

# The Role of Cognitive and Affective in Reflecting Subjective Well-Being

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## Abstract

This research aims to describe the subjective well-being of nurses, to analyze the construct validity and reliability of the subjective well-being scale, and to determine the components that form the construct of the subjective well-being scale. The subjective well-being scale is measured by using two components, namely cognitive and affective components. The subjects of this research were 62 nurses who work at a hospital in Palu. The data were collected using the subjective well-being scale. The data were then analyzed using the Structural Equation Modeling (SEM) SmartPLS 3.2.8 program with a reflective construct through the CFA 2<sup>nd</sup> Order. Based on the analysis results of the construct validity and reliability, the components and indicators that form the nurses' subjective well-being are considered valid and reliable. It shows that all the components and indicators are able to reflect and form subjective well-being. Therefore, the measurement model can be accepted because the theory that describes subjective well-being has been in accordance with the empirical data obtained.

**Keywords:** Affective; cognitive; construct reliability; construct validity; subjective well-being.

## 1. Introduction

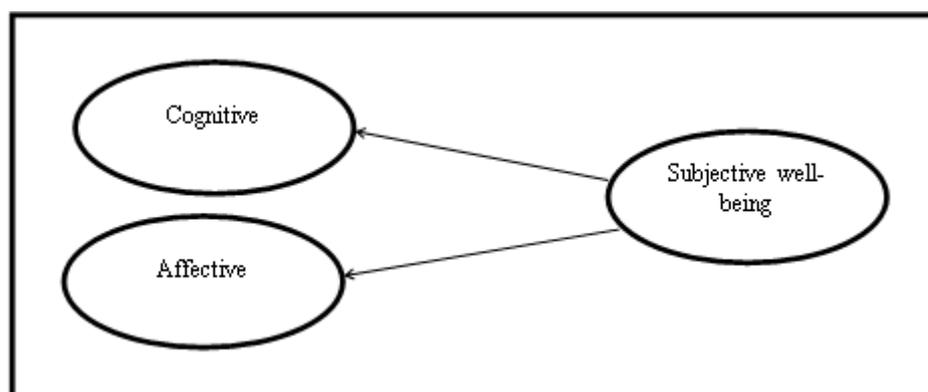
The number of female workers in Indonesia keeps increasing. The nurse is one of the professions that many women work in. The nurse is a job that prioritizes devotion and service to the patients [1]. A nurse has a great responsibility because they take care of the health and even the lives of patients [2]. The great responsibility that nurses bear often makes them feel negative emotions such as anger, disappointment, and sadness. If the negative emotions are not managed properly, they can make the nurses to not feel the subjective well-being.

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Reference [3] stated that an individual who has good subjective well-being could manage and maintain a friendship, intimate relationship, and marriage, which means, to carry out their duties optimally, nurses need good well-being. In addition, nurses who have good subjective well-being will tend to feel positive emotions instead of the negative ones [4]. Subjective well-being is also beneficial to lower nurses' social anxiety. According to [5], the better the subjective well-being, the lower the social anxiety will be. Generally, Reference [6] stated that nurses who have a good level of subjective well-being would also have better happiness, better social relations with family and colleagues, and improved performance. Reference [7] mentioned that good subjective well-being will have positive impacts on body health and endurance, where people tend to be healthier, have better immune, have a longer life, and have good self-control. Reference [8] also stated that there are positive and negative impacts of subjective well-being. Some of the positive impacts are feeling interested, excited, strong, enthusiastic, alert, proud, inspired, determined, attentive, active as for the negative impacts of well-being are feeling of distressed, disappointed, guilty, scared, hostile, irritable, ashamed, nervous, jittery, afraid. A person having good subjective well-being tends to be able to carry out all his activities easily and will also have good productivity. A nurse who has good subjective well-being will be able to solve problems in every job she faces, it will also be easy for her to get back up again after facing various problems. In addition, she will have better self-confidence to deal with problems at work [9] and can reduce her stress at work [10]. The first research on happiness conducted by Wilson [11] found that happy people were described as young, healthy, educated, high-income, extroverted, optimistic, worry-free, religious, high self-esteem, high work morale, and have simple aspirations. The subjective well-being was first introduced by Diener [8] as a means of identifying the field of psychology that tries to understand the evaluation of the quality of life, which includes cognitive and affective assessments [12]. There are two measuring tools for subjective well-being, namely the Satisfaction with Life Schedule (SWLS) [13], and the Positive and Negative Affect Scales (PANAS) [14]. Those measuring tools have a clearer theoretical, conceptual foundation, that the subjective well-being is interpreted as a form of individual's positive evaluation, which includes cognitive and affective aspects [15]. The measuring tools are also often used, such as SWLS, which measures cognitive aspects of happiness and PANAS, which measures the affective aspects of happiness. For the psychometric aspects, those tools also have better psychometric properties of reliability and validity [13, 16, 17, 14]. Even so, the validity of the interpretation results of those tools is still questioned, especially by cultural psychologists in relation to the issue of the difference in the meaning of happiness in some cultures. On the other hand, standardized scales for cross-cultural research are sometimes invalid if they are used in other cultures; for example, the SWLS [13] and Subjective Happiness Scale [16], which are used almost everywhere. However, the idea of happiness in Europe and America are measured based on individual achievements. It obviously does not fit the Eastern culture, where personal achievement is not the focus of individuals to create happiness [18]. It also applies to the PANAS scale, which based on the hedonism view, where happiness is the dominance of positive affect over negative affect. Meanwhile, in Eastern culture, according to Confucius's teachings, happiness and unhappiness always exist harmoniously. Instead of pursuing happiness excessively, people should look for deeper internal homeostasis [19]. As a result, countries such as Japan and Korea will look more unhappy if compared to countries in Europe or America [20]. As stated by [21] that an individual's subjective evaluation of happiness is strongly influenced by the cultural meaning and values of each nation, to measure the subjective well-being, we should also observe the subjective well-being of that culture. The understanding of the subjective well-being

