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Multidimensional Meaning in Life: Turkish Validation of the 3DM Using a Bifactor Model

Çok Boyutlu Yaşamda Anlam: 3DM Ölçeğinin Bifaktör Modeli Aracılığıyla Türkçe Güvenirlik ve Geçerliği Çalışması

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Abstract:

Recent research highlights the importance of multidimensional measurement in assessing meaning in life. The Three Dimensional Meaning in Life Scale (3DM) is a self-report measure based on a tripartite framework including significance, coherence, and purpose. The present study aimed to assess the psychometric properties of the Turkish version of the 3DM. The first-order confirmatory factor analysis confirmed that the Turkish version replicated the original three-factor structure of the 3DM. The model showed a good fit to the present data. The bifactor model of the 3DM supported a multidimensional structure of meaning in life, and measurement invariance indices demonstrated consistent psychometric properties across gender groups. The 3DM subscales had good reliability, with strong item-total correlations ranging from .47 to .76. They had significant positive associations with meaning in life and well-being indicators. The results provided evidence for the structural and convergent validity of the 3DM. Overall, the Turkish 3DM is a valid and reliable measure.

Keywords: Coherence, purpose, significance, meaning in life, well-being.

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Öz:

Son zamanlarda yapılan araştırmalar, yaşamda anlamın değerlendirilmesinde çok boyutlu ölçme araçlarının önemini vurgulamaktadır. Üç Boyutlu Yaşamda Anlam Ölçeği (3DM) kişisel anlam, tutarlılık ve amaç olmak üzere üç faktörlü bir öz bildirim ölçeğidir. Bu çalışma, 3DM ölçeğinin Türkçe versiyonunun psikometrik özelliklerini değerlendirmeyi amaçlamıştır. Birinci düzey doğrulayıcı faktör analizi, Türkçe 3DM'in orijinal üç faktörlü yapısını doğruladığını bulmuştur. Model mevcut verilere iyi bir uyum göstermiştir. 3DM'nin bifaktör modeli, yaşamda anlamın çok boyutlu bir şekilde değerlendirilmesini desteklemiş ve ölçme değişmezliği endeksleri cinsiyet grupları arasında tutarlı psikometrik özellikler göstermiştir. 3DM alt ölçekleri .47 ile .76 arasında değişen güçlü madde-toplam korelasyonları ile iyi bir güvenirlik göstermiştir. Alt boyutların diğer yaşamda anlam ve iyi oluş göstergeleri ile anlamlı pozitif ilişkileri olduğu bulunmuştur. Sonuçlar, 3DM'nin yapısal ve yakınsak geçerliliği için kanıt sağlamıştır. Sonuç olarak, 3DM'in Türkçe versiyonu geçerli ve güvenilir bir ölçme aracıdır.

Anahtar Kelimeler: Amaç, İyi oluş, Kişisel önem, Tutarlılık, Yaşamda anlam.

Introduction

Meaning in life has gained increasing importance in behavioral sciences in recent years. It is a multifaceted construct that includes personal goals, a sense of significance and coherence in one's life, engagement in enjoyable activities, and a drive for growth (Steger et al., 2006). Previous research has underscored its central role in various aspects of mental health such as life satisfaction (Steger et al., 2006), well-being (Ryff, 1989), eudaimonia (Huta & Ryan, 2010), and human motives (Heintzelman & King, 2014). Meaning in life is pivotal for achieving beneficial outcomes in mental health and well-being (Martela & Steger, 2023).

Research in meaning in life has faced numerous challenges (e.g., methodological, structural, anthropological, ontological, linguistic, and dynamic) over decades (Leontiev, 2016). Traditionally, it has been measured by unidimensional and multidimensional constructs. Unidimensional approaches (e.g. "Purpose in Life Scale, PIL; Ryff, 1989") treat meaning in life as a single-factor construct. However, unidimensional approaches have faced criticism. Researchers maintained that unidimensional approaches were non-specific, non-replicable (Steger et al., 2009), simplistic (George & Park, 2017), intuitive (Heintzelman & King, 2014), and inconsistent across different studies (Davies, Klaassen, & Längle, 2014).

