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Psychometric Evaluation of the Adaptation of the Short Form Foreign Language Classroom Anxiety Scale

Kısa Form Yabancı Dil Sınıf Kaygısı Ölçeği Uyarlamasının Psikometrik Olarak İncelenmesi

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Abstract: Foreign Language Classroom Anxiety Scale (FLCAS) has been extensively used as a tool for the measurement of anxiety induced by foreign language learning. Numerous studies employed the scale in different contexts including different native languages, age groups, and national or international samples of varying sizes. FLCAS has also been a topic of interest in studies that investigated its psychometric characteristics, with varying results reported over the years regarding dimensionality, construct validity, and differential item functioning. The inconsistent results in the literature have recently directed efforts towards either developing a new scale or forming a short form to be utilized in language anxiety research. This study aims at contributing to the latter line of research through a psychometric evaluation of the short form of the scale (S-FLCAS), as used by Dewaele and MacIntyre (2014), through the implementation of its Turkish translation in a sample of university students in Turkey. S-FLCAS, which is formed by eight items from the original 33-item scale, was evaluated based on validity and reliability analyses. The results of this study lend support to the efficacious use of S-FLCAS in future studies as a psychometrically valid and reliable tool to measure anxiety caused by foreign language learning.

Keywords: Foreign language anxiety, Foreign language classroom anxiety scale, Short form, Validity, Reliability

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Öz: Yabancı Dil Sınıf Kaygısı Ölçeği (FLCAS), yabancı dil öğreniminin neden olduğu kaygıyı ölçmek için yaygın bir araç olarak kullanılmaktadır. Ölçek farklı ana dillere sahip çeşitli yaş grupları ve farklı boyutlardaki ulusal veya uluslararası örneklemleri içeren çok sayıda çalışmada kullanılmıştır. FLCAS ayrıca, boyutluluk, yapı geçerliği ve değişen madde fonksiyonu bakımından farklı sonuçların aktarıldığı çalışmalara psikometrik özellikleri bakımından da bir konu olmuştur. Literatürdeki tutarsız sonuçlar son zamanlarda yabancı dil kaygısı araştırmalarında kullanılmak üzere yeni ölçek geliştirme veya kısa form oluşturmaya yönelik çabaları ortaya çıkarmıştır. Bu çalışma, Dewaele ve MacIntyre (2014) tarafından kullanılan kısa form yabancı dil sınıf kaygı ölçeğinin (S-FLCAS) Türkçe çevirisinin üniversite öğrencileri örnekleminde uygulanarak psikometrik incelemesi üzerinden, ikinci olarak bahsedilen araştırma alanına katkı sunmayı hedeflemektedir. Orijinal 33 maddelik ölçekten alınan sekiz maddeden oluşan S-FLCAS, geçerlik ve güvenirlik analizlerine dayalı olarak değerlendirilmiştir. Bu çalışmanın sonuçları, yabancı dil öğreniminin neden olduğu kaygıyı ölçmek için psikometrik açıdan geçerli ve güvenilir bir araç olarak S-FLCAS'ın gelecekte yapılacak çalışmalarda etkili bir şekilde kullanılabileceğini desteklemektedir.

Anahtar Kelimeler: Yabancı dil kaygısı, Yabancı dil sınıf kaygısı ölçeği, Kısa form, Geçerlik, Güvenirlik

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1. INTRODUCTION

As a rather complex affective factor, anxiety is an integral part of foreign language learning process, and it has been one of the dominant variables in the research into the psychology of language learning. Horwitz et al. (1986) defined foreign language anxiety "as a distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning process" (p. 128). Such conception of foreign language anxiety views it under situation-specific anxiety, different from trait anxiety and state anxiety (Aydın, 2008).

The measurement of foreign language anxiety has largely depended on Foreign Language Classroom Anxiety Scale (FLCAS), developed by Horwitz et al. (1986). It has been extensively used in the literature to measure learners' anxiety while learning a foreign language. Although various other scales have been developed over the years attempting to operationalize more detailed types of language learning anxiety (Teimouri et al., 2019), FLCAS has been extensively employed with its original or translated forms in different contexts of varying sample characteristics. A recent search of the title of the scale has yielded 4,590 hits on Google Scholar, and Horwitz et al.'s (1986) seminal article has received more than 8,000 citations, which is indicative of the popularity of the scale in the literature.

The items on FLCAS are based on what Horwitz et al. (1986, p. 128) called as "conceptual building blocks" for the anxiety of foreign language learners; namely, "communication apprehension", "test anxiety", and "fear of negative evaluation". However, these aspects of foreign language anxiety have come to be accepted as the dimensions of foreign language anxiety, despite the fact that these were not offered to be empirical dimensions or factors in either Horwitz et al. (1986) or Horwitz (1986). Critical of the approach employed in some subsequent analyses investigating the scale's factor structure, Horwitz (2016) advocated that treating the aforementioned aspects as empirical factors is "misinterpreting" the original article, in which these were proposed as "analogies", rather than empirical factors, of foreign language anxiety (p. 72). In fact, in an attempt to re-clarify this confusion, Horwitz (2017, p. 31) stated that foreign language anxiety is "different" from these specific anxieties, thus underpinning a single-factor representation of the construct. The studies that attempted to uncover the underlying dimensions of FLCAS, however, have not been fully in line with this presupposition, as manifested by highly inconsistent results reported.

