



Nurses' demands and resources at work: workload, workplace friendship, positive affect, work engagement on performance

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ABSTRACT

This study delves into how nurses perceive the demands and resources of their jobs, aiming to uncover their impact on job performance and engagement. The focus is on how nurses deal with workload, workplace friendships, and positive affect influencing their engagement and performance. These relationships were tested using Structural Equation Modeling assisted by the AMOS 24 statistical tool. The sample was drawn with purposive sampling from nurses recruited by health centers in West Kalimantan, Indonesia (n=213). The study found that workload was perceived as having a negative impact on performance, while workplace friendship, positive affect, and work engagement had a positive impact. Furthermore, the workload had a negative impact on work engagement, while workplace friendship and positive affect had a positive effect. In addition, work engagement partially mediates the relationship to performance; workload continues to have a negative effect, while workplace friendship and positive affect continue to have a positive effect. The negative relationship of workload to performance and engagement means nurses at health centers in West Kalimantan perceive workload as a job demand that particularly hinders them, while positive relationship of workplace friendship and positive affect act as resources that motivate their work.

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INTRODUCTION

Nurses are an essential human resource in health care; nurses contribute significantly to health care with a dominant number and constant service delivery. The essence of nursing practice is service, which aims to raise awareness of better nursing services and create a better social structure (Samsualam et al., 2021). Karlsson & Pennbrant (2020) emphasize that understanding nursing, service, and ethical values is necessary for professional nursing practice. However, Karlsson & Pennbrant (2020) explain that as patient care becomes more intricate and time-constrained, there is a potential for nursing practice to shift towards a more technical orientation, diminishing its

emphasis on care. Amalina et al., (2020) research on Indonesian hospitals revealed a deficiency in communication between nurses and their patients, a critical aspect of building trust, while the majority of participants noted that nurses responded to patients' needs or complaints in the quick manner. Hospitals and health center in West Kalimantan part of Indonesia is not excluded from these concerns, where research shows medical personnel show unfriendly behavior, lack behind compared to other customer satisfaction index (Hidayat & Yuliatno, 2022; Supardi et al., 2022). Darvishmotevali & Ali, (2020) explains that this involves actions and methods used by an employee to meet their job responsibilities, observed as an operational process that consists of various individual behaviors within their specific job context. They also depict an employee's organizational performance as a manifestation of their behaviors, ethical principles, knowledge, and skills.

According to the World Health Organization (2020), there is an estimated shortage of 5.9 million nurses in 2018, Indonesia being one of the countries experiencing the most significant shortage. According to Demur et al. (2019), when nurses experience excessive workloads, they tend to care less about patients. Tasks performed by individuals or teams within a specific time frame, which include practical tasks and cognitive tasks such as thinking, calculations, memorization, decision-making, and research, are nurse workloads (Pourteimour et al., 2021). Tubbs-Cooley et al. (2019) found a significant relationship between nurses' workload and missed nursing care opportunities in infants. Pourteimour et al. (2021) found that frustration was negatively correlated with job performance; however, mental and temporal demands correlated positively. According to (Bakker & Demerouti, 2017), challenging demands, such as high workloads, can be perceived by employees as satisfying work experiences that motivate them.

Individuals being given responsibilities and authority, the behavior of individuals is critical to be observed by the organization in which they participate (Hendra et al., 2022). According to Pillemer & Rothbard (2018), closeness in workplace friendships can cause conflicts between roles, communal norms, and socio-emotional goals of friendship can conflict with exchange norms and instrumental goals in organizations. Because characteristics define what workplace friendship entails. A voluntary relationship between colleagues based on mutual giving, commitment, trust, and positive affection is defined as workplace friendship (Zarankin & Kunkel, 2019). According to Pillemer & Rothbard (2018), workplace friendship is limited to non-romantic, voluntary, informal relationships that focus on personal relationships, are based on communal norms, and have socio-emotional goals. However, research supports the positive side of workplace friendships. Building solid friendships with superiors can encourage employees to achieve high-performance expectations and avoid negative feedback (Özbek, 2018). According to BiÇer, (2020), workplace friendships offer various benefits, such as higher job satisfaction, commitment, trust, and communication. They also provide emotional support and stability, resulting in better job-related attitudes and behaviors, ultimately benefiting organizational outcomes.