In contrast to unidimensional approaches, multidimensional approaches (e.g. "Meaning in Life Questionnaire, MLQ; Steger et al., 2006" or "Multidimensional Existential Meaning Scale, MEMS; George & Park, 2017," or "Three Dimensional Meaning in Life Scale, 3DM; Martela & Steger, 2023) theorize meaning in life as a multidimensional construct. These frameworks acknowledge the dynamic and complex nature of meaning in life by providing a more detailed assessment, while not excluding the unidimensional approaches.

Recent research highlights the importance of multidimensional assessments of meaning in life. In this regard, prominent among these frameworks are the tripartite views of meaning in life by George and Park (2016) and Martela and Steger (2016). These models (i.e., 3DM, MEMS) offer definitional clarity and capture prior conceptualizations of meaning in life, facilitating the measurement of its distinct aspects, and proving practical in research. According to the 3DM framework, the first dimension, coherence, is one's sense of coherence or comprehension in their life (Heintzelman & King, 2014). The second dimension, purpose, relates to one's goals and personal values, and drives goal-directed behavior and self-regulation (McKnight & Kashdan, 2009). The third dimension, significance, refers to one's subjective sense of a significant and valuable life as a relatively new construct with an emotional structure and relates to the perceived importance of one's life (Martela & Steger, 2016).

In the MEMS context, recent studies have supported the three-factor structure of meaning in life in Polish (Gerymski & Krok, 2020), Spanish (Marco et al., 2022), and Turkish (Subasi et al., 2024). In the context of the 3DM, it was developed and confirmed by Martela & Steger (2023). The 3DM consists of coherence (4 items), purpose (4 items), and significance (3 items) subscales. The 3DM positively relates to various meaning in life and well-being outcomes (e.g., life satisfaction, basic psychological needs), while having negative relationships with psychopathology outcomes (e.g., depression). In the first adaptation study of the 3DM, Beyer (2023) confirmed the structure of the 3DM in German.

The 3DM offers a new approach for capturing several facets of meaning in life. It offers a valid and reliable instrument in English and German. However, its psychometric properties are unexplored in Turkish yet. Given the potential role of the tripartite approach in meaning in life, positive psychology, suicidology, and psychotherapy research, there is a need for further research to confirm the 3DM in Turkish and non-Western cultures. This study aims to test psychometric properties of the 3DM in Turkish and explore its associations with meaning in life, and well-being indicators, representing the first evaluation of the 3DM in a non-Western context.

Method

Participants

The participants were 617 Turkish-speaking college students in Türkiye. They were 70% female; the mean age was 21.25 (*SD* = 3.78). Participants' ages ranged from 18 to 62. They reported low (n = 115), medium (n = 495), and high (n = 7) subjective economic status.

Measures

Demographics. The sociodemographic form included informed consent, nationality, gender, age, and subjective economic status.

Three-Dimensional Meaning in Life Scale (3DM) (Martela & Steger, 2023). The 3DM measures meaning in life based on coherence, purpose, and significance subscales. Coherence and purpose have four items while significance has three items rated on a 7-point Likert scale ranging from "1 = Not at all true" to "7 = Very true". In this study, the subscales showed good reliability: Coherence (α = .76); Purpose (α = .81); Significance (α = .81).

Meaning in Life Questionnaire (MLQ) (Steger et al., 2006). The MLQ assesses MiL and encompasses two subscales including the Presence of Meaning (PM) and the Search for Meaning. Each subscale has five items rated on a 7-point Likert scale ranging from "1 = Absolutely untrue" to "7 = Absolutely true". This study only included the PM subscale. PM showed adequate reliability (α = .87).

Satisfaction with Life Scale (SWLS) (Diener et al., 1985). The SWLS measures life satisfaction and includes five items assessing one factor rated on a 7-point Likert scale ranging from "1 = Strongly disagree" to "7 = Strongly agree". In this study, the SWLS showed adequate internal consistency (α = .86).

Mental Health Continuum-Short Form (MHC-SF) (Keyes et al., 2008). The MHC-SF measures well-being with a total of fourteen items rated on a 6-point Likert scale ranging from "0 = Never" to "5 = Every day" considering the question stem "During the past month, how often did you feel …" for each. It has a total score and three subscales: Emotional well-being (EWB); Social well-being (SOWB); Psychological well-being (PWB). In this study, the MHC-SF and its subscales showed adequate reliability: MHC-SF (α = .91); EWB (α = .88); SOWB (α = .85); PWB (α = .85).