Previous studies have shown a distinct lack of consistency with respect to the factor structure of FLCAS, particularly evident from factor assignment of the items, factor labels used, and item elimination to refine the scale. Aida's (1994) study was one of the first studies that investigated the factor structure of FLCAS. Aida (1994) implemented the scale in a group of 96 first-year students learning Japanese, and, as a result of principal component analysis, proposed a four-factor structure labelled as (1) speech anxiety and fear of negative evaluation, (2) fear of failing the class, (3) comfortableness in speaking with Japanese people, and (4) negative attitudes towards Japanese class.

Cheng et al. (1999) used the Chinese translation of the scale in a sample of 423 students learning English. Their principal component analysis resulted in a two-factor structure: (1) low self-confidence in speaking English, and (2) general English classroom performance anxiety.

Perez-Paredes and Martinez-Sanchez (2000-2001) performed principal component analysis with varimax rotation for the data from 198 Spanish learners of English using the Spanish translation of the scale. They concluded with four factors and labelled them as: (1) communication apprehension, (2) anxiety about foreign language learning processes and situations, (3) comfortableness in using English inside and outside the classroom, and (4) negative attitudes toward learning English.

Matsuda and Gobel (2004) administered the Japanese translation of the scale with 252 Japanese students of English. The principal component analysis with varimax rotation yielded 2 factors labelled (1) general English classroom performance anxiety, and (2) low self-confidence in speaking English.

Liu and Jackson (2008) used the data from 547 Chinese learners of English, and conducted factor analysis with varimax rotation. They identified the three factors to be (1) fear of negative evaluation, (2) communication apprehension, and (3) text anxiety.

Toth (2008) reported on the validation of the Hungarian translation of the scale in a sample of 117 students learning English. They applied principal component analysis with direct oblimin rotation, which in the end resulted in a two-factor solution. These factors were labelled (1) communication apprehension, and (2) fear of inadequate performance in English classes.

Yashima et al. (2009) performed principal axis factor analysis with promax rotation on the data collected from 182 Japanese students learning English. They reported five factors based on the analysis: (1) lack of confidence in speaking English in class, (2) fear of speaking in public, (3) anxiety about not understanding everything taught, (4) helplessness and negative attitude toward the English class, and (5) comfortableness in speaking with native speakers of English.

Mak (2011) examined the scale properties among 313 Chinese students of English in Hong Kong through exploratory factor analysis with varimax rotation, which resulted in five factors: (1) speech anxiety and fear of negative evaluation, (2) uncomfortableness when speaking with native speakers, (3) negative attitudes towards the English class, (4) negative self-evaluation, and (5) fear of failing the class.

Arnaiz and Guillen (2012) aimed to examine the relationship between anxiety and demographic variables such as age, gender, level, and grade in a Spanish university. Through principal component analysis with promax rotation of the data from 216 learners of English, they extracted three factors labelled as: (1) communication apprehension, (2) evaluation anxiety, and (3) discomfort in using English inside and outside the classroom.

Park (2014) examined the factor structure of the scale among 217 Korean learners of English through exploratory factor analysis, and identified two factors as a result of confirmatory factor analysis with another sample of 244 students: (1) communication apprehension and understanding, and (2) communication apprehension and confidence.

Toyama and Yamazaki (2018) investigated the latent construct in the scale through exploratory and confirmatory factor analysis in a sample of Japanese students learning English. They identified two factors which they labelled (1) communication apprehension and (2) fear of failing.

In other scholarly work, FLCAS was investigated with respect to the characteristics of the items within the scale. Panayides and Walker (2013) aptly drew attention to the trade-off between validity and reliability over the scale. They pointed out that the high internal consistency among the items, as reported in many studies, is actually caused by the presence of semantically similar items on the scale along with a narrow range of content coverage, which increases reliability yet makes validity questionable. In fact, the same authors did another study (Walker & Panayides, 2014) under the framework of Rasch measurement approach to develop a shorter scale with a broader coverage of the construct. They concluded that reducing the redundancy between the items does not pose a threat to validity of the construct representation.

On the one hand, these inconsistent results could be viewed as somewhat expected since learning a particular foreign language may not exert the same anxiety as learning in a different context, considering the fact that the scale has been employed in different native language contexts. Theoretically the context of learning and background of learners may be contributory factors to different results reported so far (Horwitz, 2016; Horwitz, 2017; Park & French, 2013). On the other hand, one would expect some form of empirical evidence in order to be able to speak of a single latent construct for a secure use of a total score from the scale. These contradictory results seem to complicate the task of measuring anxiety as an overarching aspect of foreign language learning without major validity and reliability issues. Therefore, recent efforts were directed towards either developing new scales or using a short form of the original scale. This study aims to contribute to the latter line of research considering the advantages short-form scales provide (Koğar, 2020). To this end, the goal of the validation of the Turkish translation of the short form

foreign language classroom anxiety scale (S-FLCAS) is to contribute to research into foreign language anxiety as a unitary concept without major validity and reliability issues.

2. METHOD

The procedures for the psychometric assessment of S-FLCAS in a Turkish sample involved adapting the scale into Turkish, exploratory factor analysis based on data collected from Sample 1, and confirmatory factor analysis and reliability analysis in Sample 2.

