

## ORIGINAL ARTICLE

# Structural Model of Work-Life Balance Effect on Nurse Work Engagement

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### ABSTRACT

**Introduction:** High job demands can cause nurses' problems, increased stress levels, burnout, and even turnover, which results in decreased performance. Conditions of work-life balance that are not aligned may reduce work attachments. **Objectives:** To examine the structural model of work-life balance on work engagement and job engagement role analysis. **Methods:** The research participants were 120 nurses, diploma graduates, or nurses who were actively working in nursing and living with their families. Data were obtained by using the UWES-9 questionnaire and the Industrial Society's Work-Life. Data processing used the Structural Equation Modelling (SEM) method, namely testing the measurement model with Confirmatory Factor Analysis (CFA) and testing the structural model with SEM methods with the LISREL 8.8.0 program. **Results:** The structural model produces a work-life balance of 8 valid items, three valid items to the vigor dimension, three valid items dedication dimension, and two useful items absorption dimensions. Work-life balance as a predictor affects work attachment but is still weak ( $\gamma = 0.29$ ; sig;  $R^2 = 8\%$ ). The work-life of nurses is not yet balanced, and it is proven that nurses find it difficult to find time to relax and maintain relationships with friends and relatives. Nurses perceive their work as very meaningful, and their strong dedication proves it. **Conclusions:** The structural model, namely work-life balance, affect the work engagement of nurses. The dedication factor very much influences the role of the work attachment of nurses.

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## 1. Introduction

High job demands can cause nurses' problems, such as increased stress levels (Desima, 2013), burnout, and even turnover. This impact is most visible (Pratiwi, 2017; Runtu & Hamel, 2018). Based on the interview results, it is known that nurses who are less able to cope with job demands will show lower work performance, such as being lazier, slower, and less enthusiastic at work. These nurses also complain of fatigue more often and show rejection when asked to work overtime or work long shifts (Tukayo & Hardy, 2020). On the other hand, some nurses have positive attitudes and behaviors (Munn, 2013). Even though they experience high job demands, they still show high work attitudes and performance. They show more serious concern for patients because they feel united with their work as nurses (Munandar & Wardaningsih, 2018). The nurses' more positive condition illustrates the condition of a stronger attachment to their work than nurses who are less able to handle the demands of their work (Sonnentag, Mojza, Demerouti, & Bakker, 2012). Greenhaus & Allen (2011) emphasized that individuals who have a strong attachment to their work have a work-life balance. Having a feeling of satisfaction and being effective in carrying out multiple roles in his life. Thus, nurses who can maintain a work-life balance will behave positively. Conversely, nurses who are less able to carry out work-life balance will behave negatively.

There are often limited resources in Indonesia's clinics or hospitals (Ardiana, Purwandari, & Wahyuni, 2020). Besides, the high need for patients in Indonesia for cheap and fast care makes it difficult for nurses to balance life with work. Nurses find it challenging to divide time for their

personal life. Meanwhile, nurses play an essential role in maintaining the quality of nursing and the satisfaction of health services in the clinic or hospital. However, when work tends to take up much time, it will disrupt the nurse's life rhythm. This condition creates a condition that is not harmonious between the life and work of nurses. Nurses perceive this as pressure that disturbs the balance between their personal life and their work life, or a condition of low work-life balance (Dex, S; Bond, 2005). The low work-life balance can lead to conflict conditions between roles where there is a mutual mismatch of pressure between work roles and family roles in certain things (Sulea, C ; Van Beek, Sarbescu, P; Virga, & Schaufelli, 2015). Therefore, to keep nurses' work performance high, a work-life balance is needed following the nursing profession and is supported by a strong work attachment.

The involvement experienced by nurses in their work is a reflection of their high work engagement. Work attachment is a mental condition related to work that generates positive and fulfilled feelings characterized by enthusiasm, dedication, and absorption at work (Schaufeli, 2017). However, other studies show that the nursing profession has the lowest score on work engagement and the highest score on burnout than other health workers (Gabel-Shemueli, Dolan, & Ceretti, 2014). This condition is an impact that might occur. On a different side, according to Bakker & Albrecht (2018), nurses immerse themselves in their role as nurses and are proactive and committed to quality health standards. This dilemma needs to be observed, and the possibility of making nurses ambiguous and prolonged may affect their mental health.

