

TRANSLATION AND PSYCHOMETRIC PROPERTIES OF WONG AND LAW EMOTIONAL INTELLIGENCE SCALE FOR ADOLESCENTS

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ABSTRACT

The aim of this study was to translate, validate, and confirm the psychometric properties of the WLEIS. This scale was developed in 2002 by Wong and Law. The Scale, which has 16 items on the 7-point Likert scale, was used. Initially, a sample of (n = 30) students was used to measure the reliability of the translated instrument. The reliability of this scale was (r = .91) suggested that it would be an appropriate scale to apply with Pakistani adolescents. In addition, Confirmatory Factor Analysis (CFA) was used to evaluate the factor structure on a sample of 300 adolescents. According to the confirmatory factor analysis, the translated scale was a valid indicator that can be applied in Pakistan. The validity and reliability of Wong and Law emotional intelligence scale were examined by looking at the Cronbach's alpha value (α), composite reliability (CR) and average variance extracted (AVE). The Cronbach's Alpha value for the four WLEIS components was .88, .89, .80, and .89; the composite reliability, it was .88, .90, .86, and .87; and the AVE, it was .65, .70, .62, and .63, respectively. The Wong & Law Emotional Intelligence Scale has also been proven to be accurate and valid in Pakistan.

Key Words: Emotional Intelligence, Reliability, Validity, Adolescents

INTRODUCTION

Emotional intelligence plays an integral part in people's lives. Emotional intelligence is the ability to be aware, control and express one's emotions and manage social relationships with fairness and compassion. EI is the key to success, both personally and professionally. Emotional intelligence is directly linked to adolescent achievement in school (Lloyd et al., 2008). EI is a cluster of introspection located at the lower level of the personality hierarchy and can be classified as a trait (Petrides, 2010).

Before the idea of Emotional intelligence (EI) emerged, psychology and management experts were interested in investigating human emotions. Emotional intelligence was first used in 1990 by Salovey and Mayer. According to them, the ability of a person to manage his emotions is called emotional intelligence. According to their definition, EI is the component of social well-being that consists of the ability to distinguish one's own and others' temperaments and emotions. And to use it to guide our thoughts and behavior in ways advantageous to the person experiencing them and the environment to which they belong. Emotional intelligence plays a vital role in making life processes go smoothly and orderly. Success can be attained not only in a person's life but also implies an individual's relationship with other people in their life (Austin et al., 2010). Numerous studies support the association between emotional intelligence and positive life experiences and explain the correlation between life satisfaction and academic achievement among adolescents (Parker et al., 2001; Austin et al., 2005).

Since Salovey and Mayer (2002) have conceptualized emotional intelligence in psychological literature, EI has received the same attention as other aspects of life, including educational achievement, job success, psychological well-being and marital satisfaction (Hurley et al., 2018). According to an extensive body of meta-analytic research conducted over the past three decades, emotional intelligence (EI) is an essential theoretical and empirical concept associated with physical health and subjective well-being (Extremera, & F.Berrocal, 2016). Emotional Intelligence (EI) is a

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multi-dimensional concept that includes three models: Mayer and Salovey's (2001) ability/intelligence model), Goleman's (1995) mixed model and the trait model of EI (Petrides, 2001). All models are broadly defined as a set of skills, abilities, and dispositions related to observing, understanding, and handling the emotional reactions of oneself and others (Bar-On & Parker, 2000). There is still debate over whether the WLEIS measures emotional intelligence as a skill or not because some research identifies the measure of emotional intelligence as a trait (Brannick et al. 2009). However, other studies support that the WLEIS measures emotional intelligence as a skill (Law et al. 2004). EI mixed model deals with measuring of different abilities and skills (Kluemper, 2008).

Emotional intelligence instruments are methods used in psychology for evaluating behavior. At present, there are numerous EI tests available on the market because of their importance of them. These instruments were developed mainly outside of western countries. Numerous of these also require several items and take a long time to administer. Examples include the Bar-On Quotient Inventory, which contains 133 statements; the Emotional Competence Inventory comprising 110 items; and the Malaysian Emotional Intelligence Scale comprising 100 items. The number of scale items can increase the time needed to deliver the test.

All of the research instruments utilized by Shi and Wang (2007) were translated into Chinese. The four-component model of the WLEIS was found to be more applicable than the one-factor model by the findings of confirmatory factor analysis. The four-factor model of the Wong and Law emotional intelligence scale was maintained with a root mean square of (0.05) and fit indices of (0.90). The internal reliability of the WLEIS and its four components was relatively high; the overall WLEIS Cronbach's reliability was 0.87.

