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## The Confirmatory Factor Analysis of the Spiritual Wellbeing Scale of a Sample of Students from Iraq and Algeria

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## التحليل العاملي التوكيدي للصورة المعربة من مقياس جودة الحياة الروحية على عينة من طلبة الجزائر والعراق

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### المستخلص

هدفت الدراسة الحالية إلى التأكد من البنية العاملية للصورة المعربة من مقياس SPIRITUALITY INDEX OF WELL BEING من خلال التحليل العاملي التوكيدي، تم إجراء الدراسة على عينة متكونة من عينة الدراسة من (187) طالبا وطالبة على مستوى جامعتي الأنبار بالعراق وسعيدة بالجزائر تم اختيارهم بطريقة عرضية، ولتحقيق أهداف الدراسة تم استخدام المنهج الوصفي بالاعتماد على مقياس جودة الحياة الروحية: SPIRITUALITY INDEX OF WELL BEING من إعداد Daaleman (2004) " & Frey" وترجمة الباحثان. أجري التحليل العاملي والتوكيدي للنسخة العربية المترجمة من الاستبيان على عينة الدراسة، وقد أظهرت النتائج تمتع النموذج بمطابقة جيدة كما تظهرها نتائج التحليل، وقد تم مناقشة النتائج في ضوء الدراسات السابقة، وأوصت الدراسة بضرورة الاهتمام بموضوع الروحانية لدى الطلبة وتصميم مقاييس عربية (خصوصا جزائرية وعراقية) تقيس مختلف جوانب الروحانية لدى الطلبة.

**كلمات مفتاحية:** الروحانيات ، الرفاهية ، تحليل العامل التوكيدي ، طلاب الجامعة..

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## **The Confirmatory Factor Analysis of the Spiritual Wellbeing Scale of a Sample of Students from Iraq and Algeria**

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### **Abstract**

The current study aims at confirming the factor structure of the Arabized image of the SPIRITUALITY INDEX OF WELL BEING scale through the confirmatory factor analysis. The study was conducted on a sample consisting of (187) students (male and female) at the level of the two universities of Anbar in Iraq and Saida in Algeria. To achieve the aims of the study, a descriptive approach was used based on the scale of the quality of spiritual wellbeing: Spirituality Index of Wellbeing by Daaleman & Frey (2004) and translated by researchers. The confirmatory factor analysis of the translated Arabic version of the Scale was conducted on the study model that has found out, according to the results of the analysis, that the model has a good fit. The study recommends the necessity of paying attention to the issue of the spirituality of the students.

**Keywords:** Spirituality, Wellbeing, Confirmatory Factor Analysis, University Students.

## **Introduction:**

The concept of life quality is considered one of the fastest-growing and most interesting areas of research during the twenty-first century. This concept is considered a scale of the individuals, societies, and people's wellbeing. The quality of life has become an important issue in the practice of health care and scientific studies since (1948) when the World Health Organization defined health as “it is not merely the absence of disease , but it is also the physical, mental fit and the social well-being”[1]

The increased interest in the life quality of an individual is reflected in the great increase in the research activity in this field during the past few decades. Although the traditional life quality has been purely evaluated through objective indicators such as unemployment rates and the level of housing, it is currently accepted that there is not always a linear relationship among the objective indicators of life quality and people's feelings of their well-being. So a careful assessment of the life quality must include the individual's personal experience of the objective conditions of his life [2]. It resulted in the fact that the life quality, eventually, is an expression of self-awareness of that quality. Life for humans is what he could perceive from it[1]. Such a thing has led to an increase in researches that study the factors that could affect the quality of an individual's personal life. It is considered one of the factors that have been studied for its impact on the psychological well-being since the 1960s of the previous age, but it is, currently, the spirituality that enjoys a renewed activity [2].

The spiritual quality of life is considered one of the main dimensions of human well-being. Spiritual well-being is the ability of the individual to establish coordinated and harmonious relations with Allah (God), himself, and others as well as the changing and controlling the personal and social environment and the solving of the personal and group problems in a fair, moderate and balanced. [3].

Spirituality is not the outcome of modern or contemporary thinking, but its concepts are related to the depth of human thinking. Throughout human history, spirituality has been an essential and integral part of human life at the individual and social levels[4]. Spirituality is difficult to approach and define in psychology practice, either as a concept or as a process. Spiritual perspectives are seen as important in an understanding of people's lives, so the concept of spirituality has begun to be included in studies due to new paradigms in the world of psychology in the recent period[5]. From a psychological point of view, Erickson's eight stages of psychological development indicate that each individual at some point in his life will raise questions about himself such as "Who am I?" And "Who am I?", "what am I?" How do I prove my existence? Hence, the research for the ego has become a major aspect of healthy psychological development. According to the perspective of social development, the development theories show that individuals, as they grow older in age, shift their interests physical focus to a more spiritual and sublime view and over the past few decades, health and social care professionals have begun to pay a more attention in the spirituality and spiritual care, which is now believed to make a significant contribution to the mental and physical health. The world health organization had proposed the enlisting of the spiritual quality of life in the health assessment of patients in 2003[4].