2.1. Sample

The validation of S-FLCAS was implemented based on data collected from two different samples of university students. The data from Sample 1 (n=180) was used for the exploratory factor analysis. Sample 2 (n=274) was utilised to perform confirmatory factor analysis, validity and reliability analyses. Sample 1 consisted of both male (n=77) and female (n=103) students learning English in a university. The mean age of the students in this group was 21.5 years. Sample 2 consisted of male (n=119) and female (n=155) students. The mean age of this group was 19.3 years. The students in both groups were learning English either in their intensive preparatory school of the university or taking English as a must course in their departments. In either case, learning English was a requirement that would possibly cause anxiety. Given the number of items in S-FLCAS (n=8), the number of participants in both Sample 1 and Sample 2 should be considered satisfactory since it is more than 10 times the number of items in the scale (Nunnally, 1978).

2.2. Data Collection Instrument

S-FLCAS consisted of eight items from the original scale developed by Horwitz et al. (1986). The short form of the scale was first created by MacIntyre (1992) in an attempt to reduce the number of items to eliminate redundancy, and the scale was reduced to eight items based on corrected item-total correlations. MacIntyre (1992) found a very high correlation between FLCAS and S-FLCAS (r=.98, p<.01), which was interpreted as validity evidence for interchangeable use of FLCAS and S-FLCAS. MacIntyre (1992) also reported a high internal consistency reliability as measured by Cronbach's alpha (α=.93). The items in S-FLCAS are based on the same rating scale as FLCAS: 5-point Likert scale, ranging from "1 - Strongly Disagree" to "5 - Strongly Agree". The reduced version of the scale consisting of eight items from the original scale was used in several other studies. Dewaele & MacIntyre (2014, 2016) employed S-FLCAS to investigate the relationship between foreign language anxiety and foreign language enjoyment. Similarly, Uzun (2017) used S-FLCAS to explore foreign language anxiety and foreign language enjoyment among Turkish learners of English and reported a high internal consistency reliability (α=.90).

However, a comprehensive psychometric evaluation of S-FLCAS was only conducted in a recent paper by Botes et al. (2022) through validity and reliability analyses in a sample of language learners (n=370) with experience in learning different target languages. In their validation process, the authors conducted exploratory and confirmatory factor analysis utilizing maximum likelihood estimation, followed by invariance testing. The EFA results proposed a one-factor solution with factor loadings of the eight items between .476 and .840. The results of CFA further confirmed the proposed factor structure producing good fit to the data (CFI= .969, TLI= .955, RMSEA=.078, SRMR=.040). As for the reliability Botes et al. (2022) provided acceptable alpha (.891) and omega (.893) values. In addition, S-FLCAS was correlated with general anxiety positively (r=.322) and foreign language learning enjoyment negatively (r=–.264), both constituting convergent and divergent validity evidence for the scale. Finally, measurement invariance testing through multigroup CFA provided support for comparing foreign language anxiety through S-FLCAS across gender, age, educational level, and native language groups.

2.3. Adaptation Process

The process of adaptation started by obtaining permission from the original scale developer and having the study approved by the ethical committee. In the first stage, the scale items were subjected to forward-translation by the researcher. As the original scale (FLCAS) has been used in numerous studies to measure foreign language anxiety among Turkish students, it has already been translated into Turkish in some of these studies. To the best of our knowledge, the first translations of FLCAS into Turkish were conducted by Gülsün (1997) and Aydın (1999). These early versions of the Turkish translation of FLCAS were utilised for the adaptation of the scale in the initial stage of this study. It should be noted that a special emphasis was given in this study on maintaining the reverse wording of the two items as in the original English form in order to reduce acquiescence bias. The items translated into Turkish were then back-translated and verified with the help of three language instructors having good command of both languages. This form of the scale in Turkish was implemented in a group of 16 students. No issues were raised regarding the suitability of the translation, and the analysis of this pilot data yielded satisfactory preliminary internal consistency reliability (α=.893). The finalized form of the scale in Turkish was used in the subsequent stages of the study as presented in the following sections. Two reversely coded items (*Item 4* and *Item 5*) were properly recoded before the data analysis.

2.4. Data Analysis

2.4.1. Exploratory Factor Analysis

The role of exploratory factor analysis is to provide evidence regarding the construct validity of a scale based on statistical relationships among the responses to a set of items, which must be evaluated in line with the theory (Finch & French, 2019). EFA is a method to opt when there is a lack of empirical evidence as to the factor structure of a construct (Bandolos, 2018). Although S-FLCAS was proposed as a one-factor scale in Botes et al. (2022), we still deemed it necessary to conduct an EFA first, rather than starting with the verification of its structure through confirmatory factor analysis, to explore any differences since the scale is adapted into another language, as suggested by Orçan (2018). There are various decisions inherent to conducting exploratory factor analysis such as investigating the factorability of the data, factor extraction and rotation, determining the number of factors, and inspection of factor loadings and cross-loadings.

