

## Developing a Scale to Measure Syrian Students' Attitude Towards Turkish (SSATT) and Examining Its Psychometric Properties

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### Abstract

The aim of the present study was to develop a valid and reliable measurement tool for identifying the attitudes towards Turkish of Syrian university students learning Turkish as a foreign language. The study group was comprised of a total of 489 individuals with 285 for exploratory factor analysis (EFA) and 204 for confirmatory factor analysis (CFA). Student opinions, relevant literature and expert opinions were utilized when developing the scale items thus putting forth a 53 item form. Eight items were excluded following the pilot application on first form for linguistic clarity thus conducting EFA with 45 items. A total of 20 items were excluded as a result of the EFA thus obtaining a 25 item, three factor form that explains 49.42 % of the variance. CFA was conducted with a new study group for examining the model fit of the obtained three factor structure and the results of CFA ( $X^2/sd= 2,46$ ; RMSEA= .085; CFI= .92; NNFI= .91; SRMR= .085; GFI: .79) set forth that the model fit of the scale is at a sufficient level. The dimension including items on the purpose and function for the use of Turkish by Syrian students was named as "Purpose/function"; items related with the daily use of Turkish were named as "Daily life" whereas the dimension including items including a negative approach towards Turkish was entitled as "Dysfunctional approach". Reliability analyses were carried out for the scale as a result of which the Cronbach's Alfa and Spearman-Brown coefficients were obtained as (.90) and (.86) for the "purpose/function", (.83) and (.82) for the "daily life", (.76) and (.74) for the "dysfunctional approach". The findings of the present study indicate that SSATT is a valid and reliable tool in measuring the attitudes of Syrian university students towards Turkish.

**Keywords:** Turkish, Attitude, Syrian University Students, Scale

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## INTRODUCTION

Over 6.5 million Syrians were forced to emigrate from their country as a result of the internal conflicts that ensued in Syria in 2011 (UNHCR, 2019). According to the Directorate General of Migration Management data (GİGM, 2021) 3.655.067 Syrians are under temporary protection in Turkey as of 17.02.2021. Of the Syrian refugees under temporary protection, 492.430 (280.845 male, 211.585 female) are in the 19-24 age interval (GİGM, 2021) or in other words they are at an age suited for higher education.

Based on the Higher Education Information Management System data (YÖK, 2021) while 1405 male and 380 female Syrians were registered as university students during the 2013-2014 academic year equaling a total of 1785 Syrian university students, this number has increased up to a total of 37236 registered Syrian university students during the 2019-2020 academic year with 23823 male and 13413 female students. As can be seen from the aforementioned data, it is possible to say that the number of registered Syrian university students has increased dramatically in Turkey.

The concept of attitude as the tendency to behave either positively or negatively towards a certain social object can be defined as the state of readiness for behavior positioned before the behaviors themselves thus indicating a stance taken towards the objects they are in relation with (Bilgin, 2014). "Since knowledge of the attitude of an individual towards a certain object or stimulus will help us in predicting the behavior of that individual towards the related stimulus, this is very important in practice." (Üstüner, 2006). Allport defines attitude as, "a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon an individual's response to all objects and situations with which it is related" (Cited by Bilgin, 2014). It can be observed based on the aforementioned definitions and explanations that attitude is a concept positioned prior to behavior which reflects the positive/negative stance of the individual towards a social object.

Previous research findings in literature (Ellis 1994; Mitchell & Myles, 1998'den Cited by: Saracaloğlu & Varol, 2007; Selçuk, 1997; Lafaye & Tsuda, 2003; Kazazoğlu, 2011; Altunay, 2004) have put forth that the attitudes of students towards foreign language makes an impact on their level of achievement in learning that foreign language. Similarly, Karatay and Kartallıoğlu (2016) report that knowledge of the attitudes of students and organizing the education process accordingly will improve the quality of education and ensure that the process will be concluded successfully.

Several studies in literature have developed a scale on the attitude towards lessons in Turkish as the native language (Demirel, 2006; Kapar Kuvanç, 2008; Bölükbaş, 2010; Topçuoğlu Ünal & Köse, 2014; Aytan, 2016); on the attitude of learning Turkish as a foreign language (Yıldız & Gürlek, 2019) and on the attitude towards Turkish of Turks outside the country (Oyarkılıçgil Ateş, 2001; Karatay & Kartallıoğlu, 2012). Moreover, Şengül (2016) conducted a study in which a scale was developed for identifying the attitudes of students from eight different countries on Turkish and Turkish preparation courses. It was concluded when the related studies in literature were examined within the scope of the present study that there are no studies focusing on the attitudes of Syrian students towards Turkish. For this purpose, it was decided that there is a requirement for developing a scale for identifying the attitudes of Syrian university students towards Turkish.