concept from a cultural point of view is crucial. Thus, the authors argue that it is necessary to adopt subjective well-being in Indonesian culture in order to see the meaning of Indonesian subjective well-being, in this case, Indonesian nurses. Reference [22] interpreted the subjective well-being as an individual's evaluation over his life, which includes a cognitive assessment of life satisfaction and affective assessment of mood and emotions. Russell [23] proposed that subjective well-being is an individual's perception of his life or an individual's subjective view of his life experience. Meanwhile, Reference [24] stated that subjective well-being is the society's subjective evaluation over an individual's life, which includes concepts such as life satisfaction, pleasant emotions, feelings of dominant satisfaction obtained from, for example, marriage, work, and emotional control. Furthermore, Reference [25] defined subjective well-being as a person's evaluative reaction or something that affects an on-going emotional reaction. In the last decade, empirical studies showed that subjective well-being could affect self-efficacy [26], socioeconomic status, social networking and competence [27], level of stress [28], burnout [29], thankfulness [30], level of optimism, cultural orientation, resilience, and optimism [31]. Reference [8] divided the subjective well-being into two components, namely the cognitive and affective component. The cognitive component consists of an evaluation of life satisfaction in general and in certain domains. In general, the evaluation of life satisfaction is the respondents' evaluation of their life as a whole. In a more specific context, Reference [8] said that global life satisfaction involves a person's perception of the comparison of his living conditions with his unique standards, whereas, in certain domains, the evaluation of satisfaction is an assessment made by someone in evaluating domains that exist in his life such as physical and mental health, work, recreation, social and family relationships. The two components are not completely separated. The affective component of subjective well-being [8] reflects the basic experience within events that occur in one's life. By studying the types of existing affective reactions, a researcher can understand how a person evaluates conditions and events in his life. There are two affective components of subjective well-being: positive affect and negative affect. The positive effect represents pleasant moods and emotions such as affection. The positive or pleasant emotions are parts of the subjective well-being because those emotions reflect someone's reaction to events that show that life goes as he desired.



**Figure 1:** Conceptual framework of subjective well-being

Based on Figure 1, the following research hypothesis is arranged:

H: Cognitive and affective components are able to form the construct of subjective well-being.

One approach that can be used to test the construct of a measuring tool is the Confirmatory Factor Analysis (CFA). CFA one of the main approaches used in factor analysis. The CFA can be used to test the components of a construct. This test is used to carry out a model measurement so that it can describe the behavioral components and indicators in reflecting latent variables, namely the subjective well-being by observing the factor loading of each component that forms a construct. The CFA is also used to test the construct validity and reliability of the indicators that form a latent construct [32]. The CFA used in this research is a second order confirmatory factor analysis (2<sup>nd</sup> Order CFA). It is a measurement model that consists of two levels. The first level of analysis is carried out from the latent construct of the components to the indicators, while the second analysis is carried out from the latent construct to the component construct [32]. Based on the above explanation, it can be inferred that subjective well-being is a crucial thing for nurses at work. Given the importance of subjective well-being to be investigated, the problem statements of this research will be: 1) Is the construct of subjective well-being valid and reliable? 2) Are indicators of life satisfaction and affective able to form constructs/variables of subjective well-being? This research aims to analyze the construct validity and reliability of the subjective well-being scale, and to determine the components that form the construct of the subjective well-being scale.

