Development and Validation of the International students Adjustment Scale in Turkey

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Abstract

Globalization had attracted millions of students around the world and there is a huge flux of students who are travelling abroad for educational purposes. The aim of these students is to gain education and achieve their dreams. But travelling abroad for education and living in a foreign country is not an easy process. During this educational journey and transition from their home country to host country international students face huge challenges of adaptation and the challenges can be in terms of Academics, socio-cultural, personal, etc. So in order to acheieve the main goal of education, International students must adapt to the new envirnoment of the host country. The study aimed to develop validity and reliability of the International adjustment scale in Turkey. A pool of 100 statements was reduced to 35 after validation resulting in five distinct domains of adjustment, such as Academic adjustment (11), Social adjustment (9), Personal adjustment (6), General Living adjustment (4) and Institutional adjustment (3). The multidimensional adjustment was developed and validated for International students in Turkey.

Keywords— International students, Adjustment, adaptation, Reliability, Validity.

I. INTRODUCTİON

Globalization is bringing many changes around the World and is revolutionizing education, especially higher education. One of the changes occurring in higher education is the internationalization of universities; It opens its doors to international students from different countries. Following the nature of globalization and changes, universities are committed to internationalization; to open its doors to international students from different countries; in a way, it is forced to compete and take on global roles in the education field. Now, students from many different countries study at universities in different countries around the world. It is foreseen that internationalization will continue to accelerate in universities all over the world in the coming years, both short-term student mobility, long-term student mobility, and the wide spread of international higher education, including joint diploma programs created by universities in different countries, and international students enrolled in a diploma program in a campus other than their own country. The number of international students, which was approximately 800 thousand in the world in the 1970s, reached 4 million by 2012, and in 2017,

there were over 5.3 million international students, up from 2 million in 2000 (UNESCO, 2019). In Turkish higher education, the number of students coming from abroad, which was 5.378 in 1983, was 8 thousand in the early 1990s, 17 thousand in the early 2000s, and 43 thousand in the early 2010s; According to the data of YÖK in 2020, it reached 185 thousand; The implementation of foreign students exam began in 1981 with Turkey to attract international students process is supported by developing different programs and scholarship opportunities (Çetinsaya, 2014: 151). Turkey, in recent years, witnessed an expansion in terms of increasing number of International students. One of the most important indicators of the leap in internationalization, in the higher education system, is that students from abroad come to study for both short-term and long-term, both undergraduate and graduate (master, doctorate) purposes (Özer, 2012). In order to increase the number of International students, the education system need to understand the problems which these international students face in their host country.

International students can face different challenges while studying in a host country (Bai, J. 2016; Wen and Hu

2019). These challenges can be faced in different areas such as differences in academics, culture, society, Language, etc. (Smith & Khawaja, 2011). International students need to adapt and assimilate to the new situation and environment to work effectively and efficiently in new situations. While facing different environment they may face lonliness and homecickness (Zhang & Goodson, 2011), and discrimnation (Smith & Khawaja, 2011). Such situations can make adaptation much more difficult and can make the adjustment process harder. Most of these adjustment stressers can lead adaptation problems (Çelik, 2020). In general, international students can face problems in diffrenent dimensions such as stress, anxiety, loneliness, maladjustment, health problems, education problems, discrimination and housing, cultural shock, food, language and communication problems, transportation, financial deprivation and insufficiency.

The rationale of the study

To achieve their goal of attaining education, International students must adapt to the new environment in the host country. Every government, concerned institution, and universities try hard to help these international students to make their adjustment process smooth and easy. But still, there can be key areas that might be harder still for International students to adapt and adjust. The rationale of this study is to develop an International adjustment scale that can access different dimensions of international students. The study will try to understand what are the key dimensions and subdimensions of International student adjustment issues in Turkey. According to the Literature, the key dimensions of International student adjustment issues are academics, Socio-culture, personal and financial. The study will try to understand the role of each dimension and how each of these dimensions is influencing the overall adjustment of International students.

II. Methodology

To have a better understanding of the adjustment and develop an effective tool the study used quantitaive methodolgy.

