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Research Article

The Turkish version of the Satisfaction with Life Scale: Measurement Invariance across Gender

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Abstract

The purpose of this study was to investigate the measurement invariance in the Turkish version of the Satisfaction with Life Scale according to gender among university students. A convenience sample of 312 university students (194 females) was participated in the study. Multi-group confirmatory factorial analyses were performed to examine the measurement invariance. The results showed a first-order one-factor solution fitted to the Turkish sample. The findings revealed that the configural and metric invariances were achieved with respect to gender. However, scalar invariance could not be reached across gender. When constrained the parameter of item four across gender, then partial scalar invariance was achieved. Ongoing analysis showed that strict invariance was achieved across gender. Establishing at least partial scalar invariance is important in that it permits comparison of latent means between subgroups. Understanding how satisfaction with life differs depending on gender and culture in the context of psychological well-being could lead a deeper conceptualization of this attribute. Moreover, this study emphasizes that valid inferences are only possible with well-developed psychometric tools.

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Introduction

Happiness, in other words well-being, is an important element that provides individual, social and environmental contributions. Subjective well-being (SWB) is considered as a two-component structure (Diener, Suh, Lucas, & Smith, 1999). The cognitive component of SWB is called life satisfaction (Diener et al., 1999). Life satisfaction is defined as the general judgment about to what extent an individual's is satisfied with the quality of his/her own lives based on the criteria they determine (Diener, Emmons, Larsen, & Griffin, 1985).

Life satisfaction can be considered a multifaceted construct (Kang, Shaver, Sue, Min, & Jing, 2003). Researches have documented that life satisfaction occupies a significant role in assessing school and community samples (Ng, Huebner, Maydeu-Olivares, & Hills, 2018).

Self-report information about subjective well-being can enable decision making mechanisms in fields like education, health (O'Donnell, 2013) and economics (Oishi, Schimmack, & Diener, 2012).

The extent to which students' educational performances affect their psychological well-being has been an ongoing research topic for the last 40 years. Therefore, the literature has well documented the contribution of life satisfaction to academic performance and the educational context of the individual. Life satisfaction reports have been associated with numerous educational outcomes including school life (in Kim & Kim, 2013), school bullying (Moore, Huebner, & Hills, 2012), student engagement (Lyons & Huebner, 2016), school attachment (Lucktong, Salisbury, & Chamratrithirong, 2018), school engagement (Upadyaya & Salmela-Aro, 2013) and academic performance (Slavinski, Bjelica, Pavlović, & Vukmirović, 2021). Based on the study conducted by Rode et al. (2005) shown that academic achievement was significantly predicted by life satisfaction. Similarly, highly reported that life satisfaction is related to university students' academic performance (Chow, 2005). Frisch et al. (2005) stated that it is possible to predict the dropout status of university students with their life satisfaction. A further relevant variable with academic settings is self-efficacy. Life satisfaction is related to social self-efficacy (Fogle, Huebner, & Laughlin, 2002), self-efficacy beliefs (Meng, 2020) and academic self-efficacy (Kim & Park, 2020). Likewise, it was also found life satisfaction severely connected with self-esteem (Li, Fang, Wang, Sun, & Cheng, 2018). Existing researches have shown coping strategies and life satisfaction is related (Saha et al., 2014). Gilman and Huebner (2006) stated that intrapersonal functioning influences life satisfaction of youths. Similarly, it has been found predictive relationships between life satisfaction interpersonal relations (Froh et al., 2007). Consequently, the existing literature shows that life satisfaction is closely connected to academic factors. The main function of schools and educators should be to prepare individuals for life in a healthy way and contribute to their development. Therefore, educators should not only focus on academic performance but also pay attention to the life satisfaction of individuals (Tian, Zhang, Huebner, Zheng, & Liu, 2016).