The Wong and Law emotional intelligence scale is a self-report measure based on the Mayer & Salovey (2001) revised model; it consisted of 16 statements for measuring EI (WLEIS, Wong & Law, 2002). According to Galindo et al., (2017), WLEIS has a reliable structure with four-factor components. These factors are the self-emotion appraisal, the other's emotion appraisal, the regulation of emotion, and the use of emotion. Whereas the instrument was initially designed in Eastern countries, it has since been translated into several languages, including Spanish, Italian, Moroccan, and Arabic (Iliceto & Fino, 2017; Pacheco et al., 2019). Briefly stated, the WLEIS work has demonstrated that all tools adhere to a four-factor design and are accurate indicators of results for both individual and work-related well-being in various languages.

Numerous Emotional Intelligence instruments have already been administered in Pakistan, demonstrating appropriate reliability and validity for usage in a Pakistani setting. In addition, Shahzad et al., in 2014 modified the short form of the "Trait Emotional Intelligence Scale" and translated it into Urdu and confirmed the psychometric properties of this scale by applying it to 201 people (TEIQUE-SF; Petrides & Furnham, 2009). Hayat and Batool (2018) designed an "emotional intelligence" (EI) scale for adolescents and children aged 9 to 17 years to determine its psychometric properties. He used Bar-On emotional intelligence model to design emotional intelligence items objectively.

The WLEIS was used on university students from China, Nepal and Morocco; the researchers used a scale based on a 5-point Likert scale. The results of the study displayed acceptable fit indices for the higher-order model, the four-factor model and the bi-factor model, which were significantly better than the previous models due to the results. Both the four-factor and the general factor models had good reliability results > 0.70 and > 0.89 (Di et al., 2021; Ghoudani et al., 2018; Sochos et al., 2021). The WLEIS has also been used on Spanish students; scale results are indicative of good reliability ($\alpha > 0.91$) and in the components of EI α between 0.79 and 0.84 (Extremera Pacheco et al., 2019). During the review of the actual structure of WLEIS in adults in Peru, it was discovered that a structure of WLEIS consisting of four factors model fit the data the best. The factor loadings of its items were high relative to the other model, like the bi-factor model, and its reliability was also good at 0.89 (Merino et al., 2016). The same outcomes were also established in nursing students, and item-rest correlation data indicated that the items had high discriminant validity (Merino-Soto et al. 2019). Carvalho et al. (2016) found that a medical students sample from Portugal and Spain responded best to the model of four correlated components, which showed acceptable reliability .80 and a good discriminate validity of the items.

Lu did research on the WLEIS and College Achievement Inventory (CAI) in 2010. Lu et al. (2010) conducted two investigations using two different samples. In the first study conducted in Beijing, 357 students from Beijing Normal University and 323 students from other universities. The second study, which involved 302 Chinese students at Calgary University, was carried out in Calgary, Canada. They could all speak both Chinese and English very well. In the second study, 151 respondents used the questionnaire in Chinese for the third sample, and 151 used the English questionnaire for the fourth sample.

Lu (2010) also worked on the Satisfaction with Life Scale (SWLS) developed by Diener et al. in 1985, the College Achievement Inventory (CAI), and the WLEIS. The 70 items on the CAI assess the importance of emotional intelligence and related factors like anxiety and academic success beyond high school. Only four subscales of 28 items, were employed in this study to assess emotional intelligence overall. The sub-scales included organizational skills, adherence to work rules and regulations, capacity to maintain attention on tasks, emotional self-control, and comprehension of emotions.

These findings support the existence of a four-component model of WLEIS. Yet, only a few of these studies support the general factor model, while some only support the bifactor or higher-order model. Therefore, it is essential to test different models in psychometric experiments to select the model that best fits the data. By doing so, we will have a good model for evaluating EI, making it easier to decide what steps to improve it further and providing people with emotional intelligence skills to progress in society and lead a better life (Malinauskas & Malinauskiene, 2020). This research aimed to translate the Wong and law emotional intelligence scale (WLEIS) and establish its psychometric properties.