Gomez and Fisher (2003) point out that the quality of spiritual life "can be defined as a state that reflects positive feelings and behaviors, awareness of the relationship with oneself and others, the sublimation, the spirituality provides the individual with a sense of identity, the perfection, the contentment, the joy, the beauty, the love, the respect, positive attitudes, peace and inner harmony, meaning and direction in life." The quality of spiritual life has also been considered an internal resource for overcoming the negative effects of individuals with long-term health problems. Doenges and Moorhouse have suggested that when a person has the spiritual quality of life, he can add meaning, purpose, and value for life besides deducing peace, harmony, and satisfaction [6].

Due to the importance of assessing spiritual well-being, many tools have been developed to measure it. The most important scale of the spiritual quality of life is, perhaps, the assessment of the Spiritual Index of Well-Being SIWB [7]. This scale is a tool designed to measure related to the personal well-being of the individuals. SIWB has been developed by using quantitative researches methods and it consists of two dimensions which are self-efficacy and life scheme. The initial psychometric data has been reviewed from three groups of samples and summarized. The factor analysis has supported the theoretical two-factor structure [8]. The psychometric properties of the scale have been studied in many segments including hospital patients [9], cancer patients [10], elderly [6], nurses [11] and substance use Disorders [12].

Despite the widespread use of the scale in health areas, it has not been used or studied the psychometric properties of the students' sample, although they might be exposed to many pressures that threaten their psychological health. In the Iraq and Algeria environment, people are facing rapid social, economic, and political change during which they need more spirituality and flexibility to acquire resources to survive. Also, the transformations that our world is witnessing today and the great changes it is going through have seriously impacted all areas of life[13]. The most important crisis that afflicted the world in general, and Algeria and Iraq in particular, is the Corona pandemic. Coronavirus can add to the burden on individuals, and spirituality can help them to face this crisis. The study by Fardin (2020) indicated that spirituality could aid people to have mental relaxation in times of crisis and dangerous diseases. Some of the religious solutions proposed against the COVID-19 prevalence could be helpful[14]. When examining the literature, it is seen that little Arabic research has been published on the topic. The study of Sabah, Al-Shujairi & Boumediene (2021) within the framework of Welch's Family Resilience Model, aimed to explore the level of spirituality as an indicator of family resilience and showed that convergent level of spirituality, and is not statistically significant[13].

Therefore, this study aims to search the factorial structure for the scale of the university students' segment via providing a rated version for the Algerian and Iraqi environments for the scale and identifying (SIWB) its factorial components on the Algerian and Iraqi environment via the calculation of factorial emphatic analysis through the following question:

What are the indications for the validity of the Arabized image of the spirituality scale of life quality for university students using the confirmatory factor analysis on Algerian and Iraqi models from the university students?

### **Objectives of the study**

This study aims at providing a rated scale for measuring the quality of the spiritual life of university students. It also aims to identify the quality extent of the suitability of the data of the (SIWB) Spiritual Index of Well-Being with the internal construction specifications model for the scale by using the confirmatory factor analysis.

### **Method**

#### **The methodology of the study**

The descriptive approach was used via identifying the basic components of the SIWB spiritual index for wellbeing scale after applying it to a sample of university students. Besides, verifying the factorial structure of the scale via the confirmatory factor analysis.

#### **Participants**

The study sample consists of (187) students (male and female). See table1.

**TABLE No. (1)****Sample Distribution according to the Variables of the Study  
(Country and Gender)**

<b>Country</b>	<b>Students' Gender</b>		<b>total</b>
<b>Algeria</b>	<b>Male</b>	<b>16</b>	<b>88</b>
		<b>18.2%</b>	
	<b>Female</b>	<b>72</b>	
		<b>81.8%</b>	
<b>Iraq</b>	<b>Male</b>	<b>50</b>	<b>99</b>
		<b>50.5%</b>	
	<b>Female</b>	<b>49</b>	
		<b>49.5%</b>	
<b>Total</b>	<b>Male</b>	<b>66</b>	<b>187</b>
		<b>35.3%</b>	
	<b>Female</b>	<b>121</b>	
		<b>64.7%</b>	

The distribution of the sample is not equal between males and females in the Algerian sample, when the percentage of males reached 18.2%, compared to 81.8% of females, while the Iraqi sample was equally distributed between males and females, where the percentage of males reached 50.5% and the proportion of females was 49.5%. The percentage of the females was bigger as compared with the total sum as it reached 64.7%, and the male percentage was 35.3%.