Among Indonesians, personality traits of the nurses impacting their choice to place trust in hospitals located in neighboring Malaysia (Komari & Djafar, 2023). In facing failures, positive affect is a psychological trait that shapes a person's emotional state (Hong et al., 2021). Positive affect is associated with the subjective experience of emotions, mood, or dispositions that facilitate behavior and environmental interaction (Jones & Graham-Engeland, 2021). Positive Affect described generally as the experience of pleasant emotions, positive affect encompasses enthusiasm, joy, happiness, tranquility, and satisfaction (Pressman et al., 2019). Emotions play an essential role in human behavior, and since work is a central part of daily life, emotions inevitably affect the job (F. Ma et al., 2023). Positive affect toward performance is a valuable resource, enhancing individuals' cognitive, emotional, and motivational processes and improving work performance (Demskey et al., 2021). Positive affect or positive emotions are subjective emotional well-being and are associated with better work performance, while negative emotions are connected with poorer performance (Salgado et al., 2019).

In addition, work engagement is impacted by the factors mentioned earlier (Wang et al., 2021; C. H. Yan et al., 2021; Y. Yan et al., 2023), making them crucial. Slåtten et al. (2022) revealed that healthcare organizations can harness actively engaged employees to enhance the patient experience and the perception of service quality. In recent studies, work engagement is commonly viewed as having three dimensions: behavioral-energetic components (vigor), emotional components (dedication), and cognitive components (absorption) (Decuyper & Schaufeli, 2020). High engagement among nurses significantly impacts their work performance as fully engaged nurses allocate their cognitive, emotional resources, and physical to their work roles (Ghazawy et al., 2021). Jung et al. (2021) stated that high job engagement is a sign of a positive mental state at work and can affect performance. Positivity is a characteristic of a nurse engaged in their work and is an intrinsic factor related to caring behavior (De Los Santos & Labrague, 2021) This is particularly important because the Gallup (2023) reports that only 24% of employees in Indonesia have high job engagement. Gallup estimates low job engagement is a significant economic factor, costing approximately 7.8 trillion U.S. dollars or about 11% of the global GDP.

The present research model posits that job demands can lead to adverse outcomes such as fatigue and employee turnover, whereas job resources can contribute to positive outcomes such as work engagement, job satisfaction, and enhanced performance; this is grounded in The Job Demands-Resources theory proposed by (Demerouti et al., 2001). Two distinct processes, the motivational and health impairment processes, are triggered by job resources and job demand. Job demands exert a negative impact, while in the motivational process, motivation positively affects performance (Bakker & Demerouti, 2017). Workplace friendships provide social support to individuals, enhancing work engagement and proven to be very helpful in managing demanding work conditions and reducing negative effects, as they are considered valuable resources (C. H. Yan et al., 2021). Workload is a type of job demand (Luo & Lei, 2021). However, Bakker et al., (2004) explain challenging demands can motivate and improve work engagement, job satisfaction, and performance. Furthermore, personal resources can serve functions similar to job resources (Bakker & Demerouti, 2017). According to (Diener et al., 2020), positive emotions can act as personal resources through their influence on cognition, affect, behavior, and physiology. But few studies have as yet explored the impact of positive affect on nurses' performance, especially through work engagement mediation. This study aims to bridge this gap by proposing these research model, in addition addressing inconsistencies in previous research on relationship to performance from workload and workplace friendship.

