

NAVIGATING COMPLEXITY: THE MODERATING ROLE OF JOB COMPLEXITY IN ENHANCING NURSE PERFORMANCE THROUGH JOB RESOURCES AND ENGAGEMENT

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Received : 01 October 2025

Revised : 10 October 2025

Accepted : 05 November

Published : 16 November 2025

DOI : <https://doi.org/10.54443/ijset.v4i11.1296>

Link Publish : <https://www.ijset.org/index.php/ijset/index>

Abstract

In the dynamic healthcare environment, nurse performance plays a pivotal role in ensuring high-quality service delivery. However, work pressure, administrative burdens, and rising public expectations pose significant challenges. This study investigated how job resources influence nurse performance, as mediated by work engagement and moderated by job complexity. Drawing on the Job Demands–Resources (JD-R) model, this study employed a quantitative, cross-sectional survey involving 174 nurses in private hospitals in East Kalimantan, Indonesia. Using partial least squares structural equation modelling (SEM-PLS), this study confirms that job resources significantly enhance both work engagement and performance, with engagement serving as a key mediator. Interestingly, job complexity did not significantly moderate the relationship between job resources, engagement, and performance. These findings suggest that supportive work environments remain critical, even in standardised healthcare settings, and that job complexity may not universally enhance motivational dynamics. This study contributes to the literature by extending the JD-R model to a developing country context and informing hospital HR policies on resource investment strategies.

Keywords: *nurse performance, job resources, work engagement, job complexity, JD-R model* **JEL Classification:** *I12, M12, M54, O15*

INTRODUCTION

Quality health services are highly dependent on the performance of nursing staff, who act as spearheads in providing services to patients. Amidst the dynamics of the ever-evolving health system, nurses face high work pressure, administrative demands, and community expectations for more humanistic and responsive services. Nurse performance is an important indicator in assessing the effectiveness of a hospital organisation, but its achievement cannot be separated from the working conditions provided by the institution itself. Various studies have emphasised the importance of a supportive work environment in achieving good nursing performance (Wei et al., 2023; Hidayati et al., 2024). One of the widely used theoretical approaches to explain the dynamics of nurse performance is the Job Demands Resources (JDR) model, which emphasises the crucial role of job resources such as autonomy, managerial support, and development opportunities in enhancing work engagement and performance (Bakker & Demerouti, 2017). These resources not only help nurses cope with work pressure but also increase intrinsic motivation, which ultimately contributes to extra-role work behaviour (Van Wingerden et al., 2023). However, recent studies have shown that the relationship between job resources and performance is not always linear or universal. Several studies have reported that contextual factors, such as job complexity, can influence the strength of this relationship (Lee &

Shin, 2022; Li et al., 2023). Job complexity describes the extent to which job tasks require high levels of information processing, problem solving, and complex decision-making, factors that are particularly relevant in the nursing work environment. However, research on the moderating role of job complexity in the relationship between job resources, work engagement, and nurse performance is still limited, especially in developing countries, such as Indonesia. Most existing studies emphasize the direct effects of job resources on engagement and performance without considering how complex work contexts can strengthen or even weaken the relationship (Hanum et al., 2023; Hanum et al., 2024).

Work engagement is a positive psychological condition characterized by enthusiasm, dedication, and absorption in work. Nurses with high levels of engagement tend to show enthusiasm, initiative, and concern for patients. Shuck et al. (2022) showed that work engagement is an important mediating variable between the work environment and actual employee performance. Nurse performance is an important outcome that includes technical competence, communication, accuracy of action, and ability to work in a team. In a dynamic and demanding hospital environment, nurse performance is determined not only by individual abilities but also by organizational support and job design (Alharthi et al., 2023). Research linking these aspects to job complexity as a moderating variable is still rare. Several recent studies have attempted to address this gap. For example, Wang and Chen (2023) showed that in a complex job context, nurses with adequate job resources showed significantly greater increases in work engagement and performance than those with low-demand jobs. Job complexity acts as a catalyst for maximizing the potential of job resources.