Work-life balance is defined as feeling holistic, feeling effective, and satisfied in essential roles. Work engagement involves efforts to direct employee personal energy into physical, cognitive, and emotional performance when performing their job roles. It is also said that work attachment is a mental condition related to work that generates positive and fulfilled feelings, which are characterized by enthusiasm, dedication, and absorption (Vîrgă, Horga, & Iliescu, 2015; Xanthopoulou, Bakker, & Fischbach, 2013). When employees have high job demands, employees tend to be less eager to work, and it is more difficult to perceive a high attachment to their work (Gabel-Shemueli et al., 2014; Hu, Schaufeli, & Taris, 2017; Montgomery, Spânu, Băban, & Panagopoulou, 2015). However, research from (Vîrgă et al., 2015) shows that job demands can also be perceived as challenging and can increase employee work engagement. Research by Gabel-Shemueli et al. (2014); Hu, Schaufeli, & Taris (2017); Montgomery, Spânu, Băban, & Panagopoulou (2015) positions work-life imbalance (as opposed to work-life balance) as an independent variable on the work attachment of nurses.

Meanwhile, (Vîrgă et al., 2015) research positions work-life imbalances as a moderator between job support and work attachment. Thus, from previous research, there is still a lack of consistency in the results of research due to differences in opinion in terms of the impact on the work engagement variable and work-life balance structure model. These two differences can occur because they are carried out by various researchers using different samples. Therefore, this study conducted a structural model test first, then continued with work engagement analysis on the same subject. Thus, the study aims to prove the structural model that work-life balance affects nurses' work engagement and to analyze the role of work engagement.

## 2. Methods

Quantitative research design using the cross-sectional method. Characteristics of the population, namely nursing diploma graduates and the nurse profession, actively working as functional nurses in hospitals or clinics in Indonesia. The sampling technique was purposive sampling and obtained a total sample of 120 nurses. Based on the number of samples, it was obtained that 71 female nurses (59.2%) and 49 male nurses (40.8%). Nurses aged ranged from 21 to 53 years old. As for the marital status, most of the participants were married as much as 52.5%, 45.8% were unmarried, and 1.7% were divorced.

The research variables consisted of work engagement as the dependent variable and work-life balance as the independent variable. The operational definition of work attachment is

the subject's positive feelings related to their work (Bakker, Schaufeli, Leiter, & Taris, 2008). The higher the positive feelings related to work, the greater the work attachment, and vice versa. As a multidimensional variable, work engagement consists of the dimensions of vigor, dedication, and absorption. Work-life balance's operational definition is the subject's satisfaction with the dual role in life and at work. The higher the work-life balance, the more important and influential the dual role will be in the subject's life and work, and vice versa (Greenhaus & Allen, 2011). Work-life balance as a unidimensional variable.

The work engagement questionnaire uses the UWES-9 (Utrecht Work Engagement Scale) compiled by Wilmar Schaufeli and Arnold Bakker (Schaufeli, 2017), a short version with a total of nine (9) items and uses an attitude scale with the number 1 indicating very lacking until the number 6 shows agree. Of the nine items, only 1 item is insignificant, namely item A1 in the Absorption dimension. All useful items have a standardized loading factor > 0.5. Testing reliability and validity using Confirmatory Factor Analysis (CFA) obtained construct reliability = 0.989 with construct variance = 0.908. The work-life balance questionnaire uses the Industrial Society's Work-Life Checklist compiled by Dex and Bond consisting of 10 items on an attitude scale with numbers one showing very lacking, up to number 6 indicating very much agree. All items indicated as valid items, but two items were deleted because they had a standardized loading factor < 0.5, namely, point 1 and point 3. Reliability testing using CFA obtained construct reliability = 0.972 with construct variance = 0.814.

Multivariate data analysis used SEM (Structural Equation Modeling) method. SEM testing uses the LISREL 8.80 program, testing the measurement model using Confirmatory Factor Analysis (CFA) and structural models using SEM. The theoretical model hypothesis testing using the correlation matrix from the sample variable X is called the S matrix and estimates the  $\Sigma$  matrix. Each element of the  $\Sigma$  matrix is correlated with each element S. The null hypothesis testing is  $S = \Sigma$  or  $S - \Sigma = 0$ . If it is not rejected or insignificant, the theoretical model is supported by empirical data or said that the model is fit. This test is also called the goodness of fit test. If the model fit has been found, the following process is to analyze the loading factor. When the factor loading shows a negative value, it was the opposite of what was conceptualized. The significance value can be found with the t-test, and it is declared significant if the t-test value is > 1.96 at the level of 95% confidence.