JD-R model not only establishes a conceptual groundwork but also provide practical implications by recognizing what is the job demands and job resources that could be strategically managed. Within the organizational context, the JD-R model facilitates communication among members regarding work and well-being by establishing a common language (Schaufeli, 2017). The results of this research could provide human resources practitioners the reference to develop or intervention of human resources programs. Understanding how things that perceived by individuals in workplace; workload, workplace friendship, positive affect could be detrimental or beneficial in affecting work engagement which in turns hindrance or motivate their performance.

This research aims to systematically investigate the various after mentioned factors in research model that impact nurse performance, prompting the selection of a multivariate statistical framework as the research method. Using Structural Equation Modeling, the analysis is expected to particularly reveal the directions of relationships in addition to the causal relationship, addressing gaps in the current research. The latter part of the next section of this article will further expand on this topic. The third section of this article will present the results of data analysis, starting with the demographics of respondents, followed by the validity, reliability of measurements, and the structural model. This will be followed by a discussion of how the hypothesized relationships in the study occur. The last section will be the conclusion, providing a brief summary of the results of hypothesis testing and their implications.

RESEARCH METHOD

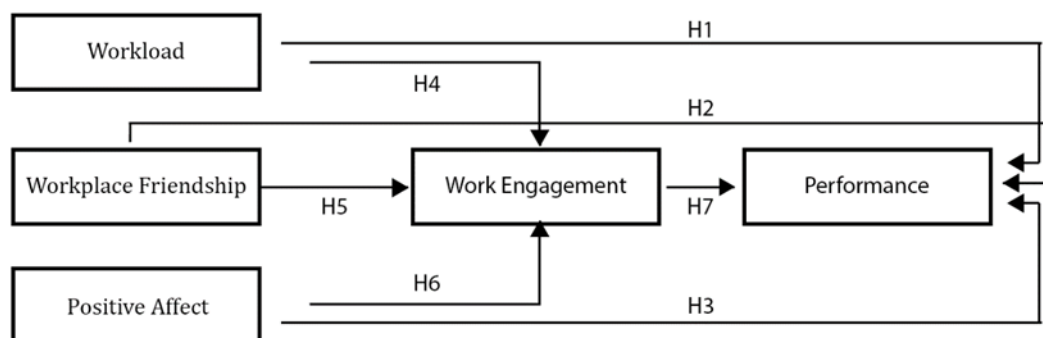


Figure 1. Research Framework

Based on the problem formulation and conceptual framework above, the research hypothesis proposed is as follows:

H1: Workload affects performance

H2: Workplace Friendship affects performance

H3: Positive Affect affects performance

H4: Work engagement affects performance

H5: Workload affects work engagement

H6: Workplace Friendship affects work engagement

H7: Positive Affect affects work engagement

H8: Workload affects performance with work engagement as a mediating variable

H9: Workplace Friendship affects performance with work engagement as a mediating variable

H10: Positive Affect affects performance with work engagement as a mediating variable

This research designed as a causal design, and quantitative methods were utilized for presenting and analyzing the data. The questionnaire played a crucial role in data collection. The questionnaire used in this study was sent to people who were regarded as meeting the set criteria. The questionnaire in this research employed a 5-point Likert scale. Workplace friendship and work engagement ranged from 1 (strongly disagree) to 5 (strongly agree). The workload variable ranged from 1 (very low) to 5 (very high). Positive affect was scaled from 1 (never) to 5 (every time). Regarding performance, the first 9 items were rated from 1 (rarely) to 5 (always), while the last 5 items were reverse-coded from 5 (never) to 1 (often). In this study, the population consisted of nurses working in West Kalimantan. The sample was drawn from nurses recruited by the health centers using a nonprobability sampling method, purposive sampling, amounting to 213 samples.