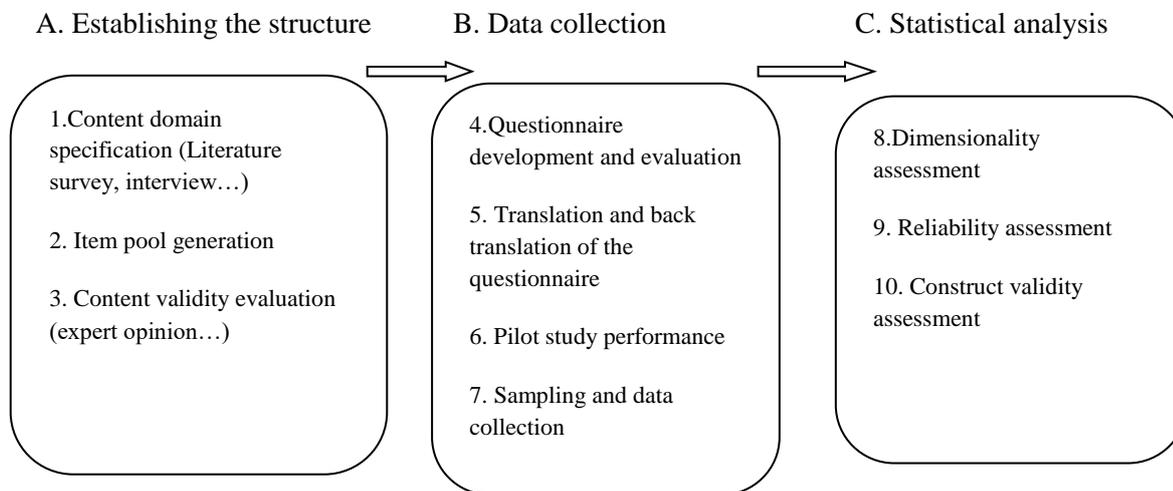
The aim of the present study was to develop a scale for identifying the attitudes towards Turkish of Syrian students learning Turkish as a foreign language.

## METHOD

### Study Model

This is a mixed model study since the qualitative and quantitative data collection and analysis processes were conducted simultaneously. Mixed model studies are those that incorporate qualitative

and quantitative research elements (Creswell, 2017). The interviews conducted comprise the qualitative aspect of the present study; whereas the implementation of the scale along with the statistical studies carried out within the scope of validity and reliability studies make up the quantitative aspect. The guideline suggested by Slavec and Drnovšek (2012) for developing a measurement tool was utilized in the present study that aims to develop a valid and reliable tool for measuring the attitudes of Syrian students towards Turkish (Figure 1).



**Figure 1: Three stages and ten steps of scale development (Slavec & Drnovšek, 2012)**

As can be seen in Figure 1, the present study is based on a model comprised of three stages and 10 sub-steps. The first step of this model consists of the literature survey for establishing the theoretical structure of the scale, item pool generation and content validity evaluation studies; while the second step includes the questionnaire development and evaluation, pilot study performance and data collection stage from a sample group with high representation strength. The final step consists of examination factor structure (exploratory factor analysis in this study); reliability analyses (Cronbach's Alfa, split half method in this study) and construct validity (confirmatory factor analysis in this study) studies.

### **Setting up the Theoretical Structure**

#### **Development stage of scale items**

The first step in the development stage for SSATT items was conducting a literature survey. The structure and items of measurement tools developed both inside and outside the country with the aim of measuring the attitudes towards learning a new language were examined in detail as part of this process. In addition, studies on the language education of Syrians in Turkey were also examined within the framework of the literature survey after which the findings of these studies were utilized during the development stage of the scale items. Secondly, face-to-face interviews were conducted with nine (six female, three male) Syrian students continuing their higher education in Turkey as part of the scale item development stage. During these interviews, questions were directed on the difficulties of continuing higher education in Turkey, the problems encountered in relation with the language, what learning Turkish means for them and their Turkish language practices in daily life. The responses of the students to these questions were examined and coded by two researchers separately after which they came together to review these codes and try to develop the scale items based on their common declarations. Finally, face-to-face interviews were conducted with three faculty members teaching a course at the Turkish Learning Center aimed at Syrian students during which the faculty members were asked to share their observations on teaching Turkish to Syrians in addition to contribute to the scale directly with item suggestions. An item pool comprised of 79 items was prepared during the first stage following the literature survey conducted for developing the scale items as well as interviews with Syrian students and faculty members. Finally, the item pool was reexamined

by the researchers within this scope as a result of which a 66 item test battery was obtained by excluding unrelated and repeated measurement items.

### **Content validity -> Expert opinions**

Expert opinions were obtained in order to identify the level at which the 66 item scale battery developed as a result of the scale item development process measures the attitudes of Syrians towards learning Turkish and the extent to which the items reflect the related content. Opinions were obtained from a total of four academics within this scope two of whom were from the language education (with one expert on teaching Turkish to foreigners), one from psychological guidance and counseling field and one from assessment and evaluation field. The academics working in the field of language education were asked to evaluate the content of the scale items, the academic working in the field of psychological guidance and counseling was asked to evaluate the assessment of attitude measurement whereas the expert working in the field of assessment and evaluation was asked to evaluate the accordance of the scale items with the rules of assessment. A three level assessment scale was identified for each item as appropriate-inappropriate-partially appropriate and opinions were requested for the items identified as partially appropriate in the form of “what would be your suggestions for the transformation of the items?”. It was concluded based on the expert opinions to exclude 13 items from the 66 item pool and to revise 16 items thus obtaining a 53 item pool.

### **Language Studies**

Feedback and suggestions were requested from two academics working in the field of Turkish language education for the assessment of the clarity of the 53 item scale pre-trial form and its spelling. Small revisions were made in three questions based on the feedback from the academics.