Balanced Measure of Psychological Needs Scale (BMPNS) (Sheldon & Hilpert, 2012). The BMPNS evaluates basic psychological needs (autonomy, competence, and relatedness) satisfaction and frustration with eighteen items. Three subscales measure need satisfaction while the other three subscales evaluate need frustrations based on a 7-point Likert scale ranging from "1 = Strongly disagree" to "7 = Strongly agree". This study only measured need satisfaction subscales, and they had adequate reliability: Autonomy (AU) (α = .71); Competence (CO) (α = .83); Relatedness (RE) (α = .81).

Adaptation Procedure of the 3DM Scale

The double-translation method was followed. In a pilot study, we recruited 24 participants over a two-week interval, and there was a high level of similarity between the items of the original and translated versions of the 3DM (α: .81). In a further pilot study, we found high internal consistency coefficients for the subscales and the 3DM (Coherence, α: .80; Purpose, α: .87; Significance, α: .87), with item-total correlations ranging from .51 to .82.

Data Collection

The present research outlined criteria to take part in the study: being at least over 18 years old and currently a college student. The study adhered to the Helsinki Declaration and its later amendments with ethical approval granted by Ibn Haldun University Social Sciences and Humanities Scientific Research and Publication Ethics Committee (Decision no: 2023/08-02; Date: 15.12.2023). The study employed convenience sampling and collected the data online via a Google Forms link in Türkiye in September 2023. Turkish versions of the scales were used. Anonymity and confidentiality were guaranteed. Participants voluntarily participated in the study and granted informed consent prior to responding to the survey items.

Data Analysis

The present research utilized Jamovi 2.3.21 and JASP 0.18.0.1 to perform the analyses. All raw data was evaluated for missing values, outliers, and normality assumptions. There was no missing data. 7 participants did not meet the criterion that participants should at least be over 18. These cases were removed. After checking the z-scores of each 3DM item considering extreme values, we detected 3 scores as outliers ranging out of -3 and +3, and removed them from the data set following the suggestion by Aron et al. (2014). 200 participants are large for most models (Kline, 2015). The sample size (617 cases) was large enough to conduct further analyses. We assume that the removed data (10 cases out of 627) will not have a significant effect on the generalizability of the findings. The 3DM items were mainly normally distributed considering skewness and kurtosis (ranging between ± 1.5) (Tabachnick & Fidell, 2013).

First, we conducted a Confirmatory Factor Analysis (CFA) to evaluate the structural validity of the 3DM. Although the 3DM items were predominantly normally distributed, DWLS was used as the estimator with Listwise deletion and robust standard error through the Mplus mimic package of the JASP. The present research followed the suggestions on fit indices (Byrne, 1994; Fabrigar et al., 1999; Kline, 2015): the chi-square, the Root Mean Square Error of Approximation (RMSEA) (values higher than .08 do not show acceptable fit), the (Standardized) Root Mean Square Residual (SRMR) (values higher than .08 do not demonstrate acceptable fit), the Comparative Fit Index (CFI) (values higher than .90 show acceptable fit; values higher than .95 indicate a good fit), the Tucker–Lewis index (TLI) (should be greater than .90). Second, we performed measurement invariance analyses (i.e., configuration, metric, scalar, and strict invariances) across gender using the fit indices as in the CFA. Third, we performed a bifactor model of the 3DM by a structural equation model as recommended by Rodriguez et al. (2016). This analysis was conducted using Mplus and Diagonally Weighted Least Squares (DWLS) with Listwise deletion. The percent of uncontaminated correlations (PUC), explained common variance (ECV), item-level explained common variance (IECV), hierarchical omega indices of the general factor (ωH) and specific factors (ωHS), omega indices of each factor (ωHS), factor determinacy (FD), and H index were calculated by an excel formula (Dueber, 2017). If PUC is > .70 and ECV > .70, Rodriguez et al. (2016) suggest that the common variance reflects a unidimensional factor. Resie et al. (2013) maintain that when hierarchical omega indices of the specific factors are less than .50 and the omega index of the general factor is greater than .80, the general score of the items is likely to reflect a unidimensional factor. Stucky and Edelen (2015) suggest that when a general factor can be considered to represent the underlying construct, IECV values of the items of the factor higher than .80 or .85 demonstrate the unidimensional item set that reflects the content of the general factor. To support the unidimensional structure of a general factor, H index value should be greater than .80 (Hancock & Mueller, 2001) and the factor determinacy value should be greater than .90 (Gorsuch, 1983). Fourth, we analyzed the convergent

validity of the 3DM with presence of meaning, satisfaction with life, emotional well-being, social well-being, psychological well-being, mental health continuum, and basic psychological need satisfaction as well as the reliability scores of the 3DM. Finally, we examined the predictive roles of the 3DM in meaning in life and well-being indicators using regression analyses.