Sample

Firstly, more then 300 international students were reached for the trial application of the developed International Students Adjustment Scale (ISAS). Then, 210 students were subjected to the test-retest method but those who didn't complete the study or didn't fit the criteria were omitted and 162 students left. Then 263 international students were reached in the final application of the scale but, again the participants who didn't fill the survey completely and who didn't fit the criteria were omitted from the research. In the end, 187 participants left for the last part of the research. In conclusion, 349 international students

were included in the research. In the study, 339 students remained after removing the extreme values during the analysis. To understand the adjustment process of international students better and to measure the effects of the language on the adjustment process, specific criteria are defined for participation. The criteria of this research are;

1. Being an international student in higher educational settings in Turkey (prep school, undergraduate, master or Ph.D. level)

2. Being between 18-35 years old.

3. Living in Turkey from at least 4 months to not more than 3 years.

4. Not coming from Turkish speaking countries such as Turkmenistan, Azerbaijan, and Uzbekistan, etc.

When the distribution of the participants is examined according to their ages, it is seen that participants aged 18-24 constitute 67.8% of the total participants, 23.3% between the ages of 25-29, and 8.8% between the ages of 30-35. When data are examined according to gender, it is seen that women constitute 46% of the total individuals and men 54%. The education levels of participans percentage was the preparatory school is 7.7%, undergraduate students is 57.5%, postgraduate students make up 27.4%, and Ph.D. students make up 7.1%. The education level with the highest number of international students is in the undergraduate group. The numbers and percentages of international students' length of stay in Turkey varies from the rate of those staying between 4-12 months is 25.7%, the rate of those staying between 13-23 months is 28.6% and the rate of those staying for 2-3 years is 45.7%.

The accommodation and percentages of international students was found that 54.4% of the students stay at the dormitory, 26.6% of the students stay with their friends, 14.3% of the students stay with their families or some parts of their family like living with sister/brother/cousins, etc., and 4% of those are alone.

Scale Development Process

To develop the scale, the steps listed below were followed. While preparing the steps in the list, 10 steps in the scale development made by Carpenter (2018) were used.

1. The scale development process begins with defining the feature to be measured with the scale comprehensively, determining its boundaries and revealing its features (Aslan, S., & Kan, A. 2021)

2. In this study, a comprehensive literature review was carried out before creating the material pool. DergiPark, ULAKBİM, Google Scholar, YÖK ACADEMIC, National Thesis Center and Web of Science databases were used in the literature review. Between the years of 2005-2020, searches

were carried out with keywords such as "international education, international student, adaptation to higher education, adaptation to higher education, internationalization in education and internationalization in higher education".Thus, the features of the concept/structure to be measured were tried to be determined correctly. With the help of the findings on the literature, an item pool of the scale includes nearly 100 problem statements. Each item was developed within the study.

3. Then, the opinions of experts and intended participants were taken to ensure content validity. Content validity assesses how well the items measure the content they were intended to measure (Creswell, 2014). While designing the expressions, attention was paid to the clarity of item expressions and the appropriateness of items to international students. Some statements were omitted from the scale due to including similar items. To examine the items on the scale, experts and intended participants ranked the items from 1 to 10. After feedback for items was taken, necessary arrangements were done and the highest-scoring sentences were used in the scale, and others were eliminated. Then the number of items on the scale was reduced to 35. The last version of the scale was sent to the experts and intended participants.Then, their opinions were asked again to ensure the items' clarity. After deciding to use the Likert type scale with the items, the scale form to be used in the pilot application was created. Afterward, the sample size was decided and in this study, while 300 participants were initially targeted, 349 participants were reached at the end.

4. The pilot application of the scale was applied to Language students of Ibn Haldun University in 2019 summer. 80 students participated in the pilot application. Then, the data obtained as a result of the pilot application was reviewed. Under the guidance of experts, the test-retest version of the scale was prepared and conducted.

