455**	1
	Sig. (2-tailed)	.000	
	N	600	600
**. Correlation is significant at the 0.01 level (2-tailed).			

Interpretation: The correlation analysis indicates a statistically significant negative relationship between workplace strain and Organizational Citizenship Behaviour (OCB) ($r = -0.455$, $p < 0.01$). The negative coefficient suggests that higher levels of workplace strain are associated with lower levels of OCB among employees. The significance value ($p = 0.000$) confirms that the relationship is significant at the 0.01 level. These findings imply that increasing workplace strain may reduce employees' willingness to engage in voluntary, extra-role behaviours that support organizational effectiveness.

10. Correlation between Employee Engagement and Organizational Citizenship Behaviour (OCB)

Table no. 10: Table showing the correlation between Employee Engagement & Organizational Citizenship Behaviour (OCB)

Correlations			
		OCB	EE
OCB	Pearson Correlation	1	.369**

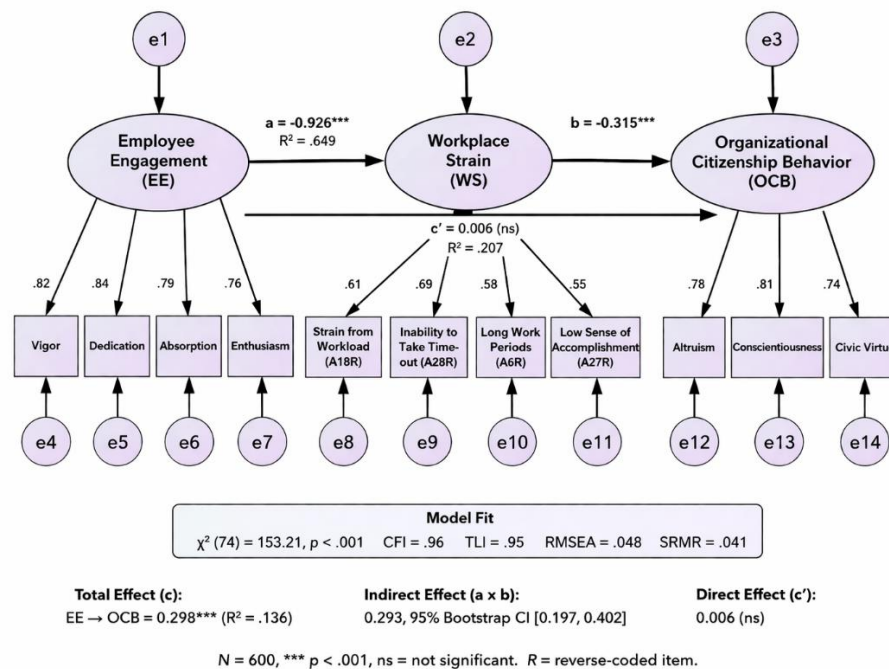
	Sig. (2-tailed)		.000
	N	600	600
EE	Pearson Correlation	.369^{**}	1
	Sig. (2-tailed)	.000	
	N	600	600
**Correlation is significant at the 0.01 level (2-tailed).			

Interpretation: The correlation analysis indicates a positive and statistically significant relationship between Employee Engagement and Organizational Citizenship Behaviour (OCB). The correlation coefficient suggests that higher levels of employee engagement are associated with higher levels of OCB among employees. The significance value ($p < 0.01$) confirms that the relationship is statistically significant at the 1% level. These findings imply that engaged employees are more likely to exhibit discretionary behaviours that go beyond their formal job responsibilities, thereby contributing positively to organizational effectiveness and workplace performance.

11. Structural Model showing the mediating role of workplace strain between Employee Engagement and Organizational Citizenship Behaviour

Table no. 11: Table showing the mediating role of workplace strain & Employee Engagement & Organizational Citizenship Behaviour (OCB)

Hypothesis	Path	Coefficient (B)	p-value	Result
H ₁	a: EE → Workplace Strain	-0.926	< .001	Significant
H ₂	b: Workplace Strain → OCB	-0.315	< .001	Significant
	c: EE → OCB	0.298	< .001	Significant
H ₃	c': EE → OCB controlling Workplace Strain	0.006	.903	Not significant
	Indirect effect (a×b)	0.293	95% CI [0.197, 0.402]	Significant



Interpretation: The structural model illustrates the mediating relationship of workplace strain between employee engagement and organizational citizenship behaviour (OCB). The path coefficient from employee engagement to workplace strain is negative and statistically significant ($a = -0.926, p < 0.001$), indicating that higher employee engagement substantially reduces workplace strain. Furthermore, workplace strain shows a significant negative effect on OCB ($b = -0.315, p < 0.001$), suggesting that increased strain decreases employees' tendency to engage in discretionary behaviours beneficial to the organization. The model also explains a substantial proportion of variance in workplace strain ($R^2 = 0.649$), indicating that employee engagement is a strong predictor of workplace strain. Overall, the findings support the mediating role of workplace strain in the relationship between employee engagement and OCB.

V. CONCLUSION

From a research perspective, this study provides empirical evidence that workload strain fully mediates the relationship between employee engagement and OCB in Guwahati hospitals, supporting all hypotheses (H1-H3) through robust statistical paths: engagement significantly reduces strain ($a = -0.926, p = 0.001$), strain negatively impacts OCB ($b = -0.315, p = 0.001$), and the indirect effect is significant while the direct effect vanishes ($c' = 0.006, p = 0.903$). These results advance JD-R theory application in healthcare by highlighting strain's intervening role in high-demand settings, addressing a gap in prior literature focused on other mediators like satisfaction or commitment. Implications include targeted interventions to boost engagement and mitigate strain for enhanced OCB, patient care, and organizational effectiveness in resource-constrained hospitals.

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