The suitability of the data for factor analysis was assessed through Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. KMO value is expected to be over .60, and Bartlett's test of sphericity should be significant to be indicative of the presence of factors in the data (Huck, 2012). KMO value was found to be .898, well above the recommended value of .60. Also, Bartlett's test yielded a statistically significant result (X^2=534.33, df=28, p< 0.001). The results supported the case for the factorability of the data. In exploratory factor analysis, various methods can be used to extract factors. One important consideration in choosing the extraction method is distributional property of the data. Principal axis factoring is generally advised when the data does not hold multivariate normality assumption whereas maximum likelihood can provide useful information if data is normally distributed (Fabrigar et al., 1999). Preliminary data analysis included checking skewness and kurtosis values for univariate normality of the item responses. Also, multivariate normality was checked through Mardia's test results obtained with *MVN package* (Korkmaz et al., 2015). Skewness and kurtosis values ranged from -.54 to .29, and -1.25 to -.40, respectively. Also, a statistically significant finding was obtained as a result of Mardia's multivariate normality test based on skewness and kurtosis, as an indication of multivariate non-normality of the data. Principal axis factoring was thus selected as factor extraction method. Factor rotation helps to determine the optimal solution when factors are extracted from the data in order to ease the interpretation of the results (Finch & French, 2019). The decision to choose either a type of orthogonal or oblique rotation depends on the assumption of whether factors are allowed to be correlated or not (Tabachnick & Fidell, 2013). In this study we assumed a correlation between the factors if more than one emerged in the factor analysis. Therefore, direct oblimin, a type of oblique rotation, could be utilized if the number of factors is deemed to be more than one. Determining the number of factors to extract is also helped by several

available methods. K1 criterion (eigenvalue>1), scree plot, and parallel analysis are among common methods used to determine the number of factors (Bandolos, 2018). Parallel analysis compares the eigenvalues in the data against a randomly generated dataset. The number of factors to extract can then be determined based on the number of higher eigenvalues in the actual dataset than in the random data. Factor loadings represent the relationship between the items and their respective factors. Common thresholds for minimum acceptable factor loadings are .32 (Tabachnick & Fidell, 2013) or .40 (Stevens, 2009), which depends on the nature of the construct and the expected relationship between an observed variable and its respective factor. In this study, an item loading of at least .40 was expected for a particular item's assignment into a factor. Exploratory factor analysis was performed using *JASP* (JASP Team, 2022).

2.4.2. Confirmatory Factor Analysis

Confirmatory factor analysis is used in the second step of data analysis to test the factor solution for S-FLCAS obtained in EFA of this study, and it is compared to the model proposed by Botes et al. (2022). As in EFA, CFA requires decisions based on the theoretical background of the construct being measured and properties of the dataset. These include which estimation method to use, how to evaluate the model fit, and dealing with modification indices if prompted in the analysis.

The data utilized to perform CFA was examined for univariate and multivariate normality through skewness and kurtosis statistics. Skewness and kurtosis values of item responses ranged from -.33 to .36 and -1.27 to -.55 respectively. Mardia's multivariate normality test based on skewness and kurtosis yielded a statistically significant finding, indicating deviation from the multivariate normality. As there were no missing data, model estimation was performed using Weighted Least Squares (WLS) estimation. WLS was chosen as the estimation method since it can be used with data that is assumed to be ordinal, such as with Likert-type scales (Flora & Curran, 2004). Also, WLS is one of the preferred methods in cases when the data are not normally distributed as it was designed for providing accurate parameter estimates accounting for non-normality in the data (Bandolos, 2018). CFA model was fitted in *lavaan package* (Rosseel, 2012) in *R software* (R Core Team, 2022). We made use of various fit indices to assess the fit of this model, including RMSEA, SRMR, CFI, and TLI. These fit indices were evaluated in line with guidelines recommended by Hu and Bentler (1999). RMSEA below .06, SRMR below .08, CFI and TLI over .95 were expected for the model to be evaluated as good fit.

2.4.3. Further Evidence for Validity and Reliability Analysis

For further evidence regarding the validity of S-FLCAS, average variance extracted (AVE) was calculated as an estimate of convergent validity. AVE gives information about convergent validity based on the magnitude of variance that the indicators in the model can account for (Fornell & Larcker, 1981). A value of .5 or higher indicates that the construct being measured holds adequate convergent validity since the majority of the variance in the items is explained by the underlying construct, whereas values less than .5 are interpreted as an indication of more error variance remaining than the variance accounted for by the factor (Fornell & Larcker, 1981; Hair et al., 2014). Finally, the relationship between students' anxiety scores in S-FLCAS and achievement scores was examined so as to yield further insight into the validity of the scale. Achievement is operationalized as students' scores in (1) a midterm exam which consisted of listening, grammar, vocabulary, reading and writing sections for the covered content in the program, and (2) spoken assessment of communication in a familiar topic according to the program, both prepared by the testing office of the department and conducted by instructors three weeks after the implementation of the scale in the second sample.

The internal consistency of the items was evaluated with regard to Cronbach's alpha, McDonald's omega, and item statistics. Cronbach's alpha is used as an estimate of internal consistency reliability in a scale. A higher value than .7 is recommended for scales for psychological constructs (Kline, 1999). Coefficient omega, on the other hand, is suggested as an alternative since it does not require the same assumptions as

Cronbach's alpha, yielding more realistic information (Dunn et al., 2014). For the internal consistency of the scale items, corrected item-total correlations were examined, and an independent samples t-test was conducted for the lower and upper groups.

2.5. Ethical approval

The author of this study complied with all the rules specified within "Higher Education Institutions Scientific Research and Publication Ethics Regulations". None of the actions stated in the second part of the regulations under the title "Actions Against Scientific Research and Publications Ethics" were conducted.