5. Outliers were checked and omitted from the research (Carpenter, 2018).

6. In the field of social sciences, factor analysis is used mostly to ensure construct validity (Büyüköztürk et al., 2012). Construct validity enables items "to measure hypothetical structures or concepts" (Creswell, 2014). In this study,

exploratory factor analysis was used to reveal the factor structure of the scale.

7. To conduct factor analysis, the Kaiser-Meyer-Olkin (KMO) value of the data set must be over 0.60 and the Barlett's chi-square must be statistically significant (Büyüköztürk, 2019) at $p<.05$ (Carpenter, 2018). The statistically significant test result also demonstrates the normality of the scores (Büyüköztürk, 2019).

8. Maximum likelihood was chosen as a factor extraction method.

9. Exploratory factor analysis (EFA) is conducted with 162 students in the test-retest group.

10. The number of factors was determined and factors were rotated. Items on the scale were retained based on the analysis. As a result of the EFA, it was seen that the scale had 5-factor structure.

11. Reliability represents internal consistency, test-retest correlations, and consistency in test administration and scoring (Creswell, 2014). Therefore, test-retest correlations were applied to check whether the scores remained constant in time when the scale was conducted again.

After developing the scale, demographic data, mean and standard deviation values of the scale, and its sub-dimensions were determined. The Pearson test was used in the correlation between the adjustment scale and its sub-dimensions. The whole study was carried out by considering the significance levels of 0.05 and 0.001. After analyzing the data, the results were interpreted with the help of literature.

III. RESULTS

Reliability of Scales and Factor Analysis

In order to develop the scale, a pre-test which consists of 35 questions has been applied to 162 international students. After the results of the pre-test, the reliabilities of the 35 questions have been determined, and then the 20th and 25th questions which reduced the reliability of the scale have been removed. The Cronbach Alpha coefficient obtained from the pre-test was found to be 0.861. In addition, a post-test was carried out to the same participants one month after the pre-test. The Cronbach Alpha coefficient obtained from the post-test was found to be 0.893. The reliability values obtained from the pre-test and post-test after the removal of the 20th and 25th questions are shown in Table 1.1.

Table 1.1. Cronbach Alpha values obtained from the pre-test and the post-test

Reliability Statistics			
	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Pre-test	0,861	0,862	33
Post-test	0,893	0,896	33

Reliability analysis is a concept that reveals the consistency of all questions in a survey and their homogeneity in measuring the discussed entity. There is a coefficient of α in the reliability analyzes made. This alpha value means $0 < \alpha < 0.40$ is unreliable, $0.40 < \alpha < 0.60$ low reliability, $0.60 < \alpha < 0.80$ highly reliable, $0.80 < \alpha < 1.00$ high reliability. As a result, ISAS has high reliability.

Factor analysis has been conducted to determine the construct validity and factor structure of the ISAS. The Kaiser-Meyer-Olkin (KMO) value of the scale has been found to be 0,806 which is shown in Table 1.2.

Table 1.2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,806
Bartlett's Test of Sphericity	Approx. Chi-Square	3469
	Df	528
	Sig.	0,000