### **Pilot Study**

A pilot study was conducted for testing whether the expressions in the scale item pool will be understood by the study group or not. The pilot study included 18 Syrian students continuing their education at Hatay Mustafa Kemal University classroom teaching department during which they were asked to score their level of understanding each expression with a four level grading in the form of “I understood very well-I understood-I did not understand-I did not understand at all”. Eight items scored as “I did not understand” and “I did not understand at all” were excluded from the scale based on the feedback from the students as a result of which the pre-trial form of the scale was finalized with 45 items.

### **Study group**

Data were collected from two different study groups within the scope of the present study including one group for the exploratory factor analysis (EFA) and one group for the confirmatory factor analysis (CFA) Criterion sampling from among the purposive sampling methods was used for identifying the study groups. Criterion sampling is the inclusion in the study group of units which meet certain criteria in accordance with the objectives of the study (Büyüköztürk et al., 2008). The inclusion criteria used for the present study within this framework were as follows:

- Having come to Turkey from Syria,
- Continuing a higher education institution in Turkey,
- Ability to read and understand a text in Turkish.

*Study group 1:* The group formed for conducting an exploratory factor analysis (EFA). In this scope, data were collected first from a total of 294 people, however the data for nine participants were excluded after four participants marked the “no” option on the voluntary consent form, three

participants marked the same response for each question and two participants were identified as outliers thus conducting the analyses on 285 individuals. Of the study group including 285 individuals, 188 were female (66 %), 97 were male (34 %). The age average of the group was 21.68 (Sd= 3.17). The average time spent living in Turkey was 6.29 years (Sd=2.00). Syrian students continuing their education at 58 different universities took part in the study with the majority of the students from Hatay Mustafa Kemal University and Gaziantep University. Faculty of Education and Faculty of Engineering were the faculties with the highest participation.

*Study group 2:* The 25 item scale form obtained as a result of EFA was applied on a new group of Syrian students including 210 individuals in order to test whether the form can be verified with a different study group or not. Data for six individuals in the second study group were excluded from the analysis as a result of data cleaning procedures thus conducting the CFA on 204 individuals. It was observed when the demographic features of the CFA group was examined that there are 142 women (69.6 %); 62 men (30.4 %) with an age average of 22.84 (Sd= 4.07) and an average time spent living in Turkey of 6.52 (Sd= 1.95). It was observed when the distribution of the data for the second study group was examined with regard to universities that Gaziantep University and Hatay Mustafa Kemal University comprised the majority. It was observed that the distributions of the students subject to faculties were education (27,9 %), engineering (18.8 %), economics and administrative sciences (10.6 %) and science literature faculty 10.1 %).

### **Data collection tools**

#### **Reading Anxiety Scale (RAS) for Individuals Learning Turkish as a Foreign Language**

The Reading Anxiety Scale (RAS) for Individuals Learning Turkish as a Foreign Language developed by Altunkaya and Erdem (2016) was used within the scope of the criterion validity study for SSATT. Consisting of 16 items and 3 factors, the RAS reliability values were calculated for the full scale as .82 for alpha reliability, .80 for the first factor, .73 for the second factor and .71 for the third factor. It was identified as a result of the CFA studies conducted on the scale that the three factor structure explains 47 % of the total variance. It was determined when the sub-dimensions were examined that the Fear of Reading Skill sub-dimension explains 26.51 % of the total variance, Grammar Anxiety sub-dimension explains 13.10 % of the variance and that the Reading Comprehension Anxiety sub-dimension explains 7.05 % of the variance. These data indicate that the scale has sufficient validity and reliability values (Altunkaya & Erdem, 2016). It was set forth as a result of the reliability analysis performed within the scope of the present study that the Cronbach alpha internal consistency value was .90 for RAS in full.

### **Data collection**

The 45 item scale pre-form obtained as a result of the pilot study was sent via Google Form to Syrian students continuing their education at various higher education institutions in Turkey. Data were collected during the dates of October 2020 – January 2021 for EFA and during the dates of February – March 2021 for CFA. There are two primary reasons for the collection of data in the digital environment. The first reason was the fact that the higher education institutions continued distance education during the data acquisition period due to the COVID-19 pandemic, whereas the second reason was the fact that the Syrian students were enrolled at different higher education institutions all over Turkey. The scale forms were mostly sent to the participants via Whatsapp and Facebook groups. The participants reached were asked to share the study link with their own groups. Information (study objective, confidentiality, participation voluntariness, how the forms will be filled, and contact information of the researchers) was first provided on the study prior to the implementation of the scale form after which they were asked if they volunteer to take part in the study or not. The data of the participants volunteering to take part in the study were included in the analysis.

## **Data analysis**

EFA, CFA and reliability analyses were conducted during the present study aiming to develop a valid and reliable measurement tool for the assessment of the attitudes of Syrian students towards Turkish. The compliance of the data acquired for EFA was first examined via KMO and Bartlett sphericity test after which principal component analysis and Varimax rotation methods were utilized during the EFA process. In the second stage, CFA was used for examining whether the structure obtained as a result of the EFA can be verified with a different sample group or not and finally Cronbach Alfa and split-half analyses were carried out within the scope of reliability studies. Outliers and erroneous codings were first removed for testing whether the data acquired from the study groups are suitable for analysis or not after which the normality and multicollinearity issues were studied. SPSS and LISREL software were used in the analyses.