However, most studies still focus on other industries, such as technology and education. Studies that specifically examine the role of job complexity in the health sector, especially nursing, are limited (Kwon et al., 2022). This indicates a theoretical and empirical gap that needs to be filled with more contextual and applicable research in the future. Based on this background, this study aims to examine the effect of job resources on nurse performance, with work involvement as a mediator and job complexity as a moderator variable. This study adopts a dynamic moderation mediation model approach to explain the psychological and structural mechanisms that drive optimal performance in the nursing sector. Specifically, this study seeks to answer the following questions: (1) Do job resources influence nurses' work engagement and performance? (2) Does work engagement mediate the relationship between job resources and nurses' performance? (3) Does job complexity strengthen the influence of job resources on nurses' work engagement and performance?

The original contribution of this study lies in the integration of the JDR model, the concept of engagement, and the perspective of job complexity in the nursing context. Thus, this study not only enriches the academic understanding of the dynamics of resources and work performance but also provides practical implications for the management of hospital human resources amidst increasingly complex work challenges. This study also makes an empirical contribution to the human resource management and work psychology literature by expanding our understanding of how complex job design can act as an opportunity (rather than a burden) to optimize the engagement and performance of essential workers, such as nurses. By understanding the interactions between job resources, engagement, and job complexity, hospital policymakers can design more effective and contextualized interventions for nurses.

LITERATURE REVIEW

Job Resources and Work Engagement

Job Resources refer to aspects of a job that are functionally beneficial in achieving work goals, reducing job demands, and stimulating personal growth (Bakker & Demerouti, 2017). In the nursing context, resources such as organizational support, effective supervision, training opportunities, and job autonomy have been shown to increase work engagement, characterized by vigor, dedication, and absorption (Van Wingerden et al., 2023). A study by Hidayati et al. (2024) in Indonesian public hospitals confirmed that the availability of adequate resources creates positive work perceptions and significantly increases nurses engagement.

Job Engagement and Nurse Performance

Job engagement is a positive psychological state that encourages employees to be physically, cognitively, and emotionally present at work (Schaufeli, 2022). Nurses who are actively engaged tend to demonstrate empathy, initiative, and precision in clinical care, leading to improved performance (Alharthi et al., 2023). A longitudinal study by Shuck et al. (2022) in a hospital setting in Asia showed that engagement is a strong predictor of performance outcomes, even stronger than motivation.

Job Complexity and Moderation Dynamics

Job complexity describes the extent to which a job demands high skills, independent decision-making, and cognitive adaptability (Morgeson & Humphrey, 2006). Wang and Chen (2023) found that in a complex job context, the relationship between job resources and engagement becomes stronger. In contrast, Li et al. (2023) highlighted that job complexity can strengthen or weaken the relationship between job engagement and performance, depending on an individual's perception of the challenges of the job. The uncertain nursing context is an ideal arena for testing this complex interaction.

H1: Job Resources on Work Engagement

Increased job resources allow nurses to feel more secure and motivated to deal with work pressure. The availability of training, feedback, and collegial support enriches the work experience and encourages greater engagement (Putri & Soetjipto, 2023). Kwon et al. (2022) found that job resources were significantly and positively correlated with nurse engagement, regardless of institutional background or type of clinical service.

H2: Work Engagement on Nurse Performance

Work engagement is a key driver of performance in service-based work. High engagement makes nurses more focused, innovative, and cooperative in performing their duties (Breevaart & Bakker, 2022). In a study by Almutairi et al. (2022), engagement contributed to improving patient outcomes, reducing clinical error rates, and strengthening coordination between medical staff.

H3: Job Resources on Nurse Performance

The direct relationship between job resources and performance has been tested in various organizational contexts, with consistent results indicating a positive effect. Job resources create a supportive work climate that accelerates the achievement of work goals (Li et al. 2023). Research in the nursing sector by Hanum et al. (2024) confirmed that sufficient job resources increase task efficiency, productivity, and patient satisfaction, even without the mediation of engagement.

H4: Job Complexity as Moderator (Job Resources on Work Engagement)

Job complexity creates a higher need for resources to balance the mental and emotional burdens. In complex jobs, resources are more important for maintaining engagement (Wang & Chen, 2023). Recent research by Lee and Shin (2022) concluded that job complexity strengthens the influence of job resources on engagement because it adds meaning and challenge to work.

H5: Job Complexity as Moderator (Work Engagement on Performance)

At the same level of engagement, individuals working in high-complexity contexts tend to show better performance because they channel their psychological energy into challenging and meaningful work activities (Mäkikangas et al., 2023). Complexity creates a space for actualization and stimulation, which strengthens the effect of engagement on performance achievement (Bakker et al., 2022).

