Bridging East and West: Validating the Tripartite Model of Meaning in a Cross-Cultural Study of the Meaning in Life Scale

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Abstract. This study examines the psychometric properties and measurement invariance of the adopted Multidimensional Existential Meaning Scale in a non-Western context using data from 861 undergraduate students. Confirmatory factor analysis (CFA) was employed to evaluate the scale's factorial structure, reliability, and validity across three dimensions: coherence, purpose, and mattering. The results revealed satisfactory model fit indices (RMSEA = 0.065, CFI = 0.941, TLI =0 .929, SRMR = 0.039), with most items demonstrating acceptable factor loadings. Composite reliability (CR) values ranged from 0.74 to 0.86, and average variance extracted (AVE) values indicated strong internal consistency and convergent validity across all dimensions. Additionally, measurement invariance was assessed across gender groups to examine the scale's structural stability and cross-group comparability. Configural, metric, and scalar models all demonstrated acceptable changes in fit indices, supporting measurement invariance across genders. These findings suggest that the adopted MiL scale is a reliable and valid instrument for assessing meaning in life across gender groups within this cultural context. The study highlights the utility of the MiL scale as a robust tool for cross-cultural research on meaning in life. Future research should further explore demographic and cultural influences to enhance the scale's applicability and theoretical grounding.

Keywords. Meaning in life, Positive Psychology, Confirmatory factor analysis, measurement invariance, non-Western.

1 Introduction

The search for meaning in life is a core human motivation, often viewed as essential to psychological well-being and resilience, particularly in the face of adversity (Frankl, 1963). Among university students, meaning in life has garnered significant attention due to its strong associations with positive psychological outcomes. Empirical studies consistently show that students with a strong sense of meaning experience greater life satisfaction, improved mental health, higher academic motivation, and lower levels of anxiety and depression (Dogra et al., 2011; García-Alandete et al., 2014; He et al., 2023; Pan et al., 2008; Steger, 2018; Zhang et al., 2022). These findings highlight the value of fostering meaning as a developmental goal in higher education settings.

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In recognition of this importance, several school- and university-based interventions have been designed to cultivate meaning among youth. These include purpose-driven life education, mindfulness-based curricula, and existential resilience programs aimed at enhancing students' ability to navigate life's challenges with direction and coherence (Steger et al., 2021). However, the effective evaluation of such programs requires psychometrically sound tools capable of capturing the multifaceted nature of meaning.

Historically, instruments used to measure meaning in life have been limited in scope. Many scales emphasize only one or two dimensions—such as coherence (the degree to which life is seen as comprehensible) or purpose (the presence of long-term goals and aspirations)—and often neglect other fundamental components (McDonald et al., 2013; McIntosh, 1999; Ryff, 1989; Steger et al., 2006; Sørensen et al., 2019). This has led to conceptual gaps and challenges in accurately capturing the richness of individuals' experiences of meaning.

To address these limitations, scholars have proposed a tripartite model of meaning in life that includes coherence, purpose, and mattering (George & Park, 2016; King & Hicks, 2021; Martela & Steger, 2016)

1. Coherence refers to the extent to which individuals perceive their lives as making sense.
2 . Purpose involves having clear goals and a sense of direction for the future.
3. Mattering relates to the belief that one's existence has value and significance in the world.

This integrative framework allows for a more comprehensive and theoretically grounded assessment of meaning and has gained empirical support in Western populations.

One of the most widely cited instruments aligned with this model is the Multidimensional Existential Meaning Scale (MEMS) developed by George and Park (2016). This scale was designed to measure all three dimensions of meaning in a balanced manner and has demonstrated strong psychometric properties, including reliability and construct validity. However, its validation has been largely restricted to Western samples, leaving open the question of whether its factorial structure and measurement properties generalize to other cultural contexts.

Culture plays a significant role in shaping how individuals construct and experience meaning (Markus & Kitayama, 1991; Oishi & Diener, 2001). For example, Eastern cultures may emphasize collective identity, interdependence, and spiritual meaning more than individualistic goal-setting or personal coherence, which are more salient in Western frameworks. As such, instruments developed in the West may not function equivalently in non-Western populations unless cross-cultural validity is established through empirical testing.

Furthermore, the role of gender in the experience of meaning in life is an area of growing interest. While some studies suggest that males and females may differ in how they derive meaning—e.g., with females potentially emphasizing relational and emotional domains, and males prioritizing achievement—there remains a lack of psychometrically validated instruments that are demonstrably invariant across gender (Lin & Shek, 2019; Schnell, 2020). Testing for measurement invariance is therefore critical to ensure that comparisons across gender are meaningful and not biased by structural inequivalence in the scale.