## **RESULTS**

This section presents the EFA and CFA results within the scope of the validity related findings followed with data on reliability.

### **Validity related findings**

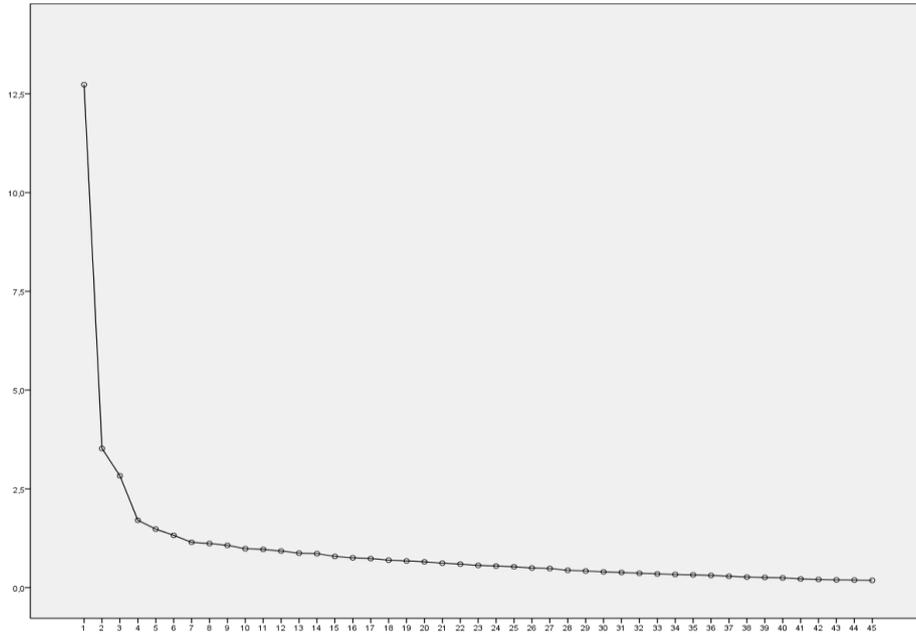
#### **Analysis Compliance of the Data**

KMO and Bartlett sphericity test results were examined as a criteria for identifying whether the data are suited for EFA or not prior to carrying out the exploratory factor analysis. The KMO (.91) and Bartlett sphericity test results ( $X^2 = 6123.41$ ;  $p < .01$ ) acquired indicate that the dataset is suited for EFA (Büyüköztürk, 2010; Çokluk et al., 2010; Field, 2009). It is required for majority of the multivariate statistics that the assumptions on normality, linearity and multicollinearity problems are met prior to the analysis (Can, 2019; Çokluk et al., 2010; Tabachnick & Fidell, 2015). It was concluded in the present study based on the Bartlett sphericity test results as well as the skewness and kurtosis values (both values should be between -1 and +1) that the data are distributed normally (Leech et al., 2005). The fact that the normality assumption has been met for the data within the scope of the study can be accepted as an indication of the linearity of the correlation between the variables (Leech et al., 2005; Tabachnick & Fidell, 2015). Finally, the multicollinearity problem between the variables was examined within the scope of the analyses on the suitability of the data. Kline (2005) indicates the presence of a multicollinearity issue when there is a correlation of above .85 between two variables. The highest value was observed as .68 when the correlation values between the items were examined in the present study. Accordingly, it was concluded that there is no multicollinearity issue between the variables.

#### **Exploratory factor analysis (EFA)**

Principal component analysis and EFA were conducted during this study aiming to measure the attitudes of Syrian university students towards Turkish since it was aimed to acquire information with the maximum accuracy with minimum measurements. At this point, Can (2019) states that the principal component analysis should be preferred if it is aimed to attain maximum accuracy with minimum measurements. One of the widely used criterion when deciding on the number of factors in exploratory factor analysis is accepting that factors with eigenvalues of 1.0 and above are important factors (Büyüköztürk, 2010; Field, 2009). It was observed as a result of the EFA conducted via principal component analysis on SSATT that there are nine factors with eigenvalues of above 1 which explain 59.82 % of the total variance. The fact that a total of nine factors were obtained which is a large number for the analysis during the first stage is an indication of the necessity to reduce the number of factors. At this point, Catell's scree plot test was used as a second criterion for identifying the number of factors. Pallant (2016) indicates that the curve changes direction during Catell's scree test thus stating that the point where the curve starts becoming horizontal from vertical can be

accepted as a criterion for identifying the number of factors. In addition, Can (2019) states that the contribution of a factor in explaining the total variance should not drop below 5 %.



**Figure 2. SSATT scree plot**

It can be observed when the eigenvalue graph of the scale is examined in Figure 2 shows that the line which continues vertically for the first three factors becomes horizontal with the fourth factor. Moreover, it was also identified that the rate of contribution to the explained variance has dropped below 4 % after the fourth factor. Accordingly, it was concluded that the scale can be evaluated as a three dimensional tool.

