

# Job Demands and Job Resources as Antecedents of Work Engagement Among Inpatient Nurse in X Hospital

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#### **ABSTRACT**

Work engagement within hospitals may be impacted by job demands and job stress, underscoring the necessity to augment work resources as a protective measure. Initial investigations conducted at Hospital X have revealed a deficiency in work engagement, particularly in the absorption aspect. This study seeks to assess the effects of job demands and job resources on work engagement, with job stress serving as a mediating factor. Employing a quantitative survey methodology with a cross-sectional design, the study involved 104 inpatient nurses as participants. The method used is the Three Box Method and statistical analysis. The findings indicate that work engagement escalates with increased job resources, while higher job demands correlate with decreased work engagement. Furthermore, enhancing job resources has the potential to alleviate job stress, whereas elevated job demands are associated with heightened job stress levels. Notably, work engagement diminishes with escalating job stress. Through the mediation of job stress, job resources, and job demands, there is a discernible impact on work engagement.

**Keywords:** Job Demands, Job Resources, Job Stress, Work Engagement.

## Introduction

The quality of service in a hospital hinges not only on competent human resources but also on a profound emotional connection to the organization and work, commonly referred to as work engagement. Work engagement is influenced by factors such as job demands and resources (Leiter & Bakker, 2010). According to the Job Demands- Job Resources Model, high job demands coupled with low job/positive resources lead to increased stress and burnout (Leiter & Bakker, 2010).

Data from multiple studies indicates that in Indonesia, only 15.4% of employees feel a sense of attachment to their work, while 76.5% do not, and the remaining 10.3% are unhappy at work (Gallup et al., 2017). Findings from a study conducted at a hospital in Bandung revealed that 36.7% of nurses fell into the high work engagement category, with the remaining 63.3% categorized as having low work engagement (Syafira, 2017).

Preliminary research at RS revealed that 46% of respondents felt less supported by work resources, lacked skills to improve and develop abilities, had limited participation in decision-making, and encountered poor relationships with co- workers leading to miscommunication. Additionally, 59% reported experiencing job stress, including fatigue, sleepiness, lack of concentration, and feelings of worry while working. Building on this foundation, the study was conducted to analyze the impact of job demands and resources on work engagement, with job stress as a mediating factor, among nursing staff at X Hospital.

## **Research Methods**

The research methodology employed in this study is quantitative research utilizing a Field Research approach. The study conducted is a cross-sectional study. The research variables consist of two independent variables (X), Knowledge of Job Demands (X1) and Job Resources (X2), one dependent variable (Y), Work Engagement (Y), and one mediating variable (Z), Job Stress (Z). The dimensions of job demands include high job pressure and emotional conditions related to work, while job resources encompass physical and social aspects. Work engagement is measured through the dimensions of enthusiasm, dedication, and absorption. Job stress, the mediating variable, is characterized by physical, psychological, and behavioral dimensions. The research model is illustrated in Figure 1, outlining the relationships among the variables. Based on this model, the research hypotheses are formulated as follows:

- H1: There is a notable relationship between job demands, job resources, engagement, and job stress as an intervening factor for nurses at X Hospital.
- H2: There is a notable relationship between job demands, job resources, and job stress on nurses' work engagement at X Hospital concurrently.
- H3: There is a notable correlation between job demands and nurses' job stress at X Hospital.
- H4: There is a notable correlation between job resources and nurses' job stress at X Hospital.
- H5: There is a notable correlation between job demands and nurses' work engagement at X Hospital.
- H6: There is a notable correlation between job resources and nurses' work engagement at X Hospital.
- H7: There is a notable correlation between job stress and the work commitment of nurses at X Hospital.

The sample size was determined using a saturated sampling technique, encompassing all inpatient nurses at RS. As recommended by (Hair Jr et al., 2014), a minimum sample size of 100 is advised for estimating SEM parameters in this panel research. Data collection utilized a Likert scoring system questionnaire distributed via a Google form to respondents. Subsequently, respondent data underwent tabulation and analysis employing the three box method for descriptive data and SEM analysis to test hypotheses. Ethical approval for this research was obtained from the Esa Unggul University Code of Ethics Enforcement Council, Research Ethics Commission under the reference number: 0924-06.022/ DPKE- KEP/ FINAL-EA/ UEU/ VI/ 2024.

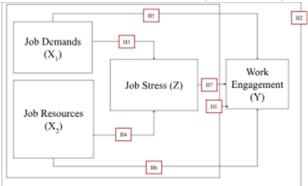


Figure 1. Research Configuration

#### **Results and Discussion**

Respondent demographic information is presented in table 1, while descriptive findings of respondents in relation to the research variables are displayed in table 2.