The current study addresses these gaps by adopting the Multidimensional Existential Meaning Scale and testing its psychometric properties and measurement invariance across gender in a sample of 861 undergraduate students in a non-Western context. Specifically, we aim to evaluate the factorial validity of the scale using confirmatory factor analysis (CFA), assess internal consistency and convergent validity, and examine whether the scale functions equivalently for male and female students through configural, metric, and scalar invariance testing. This study contributes to the growing literature on the universality and cultural specificity of meaning in life and provides empirical support for using the MEMS in diverse populations.

2 Method

2.1 Instrument

The Multidimensional Existential Meaning Scale (MEMS; George & Park, 2016) consists of 15 items designed to assess three key dimensions of meaning in life: coherence, purpose, and mattering. Each subscale includes five items. Participants rated each statement on a 7-point Likert scale ranging from 1 (*absolutely untrue*) to 7 (*absolutely true*).

To ensure cultural and linguistic appropriateness, the scale was translated into Arabic using the back-translation method (Van Widenfelt et al., 2005). This rigorous process involved translation by bilingual experts, followed by a reverse translation into English to ensure semantic equivalence. No major semantic discrepancies were found during translation review.

2.2 Participants

A total of 861 undergraduate students from Salahaddin University-Erbil in Iraq participated in the study. The sample included both male (42.1%) and female (57.9%) students, with a mean age of 21.89 years (SD = 0.37). The participants represented different stages of academic study: first-year (29.2%), second-year (34.5%), third-year (23.6%), and fourth-year (12.4%). Academic specializations were categorized into humanities and sciences, ensuring a demographically and academically diverse sample.

2.3 Data Analysis

To evaluate the dimensional structure of the MEMS, Confirmatory Factor Analysis (CFA) was employed. CFA assesses the degree to which observed indicators reflect underlying latent constructs. Factor loadings were examined to determine the strength of each item's relationship to its latent factor, with values > 0.50 considered acceptable and > 0.70 considered strong (Brown, 2015). Furthermore, the researchers assessed internal consistency and reliability; Composite Reliability (CR) and Average Variance Extracted (AVE) were computed. CR values closer to 1.0 indicate high reliability, while AVE reflects the amount of variance captured by the construct relative to measurement error. According to Comrey and Lee (1992), AVE values of ≥ .50 are "excellent," with

lower thresholds indicating decreasing levels of adequacy (e.g., .40 = very good, .30 =good, etc.).

2.4 Measurement Invariance

The Standards for Educational and Psychological Testing (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 2014) emphasize the importance of fairness in assessment, which includes demonstrating measurement invariance across relevant groups (e.g., gender). Following the framework by Meredith (1993), this study tested three levels of invariance:
1. Configural invariance: equivalent factor structure across groups,
2. Metric invariance: equivalent factor loadings,
3. Scalar invariance: equivalent item intercepts.
To mitigate the limitations of traditional chi-square difference testing—particularly its sensitivity to large sample sizes—this study followed Chen's (2007) recommendations. Measurement invariance was supported when changes in model fit indices were within the following thresholds: $\Delta CFI \leq 0.010$ and $\Delta RMSEA \leq 0.015$.

2.5 Estimation Method

Parameter estimation was performed using Maximum Likelihood robust (MLR) in Mplus (Version 8.3; Muthén & Muthén, 2017), a statistical software program capable of handling complex latent variable models. The robust ML estimator (MLR) was employed, as it adjusts for non-normality in the data by correcting standard errors and chi-square values, providing a more reliable model evaluation (Brown, 2015).

2.6 Model Fit Evaluation

The adequacy of the CFA model was assessed using multiple goodness-of-fit indices. According to Hu and Bentler (1999) and Brown (2015), the following thresholds indicate acceptable to excellent model fit:
1. Comparative Fit Index (CFI) and Tucker–Lewis Index (TLI): ≥ 0.90 (acceptable), ≥ 0.95 (excellent),
2. Root Mean Square Error of Approximation (RMSEA): ≤ 0.06 (good), > 0.08 (poor fit),
3. Standardized Root Mean Square Residual (SRMR): ≤ 0.08 (good fit).
These indices were interpreted in combination to assess whether the specified model adequately represented the observed data (Kline, 2023).

3 Primary Results

The model fit indices (Table 1indicate an acceptable overall fit. The RMSEA was 0.065, with a 90% confidence interval of 0.059–0.072, which falls within the recommended thresholds. Similarly, the CFI (0.941) and TLI (0.929) are both close to the ideal cutoff of 0.95 and considered acceptable (see Section 2.6 for details). The SRMR value of 0.039 further supports a good model fit. While the chi-square test was statistically significant, this is likely due to the large sample size, a known limitation of this index.