In the factor analysis, the Total Variance Explained table shows how many factors the scale consists of and to what extent these factors measure the phenomenon to be measured. After the factor analysis, it was determined that ISAS consisted of 5 main sub-dimensions and it is shown in Table 1.3. The scree plot graph is shown in Figure 1.1.
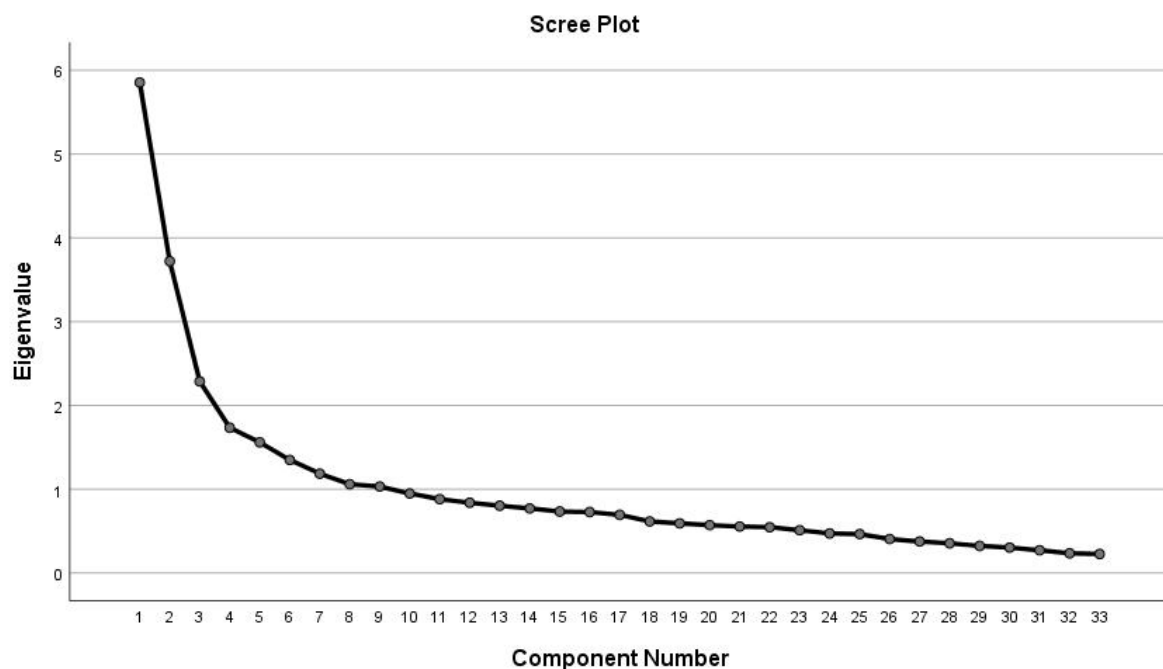

Fig.1.1. The scree plot graph

Table 1.3. Total Variance Explained table and factor groups

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,854	17,740	17,740	5,85	17,74	17,740	4,58	13,894	13,894
2	3,721	11,277	29,017	3,72	11,27	29,017	3,34	10,136	24,030
3	2,286	6,928	35,944	2,28	6,92	35,944	3,00	9,101	33,131
4	1,734	5,254	41,198	1,73	5,25	41,198	2,25	6,825	39,956
5	1,560	4,726	45,925	1,56	4,72	45,925	1,97	5,968	45,925
6	1,350	4,090	50,015						
7	1,186	3,594	53,609						
8	1,060	3,212	56,821						
9	1,032	3,127	59,948						
10	0,949	2,875	62,822						
11	0,881	2,671	65,493						
12	0,839	2,541	68,034						
13	0,803	2,432	70,467						
14	0,771	2,336	72,803						
15	0,734	2,223	75,026						

Extraction Method: Principal Component Analysis.

These fifteen component explains 75% of cummulative variaton. The first fifteen componants having highest variation are shown in the above table 1.4.

Table 1.4 Sub-dimensions and reliability values of ISAS

Sub-dimensions	Related items	Cronbach's Alpha	N of Items
Academic adjustment	1,2,3,4,5,6,7,9,10,14,15	0,838	11
Personal adjustment	13,24,26,27,28,29	0,802	6
Social adjustment	12,16,17,18,19,21,22,23,35	0,72	9
General living adjustment	30,31,33,34	0,635	5
Institutional adjustment	8,11,32	0,611	3

The first dimension is named as academic adjustment, whose Cronbach's alpha value is 0.838, the second dimension is named as social adjustment, whose Cronbach's alpha value is 0.802, the third dimension is named as personal adjustment, whose Cronbach's alpha value is 0.72, the fourth dimension is named as general living adjustment, whose Cronbach's alpha value is 0.635, the fifth dimension is named as Institutional adjustment, and its Cronbach's alpha value is 0.611. The sub-dimensions and reliability values of the scale are shown in Table 1.4.