Workload was assessed using 6 items from the NASA-TLX (Hart & Staveland, 1988). Workplace friendship was measured based on a previous study by Nielsen, Jex, & Adams (2000), which consisted of 11 items. Meanwhile, 5 items were used to measure positive affect using the Positive and Negative Affect Scales (Mroczek & Kolarz, 1998). The measurement of work engagement employs 9 items, utilizing the Utrecht Work Engagement Scale (UWES) developed by (Schaufeli et al., 2001). Performance was evaluated using 14 items from the Individual Work Performance Questionnaire (IWPQ) by (Koopmans et al., 2012)

The measurement and structural models in this study were analyzed and evaluated using the Analysis of Moment Structures (AMOS) version 24 software to conduct Structural Equation

Modeling (SEM). The model fit was evaluated by considering various fit indices, including CMIN/DF, Root Mean Square Error of Fit, Root Mean Square Residual, Normed Fit Index, Incremental Fit Index, Tucker-Lewis Index, and Comparative Fit Index. Furthermore, the validity evaluation was conducted by considering the standardized factor loadings, while the assessment of construct reliability was determined through the calculations of construct reliability and average variance extracted. Once the model was validated, hypothesis testing could be performed utilizing SEM in conjunction with the Sobel test. This combination allows for the assessment of the significance of indirect effects.

RESULTS AND DISCUSSIONS

3.1. Results

Respondent Characteristics

The analysis of respondents in this survey is predicated on the following demographic factors:

Table 1. Respondent Characteristics

Category	Item	f	%
Age	20-24 years old	12	5.6
	25-29 years old	80	37.5
	30-34 years old	48	22.5
	>35 year old	73	34.2
	Total	213	100
Gender	Female	135	63.3
	Male	78	36.6
	Total	213	100
Marriage Status	Married	135	63.3
	Unmarried	78	36.6
	Total	213	100
Education Levels	Diploma	185	100
	Bachelor	28	86.8
	Total	213	100
Length of Service	≤5 years	68	31.9
	6-10 years	65	30.5
	11-15 years	30	14.0
	>15 years	50	23.4
	Total	213	100
Work Hours (per day)	Less than 7 hours	2	0.9
	7 hours	30	14.0
	More than 7 hours	181	84.9
	Total	213	100

Source: (Processed Data, 2023)

Measurement Models

The results of the conformance, validity, and reliability tests are as follows.

Table 2. Value of Standardized Loading Factor, Construct Reliability (CR), and Average Variance Extracted (AVE) in Overall Model Fit

Items	SLF	CR	AVE	
Workload	Mental activity is required for the job	0.807	0.903	0.609
	Physical activity is required for the job	0.812		
	Time pressure due to the rate or speed at which tasks or task elements	0.834		
	Mental and physical levels to reach current performance level	0.803		
	Satisfaction with current performance	0.805		
	Job feels insecure, depressed, distracted, stressed, and upset or secure, satisfied, content, and relaxed	0.820		
Workplace	Is there an opportunity to get acquainted with coworkers	0.712	0.943	0.603