## **2. Research Method**

### **2.1. Participant**

The participant of this research were 62 nurses who work in Palu city. The research was carried out at Hospital X in Palu city. The simple random sampling technique is chosen for collecting subjects of this research.

### **2.2. Research Design**

This is semi-constructural research, where scale-designing was be done using theoretical collaborative studies with information directly obtained from field data. The advantage of using semi-constructural research is that it supports the existing theories and multiplies behavioral indicators as many as possible. Next, the psychometric properties test was done. The test included content validity analysis, discriminating power, confirmatory factor analysis, and external concurrent validity test [33].

### **2.3. Data Collection Method**

The instrument of this research is the subjective well-being scale, which is adapted from [8]. The items were arranged based on the components of subjective well-being, namely life satisfaction and affective. The scaling method utilized the rating scale model, which consisted of five answer choices. The items arrangement was based on the blueprint, as shown in Table 1.

**Table 1:** Blueprint of subjective well-being scale

Component	Indicator	No item	Amount
Life satisfaction	a. Evaluation of global life satisfaction.	1,2,3,4,5	5
	b. Evaluation of satisfaction in domains such as physical and mental health, work, recreation, social, and family relationships.		
Affective	a. Positive Affective: interested in something, excited, strong, enthusiastic, alert, proud, inspired, determined, attentive, and active.	1,2,3,4,5,6,7,8,9, 10	10
	b. Negative affective: distressed, disappointed, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid.	11,12,13,14,15,16,17, 18,19,20	10
Amount			25

**2.4. Construct Validity and Construct Reliability**

This research was intended to test the construct validity and reliability of subjective well-being measuring instruments with an outer model test. The construct validity test was confirmatory in order to show how well the results obtained from the use of measuring instruments by referring to the theory used in defining the construct. The construct validity test included convergent validity, referring to the value of factor loading of > 0.5, average variance extracted (AVE) value of > 0.5, and its discriminant validity which was done by comparing the root of AVE, in which its value should be higher than the correlation between the existing component. The next step was conducting the reliability test to show the internal consistency of the measuring instruments used. The reliability test was done by observing the composite reliability and Cronbach's alpha, which, according to Cooper, its value should be > 0.7 [34]. The reliability test was carried out to see the internal consistency of the measuring instrument by observing the value of the composite reliability and Cronbach's alpha with higher value; it will show the consistency value of each item in measuring latent variables. According to Hair, Hult, Ringle, and Sarstedt [35], the expected composite reliability and Cronbach's alpha value is still acceptable, as for 0.6 value is still acceptable. In addition, Cooper mentioned that the internal consistency is met when the construct validity has fulfilled the criteria so that the average variance extracted value has represented the internal consistency. A valid construct always means a reliable construct, but a reliable construct does not always mean a valid construct [34].

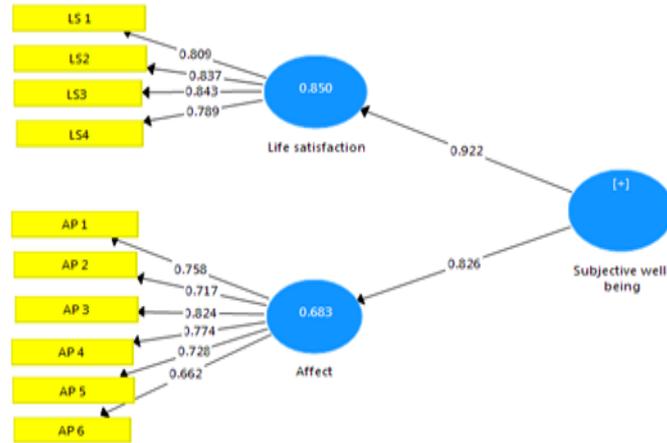
**2.5. Data Analysis**

The data of this research were analyzed using the Smart PLS 3.2.8 program with a reflective construct through 2<sup>nd</sup> Order CFA. Abdillah and Hartono [36] mentioned that PLS is a structural equation modeling analysis based on variants, which can simultaneously carry out tests of measurement models in order to examine the validity

and reliability.