METHODOLOGY

Measure

Wong and Law developed this scale in 2002. The tool is composed of 16 questions which are organized on a 7-point Likert-type scale. The measurement tool is based on four components; the Self-Emotional Appraisal (items 1- 4), the Others' Emotion Appraisal (items 5- 8), the Use Of Emotion (items 9-12) and the Regulation Of Emotions (items 13- 16). The translated scale response categories ranged from 1 for "strongly disagree" to 7 for "strongly agree." In the current study, the scores were added, and a combined score was taken to display adolescent's emotional intelligence. A higher score on the instrument revealed more emotional intelligence. Reliability estimates for all four components of emotional intelligence were, in this order, .89, .88, .76, and .85 (Wong & Law, 2002). In our study, the coefficient alphas for the emotional intelligence's four components of SEA, EOA, ROE and UOE were .88, .90, .86, and .87. The original scale alpha coefficient was .87, while the translated tool alpha coefficient was .91; it showed that high consistency of the scale. Hulin et al (2001) indicated that the generally accepted rule is that a tool's Cronbach's Alpha Coefficient in the range of 0.6 to 0.7 indicates a good degree of reliability, and 0.8 or higher is an excellent level of reliability. However, scores above 0.95 may strongly indicate repetition; therefore, they aren't necessarily good.

Research Participants

Three hundred students from Kashmir and Rawalpindi /Islamabad were included in this study. Males made up 54.0% of the study participants, while females made up 46.0% and a large percentage (58%) of the adolescent were between the ages of 15 and 16.

Procedure

This research focused on confirming the psychometric properties of WLEIS. A team of three language experts from the English department at the University of Azad Jammu Kashmir Muzaffarabad translated the WLEIS English scale into Urdu. In comparison, a second team of three experts from the Urdu department at the University of Kotli Azad Jammu and Kashmir did the same for the Urdu scale. When the Urdu and English scales were compared, the Urdu scale was found to be better due to its psychometric properties. This research was conducted in two stages; in stage I, 30 students were selected with convenience sampling technique in public and private schools in Azad Jammu and Kashmir and Rawalpindi/Islamabad; their ages ranged of the sample between 14 to 17 years. Using 16 items, WLEIS was applied to a sample of school students. All respondents provided their informed consent for participation in this research. Students were fully briefed on the intent of this research, and

they were told that they can withdraw from the study at any time; there was no pressure on you. Before conducting the research, it was essential to ensure that it encountered ethical considerations and that there was no psychological or physical harm. Keeping information from students confidential is an essential moral principle. Additionally, they were assured that their information would remain private and not be shared with other people. The researcher has guaranteed that your information will be used for research only. The results are accurately presented, and study resources are responsibly managed. They received appreciation for taking part.

In stage II, a total of 320 participants with the age range of 14 to 17 were selected from Azad Jammu & Kashmir and Rawalpindi/Islamabad for this study by convenience sampling. The complete forms of the study were 320, while 20 forms were half-filled or incomplete at the time of scrutiny; incomplete forms were excluded from the study. One hundred fifty students from Kashmir and 150 students from Rawalpindi/Islamabad were included in this study. The researchers explained the ethical consideration that the responses are entirely anonymous and that all the data obtained will be handled ethically. Informed consent was filled out and signed by the research participants. It was ensured that all the information would be used for study purposes and kept confidential. Initially, permission was taken from the authors of the scale. Then a permission letter was obtained from the university. Permission was allowed from the school authorities. Participants freely filled out the self-report questionnaire. The Statistical Package for Social Sciences (SPSS 21) was used for analysis.

RESULTS

To determine the reliability of the translated scale, a sample of 30 students was selected for this purpose. The instrument was administered to the students, and the participants were probed to provide opinions if they had difficulty understanding the scale items. Item total correlation was calculated, and the alpha reliability of the instrument was computed. Table 1 displays the item correlation of the Wong and law emotional intelligence scale. It shows a significant positive relationship, with the alpha reliability of the scale showing good consistency of the instrument ($\alpha=.91$). The mean and standard deviation of the scale were 59.26 and 22.97. Study findings also show Cronbach's alpha reliability of emotional intelligence components. All variables values, including SEA, OEA, UOE, and ROE, are higher than the overall EI model, ranging from .88 for SEA, .90 for OEA, .86 for ROE, and .87 for UOE. In light of the Fornell-Larcker criterion, analyses of the discriminant validity of variables are acceptable (Table 2).

After knowing the results of the reliability coefficient of the instrument, confirmatory factor analysis (CFA) was also conducted to find out the validity. A sample of 300 students ($N=300$) of Azad Jammu & Kashmir and Rawalpindi/Islamabad was selected for CFA purposes. The results of the Confirmatory factor analysis (CFA) supported us that the translated instrument was valid and appropriate for Pakistan's students. Table 3 reflects the fit indices of the Four-Factor Emotional Intelligence models 1, 2 and 3. The four-factor EI model 3 displayed good fit indices for the CFA analysis. It represents that model 3 fit $\chi^2 / (df) = 2.865(95)$, CFI=.96, TLI=.93, NFI=.95 and RMSEA=0.041. The factor loadings range for the emotional intelligence scale was from .71 to .87. All items are well-ranged and have factor loadings greater than .6.