Friendship	Do coworkers collaborate to address challenges together	0.730		
	In the organization, is there a chance for informal interactions and meeting new people	0.727		
	Is there active encouragement for communication among employees in the organization	0.731		
	Is there an opportunity to establish close bonds with colleagues in the workplace	0.732		
	Have strong workplace friendships been formed	0.727		
	Are there social interactions with colleagues outside of the office	0.730		
	Is there a tendency to share personal matters with coworkers	0.731		
	Is there a general sense of trust among coworkers	0.742		
	Is the anticipation of interacting with coworkers something to look forward to in my job	0.755		
Is there a belief that relationships with colleagues could evolve into genuine friendships	0.712			
Positive affect	Feeling of a good mood	0.777	0.887	0.611
	Feelings of great happiness	0.745		
	Feelings of calm and peace	0.727		
	Feelings of satisfaction with the current situation.	0.699		
	Feeling full of enthusiasm	0.760		
Work Engagement	Is there a sense of full energy experienced at work	0.725	0.932	0.605
	Is a strong and vigorous feeling present during work	0.730		
	Is the morning anticipation of going to work met with excitement	0.753		
	Is genuine enthusiasm expressed for the tasks performed at work	0.708		
	Does the work serve as a source of inspiration	0.719		
	Is pride taken in the contributed work	0.711		
	Does working intensively bring happiness	0.718		
	Is there any feeling of being lost in the deep engrossment of tasks during work hours	0.707		
	Is there a feeling of being carried away with work while at the workplace	0.711		
	Performance	Is work effectively planned to ensure timely completion	0.681	0.961
Are the goals to be achieved consistently remembered in the work		0.717		
Is skill demonstrated in distinguishing primary issues from peripheral ones at work		0.705		
Is the job efficiently performed with minimal time and effort		0.714		
Is there an initiative to start new tasks once old ones are completed		0.704		
Are additional responsibilities willingly taken on		0.706		
Are work skills actively kept up-to-date		0.702		
Is there a constant search for new challenges in the work		0.752		
Is active involvement seen in meetings and consultations		0.688		
Are complaints about minor work-related problems commonly voiced at work		0.715		
Is there a tendency to magnify workplace issues beyond necessity		0.696		
Is focus directed towards negative aspects of situations at work rather than the positive ones		0.729		
Are discussions about the negative aspects of the job commonly held with coworkers		0.710		
Are negative aspects of the job shared with people outside the workplace		0.704		

Source: Processed Data (2023)

In Table 2, the presented outcomes suggest that the indicators utilized in the developed model satisfy the established criteria for both validity and reliability (Hair et al., 2018). Indicators indicating the validity and sufficiency of all items for measuring the composition of the entire model generated exhibit values above 0.50 for standardized load factor (SLF). The Construct Reliability (CR) test results also demonstrate the reliability of all instruments, surpassing 0.70, and their consistent ability to measure the structure within the constructed model.

Table 3. Goodness of Fit Index

Index	Goodness of Fit	Value	Cut off	results
	χ^2		Expected to be low	126.473
	Df			38
	χ^2 - Significance Probability		≥ 0.05	.000
	CMIN/DF		≤ 3.00	.201
	RMSEA		≤ 0.08	.031
	RMR		$< 0,05$.154
	NFI		≥ 0.90	.842
	IFI		≥ 0.90	.969
	TLI		≥ 0.90	.968
	CFI		≥ 0.90	.969

Source: Processed Data (2023)

The model conformance test in Table 3 shows that the model fit criteria are met and the model fit is acceptable. Five measurements demonstrate a good level of fit. When there are 3-4 measurements with good fit or above the threshold values, the research model configuration can be considered adequate and accepted.

Hypotheses Testing

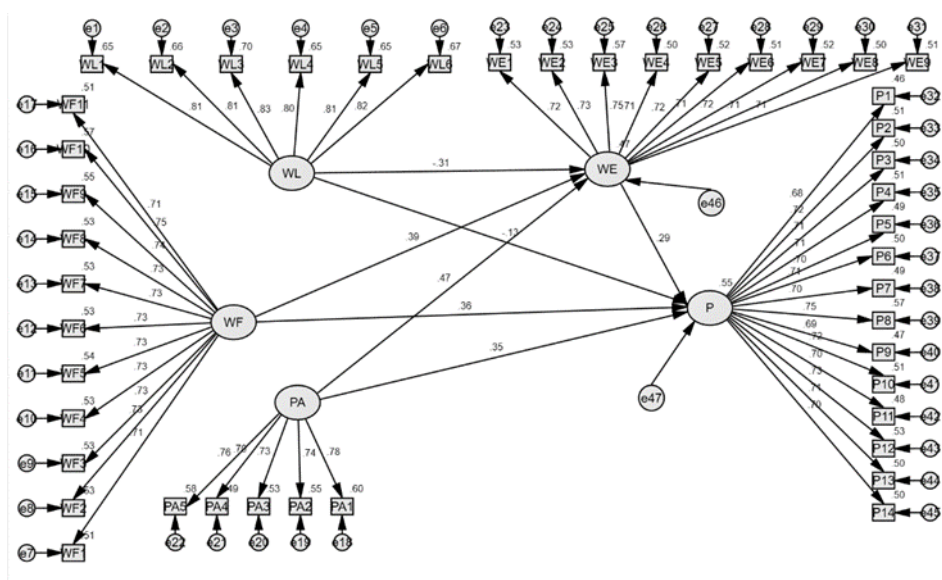


Figure 2. Full Model Testing

The results of testing the effect of the relationship between the variables in the research configuration constructed in this study are presented below.