Descriptive analysis utilizing the three-box method indicates that job demands and job resources fall into the high category, whereas job stress and work engagement are classified as

medium. Consequently, all three factors have not fully optimized nurses' work engagement.

## **SEM Analysis (Structural Equation Modeling)**

This study employs Structural Equation Modeling (SEM) analysis with the assistance of SMART-PLS software to address research inquiries. In SEM-PLS® (Partial Least Squares), it comprises two measurement models: the outer model and the inner model.

Table 1. Respondents' Characteristics

Characteristics of Res	aracteristics of Respondents Frequency		Precentage	
Gender	Male	12	11.54%	
	Female	92	88.46%	
Age	< 25 Years Old	7	6.7%	
-	25 – 30 YearsOld	53	50.96%	
	31 – 35 YearsOld	33	31.73%	
	> 35 Years Old	11	10.58%	
Latest Education	D3	15	14.42%	
	S1	89	85.58%	
Duration flabor	< 1 Years	7	6.73%	
	1-2 Years	32	30.77%	
	2-3 Years	44	42.31%	
	3 – 4 Years	10	9.62%	
	> 4 Years	11	10.58%	
Jumlah		104	100%	

Source: Data derived from surveys (2024)

The analysis of respondent characteristics presented in Table 4.1 reveals a predominance of female respondents, totaling 92, compared to 12 male respondents. Additionally, the majority of respondents fall within the 25-30 age range, with 53 individuals, and specifically, 26-30 years old, accounting for 33 respondents. Furthermore, respondents with a bachelor's degree constitute the largest group at 89 individuals. The majority of respondents have work experience ranging from 2 to 3 years, with 44 participants, closely followed by those with 1 to 2 years of experience, totaling 32 respondents.

Table 2. Research Variable Matrix

Variable	Respondent's Response Position			Behavior
	Low	Moderate	High	
Job Demands			<b>&gt;</b>	Demand
Job Resources			~	Optimal
Job Stress		V		Exhausted
Work Engagement		V		Indifferent

Source: Data derived from surveys (2024)

#### **Outer Model Test**

The criteria for evaluating the outer model include validity tests encompassing convergent and discriminant validity, as well as a reliability test based on the Composite Reliability value. Subsequently, multicollinearity is assessed to facilitate hypothesis testing. The results of the outer model test are depicted in Figure 2. The findings indicate loading factor values exceeding 0.70 and AVE values surpassing 0.5, confirming the validity and homogeneity of all indicator items in the study. Furthermore, in the reliability assessment, both the Composite Reliability and Cronbach's Alpha values exceeded 0.7, affirming the reliability and consistency of all questionnaire indicators in measuring variables.

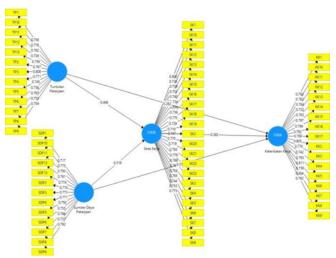


Figure 2 displays the outer model of the PLS Research Model Algorithm.

Processed Results from SmartPLS Version 3.3 (2024)

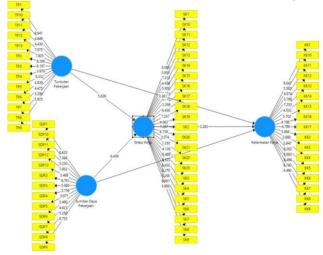


Figure 3. Research Model for Bootstrapping Internal Model Processed Results from SmartPLS Version 3.3 (2024)

#### *Inner Model Test*

Evaluation of the structural model or inner model seeks to establish the connection between constructs, significance value, R- square (R2), Q-square predictive relevance (Q2), and f-square effect size (f2) within a research model. The assessment of the structural model involves R-square for the dependent variable and the path coefficient value for the independent variable. The analysis of the structural model in this research employed the bootstrapping method in SmartPLS version 3.3, with a significance level of 0.05. The examination of the inner model is illustrated in Figure 3.

The R-Square value pertaining to work engagement is 0.926, indicating that job demands, job resources, and job stress can collectively account for 92.6% of the variance in work engagement, with the remaining 7.4% attributed to other variables not included in the study. Additionally, the R-Square value for job stress is 0.938, demonstrating that job demands and job resources can explain 93.8% of the variance in job stress, leaving 6.2% to be explained by external variables not considered in this research.