Gender Differences and Life Satisfaction

An extensive body of researches conducted so far have revealed that gender is related to life satisfaction (in Yuen, 2015). Life satisfaction has differential correlations with gender (Huebner & Dew, 1996). However, inconsistent findings were found when life satisfaction

was investigated by gender. According to several studies life satisfaction was found quite stable across gender (Emerson, Guhn, & Gadermann, 2017; Piko & Hamvai, 2010). For example, in a meta-analysis study inquiring into the gender effect on life satisfaction in the last 40 years among children and adolescents, researchers reported in general non-significant differences were observed in life satisfaction. On the contrary, there are studies showing gender differences in life satisfaction (Moksnes & Espnes, 2013; Yuen, 2013).

Especially throughout the last three decades' changes in information, technology and economy have been taking place highly rapidly. Gender-based characteristics on social and psychological variables may have changed with these changes. Therefore, it is important to repeat studies using some psychological variables such as life satisfaction, which are thought to be a main effect of gender.

Considered within the scope of cross-cultural studies, gender difference according to life satisfaction may differ from culture to culture. Chen, Cai, He, and Fan (2020), conducted a meta-analytic study in which they aimed to examine how the life satisfaction of adolescents differs according to gender. According to their research findings, a culture-dependent effect appeared on life satisfaction between the genders. On the other side, western culture-centered and individual-oriented research on life satisfaction is predominantly more. This study can be seen as an important study since it was conducted in the sample of Turkey, a country that is partially accepted as a European country but also has similarities with the cultural structure of Middle Eastern countries. In addition, this study is also necessary in terms of providing evidence on whether life satisfaction is a global (emic or etic) structure.

Measurement Invariance and SWLS

Examining the validity of psychometric tools requires ongoing processes. Since the scores related to the construct are used for comparison, the validity of the scores between the groups is also important. Evidence must be obtained as to whether the scores obtained by a measurement tool essentially matching to the core construct the tool is trying to measure (Emerson, Guhn, & Gadermann, 2017). Otherwise, interpretations of scores would be problematic. The measurement invariance test avails clarify whether it appears that there is different scoring for a particular underlying psychological construct across comparison groups (Park, Rottinghaus, Wang, Zhang, Falk, & Ko, 2019).

Existing literature shows measurement equivalence of life satisfaction has been investigated in previous studies with according to gender and culture. There is limited

evidence on the consistency of research results. While some studies endorse the measurement invariance of the SWLS across gender (Bagherzadeh, Loewe, Mouawad, Batista-Foguet, Araya-Castillo, & Thieme, 2018; Jovanovic, 2016), other studies demonstrated failure to meet configural invariance, metric invariance (Atienza, Balaguer, & Garcia-Merita, 2003), and scalar invariance (Moksnes, Lohre, Byrn, & Haugan, 2014). In general, scalar or strict invariance of SWLS rarely supported.

The Current Study

Life satisfaction is a culturally constructed phenomenon. Therefore, it is necessary to investigate how the measurement tool works in different cultures. Although SWLS is widely used tool all over the world, there are few studies that examine the measurement invariance in Turkey sample (e.g., Durak, Senol-Durak, & Gencoz, 2010). Accordingly, there is a need for a systematic study of the life satisfaction trait on Turkish version. Furthermore, so as to deepen our comprehension of the theoretical life satisfaction construct and to determine the boundaries its indicators; it is essential to have advanced validity-tested tools. The current study was conducted with university students. The reason for this is years of university students are a critical period for individuals in terms of their academic skills, intellectual accumulation, social and romantic relationships. The cognitive schemes they developed during this period affect both academic achievement and building future life (Chai, Wue, & Han, 2020). Also, this period has a vital importance in developing their own self-constructs. Besides, the existence of contradictory findings indicates that the socio-cultural and demographic contexts of life satisfaction should be taken into account (Joshanloo & Jovanović, 2020). Therefore, the purpose of the current study is to examine measurement invariance in the Turkish version of the SWLS with respect to gender in university students.