Ethics Committee Approval Information

Name of the committee: Kütahya Dumlupınar University Social and Humanities Research and Publication Ethics Committee

Data of ethics committee approval: 29.09.2021

Ethics committee approval statement issue number: 2021/07

3. RESULTS

3.1. Exploratory Factor Analysis

In the preliminary analysis, KMO value was found to be .898, and Bartlett's test yielded a statistically significant result (X^2=534.33, df=28, p<.001) as a confirmation of the factorability of the dataset. The correlation between the items ranged from .284 to .626. These small to medium correlations indicated the lack of collinearity. EFA was thus performed using principal axis factoring as the estimation method. Only one factor with an eigenvalue above one was found. Parallel analysis suggested one-factor solution to the data based on the comparison of the dataset to a randomly simulated one (*Figure 1*). The number of factors was then manually set to one, which yielded satisfactory results with respect to item loadings. Rotation was not needed since the scale was deemed to be a single-factor structure.

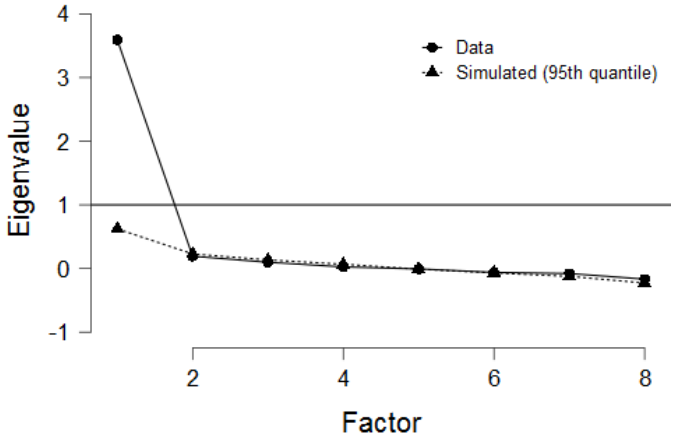

Figure 1. Scree plot

The factor loadings of all the items were above .40 threshold, ranging from .479 to .789, as presented in Table 1. *Item 4* and *Item 5* seem to have slightly lower factor loadings compared to the others. This might be related to their being reversely coded items and retained the same in our translation to reduce acquiescence bias. In fact, a similar finding was detected in Botes et al. (2022) with respect to *Item 4*, the only negated item, with a factor loading of .476. However, they were still found to have an acceptable factor loading of over .40.

Table 1.
Factor Loadings in Exploratory Factor Analysis

Items	Factor Loadings	Uniqueness
Item 1	.695	.517
Item 2	.608	.631
Item 3	.747	.441
Item 4	.479	.771
Item 5	.524	.726
Item 6	.780	.391
Item 7	.789	.377
Item 8	.669	.552

This one-factor solution of the data explained 44.9% of the variance. These findings obtained through EFA could be interpreted as an indication of the unidimensional structure of S-FLCAS with its Turkish translation and need to be verified through CFA in the second sample.

3.2. Confirmatory Factor Analysis

One-factor solution of the Turkish adaptation of eight-item S-FLCAS was examined via CFA to verify its structure with data gathered from Sample 2. Correlation between the variables ranged from .28 to .69. In line with the preliminary data analysis results regarding deviation from multivariate normality of the dataset, the CFA model was fit via WLS estimation method. The test of one-factor model for S-FLCAS as proposed by Botes et al. (2022) and obtained the same in its Turkish form in the EFA of this study demonstrated good fit, albeit with a significant $X^2(20)=31.984$ (p= .043). Model fit indices (CFI= .954, TLI= .935, RMSEA=.047 [90% CI=0.008, 0.076], SRMR=.041) were found to be within the recommended criteria (Hu & Bentler, 1999) with the exception of a TLI below .95 cut-off. These results are indicative of an adequate measurement of foreign language anxiety through the Turkish version of S-FLCAS. The standardized factor loadings of the items are presented in Figure 2. The factor loadings of all the items were significant, ranging from .59 (*Item 2*) to .84 (*Item 3*).

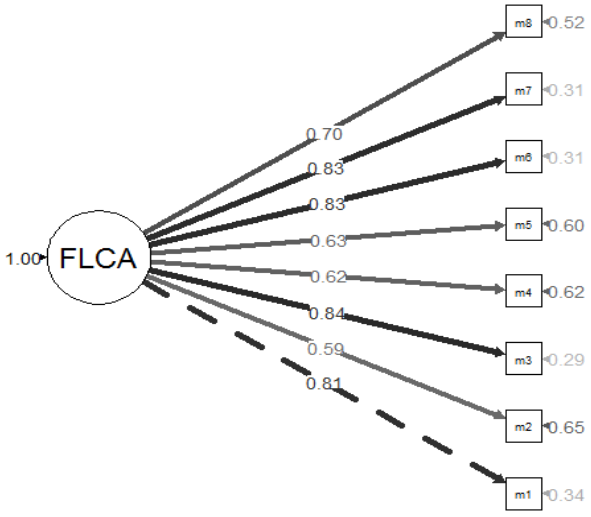

Figure 2. CFA model of S-FLCAS with standardized estimates

Based on the results of one-factor CFA model, AVE value was calculated to be .545, which indicates an adequate support for convergent validity of S-FLCAS. For further evidence regarding the use of the scale, a correlation analysis was performed between total scores of S-FLCAS and achievement scores of the students. Pearson's product moment correlation analysis indicated that foreign language anxiety was

negatively associated with both midterm achievement (r=-.32 [95% CI: -.43, -.21], p< .001) and speaking performance (r=-.40 [95% CI: -.49, -.29], p< .001). The negative association found between foreign language anxiety and achievement provides additional support for the validity of the scores obtained through S-FLCAS.