### 3. Results and Discussion

#### Work Engagement

The CFA Second-Order testing results from the UWES-9 measuring instrument with three dimensions, namely vigor, dedication, and absorption, obtained a fit model ( $p$ -value > 0.05; RMSEA < 0.08). The test results show that the vigor dimension comprises three valid items, the dedication dimension is built by three valid items, and the absorption dimension is only two useful items. This number showed that V1, V2, V3, D1, D2, D3, A2, and A3 are valid items that build the work engagement construct (WE). The work engagement construct's reliability based on useful items is valued at 0.989, classified as high. Of the eight valid items, the contribution of squared multiple correlation > 50% is in the vigor dimension in item 2, namely "I feel very strong and excited to do my job." ( $R^2 = 75.3\%$ , factor loading = 0.87); dedication dimension in item 1, namely "I am enthusiastic about my work" ( $R^2 = 69.6\%$ , factor loading = 0.83); The absorption dimension in item 3 is "I feel happy when I am working earnestly" ( $R^2 = 70.4\%$ , factor loading = 0.83). Details of the contribution value can be seen in table 1.

#### Work-Life Balance

The CFA testing results obtained a fit model ( $p$ -value > 0.05; RMSEA < 0.08) on the Work-Life Checklist questionnaire is ten items, unidimensional measuring work-life balance. The data

processing results show items WLB1 and items WLB3 with a standard loading factor below 0.5 and at-value below 1.96. These two points do not contribute to the construction because they are not used. Meanwhile, eight other items met the items' validity, namely WLB2, WLB4, WLB5, WLB6, WLB7, WLB8, WLB9, and WLB10. The construct reliability was obtained at 0.972, which is classified as high based on the valid points. The explanation can be seen in Table 2.

Table 1 Items testing of work engagement variable

Work Engagement $\chi^2 = 15.82$ , $df = 14$ P-value = 0.32430 RMSEA = 0.027	Items	Standardized Loading Factor	t-value	Standard Error	Items testing	R <sup>2</sup> (%)
<i>Vigor</i>	V1	0,75	10,25	0,097	Valid	56.2
	V2	0,87	12,19	0,095	Valid	75.3
	V3	0,74	10,30	0,096	Valid	54.7
<i>Dedication</i>	D1	0,83			Valid	69.6
	D2	0,79	12,31	0,077	Valid	62.7
	D3	0,77	11,80	0,078	Valid	58.7
<i>Absorption</i>	A1	0	0	0	Invalid	0
	A2	0,78	11,85	0,078	Valid	61.4
	A3	0,84	12,86	0,083	Valid	70.4

Table 2 Items Testing of Work-Life Balance Variable

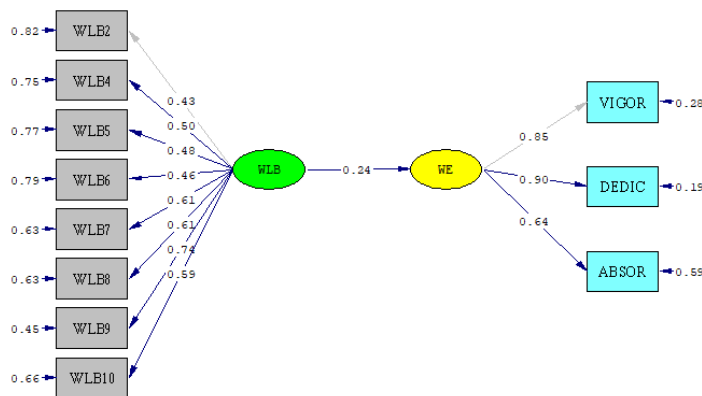
Work-Life Balance $\chi^2 = 25.67$ $df = 19$ p-value = 0.13961 RMSEA = 0.045	Items	Standardized Loading Factor	t-value	Standard Error	Items Testing	R <sup>2</sup> (%)
	WLB1	0,45	5,79	0,078	Valid	Delete
	WLB2	0,49	6,09	0,080	Valid	23.9
	WLB3	0,28	3,44	0,078	Valid	Delete
	WLB4	0,50	6,46	0,078	Valid	25.5
	WLB5	0,52	6,71	0,078	Valid	27.3
	WLB6	0,55	7,21	0,077	Valid	30.8
	WLB7	0,58	7,56	0,076	Valid	33.4
	WLB8	0,69	9,36	0,074	Valid	47.4
	WLB9	0,68	9,10	0,074	Valid	45.6
	WLB10	0,58	7,55	0,076	Valid	33.3

## Structural Model Testing

In the structural model, the model that tests the latent (construct) variables and the manifest (item) variable shows the model fit. These results mean that empirical data support nurses' work-life balance to work engagement based on theoretical concepts. Thus the model analysis can be continued. The structural model test results showed that work-life balance positively and significantly affected work engagement ( $\gamma = 0.29$ ; sig) and contributed 8%. In other words, there is a weak relationship between work-life balance and work attachments. Likewise, the role of work-life balance as a predictor was only able to provide a minimal contribution, namely 8%.