Method

Participants

The 312 university students (118 men and 194 women) were included in this cross-sectional study. All participants voluntarily participated in the study. Their ages ranged from 18 to 33 ($Mean_{age}$ = 22.9, SD_{age} = 3.2, $Median_{age}$ = 22). The students reported that they mainly come from the Central Anatoli the Mediterranean, and the Southeast Anatolia region.

Instrument

The *Satisfaction with Life Scale* (SWLS) was developed by Diener, Emmons, Larsen, and Griffin (1985). The scale is designed to measure perceived global life satisfaction. The scale consists of five items. Participants' level of agreement on each item is determined with a seven-point Likert-type scale. The responses vary from *strongly disagree* (1) to *strongly agree* (7). The total score that can be obtained from the scale ranges from 5 (low life satisfaction) to 35 (high life satisfaction). The internal consistency reliability coefficient alpha of the scale was reported as .87 and the test-retest coefficient was reported as .82 (Diener, Emmons, Larsen, & Griffin, 1985). The Turkish version of *Satisfaction with Life Scale* was adapted by Yetim (1993). Yetim (1993) reported Cronbach alpha of the Turkish version of the scale was .86, and the test-retest reliability of the scale was .73.

Data Analysis

Measurement invariance was examined with multigroup confirmatory factorial analyses (MGCFA) in *AMOS*. Preliminary analyzes were performed with SPSSv17. In this process, the means, standard deviations, skewness and kurtosis of the items were examined. Thus, the suitability of the data for multi-group confirmatory factor analysis (MG-CFA) was evaluated. The reliability coefficient of the Turkish version of SWLS was calculated with Cronbach's alpha.

It was examined whether the Turkish version of SWLS was in a single factor structure. Confirmatory factor analyses (CFA) were performed to test model fit of the Turkish version of SWLS. Chi-square ($\chi 2$) of absolute fit indices, root mean square error of approximation (RMSEA: an absolute measure of fit)) and root mean square residual (RMR) were used to examine the factor structure of SWLS. In addition to these, the comparative fit index (CFI: an incremental measure of fit), goodness of fit index (GFI), the normed fit index (NFI) and the Tucker–Lewis (TLI: an incremental measure of fit) were also used, taking into account the suggestions for using multiple fit indices. Akaikes' information criterion (AIC) is a measure of relative fit.

Values greater than .90 for CFI, NFI, TLI and GFI and values less than .08 for RMR and RMSEA indicate good fit (Hu & Bentler, 1999). While examining the RMSEA value, recommendation of Kenny, Kaniskan, and McCoach (2015) was taken into account. Kenny, Kaniskan, and McCoach (2015) suggested that the RMSEA could be problematic and misleading in evaluating model data fit in cases where the degrees of freedom (*df*) was small,

so that a refusal decision should not be made about the model fit without examining other indices.

Multigroup confirmatory factorial analyses (MGCFA) were carried out to test the measurement invariance. Examining measurement invariance procedures include comparing increasingly constrained, nested MI models. Starting from the configural (factor structure) model, metric (factor loadings), scalar (intercepts) and strict (residual variances) models are examined respectively. Difference tests such as $\Delta\chi^2$, ΔCFI and ΔRMSEA evaluate the fit of the model to the data by comparing the more restrictive model with the less restrictive model (Cheung & Rensvold, 2002). Following the rule proposed by Chen (2007) a ΔCFI of ≥ -.01 was used to indicate of invariance between nested models. In addition to ΔCFI, ΔRMSEA of ≥ .015 was used to indicate of non-invariance (Chen, 2007). The smaller the AIC values during model comparison, the better indicative of a model that fits (Williams & Holahan, 1994). In case full measurement invariance cannot not be reached, partial invariance tests are performed.

Finding

Firstly, data were screened to monitor for missing values and potential outliers. Outliers and missing value were not detected in the data. Since the skewness and kurtosis values for each item were within acceptable limits (-2,2) (Hair, Gabriel, & Patel, 2014), it was seen that there was no reason not to perform MG-CFA. The means and standard deviations on item basis according to the groups are presented in Table 2. Cronbach's alpha internal consistency coefficient was found as .82. Thus, the data were found to be suitable for CFA.