To obtain the Q2 value, you can compute the following:

Q2 = 1 - (1 - R1)(1 - R2)

Q2 = 1 - (1 - 0.926) (1 - 0.938)

Q2 = 1 - (0.074)(0.062)

Q2 = 1 - 0.004588

Q2 = 0.9954

Based on the Q2 results, which are close to 1, it can be inferred that the model already exhibits a strong predictive relevance. Additionally, the F-Square calculations indicate that the impact of job demands on work engagement falls within the weak category, with values ranging from 0.02 to 0.14. Conversely, the impact of job demands on job stress is classified as strong, with an f- square value exceeding 0.35. Similarly, the effect of job resources on work engagement is categorized as weak, with f-square values ranging from 0.02 to 0.14, while the influence of job resources on job stress is considered strong, with a value surpassing 0.35. The impact of job stress on work engagement is also deemed weak, with an f- square value ranging from 0.02 to 0.14.

Table 3. Estimated Path Coefficients and Statistical Tests

	Original Sample (O)	T Statistic s ( O/ST D EV )	P	Hipotesis
Job Stress -> Work Engagement	-0.299	2.283	0.023	Accepted
Job Resources -> Work Engagement	0.306	2.707	0.007	Accepted
Job Resources -> Job Stress	-0.485	6.439	0	Accepted
Job Demands -> Work Engagement	-0.327	3.381	0.001	Accepted
Job Demands -> Job Stress	0.433	5.626	0	Accepted
Job Resources -> Job Stress- >Work Engagement	0.145	2.06	0.04	Accepted
Job Demands -> Job Stress-> Work Engagement	-0.13	2.105	0.036	Accepted

The subsequent phase involves hypothesis testing using the estimated path coefficients and T-Statistics values displayed in table 3. According to the hypothesis testing results in table 3, it can be demonstrated that:

1. Hypothesis 1: The impact of job demands and job resources on engagement and job stress as an intervening variable for inpatient nurses at Hospital X has been accepted. An indirect relationship exists between job resources and job demands concerning work engagement through job stress, supported by p-values below 0.05 and t- statistics exceeding 1.96.

Conclusions drawn from the three-box method and research findings indicate that hospital inpatient nurses experience a negative correlation between job stress and job demands with work engagement, a negative correlation between job demands and job resources, and a positive correlation between job resources and work engagement. Consistent with theoretical frameworks by (Leiter & Bakker, 2010) and Robbins (2012), along with research by Emilisa et al. (2020) and Meijman et al. (2007), it is evident that job stress can mediate the impact of job demands and job resources on work engagement.

2. Hypothesis 2: The impact of job demands, job resources, and job stress on the work engagement of inpatient nurses at Hospital X concurrently: accepted.

There is a significant relationship among job demands, job resources, and job stress on work engagement, as indicated by the r square value nearing 1. Conclusions drawn from the three-box method and research findings reveal that inpatient nurses at Hospital X face high job demands, high job resources, and medium job stress levels. This situation impacts nurses' work engagement, which remains at a medium level, reflecting the interconnectedness of these variables. High job demands and abundant job resources, coupled with escalating job stress, lead to decreased work engagement. According to (Schaufeli et al., 2009), high job demands and insufficient resources can result in fatigue and diminished work engagement. Conversely, ample job resources, regardless of high or low job demands, foster heightened motivation and engagement. Studies by (Oshio et al., 2018) and (Inoue et al., 2013) support the notion that work engagement correlates with job demands and resources, aligning with the JD-R model's theoretical framework. Work engagement acts as a moderator in the relationship between specific job demands, resources, and psychological distress.

- 3. Hypothesis 3: The impact of job demands on the job stress of inpatient nurses at Hospital X has been accepted. There is a significant relationship between job demands and job stress, supported by p-values below 0.05 and t-statistics exceeding 1.96. The findings are derived from the three-box method, indicating that inpatient nurses at Hospital experience notable work demands. The correlation between variables reveals that job stress and job demands align positively, meaning higher job demands lead to increased job stress among nurses. Meijman et al. (2007) highlight that job demands act as stressors when employees exert high effort without adequate recovery. (Bakker & Demerouti, 2007) suggest a reciprocal relationship between work demands and burnout. (Van den Broeck et al., 2017) note that the service and health sectors exhibit the highest workload, while the industrial and public sectors have lower workloads.
- 4. Hypothesis 4: The impact of job resources on the job stress of inpatient nurses at Hospital X has been accepted. There is a significant relationship between Job Resources and Job Stress, supported byp-values below 0.05 and t- statistics above 1.96. The job resources of inpatient nurses at hospitals show a direct correlation between job stress and job demands. Increasing job resources is crucial to mitigate the impact of high job demands, as they have been proven to alleviate turnover intention and work fatigue. Workload and emotional demands positively contribute to burnout, while all job resources are linked to increased work engagement and decreased burnout. Social support acts as a buffer in the relationship between workload and burnout.
- 5. Hypothesis 5 regarding the impact of job demands on the work engagement of inpatient nurses at Hospital X has been accepted. A notable correlation between work demands and