Table 1 Global model fit.

Fit index	Model fit Estimation
Model chi-square(df,p-value)	406.501(df=87,P>.001
RMSEA (90% CI)	.065 (.059-.072)
CFI	.941
TLI	.929
SRMR	.039

Table 2 presented parameter estimates that showed that most items had acceptable factor loadings, with the exception of item 15, which fell below-recommended thresholds, suggesting it may not align well with the underlying construct. The average variance extracted (AVE) values for the three latent variables were within acceptable ranges, indicating adequate shared variance among items. Based on Comrey and Lee's (1992) guidelines, the AVE values were rated as "very good" to "excellent," with no indicators classified as "poor." Composite reliability (CR) values exceeded the 0.70 thresholds across all three constructs—Coherence, Purpose, and Matter—confirming internal consistency and stable measurement. Furthermore, coefficient omega supported the reliability of the scale in measuring constructs with items that vary in loadings and error variances. Overall, these results provide strong evidence for the measurement model's validity and reliability.

Table 2 Factor Loadings, Average Variance Extracted (AVE), and Composite Reliability (CR)

Dimensions	Items	Loading	AVE	Composite Reliability
Coherence	My life makes sense.	0.72	0.49	0.83
	I know what my life is about.	0.70		
	I can make sense of the things that happen in my life.	0.65		
	I understand my life.	0.72		
	Looking at my life as a whole, things seem clear to me	0.72		
	I have aims in my life that are worth striving for.	0.66	0.55	0.86

Purpose	I have certain life goals that compel me to keep going.	0.78		
	I have overarching goals that guide me in my life.	0.76		
	I have goals in life that are very important to me.	0.75		
	My direction in life is motivating to me.	0.75		
	There is nothing special about my existence. R	0.74	0.38	0.74
Matter	Even a thousand years from now, it would still matter whether I existed or not.	0.70		
	Whether my life ever existed matters even in the grand scheme of the universe.	0.72		
	I am certain that my life is of importance.	0.55		
	Even considering how big the universe is, I can say that my life matters.	0.23		

R: Reverse scored

3.1 Measurement Invariance Results

To evaluate whether the MEMS functions similarly across gender groups, three levels of measurement invariance were tested: configural, metric, and scalar.

The configural model, which assumes no constraints across groups, showed an acceptable model fit, suggesting that the basic factor structure is consistent for both male and female participants, as shown in Table 3. The metric model, which tests whether factor loadings are equal across groups, also demonstrated support for invariance, with minimal changes in fit indices (ΔCFI = 0.001, ΔRMSEA = 0.003). Finally, the scalar model, which imposes equality on both factor loadings and item intercepts, remained within acceptable thresholds (ΔCFI = 0.003, ΔRMSEA = 0.000). Jointly, these results indicate that scalar invariance is reasonably supported. This means that the MEMS can be validly used to compare latent scores across gender groups in this non-Western sample.

Table 3 Model fit for Configural Model, Metric Model, Scalar Model

Fit index	Configural Model Model fit estimation	Metric Model Model fit estimation	Scalar Model Model fit estimation	
Model chi-square (df, p-value)	572.130 (df=174, P-value <0.001	582.472 (df=186, p-value <0.001	612.231(df=198, p-value <0.001	
RMSEA (90% CI)	0.073(0.066-0.08)	0.070(0.064-.077)	0.070 (.063-.076)	
CFI	0.927	0.928	0.925	
TLI	0.912	0.918	0.920	
SRMR	0.045	0.049	0.052	
Invariance (multiple group) models				
Models Compared	Chi-Square	Freedom	P-Value	Change Fit index
Metric against Configural	10.341	12	0.586	CFI=0.001 RMSEA=0.003
Scalar against Metric	29.759	12	0.003	CFI=0.003 RMSEA=0.000

4 Discussion

The present study provided empirical evidence supporting the psychometric robustness of MEMS based on the tripartite model—coherence, purpose, and mattering—within a non-Western undergraduate context. Consistent with prior validation studies conducted in Western populations (George & Park, 2016), the adapted Arabic version demonstrated an acceptable model fit (e.g., RMSEA = 0.065; CFI = 0.941), satisfactory internal consistency (CR = 0.74–0.86), and adequate construct validity. These findings extended the generalizability of the Multidimensional Existential Meaning Scale (MEMS) to Arabic-speaking populations, thereby reinforcing its cross-cultural applicability.