Table 4. Hypothesis testing

Hypotheses	Path	Estimate	S.E.	C.R.	P	Conclusions
H ₁	Performance → Workload	-.067	.033	-2.005	.045	Accepted
H ₂	Performance → Workplace Friendship	.299	.069	4.348	***	Accepted
H ₃	Performance → Positive Affect	.280	.072	3.866	***	Accepted
H ₄	Performance → Work Engagement	.235	.069	3.400	***	Accepted
H ₉	Work Engagement → Workload	-.199	.043	-4.593	***	Accepted
H ₈	Work Engagement → Workplace Friendship	.391	.086	4.558	***	Accepted
H ₇	Work Engagement → Positive Affect	.465	.088	5.293	***	Accepted

Source: Processed Data (2023)

From Table 4, the data processing results obtained support the previous research hypotheses. First, workload shows a significant negative relationship with performance (p-value=.04). Meanwhile, second, workplace friendship shows a significant positive relationship to performance (p-value=<.01). Third, positive affect shows a positive and significant relationship to performance (p-value=<.01). Fourth significant positive relationship is shown by work engagement to performance (p-value=<.01). Additionally, the fifth hypothesis examines the association between workload and work engagement, revealing a statistically significant negative correlation (p-value=<.01). Sixth, workplace friendship shows a positive significant relationship to work engagement (p-value = <.01). Seventh, the positive relationship by positive affect shows a significant relationship to work engagement (p=<.01). These results show significance through the p-value that has been obtained showing a value smaller than .05 ($\alpha = .05$).

Table 5. Sobel Test - Significance of Mediation

Hypotheses	Path	Sobel test statistic	Two-tailed probability	Conclusions
H ₈	Workload → Performance mediated by Work Engagement	-2.74	0.006	Accepted
H ₉	Workplace Friendship → Performance mediated by Work Engagement	2.72	0.006	Accepted
H ₁₀	Positive Affect → Performance mediated by Work Engagement	2.86	0.004	Accepted

Source: Processed Data (2023)

Table 5 reveals that the obtained results from the Sobel test demonstrate a p-value smaller than .05 ($\alpha = .05$), concluding that it can be inferred that work engagement plays an indirect role. Firstly, an indirect relationship between workload and performance through work engagement is observed, both significant and negative (p-value = .006). Secondly, a significant indirect relationship between workplace friendship and performance through work engagement was found to be positive (p-value = .006). Additionally, positive affect exhibits a significant and positive indirect relationship to performance through work engagement (p-value = .004).

3.2. Discussion

The findings of this study validate the assertion that workload exhibits an inverse correlation with nurse performance, aligning with prior scholarly investigations (Febrina et al., 2020; Pamungkas et al., 2022). Additionally, a negative impact on work engagement due to workload was identified, and this finding aligns with earlier research (Ugwu & Onyishi, 2020). According to the Job Demands-Resources (JD-R) model, workload is a job demand that can be classified as advantageous or disadvantageous. Nurses perceive workload as a job demand that reduces performance (Nnko et al., 2019). In contrast to prior research by Kunte & Rungruang (2019) identified positive impacts on work engagement, explicitly stemming from the perception of workload as challenging demands. Nurses' perceptions of the workload explain these differing results. Excessive workload can cause stress and reduce worker performance, so coping mechanisms are needed to mediate between job stress and employee performance (Sutrisno et al., 2023). Watanabe & Yamauchi (2018, 2019) found that working overtime due to compliance had a negative impact, while working overtime for enjoyment positively affected both work engagement and mental health.