It was set forth after obtaining a three factor structure following EFA that the items are mostly accumulated in the first factor which has made it difficult to collect the factor at a common denominator. In this case, it can be put forth that a rotation procedure is required (Can, 2019). Varimax rotation was preferred since it is one of the most commonly used methods of rotation (Tavşancıl, 2002) and since it was desired to generalize the data of the present study for Syrian university students (Büyüköztürk, 2002). The criteria considered when deciding the items to be excluded from the EFA process of SSATT were items with a high factor load for its own factor and a low factor load for other factors. At this point, it is suggested that the item should have minimum factor load should be .33 (Ho, 2006) or .45 (Tabachnick & Fidell, 2015) for its own factor. In addition, it is also indicated that the difference between the load for its own factor and for other factors should be .10 (Büyüköztürk, 2010) or .15 (Can, 2019). Even though there is no exact criterion on starting the item exclusion procedure from items with low factor loads or overlapping items, Çokluk et al. (2010) suggests starting with overlapping items and excluding the items one by one. In this scope, nine items (5, 11, 18, 23, 24, 30, 32, 40, 43) with a load value difference of below .15 were excluded one by one starting with high overlap. Afterwards, the remaining eight items (1, 3, 17, 19, 20, 25, 27, 28, 39) with factor load values of below .50 were excluded thus leaving 27 items in the scale. Finally, two items (4 and 9) with low correlation (below .30) in the item total correlation analysis were excluded within the scope of item exclusion.

**Table 1. The load values of factors, common factor loads (CFL), item-total correlations (r), eigenvalues of the factors and explained variance**

		After Varimax Rotation				
		CFL	F 1	F 2	F 3	r
<b>Factor 1: Purpose/Function</b>						
42	Learning Turkish will help me establish good relations with Turkish people.	.61	.77			.63*
41	Learning Turkish will make my daily life easier.	.59	.75			.65*
44	I would like to be as fluent in Turkish as my native language.	.56	.73			.59*
13	Turkish is important for me.	.53	.71			.63*
16	I would like to speak Turkish fluently.	.48	.68			.56*
12	I would like to speak Turkish more.	.42	.64			.51*
31	I am happy when they say, "Your Turkish is very good"	.44	.62			.59*
6	I am happy when I learn a new Turkish word	.48	.62			.64*
21	I would like to improve my Turkish	.41	.61			.57*
33	I can learn Turkish culture too if I learn Turkish well	.48	.59			.66*
15	Knowing Turkish is important for my future	.38	.58			.56*
8	I am curious about the meanings of Turkish words	.37	.57			.55*
<b>Eigenvalue: 5.89; Contribution to total variance: 23.55</b>						
<b>Factor 2: Daily life</b>						
35	Speaking Turkish at home makes me happy	.65		.77		.61*
38	I enjoy reading poetry in Turkish	.57		.74		.41*
34	I would like to use Turkish for the rest of my life	.47		.66		.54*
29	I prefer speaking Turkish with those close to me	.47		.63		.56*
36	I enjoy writing in Turkish	.54		.63		.62*
45	I enjoy reading things in Turkish (newspaper/magazine/book)	.44		.62		.56*
26	I would like to select a Turkish related profession in the future	.36		.60		.36*
7	I like Turkish activities	.40		.54		.57*
<b>Eigenvalue: 3.83; Contribution to total variance: 15.33</b>						
<b>Factor 3: Dysfunctional approach**</b>						
14	I think that Turkish is a boring language**	.64			.74	.55*
10	I feel uncomfortable when speaking Turkish**	.55			.70	.47*
22	I feel uncomfortable when people speak Turkish near me**	.62			.70	.55*
2	I think that Turkish is a difficult language**	.47			.67	.33*
37	I find it difficult to listen to what is said in Turkish **	.41			.62	.32*
<b>Eigenvalue: 2.64; Contribution to total variance: 10.54</b>						
<b>Total Eigenvalue: 12.36</b>						
<b>Total explained variance: 49.42</b>						

\*p < .01; \*\* Reverse item

It has been identified based on the findings presented in Table 1 that the item total correlations of the items in SSATT vary between .32 and .66 and that all items display a moderately significant correlation with the total. It was observed when the load values of the items in the scale were examined that the purpose/function dimension consisting of 12 items has a factor load varying between .57 and .77; that the factor loads for the items in the daily life dimension consisting of 8 items vary between .54 and .77 and finally that the items have factor loads varying between .62 and .74 for the dysfunctional approach dimension comprised of 5 items. Based on the common factor loads in the scale, values were attained between .36 and .65. It was illustrated when the eigenvalues and the explained variance percentages of the sub-dimensions were examined that the purpose/function sub-dimension has an eigenvalue of 5.89 and a variance of 23.55 %; that the daily life sub-dimension has an eigenvalue of 3.83 and a variance of 15.33 % whereas the dysfunctional approach sub-dimension has an eigenvalue of 2.64 and a variance value of 10.54 %. It can be seen that the total eigenvalue of the scale is 12.36 and that the explained total variance is 49.42 %.