METHOD

Research Design

This study used a quantitative design with a cross-sectional survey approach to examine the relationship between job resources, job engagement, and nurse performance, and the moderating role of job complexity. The quantitative approach was chosen because it can explain the causal relationship between latent variables empirically and measurably (Hair et al., 2021; Sarstedt et al., 2022). The structural model in this study refers to the Job Demands Resources (JDR) framework, which includes job engagement as a mediating variable and job complexity as a moderating variable (Bakker & Demerouti, 2017).

Population and Sample

The population in this study comprised all professional nurses working in private hospitals in East Kalimantan. The sample used was 174 nurses selected using the proportional stratified random sampling technique, which reflects the representation of various work units (inpatient, ICU, ER, and surgery). The number of samples met the minimum requirements in the Structural Equation Modeling Partial Least Squares (SEM PLS) analysis for models with four to six constructs (Hair et al., 2021).

Data collection technique

Data were collected through a structured questionnaire distributed online and in hard copy over four weeks. Participation was voluntary and anonymous, with informed consent obtained prior to the completion of the questionnaire. This study was approved by the internal ethics committee of the hospital. The online distribution followed the guidelines for digital data collection in the healthcare sector to minimize bias (Almeida et al., 2022).

Research Instruments

The variables were measured using validated scales. Job resources were measured using items from Bakker et al. (2003), which included supervisor support, autonomy, and access to development. Work engagement was measured using the Utrecht Work Engagement Scale (UWES 9), which has good psychometric properties (Schaufeli et al., 2019). Nurse performance was measured using an adaptation of the Individual Work Performance Questionnaire (IWPQ), which has been validated for health workers (Koopmans et al., 2014). Job complexity was measured using a subscale of the Work Design Questionnaire (WDQ) developed by Morgeson and Humphrey (2006), which was updated in the hospital context (Lee & Shin, 2022). All items were measured using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Validity and Reliability

Content and construct validity were assessed in this study. Construct validity was determined through convergent and discriminant validity, using the Average Variance Extracted (AVE) and cross-loading values. Internal reliability was measured using Cronbach's alpha (> 0.70) and composite reliability (CR) (> 0.70), which showed that all constructs were within good reliability limits (Hair et al., 2021; Henseler et al., 2016).

Data Analysis Techniques

Data were analyzed using Structural Equation Modeling Partial Least Squares (SEM PLS) with the help of SmartPLS 4 software. SEM PLS was used because it can handle complex predictive models, including mediation and moderation (Sarstedt et al., 2022). Testing of the measurement model included indicator reliability, internal consistency, and convergent and discriminant validity. The structural model was tested by assessing the path coefficient, t-value (through bootstrapping as much as 5,000), R^2 value, effect size (f^2), and predictive relevance (Q^2). Moderation was tested by forming interactions between job complexity and the related predictors. This methodological approach was designed to provide a comprehensive and valid analysis of the hypothesized relationships in accordance with quantitative research standards in the fields of work psychology and nursing management.

RESULTS AND DISCUSSION

Respondent Demographic Descriptive

This study involved 174 respondents, consisting of active nurses in private hospitals in East Kalimantan. Based on gender, respondents were relatively evenly divided, with 85 (48.9%) males and 89 (51.1%) females. This reflects almost even gender representation among the nursing staff. In terms of age, the majority of respondents were in the 21-30 year range (159 people, 91.4%), followed by the 31-40 year age group (15 people, 8.6%). These data indicate that the nursing staff involved in this study were predominantly younger. Based on work experience, most respondents had 0–2 years of work experience (87 people, 50%), followed by 2 years 1 month – 5 years of work experience (63 people, 36.2%), and 5 years 1 month – 10 years of work experience (24 people, 13.8%). This shows that most nurses are still in the early to middle stages of their careers. When viewed from the work unit or field, nurses working in inpatient units dominated, with 50 people (28.7%), followed by the ICU (23%), ER (20.1%), polyclinic (14.4%), and others (13.8%). This variation reflects the diversity of work contexts that can affect perceptions of work resources, involvement and job complexity.