When compared with the original validation conducted by George and Park (2016) in North America, the current findings converged in terms of factorial structure and internal reliability. In both contexts, the three subdimensions—coherence, purpose, and mattering—exhibited strong loadings and acceptable discriminant validity. However, one divergence emerged in the current study item “Even considering how big the universe is, I can say that my life matters” demonstrated weak performance, with a substantially low factor loading. While previous studies reported adequate psychometric properties for this item, its underperformance in this context may reflect cultural or linguistic nuances that influenced participants' interpretations. Such differences aligned with assertions by Markus and Kitayama (1991) that cultural schemas shape psychological processes, including existential beliefs.

Further comparative insights were drawn from non-Western validation studies. For instance, Lin and Shek (2019) reported structural validity of the MEMS in Chinese samples, though they noted conceptual overlap between the dimensions of purpose and mattering. In contrast, the current findings demonstrated clear factorial distinctions among all three constructs, as supported by average variance extracted (AVE) values. This distinction suggested that while the conceptual underpinnings of meaning in life might be universal, the salience and interpretation of each component may vary across sociocultural environments.

Schnell (2020), who examined meaning in life across German populations, found coherence to be the dominant factor influencing existential satisfaction. Although the present study did not assess differential factor salience, the relatively balanced internal consistencies and loadings across the three subscales suggested an equal contribution of coherence, purpose, and mattering within the Iraqi sample. This balanced pattern may be attributable to the role of collectivistic values and religious frameworks in shaping existential perceptions, which warrant further qualitative investigation.

Finally, the study confirmed measurement invariance across gender at the configural, metric, and scalar levels. This finding addressed a notable gap in the literature, as previous studies have rarely tested full invariance across gender. The demonstrated equivalence supports the validity of gender-based comparisons and aligns with the methodological recommendations outlined by AERA, APA, and NCME (2014).

In summary, the findings corroborated existing literature regarding the structural validity of the MEMS and expanded the scale's cross-cultural evidence base by confirming its utility within an Arabic-speaking, non-Western student population. The results underscored the scale's potential as a reliable instrument for global research on existential meaning.

5 Implications

The findings of this study carried several theoretical and practical implications. The successful validation of the MEMS within an Arabic-speaking, non-Western context contributed to the growing cross-cultural literature on existential well-being. By confirming the structural validity and gender-based invariance of the Multidimensional Existential Meaning Scale (MEMS), this study supported the applicability of the tripartite model—coherence, purpose, and mattering—beyond Western cultural frameworks.

Practically, the validated scale offered a psychometrically sound instrument for researchers, educators, and clinicians seeking to assess the existential dimensions of student development. Institutions of higher education could utilize the scale to monitor psychological well-being, inform resilience-building interventions, and tailor curricular or counseling efforts that promote personal meaning among university students. Given the growing emphasis on holistic student development in global education systems, the MEMS provided a reliable and culturally sensitive tool for fostering psychological thriving.

Additionally, the study's confirmation of gender invariance strengthened the case for using the scale in comparative research across male and female populations. Such measurement equivalence ensured that observed differences in MEMS scores could be interpreted as substantive rather than artifactual, thereby enhancing the validity of gender-focused policy or program evaluations.

6 Limitations and Future Research

Despite its contributions, the study was subject to several limitations. First, the sample was restricted to undergraduate students from Iraq, which may limit the generalizability of findings to other age groups, countries, or cultural subgroups. Future studies should aim to replicate the validation across broader Arab populations, as well as in other non-Western regions, to enhance cross-cultural validity. A further limitation involved item-level performance, particularly the last item within the mattering dimension, which exhibited a weak factor loading. This may reflect a translation issue, cultural misalignment, or semantic ambiguity. Further qualitative research or cognitive interviewing could illuminate why certain items underperformed and inform scale refinement. Finally, while the study addressed measurement invariance across gender, it did not examine invariance across other demographic variables such as academic major, socioeconomic status, or religious affiliation. Future studies should explore these dimensions to better understand how various social identities intersect with experiences of meaning in life.

7 Conclusions

This study provides robust evidence supporting the psychometric soundness of the Multidimensional Existential Meaning Scale within a non-Western cultural context. The confirmatory factor analysis (CFA) indicated an acceptable model fit, with satisfactory factor loadings, composite reliability, and average variance extracted (AVE) values. Additionally, the scale demonstrated measurement invariance across gender, confirming equivalence at the configural, metric, and scalar levels. These results validate the Multidimensional Existential Meaning scale's use for meaningful comparisons across gender groups and reinforce its applicability in culturally diverse settings. The findings highlight the scale's cross-cultural relevance and open pathways for future research aimed at theoretical refinement and broader validation efforts across global populations.

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