### Confirmatory Factor Analysis (CFA)

CFA was conducted on a new study group of 204 individuals in order to test whether the 25 item SSATT obtained as a result of EFA can be verified with a different sample group or not. Item

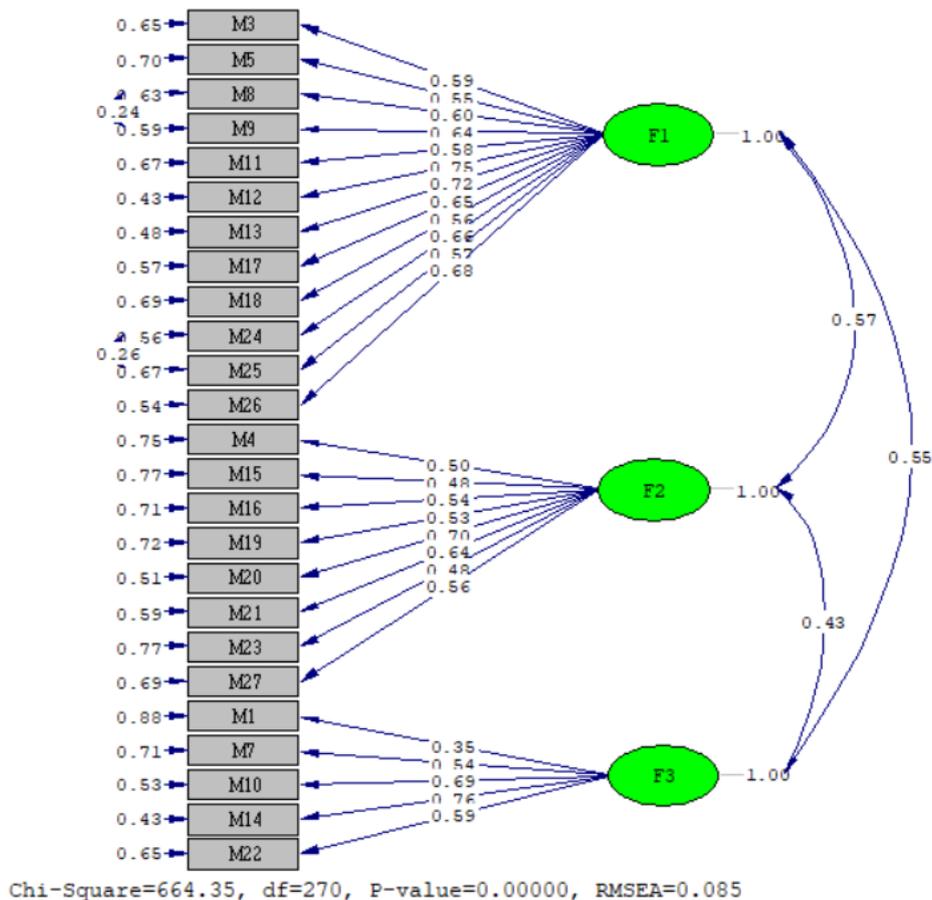
factor loads, goodness of fit and t values were considered as references for the assessment of the CFA results via Maximum Likelihood method. Table 2 presents the goodness of fit values used in the present study, the respective cut off points for these values and the goodness of fit values obtained from SSATT.

**Table 2 The fit values of the suggested model and the standard fit criteria**

Goodness of fit statistics	Acceptable	Estimated Model	Result
<sup>7</sup> $\chi^2/sd$	$\chi^2/sd \leq 5$	2,46	Accept
<sup>1,2,6</sup> CFI	CFI > .90	.92	Accept
<sup>1,2,6</sup> NNFI	NNFI > .90	.91	Accept
<sup>3,4</sup> RMSEA	.08 < RMSEA ≤ .10	.085	Accept
<sup>3,4</sup> SRMR	.05 < SRMR ≤ .10	.85	Accept
<sup>3</sup> GFI	.85 ≤ GFI < .95	.79	Reject

<sup>1</sup>Byrne, 2010; <sup>2</sup>Ullman, 2001; <sup>3</sup>Çelik & Yılmaz, 2013; <sup>4</sup>Kline, 2005; <sup>5</sup>Meydan & Şeşen, 2011; <sup>6</sup>Hu & Bentler, 1999; <sup>7</sup>Şimşek, 2007

As can be seen from Table 2, five out of the six goodness of fit values examined as part of the confirmatory factor analysis conducted on SSATT were in the acceptable reference interval. Furthermore, the goodness of fit values in Table 2 are those obtained as a result of the modification between the error terms of items 8-9 and items 24-25 in the purpose/function sub-dimension. In addition to the goodness of fit values, standard path coefficients for each item in the scale can be examined together with the t values that evaluate the significance of these paths. Figure 3 presents the correlations between the sub-dimensions and the standardized path coefficients obtained as a result of the analysis.



**Figure 3. The path diagram of SSATT**

As can be seen in Figure 3, the standardized path coefficients for the items in their dimension vary between .55 and .75 for the purpose/function dimension; .48 and .70 for the daily life dimension, .35 and .76 for the dysfunctional approach dimension. Moreover, it was also observed that the t values for the items in their respective factors vary between 5.51 to 12.11 and that all items make a statistically significant contribution to the model ( $p < .01$ ).

### Criterion validity

The criterion validity of SSATT was examined with regard to its relations with the Reading Anxiety Scale (RAS) for those learning Turkish as a foreign language. Table 3 presents the related correlation values.