Descriptive Statistics of Research Variables

This study measured four main variables: **Job Resources**, **Work Engagement**, **Nurse Performance**, and **Job Complexity**. Based on the results of the descriptive analysis of 174 respondents, the average value and standard deviation of each variable indicate a level of perception that tends to be positive, as indicated by the mean value above the midpoint of the Likert scale (3.00). **The job Resources** variable had an average value of **3.85**, with a standard deviation of **0.56**, indicating that, in general, the nurses felt they had adequate support and work facilities

from the organization. **Job Involvement** shows the highest average, which is **3.92**, with a standard deviation of **0.60**, reflecting a high level of enthusiasm and dedication in carrying out tasks. The **Nurse Performance variable** recorded an average of **3.87** and a standard deviation of **0.58**, indicating that most respondents considered their work performance to be at a good level. Meanwhile, **Job Complexity** had an average value of **3.75**, with a standard deviation of **0.62**, indicating that the majority of nurses viewed their work as quite challenging and requiring high cognitive capacity and technical skills.

Table 1. Descriptive Statistics (N = 174)

Variables	Number of Items	Minimum Score	Maximum Score	Average (Mean)	Standard Deviation (SD)
Job Resources	6	2.33	4.83	3.85	0.56
Job Engagement	9	2.11	5.00	3.92	0.60
Nurse Performance	7	2.43	4.86	3.87	0.58
Job Complexity	4	2.00	4.75	3.75	0.62

Source : Data processing results, 2025

Structural Equation Modeling

Structural Equation Modeling (SEM) is a powerful multivariate statistical approach for analyzing causal relationships between latent constructs and observed indicators, including mediation and moderation in a single integrated model. SEM is particularly suitable for management and organizational psychology research because it can simultaneously test complex theoretical models involving interactions between variables, including in work contexts such as nursing. SEM PLS, as a variance-based variant, is considered more flexible for non-normal data and small to medium samples, and excels in predicting and exploring construct relationships (Hair et al., 2021; Ringle et al., 2022). SmartPLS 4 makes it easier for researchers to test the validity and reliability of the measurement model using Average Variance Extracted (AVE), Cronbach's alpha, and composite reliability, as well as to assess the strength of the structural model using the path coefficient, R², f², and Q² (Sarstedt et al., 2022). In nursing studies, the use of SEM PLS has been proven effective in mapping the influence of job resources and work engagement on performance by considering the role of moderators, such as job complexity (Wang & Chen, 2023).

Evaluation of measurement model

The evaluation of the measurement model (outer model) in the SEM PLS approach aims to ensure that the latent construct is measured validly and reliably through the indicators used. In this study, all indicators had an outer loading value > 0.70, indicating that each item made a substantial contribution to its construct (Hair et al., 2021). The Cronbach's alpha (CA) and Composite Reliability (CR) values for all constructs exceeded the threshold of 0.70, indicating that the instrument has good internal consistency (Sarstedt et al., 2022). In addition, the Average Variance Extracted (AVE) values were all above 0.50, indicating that each construct could explain more than 50% of the variance of its indicators, thus meeting the requirements for convergent validity (Henseler et al., 2016).

Table 2. Outer Loading Measurement

Variables/Indicators	Symbol	Outer Loading	STDEV	CA	CR	AVE
Nurse Performance	PERF			0.727	0.728	0.550
Quality of Service	PERF1	0.746	0.034			
Work Efficiency	PERF2	0.760	0.031			
Patient Satisfaction	PERF3	0.714	0.038			
Compliance with medical procedures	PERF4	0.746	0.034			
Work Involvement	WE			0.762	0.762	0.615
Passion	WE1	0.802	0.026			
Dedicated	WE2	0.779	0.032			
Absorption	WE3	0.772	0.034			
Job Resources	JR			0.791	0.792	0.616
Autonomy	JR1	0.831	0.022			
Supervisor Support	JR2	0.797	0.026			

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Access to training and development	JR3	0.784	0.026			
Availability of physical resources	JR4	0.725	0.039			
Job Complexity	JC			0.757	0.757	0.578
Task Variations	JC1	0.765	0.033			
Level of Responsibility	JC2	0.786	0.032			
Decision making needs	JC3	0.745	0.034			
Cognitive Demands	JC4	0.746	0.033			

Source : Data processing results, 2025

To evaluate discriminant validity, the Fornell–Larcker criterion was used, where the square root of the AVE on the diagonal was higher than the correlation between the constructs in the rows and columns. For example, the $\sqrt{\text{AVE}}$ value for Work Engagement (0.785) was higher than its correlation with Job Resources (0.691) and Nurse Performance (0.714), indicating that the constructs were measuring different entities. All constructs in the model met this criterion, indicating that the measurement model had successfully avoided the problem of overlapping constructs and could proceed to the structural model evaluation stage (Ringle et al., 2022).