Descriptive statistics, Pearson's correlation tests, reliability analyses, independent-samples t-tests, and structural equation model for the bifactor indices were carried out through Jamovi 2.3.21. The confirmatory factor analysis and measurement invariance analyses were performed through JASP 0.18.1.1 with the Mplus mimic package.

Results

Descriptive Statistics of the 3DM Items

All items predominantly showed normality except for the seventh, ninth, and tenth items as they did not fall within ±1.5 values of skewness and kurtosis (Tabachnick & Fidell, 2013). All item-rest correlations of the scale were acceptable as they were higher than .30. The item-rest correlations of the coherence subscale ranged between .48 and .69. The item-rest correlations of the purpose subscale ranged between .47 and .72. The item-rest correlations of the significance subscale ranged between .54 and .76.

Structural Validity

As shown in Table 1, the chi-square indicated that the subscales better explained the observed data. CFI and TLI values fell within an acceptable range, showing a good fit. All parameters were significant, $p < .001$. All standardized estimates were higher than .50. The fit indices demonstrated that the model fitted the 3DM data. These findings provided evidence for the latent constructs.

The standardized β values of the 3DM item ranged from .53 to .95. Each of the latent variables had high moderate significant positive associations with each other. Each item indicated satisfactory scores, confirming the suitability for retention in the scale, as items with a standardized β value of 40 and above should be retained in CFA (Kline, 2015).

Table 1. *CFA Fit Indices for the 3DM*

χ^2	df	χ^2/df	p	CFI	TLI	RMSEA	SRMR
153.92	41	3.75	< .001	.99	.99	.07	.05

Note. χ2: Chi-square; df: Degree of freedom; p: p value; CFI: Comparative Fit Index; TLI: Tucker-Lewis Index; RMSEA: Root Mean Square Error of Approximation; SRMR: Standardized Root Mean Square Residual.

Measurement Invariance of the 3DM Across Gender

As shown in Table 2, configuration, metric, scalar, and strict invariance indices demonstrated good fit across genders considering fit indices (see Data Analysis). Configural invariance indices evidenced that the factor structures did not have significant differences across genders, indicating that the same observed variables assessed the same latent constructs. Metric invariance indices showed that the factor loadings did not have significant differences across genders, demonstrating that the strength of the relationships between observed variables and latent variables was equal. Scalar invariance indices demonstrated that the latent constructs had the same equivalent metric and scale across genders. Metric invariance provided support for the equivalency of the observed variables' residual variances. Overall, the indices supported the consistency of psychometric properties of the 3DM across genders.

Table 2. *Measurement Invariance of the 3DM Across Gender*

Invariance type	χ^2	df	χ^2/df	p	CFI	TLI	RMSEA	SRMR
Configural	140.10	58	2.42	< .001	.97	.96	.07	.04
Metric	163.05	65	2.51	< .001	.97	.95	.07	.05
Scalar	198.29	72	2.75	< .001	.96	.95	.08	.06
Strict	276.81	85	3.26	< .001	.94	.93	.09	.06

Note. χ^2: Chi-square; df: Degree of freedom; p: p value; CFI: Comparative Fit Index; TLI: Tucker-Lewis Index; RMSEA: Root Mean Square Error of Approximation; SRMR: Standardized Root Mean Square Residual.