**Table 3 The relationship of SSATT sub dimension and RAS and descriptive statistic**

	1	2	3	4	M	Ss
1. Purpose/function	-				52.40	6.62
2. Daily life	.47*	-			28.74	5.11
3. Dysfunctional approach	.38*	.24*	-		19.07	3.64
4. RAS	-.02	-.16**	-.60*	-	46.89	11.62

RAS: Reading Anxiety Scale \*  $p < .01$ ; \*\*  $p < .05$

As can be seen from Table 3, there is a statistically significant correlation between the purpose/function sub-dimension of the scale and the daily life sub-dimension at a level of .47 ( $p < .01$ ); similarly a statistically significant correlation at a level of .38 ( $p < .01$ ) was also observed between purpose/function and dysfunctional approach and finally a statistically significant correlation at a level of .24 ( $p < .01$ ) was observed between daily life and dysfunctional approach. While a correlation was not identified between the reading anxiety scale (RAS) scores for those learning Turkish as a foreign language and the SSATT and its sub-dimensions,  $r = -.02$  ( $p > .05$ ), a statistically significant correlation at a low level ( $r = -.16$ ;  $p < .05$ ) was observed between RAS and daily life sub-dimension and a moderate statistically significant correlation ( $r = -.60$ ;  $p < .01$ ) was present with the dysfunctional approach sub-dimension.

### Findings on reliability

Reliability studies for SSATT were conducted using Cronbach's Alfa, Spearman-Brown split-half test methods. Table 4 presents the values for the reliability analysis of the scale.

**Table 4. SSATT' Cronbach's Alfa and Spearman-Brown Split-half coefficient**

	Alfa	Split-half
1. Purpose/function	.90	.86
2. Daily life	.83	.82
3. Dysfunctional approach	.76	.74

As put forth in Table 4, the Cronbach's Alfa internal consistency values of the scale vary between .76 to .90 on the basis of its sub-dimensions, while the Spearman-Brown split-half test analysis results vary between .74 to .86.

### Standardization of the scale implementation

A directive with information on how to fill the scale, the objective of the study, data confidentiality and participant voluntariness was provided to the students prior to the implementation of SSATT aiming to measure the attitudes on learning Turkish of the Syrian university students continuing their education in Turkey. The scale was scored as a five-point Likert type scale with

“strongly disagree (1), “disagree” (2), “little agree” (3), “Agree” (4), “strongly agree (5)”. The five items (1, 7, 10, 14, 22) in the dysfunctional approach sub-dimension of the scale were scored reversely and it is suggested to rotate the scores of these items prior to the analysis. The scale has a total of 25 items with 12 items (3,5,8,9,11,12,13,17,18,24,25,26) in the purpose/function sub-dimension and eight items (4,15,16,19,20,21,23,27) in the daily life sub-dimension. An increase in the dysfunctional approach sub-dimension score following the reverse scoring conducted with the purpose/function and daily life sub-dimensions is an indication of positive attitude, whereas a decrease in the score is an indication of negative attitude.

## DISCUSSION AND CONCLUSION

Study group size is one of the most important parameters when conducting factor analysis. At this point, it is quite difficult to indicate the number of elements in the study group and to put forth precise criteria regarding the calculation of this number. Even though there are different opinions on the number of individuals in the study group, Tabachnick and Fidell (2015) specify that 300 and above is a good sample size. In addition, Kline (2005) states that 100-200 is “moderate” size for factor analysis and that measurements including a study group size of above 200 reflects a “large” study group. Ho (2006) points out that the sample group should not decrease to below 100 in factor analysis studies and that each indicator / observation ratio should exceed 1/5. While the analysis of the 45 item preliminary form for EFA was conducted with 285 people, CFA for the 25 item final form was carried out using data collected from 204 individuals. It can be concluded based on the sample group sufficiency criteria that the sample group size for EFA and CFA is sufficient in the present study.

The KMO value assessing the suitability of the study data for EFA indicates perfection as it approaches the value of 1 and weakness as it approaches zero; it is also indicated that values of KMO above .6 are sufficient for study groups with 250 people and above (Field, 2009). Statistically significant test results for Bartlett sphericity examining the correlations between variables are accepted as an indication to the suitability of the data matrix and in addition to its normality as well (Büyüköztürk, 2010; Çokluk et al., 2010). The KMO (.91) and Bartlett sphericity test values ( $X^2 = 6123.41$ ;  $p < .01$ ) obtained in the present study shown that the data set is suitable for EFA. Furthermore, skewness and kurtosis values ranging between -1 and +1 also an indication of normal distribution for the data (Leech et al., 2005) while the fact that there is no correlation between the variables above .85 (Kline, 2005) be considered as an indication that there is no multicollinearity issue.

Exploratory factor analysis (EFA) is a statistical analysis performed to discover the relations between variables (Pallant, 2016) and for identifying which variables are relatively independent from the others in order to reduce the number of variables (Tabachnick and Fidell, 2015). The criteria frequently used in EFA for deciding on the number of factors are having an eigenvalue of above 1.0 (Büyüköztürk, 2010; Field, 2009) and/or a contribution to total variance exceeding 5 % (Can, 2019). In addition, it is also indicated that the point at which the slope becomes horizontal in the Cattell scree test can be considered as a criterion for determining the number of factors when there are a lot of factors with eigenvalues above 1.0 (Pallant, 2016). It was identified based on the aforementioned criteria that SSATT has a three factor structure. Since majority of the items are collected under the most important factors when the factor structure first appears in the exploratory factor analysis, it becomes quite difficult to interpret the structure thus making rotation a necessity to overcome this difficulty (Can, 2019). The second decision that should be given after deciding to perform the rotation procedure is whether the rotation should be vertical or oblique. Büyüköztürk (2002) holds the opinion that vertical rotation should be preferred if the researcher is concerned with generalizability and that the results obtained from vertical rotation and oblique rotation do not differ significantly. Whereas Tavşancıl (2002) reports that varimax is the most frequently preferred method among the vertical rotation methods. Based on these inferences, the analyses were limited with three factors for identifying the factor structure of SSATT and varimax vertical rotation method was utilized.

