IJPES
www.ijpes.com
International Journal of Psychology and Educational Studies
ISSN: 2148-9378

Validity and Reliability of Adolescents Academic Inertia Scale

Özlem TAGAY[1], Osman CIRCIR[2]

[1]*Mehmet Akif Ersoy University, Burdur, Turkey* *0000-0002-9821-5960*

[2] *Mehmet Akif Ersoy University, Burdur, Turkey* *0000-0002-7847-9205*

ARTICLE INFO

Article History:
Received 22.02.2021
Received in revised form 17.05.2021
Accepted 20.08.2021
Article Type: Research Article

ABSTRACT

The aim of the current study is to conduct the validity and reliability studies of the Academic Inertia Scale for Adolescents (AAIS). Inertia is that occurs from not adapting to the current situation, lack of motivation, insufficient self-control and lack of socializing. It has been stated that living in inertia is a result of the individual's preferences. Increasing academic expectations from adolescents causes fatigue in this process. In order for the adolescents to receive effective psychological support, this state of exhaustion and neglect must be first detected, evaluated, and necessary support provided. Based on the relevant knowledge in the literature, this situation is to be first evaluated and then inertia considered. However, in the literature, to our best knowledge, there is no valid and reliable measurement tool to determine inertia in adolescents. The development of the academic inertia scale will be effective in identifying and evaluating the adolescents' situation and making more research on this subject. The study group of the current research is composed of a total of 410 students (234 females and 176 males) attending high school in Konya in 2019-2020 school year and selected through the convenience sampling method. The factor structure of the scale was investigated with explanatory and confirmatory factor analyses and a five-dimensional construct explaining 46.96% of the total variance was obtained and the fit of this construct was found to be good. In order to determine the reliability of the scale, internal consistency and test-retest reliability analyses were run and acceptable values showing that the scale is reliable were obtained. The findings of the current study was concluded that the Academic Inertia Scale for Adolescents is a reliable and valid scale that can be used in the process of determining the academic inertia level of high school students.

© 2022 IJPES. All rights reserved

Keywords:
Adolescent, inertia, inertia scale.

1. Introduction

There is a decline in the fulfilment of school-related duties and responsibilities with the change of interests during adolescence, coinciding high school years, a period of transition from childhood into adulthood (Larson et al., 2002). Adolescents who experience intense stress and anxiety want to continue their childish life and try on the other to take on adult roles. There are various factors inside and outside school that contribute to the quality of academic performance of students. Moreover, increased academic expectations during this period may also lead to fatigue in adolescents (Faroog et al., 2011). Cognitive ability (Subotnik et al., 2011), motivation (Guay et al., 2008), and self-control (Kuhnle et al., 2012) are the important factors affecting the academic achievement of adolescents. An individual who is not actively pursuing a given task can have low momentum, and this condition is associated with inertia. The withdrawal of adolescents from academic activities during this period is considered to be explained with inertia (Deemer et al., 2019).

Inertia refers to the tendency of individuals to repeat the same actions, to live according to previous knowledge and experiences, and to be in a static mode (Pierce, Gardner, & Dunham, 2002: Cited Karayel, 2014). Students experience stress arising from the necessity to do some activities within a structured program for a specific

[1]Corresponding author's address: Mehmet Akif Ersoy University, Faculty of Education Burdur /Turkey
e-mail: ozlemtaga@ymehmetakif.edu.tr
Citation: Tagay, Ö. & Cırcır, O. (2022). Validity and reliability of adolescents academic inertia scale. *International Journal of Psychology and Educational Studies, 9*(2), 283-296. https://dx.doi.org/10.52380/ijpes.2022.9.2.324

educational purpose (Salanova et al., 2009). In this context, the planned, programmed, and compulsory uniform education program may also affect the inertia levels of the students.

Inertia is defined as using previously acquired knowledge and experience, indifference to changes, neglect of duties, and even laziness (Kinnear & Roodt, 1998). Inertia in physics means inactivity, not taking action in personal development towards a goal. The problem of people who dream for years to be successful, set goals, make plans but cannot take the first step is that they live in inertia (Sekman, 2007). People in inertia do not make the smallest attempt to do their responsibilities well. They do not follow publications related to their field, do not follow the latest developments and are indifferent and unwilling to fulfil their duties (Soysal, 2007). People in inertia tend to act generally slowly. Laziness, frustration, indolence and weariness are among the characteristics of inertia. People who experience inertia often postpone, make excuses, and behave reproachfully, recklessly, pessimistically, critically, and anxiously while performing a certain task. Therefore, their joy of life and energy for a living is low (Sekman, 2007).