3.3. Reliability Analysis

Cronbach's alpha and McDonald's omega coefficients were used to assess the internal consistency of S-FLCAS, which indicated a unidimensional structure through EFA and CFA. Coefficients alpha and omega were calculated to be .894 and .897, respectively, indicating a good internal consistency between the items measuring the same construct. Table 2 presents item reliability statistics along with t-test results based on comparison of 27% lower and upper groups.

Table 2.
Reliability Statistics

Items	Corrected Item-Total Correlation	If item dropped		Mean	Std. Dev.	Lower-Upper Group t
		Alpha	Omega			
Item 1	.717	.876	.881	2.690	1.288	-21.681*
Item 2	.541	.892	.896	2.588	1.220	-11.560*
Item 3	.756	.872	.875	2.942	1.336	-23.913*
Item 4	.558	.891	.895	2.931	1.255	-13.595*
Item 5	.595	.887	.891	2.697	1.109	-12.759*
Item 6	.789	.869	.874	2.639	1.212	-21.212*
Item 7	.763	.871	.876	3.398	1.286	-21.904*
Item 8	.662	.881	.886	2.672	1.229	-17.016*

*p<.001

Corrected item-total correlations range from .541 (*Item 2*) to .789 (*Item 6*). This indicates all the items contribute to the overall scale. Removal of any of the items would not result in an increase in either the overall alpha or omega coefficients, meaning that none of the items is detrimental to the inter-item reliability. Comparison of lower and upper groups based on their scores on each item yielded statistically significant differences, indicating that all the items discriminate well between those with high and low anxiety in terms of foreign language learning.

4. DISCUSSION and CONCLUSION

This study aimed to psychometrically evaluate the Turkish translation of the short form of FLCAS. The Turkish form of S-FLCAS was tested in terms of construct validity through exploratory and confirmatory factor analysis in two student samples in a higher education context. The scale was also examined with respect to its internal consistency reliability.

S-FLCAS was revealed to have an underlying unidimensional structure in its Turkish form through exploratory factor analysis. All the items had acceptable factor loadings and this single-factor structure accounted for 44.9% of the whole variance. Confirmatory factor analysis further verified the construct validity of the scale, with satisfactory model fit indices. This single-factor solution is consistent with Botes et al. (2022), who reported a similar unidimensional model in their exhaustive validation of S-FLCAS. However, our analysis of CFA did not require covarying the two reversely coded items to improve the model fit as was needed in Botes et al. (2022), which might perhaps be a function of the different language used.

Beyond its factor structure, we report promising validity evidence for S-FLCAS since foreign language anxiety as measured by S-FLCAS in its Turkish form was correlated with achievement scores in a midterm exam (r=-.32), and speaking performance (r=-.40). This finding is in close line with the results of two recent meta-analyses. First, Teimouri et al.'s (2019) meta-analysis of empirical results from 97 primary studies

yielded a negative relationship (r=-.36) between L2 anxiety and achievement. Secondly, Botes et al.'s (2020) meta-analysis addressed the relationship between language achievement and foreign language anxiety as measured by specifically FLCAS in 67 eligible studies. Similar to Teimouri et al. (2019), Botes et al. (2020) found that foreign language anxiety is negatively correlated with general academic achievement (r=-.39), reading academic achievement (r=-.34), writing academic achievement (r=-.43), listening academic achievement (r=-.52), and speaking academic achievement (r=-.25). These results show strong support to the validity evidence of S-FLCAS since it can capture a somewhat expected relationship as reported in numerous studies in the literature.

Our findings regarding the internal consistency of S-FLCAS indicated a good level of reliability as measured by coefficients alpha (.894) and omega (.897). These findings are very similar to Botes et al. (2022), who found comparable results (α=.891, ω=.893). Considering the significant issue related to the trade-off between validity and reliability in psychological constructs (Panayides, 2013; Panayides & Walker, 2013), these coefficients do not seem to be too high to risk validity.

The findings of this study are not without some limitations, and we recommend several points to consider while evaluating our results. The first point relates to the possible reduction of content coverage due to the elimination of the majority of the items in the original scale. However, it should be noted that Panayides and Walker (2013) had already stressed that the original scale is dominated by semantically similar items, thereby limiting its content coverage. In fact, considering the number of items not functioning as intended and thus removed to refine the scale in previous studies, this should not be taken as a daunting issue if measuring foreign language anxiety as a unitary construct is deemed by researchers. Using a short form measure in this sense offers considerable practicality, particularly when foreign language anxiety is to be examined along with other psychological variables, with a decreased number of items to implement. In addition, the results may be subject to the sample characteristics employed in this study. If foreign language anxiety is actually to be regarded as population dependent and thus varies as an artefact of culture or learning context (Horwitz, 2016; Horwitz, 2017; Park & French, 2013), it would be interesting to investigate how the scale functions in contexts different from the one in this study.