Bifactor Model of the 3DM

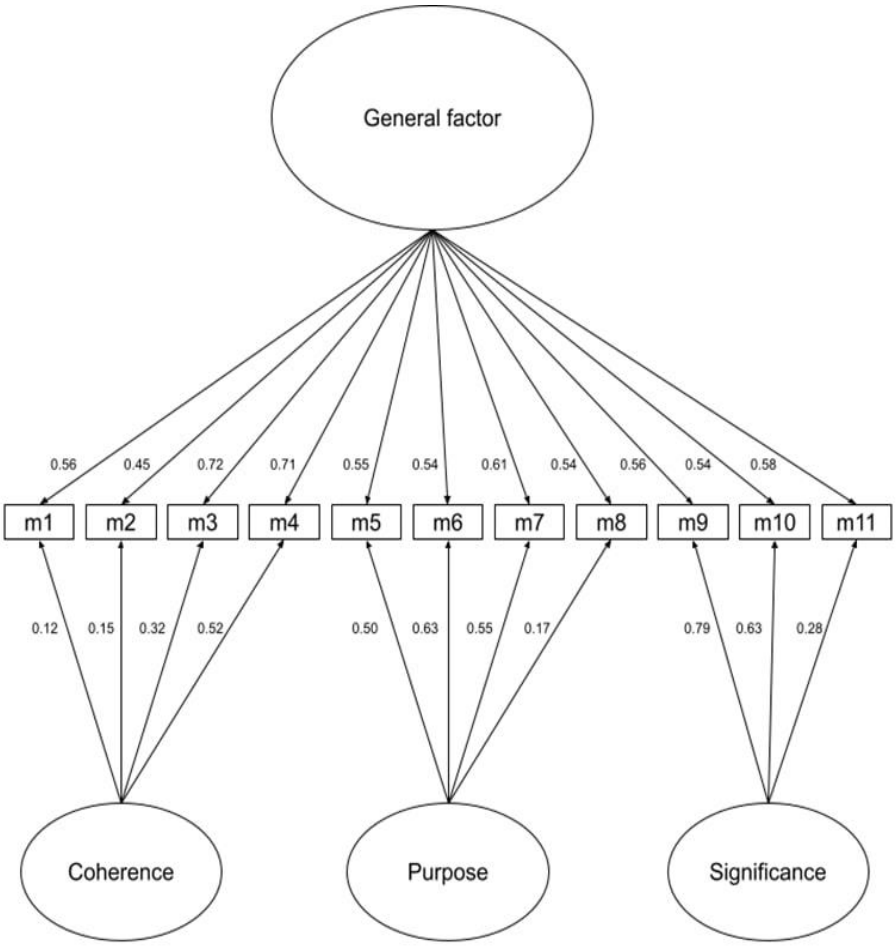
As shown in Table 3, the results demonstrated that the bifactor model of the 3DM had excellent fit indices: $\chi^2 = 3296.42$, df = 55, $p < .001$, CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = 0.03. The value of the percent of uncontaminated correlations (PUC) was .727. The explained common variance index (ECV) was .600. The hierarchical omega coefficients for the subscales ranged from .135 to .435. The omega coefficient for the general factor was .767. These results indicate a significant amount of consistent subscale-specific variance remaining after the general factor's contribution is separated out. The relative omega coefficients for the subscales ranged from .174 to .507, while it was .843 for the general factor. IECV values showed that five items higher than .80 could be used if the multidimensionality of the 3DM was supported. H index was .858 and FD value was .889, demonstrating that the subscales had a high correlation with the general factor and a well-conceptualized latent construct. As Rodriguez et al. (2016) suggested, the scale can be considered multidimensional since the ECV value is less than .70 and the PUC value is higher than 70. Similarly, Reise et al. (2013) maintained that the multidimensionality of the scale is unable to disqualify the unidimensionality of the scale when the ECV value is higher than .60, the PUC value is less than .80, and the hierarchical omega coefficient of the general factor is greater than .70. Both interpretations are in line with our results. Overall, the findings did not support the unidimensional measurement of the 3DM, and provide evidence for the multidimensionality of the meaning in life construct based on the 3DM conceptualization (see Figure 1).

Table 3. *Factor Loadings and Coefficients of the 3DM Bifactor Model*

Item	3DM General	Coherence	Purpose	Significance	IECV
Item1	.561	.117			*.958*
Item2	.449	.154			*.895*
Item3	.717	.323			*.831*
Item4	.707	.524			.645
Item5	.554		.495		.556
Item6	.544		.627		.429
Item7	.613		.552		.552
Item8	.545		.171		*.910*
Item9	.562			.794	.334
Item10	.539			.633	.420
Item11	.579			.277	*.814*
PUC	.727				
ECV	.600				
FD	.889				
H	.858				

Note. IECV = Item-level Explained Common Variance, PUC = Percent of Uncontaminated Correlations, FD = Factor Determinacy, H = H Index.