Prior to measurement invariance was examined, a series of single-group analyses were performed with each sample separately. The first-order one-factor model solution resulted in excellent fit indices for the entire sample and gender groups (in Table 1). The standardized factor loadings and the error terms for the baseline model across gender presented in Table 2. The standardized factor loadings ranged from .55 to .80 for females, and .49 to .86 for males. All factor loadings were significant at the .01 level. No evidence for modification could be obtained. Therefore, the unmodified model is used for the multi-group tests.

Table 1. Goodness-of-fit indexes for the full sample and the baseline model among subgroups

Group	χ^2	*df*	*p*	χ^2/df	CFI	NFI	GFI	TLI	AIC	RMR	RMSEA	90% CI for RMSEA	
												L	U
Full	12.54	5	.028	2.501	.99	.99	.99	.97	32.54	.032	.070	.021	.11
Female	19.28	5	.002	3.856	.97	.96	.97	.90	39.28	.037	.116	.064	.17
Male	4.49	5	.481	.898	1.00	1.00	.98	.99	24.49	.026	.000	.000	.13

Measurement Invariance

Findings of the MGCFA tests across gender were presented in Table 3. The configural model revealed a significant chi-square value at the .01 level. However, since chi-square is a statistic sensitive to the sample size, other fit indices should be examined before rejecting the model. The other indexes yielded good fit (in Table 3). Thus, configural invariance was accepted across gender. After finding that the common factor structure was valid between males and females, it was time to test the next level invariance. The hierarchical chi-square comparison between model 1 and model 2 was not significant (p = .094). In parallel with these findings, metric invariance was supported between genders in terms of delta CFI (ΔCFI ≥ -.01) and delta RMSEA (ΔRMSEA < .015). After supporting equivalent factor loadings between males and females, so the next more restricted model could be tested. The nested chi-square comparison between model 2 and model 3 was significant (p < .01). The additional evidences suggested that model 3 demonstrated worse fit than the previous model (ΔCFI = -.046 < -.01 and ΔRMSEA= .017 > .015). That is, scalar invariance was not achieved. The ΔCFI, ΔRMSEA and significant delta chi-square p value indicated that model fit was not improved. So, there was evidence for non-invariance intercepts between gender groups. Further analysis showed that if intercept of the item four (SWLS-4) is freely estimated across the groups, partial scalar invariance was achieved. The findings from the comparison of model 4 and model 2 revealed that better and acceptable improvement was obtained. After establishing partial scalar invariance, strict invariance test was performed to examine if invariance of error variances existing for each item. The strict invariance was hold according to evidences from the comparison of model 4 and model 5 across gender (p = .058, ΔCFI = -.009 > -.01 and ΔRMSEA = -.003 < .015).

Table 2. Standardized factor loadings and error terms (for the baseline model) across gender

	Standardized Factor Loadings		Error Variances		Mean (*SD*)	
Items	Female	Male	Female	Male	Female	Male
1	.72	.66	.63	1.10	4.82 (1.16)	4.71 (1.40)
2	.72	.71	.81	1.01	4.30 (1.31)	4.13 (1.44)
3	.80	.81	.56	.76	5.12 (1.29)	4.93 (1.47)
4	.65	.86	.85	.55	4.97 (1.24)	4.27 (1.44)
5	.55	.49	2.18	2.42	3.73 (1.78)	3.07 (1.79)

Table 3. Fit indexes for MGCFA models and difference tests of SWBLS across gender

Model	χ^2	*df*	χ^2/df	CFI	TLI	GFI	AIC	RMSEA
M1 Configural	29.31	10	2.931	.965	.93	.96	69.314	.079
M2 Metric	37.25	14	2.661	.957	.94	.96	69.254	.073
M3 Scalar	66.94	19	3.524	.911	.91	.91	108.949	.090
M4 Partial scalar-I4	46.65	18	2.614	.948	.94	.95	91.055	.072
M5 Strict	57.33	23	2.493	.939	.94	.94	91.334	.069