As a conclusion, the adapted form of S-FLCAS in this study yielded promising results with respect to validity and reliability, which makes its use efficacious considering its clear unidimensional structure and the practicality provided. Future studies can search for more validity evidence for the use of S-FLCAS as a measure of foreign language anxiety as a distinct concept. These can include testing whether S-FLCAS demonstrates measurement invariance, which is a prerequisite for conducting group comparisons (Vandenberg & Lance, 2000), possibly in larger samples. More in-depth analyses regarding the scale such as differential item functioning and rating scale analyses could also afford valuable insights into the functioning of the items (Sen & Gocen, 2020). We contend that S-FLCAS, with its current form validated in this study, can be used to measure foreign language anxiety without major validity and reliability issues.

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APPENDIX

Appendix-1. Short Form Foreign Language Classroom Anxiety Scale (S-FLCAS) Items.

1- Even if I am well prepared for FL class, I feel anxious about it.
2- I always feel that the other students speak the FL better than I do.
3- I can feel my heart pounding when I'm going to be called on in FL class.
4- I don't worry about making mistakes in FL class.
5- I feel confident when I speak in FL class.
6- I get nervous and confused when I am speaking in my FL class.
7- I start to panic when I have to speak without preparation in FL class.
8- It embarrasses me to volunteer answers in my FL class.

Appendix-2. Kısa Form Yabancı Dil Sınıf Kaygısı Ölçeği Maddeleri

1- Önceden iyi hazırlanmış olsam bile derste heyecanlanıyorum.
2- Diğer öğrencilerin her zaman benden daha iyi İngilizce konuştuğunu düşünüyorum.
3- İngilizce dersinde sıra bana geldiği zaman kalbimin hızlı hızlı attığını hissediyorum.
4- İngilizce dersinde hata yapmak beni endişelendirmez.
5- İngilizce dersinde konuştuğum zaman kendime güvenirim.
6- İngilizce dersinde konuştuğum zaman hem tedirgin oluyorum hem de kafam karışıyor.
7- İngilizce dersinde hazırlıksız konuşmak zorunda kaldığımda paniğe kapılıyorum.
8- İngilizce dersinde sorulan sorulara gönüllü olarak cevap vermeye çekiniyorum.

GENİŞLETİLMİŞ ÖZET

1. GİRİŞ

Oldukça karmaşık bir duyuşsal faktör olan kaygı, yabancı dil öğrenme sürecinin ayrılmaz bir parçasıdır ve dil öğrenme psikolojisi araştırmalarında baskın değişkenlerden biri olmuştur. Yabancı dil kaygısının belirlenmesinde büyük ölçüde Horwitz vd. (1986) tarafından geliştirilen Yabancı Dil Sınıf Kaygısı Ölçeği (FLCAS) kullanılmıştır. Bu ölçek, yabancı dil öğrenen öğrencilerin kaygılarını ölçmek için literatürde yaygın olarak kullanılmaktadır.

FLCAS'deki maddeler, Horwitz vd. (1986, s. 128) tarafından yabancı dil öğrenme kaygısı bağlamında "kavramsal yapı taşları" olarak nitelendirdikleri "iletişim kaygısı", "sınav kaygısı" ve "olumsuz değerlendirilme korkusu"na dayanmaktadır. Ancak, yabancı dil kaygısının bu yönleri, Horwitz vd. (1986) ya da Horwitz (1986) tarafından ampirik birer faktör olarak sunulmamış olmalarına rağmen, yabancı dil kaygısının alt boyutları olarak kabul görmüştür. Önceki çalışmalara bakıldığında, ölçeğin faktör yapısına ilişkin belirgin bir tutarlılığın olmadığı görülmektedir. Bu durum özellikle maddelerin faktörlere atanması, kullanılan faktör isimleri ve ölçeği yeniden düzenlemek için yapılan madde eleme işlemlerinde ortaya çıkmaktadır.

Ölçeğin çok sayıda farklı anadil bağlamında kullanıldığı göz önüne bulundurulduğunda birbirinden farklı olarak elde edilen sonuçlar bir anlamda beklendik sonuçlar olarak görülebilir. Nitekim teorik anlamda, öğrenmenin gerçekleştiği bağlam ve öğrenenlerin kendi deneyimleri elde edilen farklı sonuçlara sebep olarak gösterilebilir (Horwitz, 2016; Horwitz, 2017; Park & French, 2013). Ancak, ölçekten alınan toplam puanın güvenilir bir şekilde kullanılabilmesi için arka planda tek bir örtük yapıya işaret eden ampirik kanıtların bulunması gerekmektedir. Bu anlamda, elde edilen farklı sonuçlar genel anlamda yabancı dil öğrenme kaygısını geçerlik ve güvenirlik sorunları olmaksızın ölçmeyi zorlaştırmaktadır.

Bu nedenle, son zamanlarda yeni ölçeklerin geliştirilmesi ya da orijinal ölçeğin kısa formunun kullanılması yönünde bir yönelimden söz edilebilir. Bu bağlamda çalışmanın amacı, yabancı dil öğrenme kaygısını bütünleşik bir kavram olarak ölçme amacına hizmet edecek şekilde geliştirilen FLCAS kısa formunun Türkçe uyarlamasını yaparak geçerlik ve güvenirlik bakımından incelemektir.