If we look at the points that compose the structural model, it turns out that the WLB9 item "It is difficult for me to find leisure time to do a hobby or maintain relationships with my friends and relatives" contributed to the work-life balance by (R<sup>2</sup> = 55.5%, factor loading = 0.74) ; item WLB8 (R<sup>2</sup> = 37.0%, loading factor = 0.61); item WLB7 (R<sup>2</sup> = 36.7%, factor loading = 0.61); and

item WLB10 ( $R^2 = 34.3\%$ , factor loading = 0.59). While the work engagement construct, the dimension that has the largest contribution is the dedication dimension ( $R^2 = 81.4\%$ , factor loading = 0.90); The vigor dimension is also high ( $R^2 = 72.0\%$ , factor loading = 0.85) and the smallest contribution from the absorption dimension ( $R^2 = 40.8\%$ , factor loading = 0.64). A detailed explanation can be seen in Figure 1 and Table 3.



Description: WLB: Work-Life Balance; WE: Work Engagement, DEDIC: Dedication; ABSOR: Absorption

Figure 1. Structural Model

Table 3 Squared Multiple Correlations for Structural Equations ( $R^2$ ) in Structural Model

Fit Model	Items/Indicators	$R^2$ (%)
$\chi^2 = 84.34$ , $df=43$ , $p$ -value = 0.00037, RMSEA = 0.000	WLB2	18.4
	WLB4	24.9
	WLB5	23.4
	WLB6	21.2
	WLB7	36.7
	WLB8	37.0
	WLB9	55.5
	WLB10	34.3
	<i>Vigor</i>	72.0
	<i>Dedication</i>	81.4
<i>Absorption</i>	40.8	

The structural model of work-life balance towards work engagement shows that work-life balance is a predictor of work engagement. That is, work-life balance affects work attachments. If work-life balance increases, work engagement increases, and vice versa. However, the results obtained were still very small ( $\gamma = 0.29$ ; sig;  $R^2 = 8\%$ ). When judging from the structural model, it can be concluded that the work-life balance construct has eight valid items. In comparison, the work attachment construct in the vigor dimension has three valid items, the dedication dimension has three valid items, and the absorption dimension has two valid items.

This study's work-life balance domain is more directed at work role conflicts caused by high workloads and working hours. This condition is reflected in the most significant contribution ( $R^2 = 47.4\%$ ) in the item "It is difficult for me to find leisure time to pursue a hobby or maintain relationships with my friends and relatives." High demands in nursing work, such as often working more than regular work shifts or needing to stay alert to work problems when they leave work, causes less time for nurses to handle personal problems and carry out activities with their relationships (Gabel-Shemueli et al., 2014; Vîrgă et al., 2015). When the nurse judges that the balance between her role at work and the family environment has not been achieved, the nurse

demands high effort and energy. In the end, it can interfere with life outside of work, so the risk of nurses becoming engaged in their work increases.

Dedication has the most outstanding contribution to the work attachment construct, which is influenced by work-life balance (Gabel-Shemueli et al., 2014). When the conflict between personal life and work increases, nurses will find it more challenging to find meaning in their work, even if their job satisfaction decreases (Munn, 2013). Furthermore, if the nurse feels that their work is meaningless in this condition, it will be able to affect the morale and focus of the nurse when handling patients. However, when colleagues show that they care and build a more open and comfortable work environment for nurses, nurses will also find a sense of meaning in the workplace (Gabel-Shemueli et al., 2014; Munn, 2013). In other words, there is a need for social support for nurses when carrying out their work (Boyar, Campbell, Mosley, & Carson, 2014).

#### 4. Conclusion

The study results prove that the structural model, namely work-life balance, affects nurses' work engagement. The dedication factor very much influences the role of the work attachment of nurses. This condition means that nurses feel their work is meaningful and proud to foster enthusiasm for them.

The results of this study are in line with the research of Gabel-Shemueli et al. (2014), Hu et al. (2017), Montgomery et al. (2015), which positions work-life imbalance (versus work-life balance), which affects the work attachment of nurses. Bakker & Albrecht (2018) said that nurses immerse themselves in their role as nurses and are proactive and committed to health quality standards. The reason for this statement by (Bakker & Albrecht, 2018) can be answered because nurses have a decisive dedication factor with their work.

Considering that the effect of work-life balance on work attachment is still weak, it is necessary to carry out further research by considering social support as a variable that strengthens nurses' work attachment.

#### Ethics

Ethical studies are conducted through the Tarumanagara University Human Research Ethics Committee, Institution of Research, and Community Engagement.

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