Difference tests	$\Delta\chi^2$	Δdf	*p*	ΔCFI	ΔRMSEA
Model 2 - Model 1	7.94	4	.094	-.008	-.006
Model 3 - Model 2	29.695	5	**.000**	**-.046**	**.017**
Model 4 – Model 2	9.401	4	.052	-.009	-.001
Model 5 – Model 4	10.679	5	.058	-.009	-.003

Gender Differences

Besides, it was explored whether there is a significant difference between the means of life satisfaction of gender groups. Independent samples *t* test was conducted to test whether life satisfaction mean scores show a significant difference according to gender. The mean comparison between males and females resulted in a significant difference in favor of females on the life satisfaction at the .01 level (M_{female} = 22.98, *SD* = 5.09, M_{male} = 21.12, *SD* = 5.79, *t* = 2.86, *p* = .004).

Discussion and Conclusion

The SWLS is a widely used brief self-report scale that has been adapted to many cultures. It has been used in many different disciplines (Vonkova, 2019) and has been compared the SWLS scores according to various socio-demographic variables in different. The inconsistency between these studies necessitated the continuation of the researches. Thus, the objective of the current study set out to inquiry the measurement invariance of the Turkish version of SWLS with respect to gender.

Preliminary findings indicated that the Turkish version of SWLS yielded well psychometric attributives. Internal consistency was high and first-order CFA results showed excellent model data fit. Although some studies report that a two-factor structure has emerged (Hultell & Gustavsson, 2008; Wu & Yao, 2006), the one-factor structure of the scale has been widely supported in many cultures (Checa, Perales, & Espejo, 2019; Emerson, Guhn, & Gadermann, 2017; Whisman & Judd, 2016). Consistent with of previous common findings, the one-factor structure was also confirmed in the Turkish version of SWLS. Besides, the one-factor solution was verified without the need for any modification contrary to those who stated that the error variances of item 4 and item 5 (Hultell & Gustavsson, 2008) or item 1 and item 2 (Sachs, 2003) should be correlated to fulfill the better fit. Furthermore, it was observed that the Turkish version of SWLS data fit was confirmed the one-factor solution for males and females.

In this study, configural and metric invariance of the SWLS were obtained across gender. These results support that male and female conceptualize life satisfaction within an identical uni-dimensional structure and also, they have invariant factor loadings. This is a sign of the identicalness of the unit of measurement. Due to the fact that the intercept of item 4 (*So far I have gotten the important things I want in life*) was being non-invariant, full scalar invariance was not supported. After releasing invariance constraint on item 4, partial scalar invariance was obtained across genders. This finding suggests that intercept of item 4 is not invariant. This implies that the mean differences of the groups at the observed level do not reflect the latent mean differences of the groups. The intercept of the item 4 was higher for females compared to males. That is, the female participants have more score on this item than the male participants. Consistent with this finding, in the study conducted by Arıkan and Zorbaz (2020) on Turkish university students, it was observed that failure the strict invariance across gender due to item 4. Whisman and Judd (2016) stated that item 4 contains an implicit reference to the past. When males assess theirs past lives, they may have a lower perception of getting the important things they wanted in their lives. Perhaps because males have more life goals (career expectations ect.), they might feel they had fewer achievements than what they will realize in the future. Furthermore, Whisman and Judd (2016, p. 243) also stated that "differences in intercepts may reflect real differences in life satisfaction", which might indicate that males and females attribute different connotation to item 4. It is possibility that the word "*important*" in the content of the item 4 has been conceptualized

differently for males and females. Finally, strict invariance was attained across gender. It was observed that strict invariance was attained in the ongoing analysis.