Conversely, in line with earlier research, a positive impact on nurse performance and work engagement was discovered for workplace friendship (OK et al., 2019; C. H. Yan et al., 2021). This positive relationship is likely because respondents have good workplace friendships. Workplace friendship can provide social support that enhances an individual's work engagement (C. H. Yan et al., 2021). According to Zarankin & Kunkel, (2019), the relationship between workplace friendship and performance follows an inverted "U" pattern. Workplace friendship can enhance performance, but excess friendships can lead to decreased performance due to emotional burdens and fatigue in managing many friendships. On this case the condition supports workplace friendship as a valuable resource for nurses.

As in earlier studies, positive affect was also discovered to have a positive relationship with both work engagement and performance (X. Ma et al., 2023; Okojie et al., 2023). Nurses self-reported experiencing positive emotions. A high level of positive emotions is marked by elevated energy, complete concentration, and enjoyable work engagement (Khan et al., 2022). Positive emotions enhance cognition, behavior, feelings, and physiology, resulting in positive personal and social outcomes that enhance performance and act as lasting resources (Diener et al., 2020). Lasting resource in results of forming positive affect. Momentary experiences can form more enduring states, which, over time, can lead to more stable dispositions (Laguna, 2019).

The same is shown in indirect relationships through work engagement, as in previous studies (Grobelna, 2019; Pourteimour et al., 2021; Rizki et al., 2021; Zhang et al., 2022). Performance, through work engagement, exhibits a negative relationship with workload. Meanwhile, workplace friendship and positive affect demonstrate a positive relationship. This aligns with the JD-R framework, two distinct processes, the motivational and health impairment processes, are triggered by job resources and job demand. Job demands exert a negative impact, while job resource in the motivational process, motivation positively affects performance (Bakker & Demerouti, 2017). This study positions workload as a hindrance demand, characterizing it as a source of strain that can potentially diminish work engagement and subsequently impact performance. Meanwhile, workplace friendship and positive affect act as resources or job resources that motivate work engagement and, ultimately, performance.

CONCLUSION

The data processing results revealed that all direct relationship hypotheses were accepted. The direct relationship with performance and work engagement from workload showed a negative direction. In contrast, the relationships with workplace friendship, positive affect, and work engagement were positive. Additionally, the indirect relationships built from the JD-R theory, namely workload, workplace friendship, and positive affect on performance mediated by work

engagement, were also accepted. Our research contributes to extends prior research on job performance by highlighting how workload subjectively perceived as job demands and that will negatively influence nurses' outcomes. In addition, on JD-R theory it expands the role workplace friendship and positive affect can act as resources. This implies the importance to expand focus to the resources possessed by individuals who ultimately become valuable assets for the organization, as nurses perceive workload as a job demand that hinders them, while workplace friendship and positive affect act as resources that motivate their work. This concerns in practical terms can be put in form of human resource management developments as well as interventions, JD-R theory can be applied as organizational assessment, JD-R monitor, serious games, job crafting interventions, and personal resources interventions (Bakker & Demerouti, 2017). However, like any research, this study also has limitations that can provide a foundation for future research. The research method used is cross-sectional, employing a longitudinal method may lead to more conclusive causality in this research. Additionally, there are limitations related to the resources of the respondents in the study, which were gathered using purposive sampling, limiting the generalizability of the results. Future research has the potential to delve deeper into the research variables, such as more complex mechanisms, such as the potential buffering role of job resources, namely workplace friendship and positive affect, on job demands such as workload. For instance, perceptions of the variables in the study can be explored, workload is influenced by job resources, job demands, and intrinsic traits (Wang et al., 2021). Otherwise, there is also possibility of burnout the antipode of work engagement can be explored as mediation in the research framework.

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