Table 3. Fornell Larcker Criterion

	JC	JR	PERF	WE
JC	0.761			
JR	0.721	0.785		
PERF	0.795	0.667	0.742	
WE	0.759	0.691	0.714	0.785

Source: Data processing results, 2025

Thus, the measurement model in this study shows adequate validity and reliability according to the latest evaluation standards in the PLS-SEM literature. Therefore, it can be concluded that the research instrument is suitable for testing the causal relationships between the variables in the structural model.

Structural model testing (Inner model)

Testing the structural model (inner model) in the SEM PLS approach aims to evaluate the strength and predictive relevance of the relationship between the latent constructs. Based on the R square (R^2) value, the nurse performance variable (PERF) was substantially explained by the predictor variables by 67.2%, while work engagement (WE) was explained by 47.8%. According to Hair et al. (2021), an R^2 value above 0.67 is classified as strong and above 0.33 is classified as moderate, indicating that the model has good explanatory power in explaining the variations in endogenous variables. The adjusted R^2 value, which is not much different, indicates that the model is not overfitting.

Table 4. R square (R^2)

	R square	R square adjusted
PERF	0.672	0.664
WE	0.478	0.475

Source: Data processing results, 2025

Furthermore, the f square (f^2) test was used to measure the magnitude of the contribution of the effect of each independent variable on the dependent variable. The results show that Job Complexity (JC) on Nurse Performance has a moderate effect ($f^2 = 0.275$), while the direct effect of Job Resources (JR) on Job Engagement is very large ($f^2 = 0.916$), indicating a significant role of Job Resources in shaping Job Engagement. In contrast, the direct effect of JR on PERF ($f^2 = 0.020$) and WE on PERF ($f^2 = 0.046$) were included in the weak category (Chin, 2010). The moderation interaction effects of $JC \times JR$ and $JC \times WE$ have f^2 values close to zero, indicating a very small moderation contribution.

Table 5. F square test

	f square
JC > PERF	0,275
JR > PERF	0,020
JR > WE	0,916
WE > PERF	0,046
JC x JR > PERF	0,000
JC x WE > PERF	0,005

Sumber: Hasil olah data, 2025

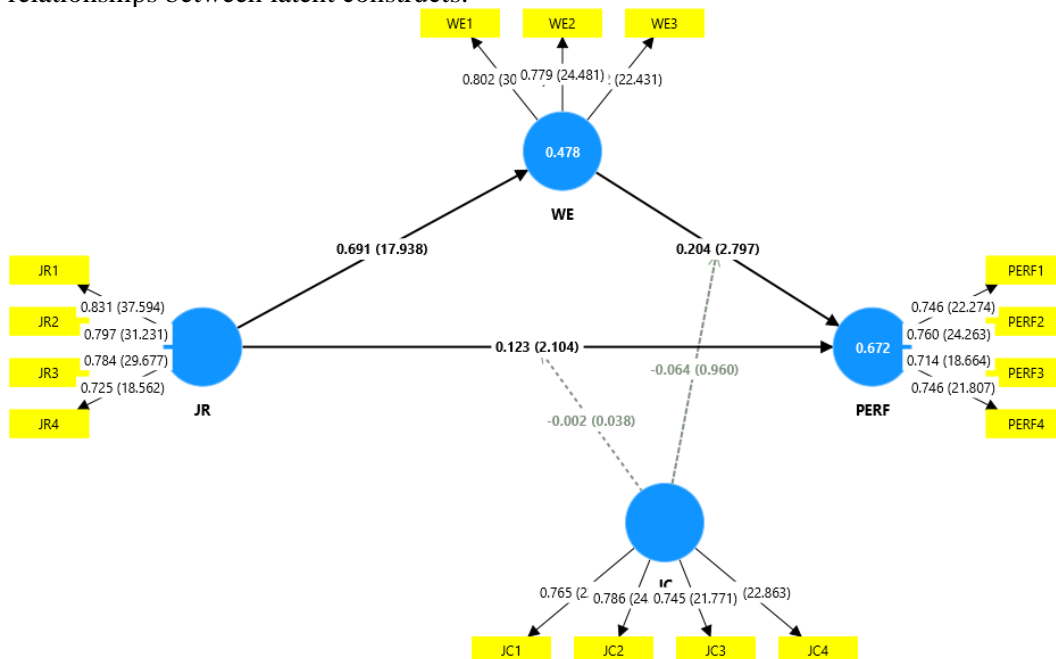
The multicollinearity test through the Variance Inflation Factor (VIF) shows that all predictors have values below the threshold of 5.0, which means there is no indication of high multicollinearity among the constructs (Sarstedt et al., 2022). Controlled VIF values strengthen the validity of the model for estimating causal relationships. Thus, the structural model has good predictive relevance, with significant effects of job resources and job complexity on nurse engagement and performance according to the JD-R theoretical framework.