**Materials**

The spirituality index of wellbeing scale was relied on which consists of 12 statements distributed to two main dimensions: self-efficacy and life scheme. This scale of self-efficacy and life scheme reflects the individual's perceptions of the spiritual quality of life and the items were responded to via Likert's five-point scale which ranges from 1 (strongly agree) to 5 (strongly disagree).

The reliability was estimated by using the Alpha Cronbach coefficient between the result of the test and the retest method. The validity was estimated



via the confirmatory factorial analysis. The confirmatory factorial analysis has resulted in the following indications: Chi-square =508.35,  $P < .001$ ; CFI = 0.98; Tucker-Lewis's index = 0.97; RMSEA = 0.13.

Regarding the reliability, the Alpha Cronbach Coefficient for the self-efficacy dimension was 0.86 and Pearson after the retest was 0.77; the Alpha Cronbach for the life scheme dimension was 0.89, and Pearson after the retest was 0.86. Concerning the overall scale ,the Alpha Cronbach was 0.91 ,and Pearson, after the retest, was 0.79, indicating that the scale is characterized by validity and good reliability [7].

### **Procedure**

The importance of confirmatory factorial analysis is represented in examining the validity of the hypotheses concerning the relationships between Latent variables and Endogenous variables. This method is used to check the structural validity of the scales via which each latent variable is expressed through a set of endogenous variables (the related and connected by it). The confirmatory factorial analysis, unlike the exploratory factorial analysis, aims at examining the validity of a particular model that has been built on the basis of a specific theory in previous studies to verify the degree of the quality of this model on the same models or different ones. Hence, we can identify the main question that the confirmatory factorial analysis aims to answer which is: What is the degree of the quality of the supposed model which consists of a set of latent and endogenous variables?

The present study has examined the SPIRITUALITY INDEX OF WELL BEING using the Confirmatory Factor Analysis method via the AMOS 24 program.

## Results

The Maximum Likelihood Method was used. The extracted indicators from the factor analysis of the SPIRITUALITY INDEX OF WELL BEING scale, which was applied to a sample of students of both genders ( $n = 187$ ) were good. See TABLE No. (2)

**TABLE No. (2)**

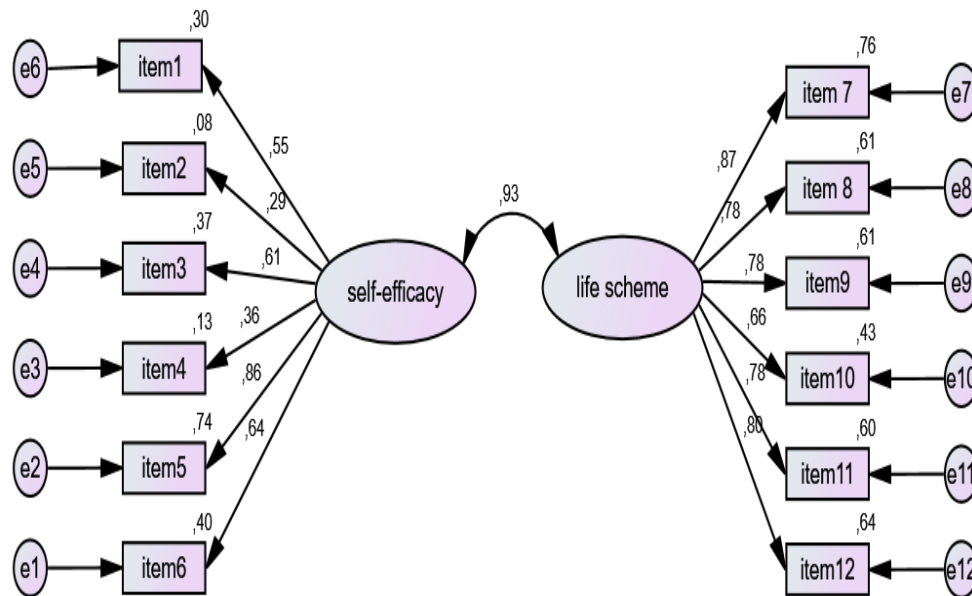
**Goodness of Fit for the Model**

<b>Goodness of Fit Indicators</b>	<b>Indicator Value</b>
<b>Chi-square</b>	<b>80.822 /P=0.008</b>
<b>Chi-square / Degree of Freedom</b>	<b>1.525</b>
<b>The comparative fit index (CFI)</b>	<b>0.974</b>
<b>Goodness-of-fit indices (GFI)</b>	<b>0.933</b>
<b>root mean square error of approximation (RMSEA)</b>	<b>0.053</b>

Results of Goodness of Fit quality indicators, generally, indicate that each the comparative fit indicator  $CFI = 0.974$ , goodness fit indicator  $GFI = 0.933$  and Root Mean Square Error of Approximation  $RMSEA = 0.053$  were very good, which indicates the model matches the data collected on the students. See Figure1, confirmatory factorial analysis of the spirituality index of well-being

among students.