In parallel with the findings of this study, Moksnes, Lohre, Byrn, and Haugan (2014) also stated that scalar invariance was not supported in their study. However, they did not specify from which item non-invariance originated. Atienza, Balaguer and Garcia-Merita, (2003) found that the factor loadings were not invariant across gender due to the items 2 and 5. On the other hand Jovanovic (2019) reported full scalar invariance across gender but latent mean comparisons displayed that females reported higher life satisfaction than males. Results of other studies also mentioned providing scalar (Checa, Perales, & Espejo, 2019; Hultell & Gustavsson, 2008; Ortuño-Sierra, Aritio-Solana, Chocarro de Luis, Nalda, & Fonseca-Pedrero, 2019) and strict invariance (Wu & Yao, 2006) across gender.

A remarkable finding of this study was that females reported significant higher-level mean scores on the life satisfaction items than males. Consistent with these findings, in the study conducted in Turkey by Cenkseven-Önder (2012), early adolescent females obtained higher life satisfaction scores than males. In large-scale studies, it has been emphasized that women report consistent and typically higher life satisfaction than men worldwide (Zweig, 2015). In fact, it can be expected to have negative consequences on women's life satisfaction in societies with gender discrimination or gap. Therefore, the factors contributing to females' higher perception of life satisfaction than males need to be deeply examined by cultural context.

Such finding is in a sense surprising given that boys in countries with Muslim majorities (as in Turkey) are always more valued from the moment they are born and the mother who bears a son deserves respect because of the having a son. In many areas of their lives, men have more opportunities and more freedom in such cultures. Therefore, they have the opportunity to have a better standard of living than Muslim women (Abdel-Khalek, 2010 cited in Yuen, 2015). Then why do women report more life satisfaction in a geography where gender equality gap is high? Perhaps contrary to expectations, a more restrictive lifestyle does not create a negative factor for females, especially in collectivist cultures. As a matter of fact, in their research Kuppens, Realo and Diener (2008, p. 73) pointed out that "negative experiences may have less impact on life satisfaction in collectivist nations than in individualist ones". It is more important to establish deep bonds and close relationships for females, and they may be assessing their life satisfaction through these values in collectivist

cultures. The study by Al-Attiyah and Nasser (2016), which indicated that in a sex-segregated society like Qatar, young women have higher life satisfaction than young men, also supports this view. Grant, Wardle and Steptoe (2009) reported that women are likely to be more satisfied with their lives than men in the Pacific Asia region, unlike the US and Central and Eastern Europe regions. In the case of China, which is considered a typical collectivist culture, life satisfaction was found to be significantly higher among female university students than the male peers (Ye, Yu, & Li, 2012). Similarly, Chen, Cai, He and Fan (2020) noted that where males are more advantageous, such as in Asia, males are expected to have higher life satisfaction levels, but the opposite is observed. Likewise, in the case of Serbia, which is stated to reflect collectivism, authoritarianism and patriarchal views (Pešić, 2006), latent mean comparisons revealed that female Serbian undergraduate students reported higher life satisfaction than their male peers (Jovanovic, 2016).

In Turkey, where is collectivist and also mainly Muslim, life priorities such as getting married, having children, chores or elderly care, have a major impact on women's decisions to work part-time, take a break from work, or complete withdraw from work (Tarhan, 2019). In Turkey, women are expected to be modesty, moderate, consent and accepting. Individual (academic and career) development and self-identity development are at a lower level in cultures where being modesty is valued (Kurman & Sriram, 2002). Therefore, women's academic and career ambitions are not high in Turkey, because they are not a way of self-actualization. The concept of *self* in collectivist cultures is regarded as less essential (Yetim, 2003, p. 301). Social networks are more important and the values within these networks stand out in such cultures. For women, acting in accordance with the norms in family-oriented relationships, being a good wife, being a devoted mother, and loyalty to relatives are more priority values in Turkey. Furthermore, "in cultures oriented toward collectivism the ingroup forms the central unit of society and binds individuals to its needs, goals, and fate" (Chun, Moos, & Cronkite, 2006, p. 31). Studies conducted in Turkey showed that female undergraduates have higher perceived social support scores and lower loneliness scores than males (Yılmaz, Yılmaz, & Karaca, 2008). Besides, it has been observed that there is significant positive correlation between perceived social support and psychological resilience (Turgut, 2015). Doğru (2018) also found that female university students' psychological well-being and perceived social support levels from the family were higher than that of males. In collectivistic cultures social support may help women to cope better with life adversities