2. YÖNTEM

FLCAS kısa formunun psikometrik olarak incelenmesi ölçeğin uyarlanması, açımlayıcı ve doğrulayıcı faktör analizi işlemleri ve geçerlik ve güvenirlik bakımından ek kanıtların sunulması yoluyla gerçekleştirilmiştir. FLCAS kısa formu ilk olarak MacIntyre (1992) tarafından 33 maddelik orijinal ölçekten, düzeltilmiş madde-toplam korelasyonları temelinde belirlenen sekiz madde ile oluşturulmuştur. Sekiz maddenin oluşturduğu kısa form, birtakım araştırmalarda kullanılmasına rağmen (Dewaele & MacIntyre, 2014; Dewaele & MacIntyre, 2016; Uzun, 2017), psikometrik anlamda kapsamlı bir inceleme Botes vd. (2022) tarafından gerçekleştirilmiştir.

Bu çalışmada FLCAS kısa form ölçeğinin Türkçe uyarlaması yüksek öğrenim düzeyinde dil öğrenimi sürecinde olan öğrenciler arasında yapılmıştır. Türkçe literatürde de yaygın bir şekilde kullanılmış olan orijinal ölçeğin maddeleri önceki çevirilerden de yararlanılarak önce hedef dile, daha sonra tekrar İngilizceye çevrilerek ve uzman görüşleri ve ön uygulama işlemlerinden yararlanılarak gerçekleştirilmiştir. Türkçeye uyarlanan ölçek kullanılarak toplanan veriler üzerinde sırasıyla açımlayıcı faktör analizi ve doğrulayıcı faktör analizi gerçekleştirilmiş ve geçerlik ve güvenirlik bakımından kanıtlar sunulmuştur.

3. BULGULAR, TARTIŞMA VE SONUÇ

İlk olarak 180 öğrenciden oluşan bir örneklemden elde edilen veriler üzerinde yapılan açımlayıcı faktör analizi ile tek boyutlu bir yapı elde edilmiş olup maddelerin faktör yüklerinin yeterli düzeyde olduğu görülmüştür. İkinci örneklem olarak 274 öğrenciden toplanan veriler üzerinde ise doğrulayıcı faktör analizi gerçekleştirilmiştir. Bu aşamada, tek boyutlu yapının doğrulandığı ve model uyum indekslerinin yeterli

olduğu görülmüştür. Ayrıca, ölçekten elde edilen verilerin iç tutarlık (α=.894, ω=.897) ve %27'lik alt ve üst gruplar arasında ayırt edicilik bakımından istatistiksel olarak yeterli kanıt oluşturduğu belirlenmiştir. Bu kapsamda ölçek ile toplanan verilerin öğrencilerin başarı puanlarıyla arasındaki korelasyona ilişkin olarak son yıllarda yapılan meta-analiz çalışmalarının sonuçlarına yakın sonuçlar elde edilmiştir.

Açımlayıcı ve doğrulayıcı faktör analizinde Botes vd. (2022) tarafından sunulan sonuçlar ile oldukça tutarlı sonuçlar elde edilmiştir. Ayrıca Teimouri vd. (2019) ve Botes vd. (2020) gibi meta-analizlerde yabancı dil kaygısı ve başarı arasındaki ilişkiye yönelik sonuçlarla oldukça benzer sonuçların elde edilmesinin de kısa form ölçeğin geçerlik ve güvenirlik bakımından yeterliğine yönelik kanıt oluşturduğu düşünülmektedir.

FLCAS kısa formunun Türkçe uyarlamasına yönelik olarak yüksek öğrenim düzeyinde öğrencilerden toplanan veriler ile gerçekleştirilen analizler neticesinde ölçeğin yabancı dil öğrenme kaygısını tek boyutlu bir yapı olarak geçerlik ve güvenirlik bakımından sorunsuz şekilde ölçmeye yönelik kullanılabileceği sonucuna varılmıştır.

Elde edilen bu sonuçların değerlendirilmesinde ölçeğin orijinal halindeki 33 maddeden sekiz maddeye indirgenmiş olması kapsam geçerliği sorununu gündeme getirebilir. Ancak 33 maddeden oluşan orijinal ölçeğin semantik anlamda birbirine benzer maddelerden oluştuğu ve hali hazırda kapsam geçerliği bakımından zaten sorunlu olabileceğine yönelik tartışmalar (Panayides & Walker, 2013) dikkate alınmalıdır. Bu anlamda kısa form ölçek kullanımının getireceği kullanışlılık düşünüldüğünde araştırmalarda kaygının yanı sıra yabancı dil öğreniminin diğer duyuşsal değişkenleri açısından birlikte veri toplanması pratik olarak sağlanabilir. Sonraki araştırmalarda ise ölçme değişmezliği, değişen madde fonksiyonu gibi analizlerin yapılması ve ölçeğin geçerliğine yönelik ek kanıtların toplanması önerilebilir.

ETHICAL APPROVAL

The author(s) of this study complied with all the rules specified within "Higher Education Institutions Scientific Research and Publication Ethics Regulations". None of the actions stated in the second part of the regulations under the title "Actions Against Scientific Research and Publications Ethics" were conducted.

Ethics Committee Approval Information

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AUTHOR CONTRIBUTION

This is a single-author study.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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