***confirmatory factorial analysis of the spirituality index  
of well-being among student***



**Figure1: confirmatory factorial analysis of the spirituality index of well-being among students**

**Validity of the model**

**The convergent validity**

The convergent validity is manifested in the participation of a group of indicators in the measurement of a specific factor so that the high estimate values of the indicators that measure a factor are considered evidence of the convergent validity. See table 3 to show the estimates of the item loading after calculating the confirmatory factor analysis.

**TABLE No. (3) Item loading after confirmatory factor analysis**

<b>Estimate</b>	<b>Items</b>	<b>Dimensions</b>
<b>Self- Efficacy</b>	1	0,547
	2	0,287
	3	0,612
	4	0,360
	5	0,859
	6	0,636
<b>Life Scheme</b>	7	0,871
	8	0,782
	9	0,781
	10	0,655
	11	0,777
	12	0,799

It is noticed from the table that the convergent validity is achieved which assumes that a group of statements represent the same factor if the proportion of correlations is high. The value of the reliability or estimate has ranged between 0.28 to 0.87 which are acceptable estimates.

**Reliability via Cronbach's alpha:** Cronbach's alpha factors were relied on to measure the reliability of the scale. The results have shown that the reliability factor was 0.90.

#### **The Composite Reliability:**

The Composite Reliability of the study model was also calculated according to the following equation [15]:

$$C R = \frac{(\text{Sum of loading})^2}{(\text{Sum of loading})^2 + \text{Sum of Indicator Measurement Error}}$$

*Indicator Measurement Error calculated by 1*

*– SMC (Squared Multiple Correlation)*

By replacement in the previous equation, the Composite Reliability coefficient value was = 0.894.

### **Reliability by McDonald 's coefficient omega:**

A weighted (omega) is not sufficient to employ the contribution of each item in an explanation after it (by squaring its estimate). But instead, it relies on the estimate the weight of the contribution of each item in its dimension by the ratio of the item to the error variance) the rest of the variance that the item did not share with its dimension). The amount of the item estimate divided by error or remained variance represents the weight in which the size of each item contributes to interpreting its dimension or how important each item is in determining the concept[16].[16]. McDonald's coefficient omega was calculated by using the JASP statistical program. The coefficient was estimated at McDonald 0.903.

According to what is said previously, is concluded that the study model has a great deal of validity in data representation as well as a high level of validity and reliability

### **Discussion**

The present study aimed at revealing the extent of the Confirmatory factor analysis matching for the SPIRITUALITY INDEX OF WELL BEING scale on a model of university students in Iraq and Algeria with the original factor structure for the scale. Hence to know the quality of the relevance of its data with the internal structure specifications model of the scale using the confirmatory factor analysis In a completely different cultural environment from the cultural

environment in which the scale was previously structured by Daaleman and Frey (2004) [7].

Concerning the Goodness of Fit indicators, the chi-square test is considered a basic measure of goodness fit as it is assumed that there are no significant differences between the expected model and the actual model or seen one, such as null hypothesis and alternative hypothesis with the existing of differences between the two models. The smaller the value of chi-square, the more suitable the model is at its best. This factor is flawed it is affected by its significant value of the model size. So, it must be followed by other evidence for better goodness, as the value of both GFI and CFI is greater than 0.90, which means that the model is in the best quality of goodness. As for the RMSEA, the spoken value of goodness quality is that the factor value is to be less than 0.08, and its value came at 0.05 which indicates the fit of the model.

Through the results reviewed above, it is noted that the scale has preserved its factor structure. This indicates that the dimensions of the scale are universal and fit in all cultures. Besides, the security of the scale is suitable for various sectors including university students. The following recommendations can be suggested according to the results that the study has reached:

- Attention must be paid to the topic of spirituality among university students and the designing Arab standards - especially Algerian and Iraqi that measure the various aspects of spirituality.
- Supporting these results by conducting studies on the same scale or constructing scales that measure the same variable to give a clear picture about this spirituality and its component characteristics.
- Making sure of the psychometric features of the scale in other ways, for example by using the Rasch model.

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