Table 6. Multicollinearity Test

	VIF
JC > PERF	3,065
JR > PERF	2,351
JR > WE	1,000
WE > PERF	2,760
JC x JR > PERF	2,567
JC x WE > PERF	2,665

Source : Data processing results, 2025

Path coefficient analysis in the SEM PLS structural model is used to measure the strength and direction of the relationships between latent constructs.



The test results show that all main hypotheses are accepted at the 5% significance level. The effect of Job Resources (JR) on Work Engagement (WE) showed the strongest coefficient ($\beta = 0.691$, $t = 17.938$, $p < 0.001$), indicating that available job resources significantly increased nurses' work engagement. The direct relationship between JR and Performance (PERF) is also significant ($\beta = 0.123$, $t = 2.104$, $p = 0.035$), although with a weaker effect strength.

Meanwhile, the effect of WE on PERF is strong ($\beta = 0.204$, $t = 2.797$, $p = 0.005$), supporting the mediating role of work engagement in improving performance.

Table 7. Hypothesis Testing Results

Hypothesis	Relationship Between Variables	Path Coefficient	T Statistics	P Value	Conclusion
H 1	Job Resources (JR) → Job Engagement (WE)	0.691	17,938	0,000	Accepted (Significant)
H 2	Job Resources (JR) → Nurse Performance (PERF)	0.123	2,104	0.035	Accepted (Significant)
H3	Work Engagement (WE) → Nurse Performance (PERF)	0.204	2,797	0.005	Accepted (Significant)
H4	Job Complexity x Job Resources (JC x JR) → Nurse Performance (PERF)	0.002	0.038	0.970	Rejected (Not Significant)
H5	Job Complexity x Job Involvement (JC x WE) → Nurse Performance (PERF)	0.064	0.960	0.337	Rejected (Not Significant)

Source : Data processing results, 2025

However, the Job Complexity (JC) moderation interaction did not show a significant effect. The moderating effect of $JC \times JR$ on PERF had a coefficient close to zero ($\beta = 0.002$, $p = 0.970$), and $JC \times WE$ on PERF was also not significant ($\beta = 0.064$, $p = 0.337$), indicating that job complexity neither strengthened nor weakened the influence of JR and WE on nurse performance in this context. This may indicate that complexity does not always act as an effective moderating factor in a standardized hospital work setting (Sarstedt et al., 2022). Overall, the interpretation of these path coefficients confirmed the theoretical validity of the main model and provided important insights for human resource development in healthcare organizations.

DISCUSSION

H1: Job Resources on Work Engagement

The test results showed that the availability of job resources significantly impacted nurses' work engagement. This finding confirms that nurses who feel structurally and psychologically supported by the organization show higher levels of enthusiasm and dedication in performing their duties. This finding is in line with the study by Van Wingerden et al. (2023), which showed that job autonomy, supervisor support, and access to career development consistently strengthen the dimensions of passion and absorption in work engagement. This study provides empirical support for the Job Demands–Resources (JDR) framework, which states that job resources drive intrinsic motivation. The practical implications of these results encourage hospital management to prioritize investments in training, open communication, and a supportive work environment. Theoretically, this finding extends the cross-cultural evidence on the central role of job resources, especially in the healthcare sector of developing countries, and directly supports hypothesis H1.