(Ozdemir & Tas-Arslan, 2018) and has positive effects on life satisfaction (Bourque, Gold, Bonneville, & Béland, 2005). Social support can function as a protective factor and help women develop a mechanism to adapt to negative consequences (Evans, Steel, & DiLillo, 2013). Therefore, when these results are combined, despite faced with negative circumstances, the perceived social support from relatives can be explained by the fact that females are more resilient and these factors lead to higher perceptions of life satisfaction. It seems likely that life satisfaction for females is also conceptualized according to these cultural values and culture-related factors.

The present study was conducted with a Turkish sample. The findings confirmed a first-order one-factor solution in each of the group memberships. The findings showed that the configural invariance was achieved with regard to gender. This indicates that there is the fixed factor structure between the group memberships. That is, the same factor pattern is prevailing between the comparison groups. Metric invariance by gender was maintained. The fact that there are equivalent factor loadings across genders suggests that the latent construct measured by the life satisfaction according to gender membership attributes the identical meaning. Full scalar invariance could not be reached in any model across the gender. Furthermore, the fact that full scalar invariance was not supported indicates that it is not meaningful to match latent means by using whole items among the gender groups. This result shows that the latent mean comparison can only be made partially by freeing constrain the non-invariant item's parameters. Overall, the findings displayed that the latent means of the SWLS are partially comparable. Because the differences in latent mean cannot be attributed only to life satisfaction, but rather to participants' group memberships on item 4. Establishing at least partial scalar invariance is important in that it permits comparison of latent means between subgroups. In sum these results show that except for item 4, valid compares can be made over the remaining SWLS items. In the comparisons made on the invariant items, it can be accepted that gender group members attribute the same meaning to the items and interpret them similarly. On the other hand, it also shows that researchers should interpret with caution about comparing SWLS scores on the basis of gender.

The main limitation of this study includes recruiting the participants of these study with convenience sampling, this limits generalizability. In this study measurement invariance was conducted in only for gender groups. This limits the fulfillment of generalizability. It is recommended that future studies be conducted in a way that they can

examine various social demographic variables and all segments of the society more comprehensively. Future research is needed to assess prospective biases between the SWLS and group memberships. This cross-sectional study limits our understanding regarding life satisfaction. Longitudinal studies will allow us to understand with which factors the life satisfaction of individuals changes during their life periods.

In spite of the limitations, the current study has some implications First, measurement invariance is ensured, even if only partially, indicates that SWLS is a concise and valid measure of life satisfaction appropriate for use in diverse sub-samples of Turkey population. Second, the items revealing the non-invariance contain information on the conceptual and practical sources of difference between the group memberships. Finally, the results of this current study also give the opportunity to make inferences regard to gender for Turkish culture. Obviously, one's life satisfaction assessment is influenced by the socio-cultural context and demographic attributes. Understanding how life satisfaction is differentiated in the context of psychological well-being depending on gender and culture allows us to have a deeper conceptualization of this trait. Further, this study highlighted once again that valid inferences are possible only with well-established psychometric tools.

Ethical Committee Permission Information

Name of the board that carries out ethical assessment: Niğde Ömer Halisdemir University Social and Humanities Research Ethics Committee

The date and number of the ethical assessment decision: 28.01.2021-02/11

Author Contribution Statement

Devrim ERDEM: *Conceptualization, literature review, methodology, implementation, data analysis, translation review-writing and editing.*

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