Figure 1. *Bifactor Model of the 3DM*



Convergent Validity

As shown in Table 4, the results demonstrated that coherence, purpose, and significance had positive moderate associations with the presence of meaning. The results predominantly showed that coherence, purpose, and significance had significant positive moderate associations with well-being indicators (i.e., life satisfaction, basic psychological needs, mental health continuum), supporting the convergent validity.

Table 4. *The Associations of the 3DM Subscales with Meaning and Well-Being Indicators*

	Coherence	Purpose	Significance
Purpose	0.57	-	-
Significance	0.53	0.47	-
Presence of meaning	0.68	0.60	0.59
Life satisfaction	0.50	0.44	0.49
Autonomy satisfaction	0.40	0.40	0.47
Competence satisfaction	0.29	0.41	0.36
Relatedness satisfaction	0.34	0.36	0.42
Mental health continuum	0.55	0.51	0.59
Emotional well-being	0.45	0.41	0.55
Social well-being	0.42	0.37	0.41
Psychological well-being	0.54	0.54	0.60

Note. All correlations were significant at p < .001.

The Predictive Role of the 3DM in Meaning in Life and Well-Being Indicators

As demonstrated in Table 5, coherence, purpose, and significance substantially predicted variances in the presence of meaning, satisfaction with life, autonomy satisfaction, competence satisfaction, relatedness satisfaction, emotional well-being, social well-being, psychological well-being, and mental health continuum. The R^2 values show that coherence, purpose, and significance explain moderate to high proportions of variance in the well-being outcomes, with the strongest effects observed for presence of meaning, psychological well-being, and mental health continuum. Significance tends to have the strongest relationships across most well-being outcomes. Coherence strongly particularly predicts emotional and psychological well-being. Purpose appears to be less impactful than coherence and significance despite explaining significant proportions of the well-being outcomes.

Table 5. *The Predictive Role of the 3DM in Meaning in Life and Well-Being Indicators*

Dependent variable	Predictor variable	B standardized	*SE*	*t*	R^2
PM	Coherence	1.03	0.04	23.23*	.47
	Purpose	0.86	0.05	18.72*	.36
	Significance	0.99	0.05	18.11*	.35
SWLS	Coherence	0.75	0.05	14.27*	.25
	Purpose	0.62	0.05	12.20*	.19
	Significance	0.82	0.06	14.00*	.24
AUS	Coherence	0.23	0.02	10.83*	.16
	Purpose	0.22	0.02	10.88*	.16
	Significance	0.30	0.02	13.20*	.22
COS	Coherence	0.17	0.02	7.54*	.08
	Purpose	0.22	0.02	11.22*	.17
	Significance	0.23	0.02	9.46*	.13
RES	Coherence	0.17	0.02	8.95*	.12
	Purpose	0.17	0.02	9.44*	.13
	Significance	0.24	0.02	11.42*	.17
EWB	Coherence	0.34	0.03	12.41*	.20
	Purpose	0.29	0.03	11.08*	.17
	Significance	0.46	0.04	16.15*	.30
SOWB	Coherence	0.59	0.05	11.55*	.18
	Purpose	0.48	0.05	9.89*	.14
	Significance	0.63	0.06	11.12*	.17
PWB	Coherence	0.77	0.05	16.04*	.30
	Purpose	0.72	0.05	15.75*	.29
	Significance	0.95	0.05	18.41*	.36
MHC-SF	Coherence	1.70	0.10	16.30*	.30
	Purpose	1.50	0.10	14.82*	.26
	Significance	2.04	0.11	18.21*	.35

Note. * p < .001. *SE*: Standard Error; *t*: t-statistic; R^2: Coefficient of Determination. PM: Presence of Meaning; SWLS: Life Satisfaction; AUS: Autonomy Satisfaction; COS: Competence Satisfaction; RES: Relatedness Satisfaction; EWB: Emotional Well-Being; SOWB: Social Well-Being; PWB: Psychological Well-Being; MHC-SF: Mental Health Continuum.