H2: Work Engagement to Nurse Performance

Work engagement was found to have a significant effect on nurse performance, as indicated by increased accuracy, efficiency, and quality of service. Nurses with a high level of dedication tend to provide more optimal services, both in terms of compliance with procedures and patient satisfaction. This finding is consistent with the results of Breevaart and Bakker’s (2022) study, which emphasized that work engagement is a strong predictor of job performance in service-based professions. This study also strengthens the findings of the meta-analysis by Shuck et al. (2022), which places engagement as an important mediator between organizational factors and performance outcomes. Practically, hospitals can use engagement as a non-financial performance indicator in their HR management systems. This finding confirms Hypothesis H2 and adds to the evidence that engagement-enhancing interventions have a direct impact on work behavior outcomes in the nursing sector.

H3: Job Resources on Nurse Performance

Job resources also had a direct effect on nurses’ performance, although with a lower strength than the effect on work engagement. This suggests that, in addition to being a motivational driver, job resources also have a direct functional effect on facilitating task implementation. These results support the study by Hanum et al. (2024), who stated that

organizational support and work facilities play a role in improving the efficiency and accuracy of health workers' work. This study adds to the evidence that in some contexts, the effect of job resources is not always fully mediated by engagement and can have a direct impact on behavioral output. The practical implication is that the provision of adequate physical tools and resources will have a direct impact on performance, even before psychological aspects such as engagement are considered. These findings support H3 and strengthen the dual-path structure of job resources in the JDR framework

H4: Job Complexity × Job Resources to Work Engagement

The test results show that job complexity does not moderate the relationship between job resources and work engagement. This finding implies that perceptions of task complexity, such as decision-making needs or cognitive demands, are not strong enough to strengthen or weaken the effect of resources on engagement in the hospital context. This is in contrast to the study by Wang and Chen (2023), who found that in the technology sector, complexity strengthens the effect of job resources on engagement. This difference may be due to the level of procedural standardization in the hospital environment, which limits cognitive autonomy. Theoretically, these results suggest that complexity does not always enhance work contexts. In practice, managers cannot rely on complexity as a natural leverage to increase engagement and must continue to focus on providing concrete structural support. Thus, H4 is not proven in the context of this study.

H5: Job Complexity × Work Engagement to Nurse Performance

The interaction between job complexity and job engagement also did not have a significant effect on nurses' performance. This result suggests that although nurses have high engagement, it does not automatically translate into better performance when the job becomes more complex. This finding differs from the results of Mäkikangas et al. (2023), who showed that in creative work, complexity strengthens the relationship between engagement and performance. In the nursing context, structural factors such as protocol compliance and system limitations are likely to inhibit the cognitive flexibility needed to actualize engagement. This finding challenges the generalizability of previous results and suggests the importance of examining specific work contexts. The practical implication is that hospital administrators cannot rely on complexity as an additional motivational factor and should instead focus on simplifying work processes to maintain optimal performance. Therefore, H5 was not supported in this study.

CONCLUSION

This study makes an important contribution to the literature on organization and human resource management in the healthcare sector by demonstrating that job resources significantly affect nurses' job engagement and performance, both directly and indirectly. Job engagement plays an important mediating role in strengthening the relationship between organizational support and performance outcomes. Meanwhile, job complexity does not act as a significant moderator in the relationship, indicating that in the context of highly standardized hospitals, diversity and cognitive demands do not always strengthen the motivational effects of job resources or of engagement. The theoretical implications of these findings reinforce the relevance of the Job Demands–Resources (JDR) model in the nursing context in developing countries. This study extends the application of the model by examining the moderating role of job complexity, providing insight that challenging work designs may not necessarily improve engagement or performance depending on the context and organizational structure. From a practical perspective, hospitals and policymakers should prioritize resource-based interventions, such as managerial support, professional development, and job autonomy, to promote healthcare workers' engagement and productivity. On the policy side, these results support the importance of investing in psychological well-being-based work systems and performance management, particularly in the public service sector. The limitations of this study include the cross-sectional design, which limits causal inference, and the single-site coverage, which limits generalizability. In addition, the measurement of job complexity is perceptual and does not accommodate contextual dynamics or objective workload. For future research, a longitudinal approach to capture long-term behavioral changes is recommended, as well as an expansion of the sample across institutions and regions to increase external validity. Further exploration of the role of other psychological variables, such as psychological safety, resilience, or meaningful work, could also enrich our understanding of how organizational resources translate into optimal performance.

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