Table No. 1: Item total correlation of Wong and law emotional intelligence scale for the sample (n=30)

Item-Total Correlation	
Items	Correlation
SEA1	.580**
SEA2	.719**
SEA3	.773**
SEA4	.687**
OEA1	.792*
OEA2	.869**
OEA3	.725**
OEA4	.762*
ROE1	.551**
ROE2	.784*

ROE3	.741**
ROE4	.768**
UOE1	.805**
UOE2	.561**
UOE3	.734**
UOE4	.728*

** $p < .01$

* $p < .05$

Table No. 2 Discriminant and Convergent Validity of Other Variables along with Cronbach's Alpha Reliability of Four Dimensions of Emotional Intelligence Scale

Variables	Emotional Intelligence	Positive Affect	Negative Affect	Satisfaction with Life	Alpha-value
EI	.43	.345**	-.185**	.273**	.88
PA	.345**	.49	-.60**	.38**	.90
NA	-.18**	-.60**	.38	-.29**	.86
SWL	.27**	.34**	-.29**	.40	.87

** $p < 0.01$

Table No. 3 Fit Indices for Four Factors Emotional Intelligence Scale (n=300)

Models	χ^2 (df)	$\chi^2 / (df)$	TLI	CFI	RMSEA
Model 1	395.452(97)	4.066	.79	.85	.10
Model 2	341.876(96)	3.561	.91	.93	.07
Model 3	272.247(95)	2.865	.93	.95	.06

Model 1=Default model of CFA; Model 2& 3= M1 after adding error variances

DISCUSSION

The research aimed to translate the scale of emotional intelligence in Urdu and validate it. The original tool, developed by Wong and Law (2000), had 16 items. After receiving the translated items, the instrument was administered to 30 students chosen from Azad Jammu Kashmir and Rawalpindi. Several statistical methods were used for the determination of reliability and validity. The scale's alpha reliability was determined to be (.91), demonstrating the scale's internal consistency was satisfactory. The scale was administered to 300 adolescents in the final phase. The factor loading of the translated tool was confirmed by CFA using AMOS. No item needed to be eliminated because every factor loading was within an acceptable range. In terms of validity, CFA was used, and the results showed that the four-factor model of EI has the most empirical and theoretical support. The WLEIS consists of 16 statements defined by four prime components, including assessing one's own emotions, assessing the emotions of others, regulating emotions, and using emotions. Cronbach's reliability coefficients for the translated scale were more significant than those for Wong and Law scale (Wong and Law 2002; Law et al. 2004).

Regarding convergent validity, a relationship was also found between the WLEIS and other variables, including life satisfaction, positive and negative affect. The results indicate a robust positive relationship between variables such as emotional intelligence, life satisfaction, and positive affect. According to table 2 findings, WLEIS, satisfaction with life and positive affect are negatively correlated with negative affect. The research outcomes of Blasco-Balled et al. (2020) also corroborate our findings. Additionally, Wong and Law's Emotional Intelligence Scale was found to have composite reliability as the AVE for each component provided similar appropriate results. The Fornell-Larcker criterion showed satisfactory outcomes for WLEIS regarding discriminant validity. Finally, the reliability results showed adequate levels of internal consistency across all four components. The findings also indicated that what has been observed in other earlier studies is consistent with these results (Merino et al., 2016; Blasco-Belled et al., 2020).

The results of this study also corroborate the theoretical work of Mayer and Salovey (1997) and Wong and Law (2004), who focused on different aspects of emotional intelligence. As for the practical contribution of the study, the scale has good psychometric properties, which can be used to measure people's emotional intelligence within educational and organizational contexts. Different

cross-cultural research works on the WLEIS have been conducted in countries like China (Law & Wong, 2002; Law et al., 2004) and Japan (Fukuda et al., 2011). Wong & Law (2002 & 2004) argues that the four-factor emotional intelligence framework demonstrates the predictive validity of life satisfaction while supporting the results of the discriminant validity of the five-factor personality components.

CONCLUSION

The research was intended to translate and validate the Wong and Law Emotional Intelligence Scale into Urdu. The results prove that this instrument is reliable and valid and can be used on Pakistani adolescents. The findings support and validate the emotional intelligence four-factor model. The study has its limitations; the results are generally regarded as preliminary due to the relatively small sample size and need further investigation using validity and reliability tests on more representative samples. However, there's a need for more research on the emotional intelligence scale, which can be used on other age groups, such as children or the elderly. Understanding how emotional intelligence levels affect subjective well-being, academic achievement, and job performance is also necessary.

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