It is desired in factor analysis studies that the load of an item in its respective factor is as high as possible. At this point, it is suggested that the lower limit for the item load in the factor can be accepted as .33 (Ho, 2006) but that factor loads of .45 and above should be accepted as the cutoff point for the factor load whenever possible (Tabachnick & Fidell, 2015). It is desired that the items are not overlapped meaning that the item does not have low load values in other factors while it has a high load factor in its principal factor (Çokluk et al., 2010). It is suggested that there should be a minimum distance of .10 between the load of the item in its principal factor and its load in other factors (Büyüköztürk, 2010), however it is also suggested to have a minimum difference of .15 if excluding items from the measurement tool will not disrupt the structure (Can, 2019). Within the framework of the criteria identified for item exclusion, nine items with a load value difference in two factors of less than .15 along with eight items with load values of less than .50 in their principal factors were excluded from the scale. Finally, two more items were also excluded from the scale since they displayed a low correlation with the total and thus obtaining the final version of the scale including a total of 25 items. It was observed after completing the item exclusion procedure that the three factor structure explains 49.42 % of the total variance. It can be stated that sufficient variance values have been reached for the present study based on the consideration that the variance explained between 40 % - 60 % is sufficient for structures with multiple factors (Büyüköztürk, 2010; Tavşancıl, 2002). Support was received from academics working in the field of Turkish education in order to name the factors after identifying the items that will remain in the scale. The items in the first factor focus mostly on why Syrian university students use Turkish as well as their opinions on the functions of Turkish thereby this item was named as “purpose/function”. Since the second factor focused on the use of Turkish in daily life it was named as “daily life”, while the third factor was named as “dysfunctional approach” because it includes items with negative approaches towards Turkish.

CFA was conducted as a separate analysis within the scope of the validity studies which is the statistical analysis of whether a pre-determined theoretical structure or standard measurement tool is verified by the present data (Byrne, 2010; Kline, 2005; Şimşek, 2007). At this point, CFA can be considered as the body of analyses for identifying the extent to which an already existing theoretical structure can be verified in the light of new data (Byrne, 2010; Kline, 2005; Meydan and Şeşen, 2011; Ullman, 2001). Goodness of fit values are among the most important criteria that provide an idea on whether a model has been verified at an acceptable level within the context of model data fit in CFA studies (Şimşek, 2007). In addition to the aforementioned importance, there are debates on the goodness of fit values evaluating the different reference points as well as debates on which data should be used in studies. At this point, Ullman (2001) states that different goodness of fit values mostly lead the researcher to similar results indicating that the goodness of fit values to be used mostly depend on personal preferences. While the values of  $X^2/sd$ , CFI, NNFI, RMSEA and SRMR put forth that the model is verified (Byrne, 2010; Çelik & Yılmaz, 2013; Hu & Bentler, 1999; Kline, 2005; Meydan & Şeşen, 2011; Şimşek, 2007; Ullman, 2001) as a result of the CFA analysis conducted, it was also illustrated that the GFI value of .79 was below the acceptable level. In this scope, even though it is examined within the scope of goodness of fit values in the present study, since GFI is indicated as a weak goodness of fit value for the assessment of the goodness of fit (Hu & Bentler, 1999) the fact that it was below acceptable limits was not considered as an obstacle for the verification of the scale.

Finally, criterion validity was examined within the scope of validity studies for SSATT. Accordingly, the correlation between the Reading Anxiety Scale (RAS) for those learning Turkish as a foreign language and SSATT scores were examined and while a statistically significant correlation could not be identified between the purpose/function sub-dimension and RAS, a low correlation was observed between daily life and RAS, while a moderate and statistically significant correlation was identified between dysfunctional approach and RAS. At this point, the moderate level of correlation between the dysfunctional approach assessing negative approaches to Turkish and the anxiety related with reading in Turkish may be taken as proof of criterion validity.

The Cronbach Alfa and Spearman-Brown split half coefficient calculated within the scope of reliability studies assess the internal consistency of the items of the scale, or in other words the homogeneity between the items (Büyüköztürk, 2010; Can, 2019; Leech et al., 2005). Even though

there are debates in the related literature on the value of internal consistency, it is generally indicated that reliability increases as the values approach 1.00 and that values of .70 and above are acceptable (Büyüköztürk, 2010; Can, 2019; Leech et al., 2005). The fact that the values obtained as a result of the reliability analyses in the present study vary between .74 and .90 may be presented as proof that the measurement tool may make reliable measurements.

The findings obtained as a result of the present study point out that SSATT is a valid and reliable tool for measuring the attitudes towards Turkish of the Syrian university students. It was observed that the aforementioned scale can be utilized by researchers who will conduct studies on the attitudes towards Turkish of Syrian university students.

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