work engagement has been established, supported by p-values below 0.05 and t- statistics exceeding 1.96. Through the three box method and research findings, it is evident that the work demands of inpatient nurses at Hospital X fall within the medium category. This relationship underscores an inverse connection between job demands and work engagement, indicating that heightened job demands lead to decreased work engagement among nurses. These outcomes align with Ahmed's (2017) research, which highlighted a significant negative effect of emotional demands on work engagement. The study affirms the detrimental impact of job demands, such as workload and emotional stress, on employees' well-being at work, consequently diminishing work engagement. According to Van den Broeck et al. (2010), while workload can be viewed as demanding, it has the potential to enhance work engagement, particularly when paired with high skill levels.

6. Hypothesis 6 regarding the impact of job resources on the work engagement of inpatient nurses at Hospital X has been accepted.

A notable relationship exists between job resources and work engagement, supported by p-values below 0.05 and t- statistics exceeding 1.96. The job resources of inpatient nurses at Hospital In hospitals show a positive correlation with work engagement, indicating that increased job resources lead to higher work engagement levels among nurses.

The outcomes align with (Bakker & Demerouti, 2007) work engagement theory, which suggests that job resources influence work engagement. (Patience et al., 2020) similarly found that job demands (emotional demands) and job resources (meaningful work and career advancement) are expected to enhance nurses' work engagement in public hospitals. Meaningful work, as a job resource, was the primary factor affecting work engagement among public and private nurses. Leader-member exchange boosts work engagement among private sector nurses. Meaningful work emerges as a professional asset for enhancing work engagement among nurses in public and private healthcare facilities.

7. Hypothesis 7 regarding the impact of job stress on the work engagement of inpatient nurses at Hospital X has been accepted.

A significant relationship exists between job stress and work engagement, supported by p-values below 0.05 and t- statistics exceeding 1.96. Findings from the three-box method and research indicate that inpatient nurses at Hospital So do not achieve optimal work engagement due to their job stress, reflected in the medium-level work engagement variable index category. The analysis reveals an inverse correlation between job stress and work engagement, indicating that higher job stress leads to lower work engagement among nurses.

The findings align with prior research carried out by (Rothmann, 2008), specifically regarding the facets of job satisfaction (ranging from pleasure to displeasure), job stress (ranging from anxiety to comfort), fatigue (ranging from tiredness to enthusiasm), and engagement (ranging from enthusiasm to depression) being interconnected. Coetzee et al. (2010) noted that the origin of job stress is significantly associated with the extent of employee work engagement.

Based on the research findings, the primary influential variable is job resources impacting job stress, exhibiting a negative correlation. In essence, higher job resources correspond to lower job stress levels. The secondary influential variable is the relationship between job demands and job stress, showing a positive correlation. This indicates that increased job demands result in higher job stress levels experienced by inpatient nurses. Additionally, job

stress negatively affects work engagement, with higher job stress leading to lower work engagement.

## Conclusion

The research findings indicate that job demands and job resources have an impact on work engagement among inpatient nurses at Hospital job stress, with job stress serving as a mediating factor. Recommendations and implications for hospitals include:

- a. To reduce high work demands, an evaluation of the assignment system (division of tasks, division of energy, work schedule and rest hours) is needed regarding employee work demands so that employees can concentrate fully while working.
- b. To increase work resources, a conducive work environment is needed, superiors who can communicate well, care about obstacles felt by employees, provide limits on authority, provide feedback on employee performance and can be an example and motivation for employees. The hospital can also hold regular meetings with each division, to carry out evaluations and receive input from employees in order to improve the work system.
- c. To reduce work stress, regular health checks are needed for employees, both physical and psychological/counseling (complaints related to psychological conditions). So if there are employees who experience stress or illness due to work, early treatment can be carried out to prevent complications or worsening conditions that will affect work engagement.
- d. To increase work engagement, you can provide appreciation for every effort made by employees, provide education or training related to work engagement for employees so that patient service runs better. Gathering/outing activities can also be held to strengthen employee cooperation, or invite special motivators to increase employee work motivation. Questionnaires related to work engagement are also given to all employees and surveys need to be conducted regarding assessments of hospital management and what employees expect, so that employee aspirations are conveyed.

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