### 3. Result

Based on the results of the outer model test conducted on the construct, the subjective well-being has met the validity and reliability, as seen in Figure 2 of the outer model:



**Figure 2:** Outer model of subjective well-being scale

#### 3.1. Construct Validity Test

##### 3.1.1. Convergent Validity Test

Based on the convergent validity test on the outer model, the loading factor from variable to components has a value of  $> 0.5$ . The value of the factor loading can be seen in Table 2:

**Table 2:** Loading factor (variable-component)

Components	Value of loading factor	Information
Life satisfaction	0.850	Valid
Affective	0.683	Valid

Based on the convergent validity test on the outer model, the factor loading from components to indicators has a value of  $> 0.5$ , as shown in Table 3:

**Table 3:** Loading factor (component-indicator)

Indicator	Factor loading value	Information
KP1	0.809	Valid
KP2	0.837	Valid
KP3	0.843	Valid
KP4	0.789	Valid
AP2	0.758	Valid
AP4	0.717	Valid
AP5	0.824	Valid
AP6	0.774	Valid
AP7	0.728	Valid
AP8	0.662	Valid

Based on the convergent validity test, the AVE of subjective well-being has a value of 0.530. The AVE value of each components can be observed in Table 4.

**Table 4:** AVE value of subjective well-being

Components	AVE value	Information
Life satisfaction	0.672	Valid
Affective	0.556	Valid

### 3.1.2. Discriminant Validity Test

Based on the value of the discriminant validity test, the results of the Average Variance Extracted (AVE) root of each component is higher than the AVE root of other components. So, the criteria for discriminant validity are met. The value of the AVE root of the subjective well-being construct can be seen in Table 5 below.

**Table 5:** The root AVE value of subjective well-being

Components	Life satisfaction	Affective
Life satisfaction	<b>0.820</b>	0.576
Affective	0.576	<b>0.745</b>

### 3.2. Construct Reliability Test

Based on the results of the construct reliability test, the construct of the subjective well-being has met the reliability, with alpha Cronbach's and composite reliability of > 0.7, as illustrated in Table 6.

**Table 6:** The value of composite reliability and Cronbach alpha of subjective well-being

Variable	Composite reliability	Cronbach alpha	Information
Subjective well-being	0.886	0.851	Reliable

The results of construct reliability with confirmatory analysis (Confirmatory Factor Analysis 2<sup>nd</sup> Order) in Table 6 show that the measuring dimension/latent variable of subjective well-being meets the unidimensional criteria [33]. This is indicated by the composite reliability value of 0.886 and Cronbach's alpha value of 0.851. Based on the data analysis and processing of the components of subjective well-being construct by using 2<sup>nd</sup> Order Confirmatory Factor Analysis, the results show that the model is acceptable because all dimensions can reflect the formed variable/construct.

#### **4. Discussion**

Based on the analysis of construct validity and reliability, the components and indicators that form subjective well-being are declared valid and reliable. It shows that all the existing components and variables are able to reflect and form subjective well-being. The most dominant component capable of reflecting subjective well-being is cognitive (life satisfaction), which factor loading value is 0.843 and its main indicator is the reactional evaluation to life satisfaction in the global scope, as well as the evaluation of satisfaction in domains such as physical and mental health, work, recreation, social and family relationships. In general, nurses feel that they are satisfied with their lives, and they do not want to change anything. The component that reflects the lowest subjective well-being is the affect, which factor loading value is 0.662, and its main indicators are emotions that reflect someone's reaction (individual reaction) to events which show that life goes or does not go as he desired. The findings of this research are in line with Akhtar's research [37] which proved that subjective well-being fulfilled the reliability requirements with a value of 0.80, in which the highest component is cognitive or life satisfaction with a factor loading value of 0.826 and the lowest component is affection with a factor loading value of 0.853. Meanwhile, the reliability value in research is 0.851. As for the highest component is cognitive or life satisfaction with a factor loading value of 0.843, and the lowest component is affection with a factor loading of 0.469. The results of this research are expected to provide an overview of the construct validity and reliability of the subjective well-being of the nurses in a hospital in Palu city so that this research can be used as a reference for further research related to subjective well-being.

#### **5. Conclusion**

Based on the discussion and results of the analysis, the subjective well-being has met good validity and reliability. All components or indicators can significantly form the construct of subjective well-being, where cognitive is the dominant component reflecting the work or life satisfaction, with a factor loading of 0.843. In addition, the component that reflects the lowest subjective well-being is the positive affect, with a factor loading of 0.662.

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