Discussion

The present research aimed to test the psychometric properties of the 3DM in Turkish. The 3DM showed good reliability and acceptable fit indices based on the CFA. The item-rest correlations of the 3DM items were in acceptable ranges. The CFA indices evidenced the structural validity, replicating the original (Martela & Steger, 2023) and the German 3DM (Beyer, 2023). The bifactor model did not support the unidimensional measurement of the 3DM. The positive associations among the variables of interest indicated the convergent validity of the 3DM. The Turkish version of the 3DM is the first study to confirm the 3DM in a non-Western culture with a bifactor model. Unlike the Turkish bifactor model of the MEMS (Subasi et al., 2024), the bifactor model of the Turkish 3DM did not provide adequate evidence for the unidimensional measurement in Turkish. The differences in the bifactor models of the 3DM and the MEMS can be attributed to sample characteristics (e.g., adults vs. college students), scaling (e.g., five-point Likert vs. seven-point Likert), mental health (e.g., presence of any mental disorder vs. having no mental disorder reported), and the distinction between significance and mattering.

Each Turkish 3DM subscale was moderately positively associated with the presence of meaning and mental health continuum indicators. Furthermore, the Turkish 3DM had similar positive associations with life satisfaction and need satisfaction (Beyer, 2023; Martela & Steger, 2023). The 3DM additionally showed similar positive associations with meaning in life and well-being indicators as in the original MEMS (George & Park, 2017), and its Polish (Gerymski & Krok, 2020), Spanish (Marco et al., 2022), and Turkish (Subasi et al., 2024) versions. In addition, each Turkish 3DM dimension substantially predicted variance in presence of meaning, satisfaction with life, need satisfaction, along with mental health continuum indicators for the first time (Gerymski & Krok, 2020; George & Park, 2017; Martela & Steger, 2023; Subasi et al., 2024). Martela and Steger (2023) explored that significance had the highest explanatory power on life satisfaction, while coherence had the least. However, our findings showed that coherence had the highest score, while purpose had the least. Cultural differences in subjective judgments of meaning in life between American and Turkish participants may account for these slight differences.

In conclusion, the Turkish 3DM is a valid and reliable measure to assess meaning in life based on the tripartite framework. It can be utilized as a multidimensional tool to measure meaning in life in Turkish culture and cross-cultural research. Our findings support the 3DM conceptualization although there may be slight differences in mattering and significance. The present research extends the application of the 3DM to non-Western contexts, and offers important insights into the cultural specificity and universality of meaning in life conceptualizations. Future research should investigate differences and similarities of the 3DM approach in diverse cultural settings and populations to gain a deeper understanding of meaning in life globally.

The present research has several limitations. To begin with, causality cannot be concluded based on our results given that our research employs a cross-sectional design. This requires further clarifications on how the Turkish 3DM responses can change over time. Second, the results may be limited when it comes to generalizing the findings to the general population in Türkiye since the current research used convenience sampling in an online environment with university students. Finally, the concurrent validity, divergent validity, and test-retest reliability of the Turkish 3DM have not been established in the present research.

Future research can longitudinally monitor changes in coherence, purpose, and significance, especially with different populations such as adolescents, young adults, or older adults, and examine the psychometric properties of the Turkish 3DM in various conditions such as clinical studies. Further research is required to compare the cultural differences in the 3DM. Additional research can test whether a bifactor model can represent the 3DM among other populations (e.g., adolescents, emerging adults, adults, older people, and disadvantaged groups). Future studies can particularly investigate the sources, outcomes, and associations of the significance subscale. The similarity and distinction of significance and mattering constructs require further explorations in diverse cultural contexts and populations. Further research can analyze the differences and commonalities of multidimensional meaning in life constructs such as the 3DM and the MEMS. The explanatory roles of unidimensional and multidimensional approaches such as the 3DM and the MEMS can be compared. Additional research can particularly focus on the role of the 3DM in non-clinical and clinical populations considering well-being and psychopathology. Finally, future research in the 3DM approach can be instrumental in guiding meaningful interventions, psychosocial support programs, suicide prevention interventions, and in advancing psychotherapy, well-being, and positive psychology research.

Declarations

Ethical Approval and Consent to Participate
Ethical approval has been granted to this study by Ibn Haldun University Social Sciences and Humanities Scientific Research and Publication Ethics Committee (Decision no: 2023/08-02; Date: 15.12.2023).

Consent for Publication
Not applicable.

Availability of Data and Materials
The data can be made available upon reasonable request.

Competing Interests
The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Author Contributions
MS has proposed the main idea of the research and substantially contributed to all stages of the study. SB contributed to data collection, interpretation, and discussion. HK contributed to data collection and manuscript revision. EO contributed to manuscript revision and supervision. All authors have read and approved the final article.

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