IV. DİSCUSSİON

The study aimed to develop a International students adjustment scale to examine the adjustments issues of International students in Turkey. Studies in the Turkish literature are mostly on the problems experienced by international students and there is no special scale designed for international students studying in Turkey. In order to collect data, adapted scales and generally Turkish-language scales were used in the literature. For this reason, in the

studies in literature, the participants generally consist of students who are fluent in Turkish, have stayed in Turkey for a long time and can be said to have already adjusted to Turkey. However, in this study, the scale was developed in English and allowed to measure the adjustment of newly arrived international students who do not speak Turkish or are in the phase of learning Turkish. Moreover, to understand adjustment process of international students, as a inclusion criteria, the length of stay in Turkey was limited to 3 years in the study. Because of these points, this study gives more detailed information about international students who are new to Turkey and do not know Turkish very well yet. In addition, in this study, students living in Turkey for less than 4 months were excluded in the study in order to minimize the effect of the process called the honeymoon stage by Oberg (1960).

In the result of explanatory factor analysis, it was found that ISAS has 5 sub-dimensions. These sub-dimensions were named academic adjustment, social adjustment, personal adjustment, general living adjustment, and Institutional adjustment. The correlation coefficients of ISAS and its sub-dimensions were examined. The ISAS has been found to have a moderate level of positive correlation with its all of subdimensions. This correlation was expected because while creating the items and naming the sub-dimensions, the areas where international students had the most problems were identified, and the literature was used. While naming the factors, specifically, Tseng & Newton's (2002) model was used. Furthermore, the study discovered a moderate level of correlation between social adjustment and personal adjustment. According to studies, social support, which is a component of social adjustment, reduces student stress (Brunsting et al., 2019; Poyrazlı et al., 2004) and loneliness (Çollaku & Nazir, 2019) while also increasing life satisfaction (Schartner & Young, 2016). These findings also support the correlation between social adjustment and personal adjustment.

A moderate level of correlation between social adjustment and general living adjustment was found as a result of analysis. In many studies, it has been determined that students have financial problems. The financial problems of the students may cause them to not be able to go to the touristic and cultural places of the host country, not be able to mingle with host country's people. This situation can reduce the perceived social support from people in host country and also socio-cultural adjustment.

Besides, the study indicated a moderate level of correlation between social adjustment and academic adjustment & discrimination subdimensions. This is consisted with the study of Ahrari et al. (2019) which found that sociocultural adjustment is significantly impacted when students are subjected to prejudice by university members, or other people (Ozer, 2015).

On the other hand, a low level of positive correlation was found between the social adjustment and academic adjustment. Studies in the literature demonstrated that social adjustment directly impacts academic adjustment because students require a supporting social network in their new setting to be successful. (Sawir et al., 2008; Schartner & Young, 2016). Also, academic adjustment process includes some social skills such as having good contact with students and university members, participating discussions, attending group assignments (Alsahafi & Shin, 2017). Therefore, it explains the correlation between academic adjustment and social adjustment.

In addition, there was a moderate level of positive correlation between personal adjustment and academic adjustment. Findings in the literature support these results. To illustrate, Spencer-Qatey & Xiong (2006) pointed out that students' stress decrease when their academic success increase. Also, Franco et al. (2019) found that students decrease their academic expectation, when they expose to high level of stress.

There was a low level of a positive relationship between personal adjustment and general living adjustment, according to the findings. This is consisted with the findings in the literature. Some elements in the general living adjustment such as extreme climatic circumstances (Abu Rabia, 2016) and food (Çollaku & Nazir, 2019) might negatively affect students' personal adjustment. Also, no significant correlation between personal adjustment and academic adjustment & discrimination was found.

Moreover, a low level of a positive relationship between academic adjustment and academic adjustment & discrimination has been discovered. Studies in the literature point to the importance of organizational support, academic support, and a tolerant environment free from discrimination in academic adjustment (Ahrari et al., 2019; Gopalan et al., 2019). Therefore, the positive correlation between these two subdimensions is consistent with the literature. Also, no significant correlation between academic adjustment and general living adjustment was found in this study.

Finally, a moderate level of positive correlation was found between general living adjustment and academic adjustment & discrimination. No specific findings on this subject were found in the literature.

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