Eymen (2007) defines inertia as a condition in people that occurs from adapting to the current situation and from insufficient motivation, self-control, empathy, and socializing. It has been stated that living in inertia is a result of the individual's preferences. However, the organizational climate and cultural factors in which individuals live in will also affect the inertia level of the individual (Şaştım, 2019 & Kutlu, 2004). As a part of the organization, students, just like the employees, are a part of the school where systematic reactions are expected from them on many issues at certain times and in a certain order. It is also possible for students to experience problems arising from the organizational structure of the school they are enrolled at. Therefore, motivation that affects organizational inertia (Bingöl, 1997) and organizational climate (Soysal, 2010) can also lead to inertia.

Bingöl (1997) stated that motivation affects the inertia level of individuals. Students' motivation decreases from time to time due to the educational duties and responsibilities encountered during the educational process. These may lead them to experience inertia. The formation of inertia in the school can be prevented with a positive school climate and communication between students, teachers, administrators, and parents (Soysal, 2010). As a part of the school climate, students may experience inertia depending on the school climate and the interaction among the entities forming that climate. The student's academic activities, main duties, and responsibilities may also be negatively affected by this situation. Students during their adolescent years are under pressure and stress due to their developmental tasks, emotional tides, relationships with family and friends, future expectations, career plans, and exam processes (Cırcır, 2018). As a result of these conditions, students may experience fear of uncertainty, difficulty in giving up negative habits, insecurity, and fear of making mistakes. These feelings and thoughts in individuals may result in inertia.

The study of academic inertia may explain how behavioral movement on academic tasks is engendered, which could further illuminate how and to what degree career-related interests and goals are pursued. However, because academic inertia is a newly proposed construct, there are currently no instruments designed to measure it. Therefore, measuring academic inertia in various states of psychological momentum may allow researchers to tap unique sources of variance that reflect heightened perceptions of competence and efficacy expectancies (Deemer et al., 2019). Studies on the concept of inertia are quite limited. Studies on inertia have generally been conducted related to organizational psychology. In the literature, to our best knowledge, there are no studies about a measurement tool to determine the inertia levels of adolescents.

Şaştım (2019) concluded that the relationship between inertia and burnout was moderate; male teachers, teachers who graduated from the faculties of education, classroom teachers, and graduate teachers experienced low levels of inertia and burnout. Çankaya and Demirtaş (2010) examined the relationship between university climate and inertia by referring to prospective teachers' opinions and concluded that the university climate significantly predicted the inertia level in terms of motivation and social opportunities in prospective teachers. Çankaya (2010) have considered the opinions and suggestions of primary school administrators for schools to cope with inertia. The research concluded a significant relationship between quick decision-making processes within the organization, access to new information resources, meeting members' needs quickly, effective cooperation in the social milieu, sustainable resources, and continuing success and inertia.

Increasing academic expectations from adolescents enrolled in the secondary education process during adolescence causes fatigue in adolescents. For the adolescents to receive effective psychological support, this state of exhaustion and neglect must be first detected, evaluated, and necessary support provided. Therefore, measuring academic inertia in various states of psychological momentum may allow researchers to tap unique sources of variance that reflect heightened perceptions of competence and efficacy expectancies. Based on the relevant knowledge in the literature, this situation is to be first evaluated and then inertia considered. However, in the literature, there is no valid and reliable measurement tool to determine inertia in adolescents to our best knowledge. The present study aims to solve this necessity and fulfil this gap in the relevant area. Hence, the validity and reliability studies of the developed Adolescents Academic Inertia Scale are conducted.

2. Method

2.1. The Study Group

The present study participants consisted of three different groups enrolled at various high schools within Konya Province. They took part in the study for the preparation of a scale to measure inertia experienced by adolescents. These study groups were determined using the convenient sampling method. The convenient sampling method enables the application of a questionnaire to the participants within the researcher's reach (Balcı, 2001). These study groups are given below.

2.1.1. The First Study Group: The first study group received the 60-item (out of the 63-item) Adolescent Academic Inertia Scale (AAIS); three items were removed in line with the views of specialists. A total of randomly selected 30 participants (19 females and 11 males) enrolled at different class levels at High Schools within the Konya district throughout the 2019-2020 academic year took part in the study. 8 (26%) students were 14; 13 (43.3%) students were 15, and 9 (30%) students were 16 years' old

2.1.2. The Second Study Group: In the second study group, the 60-item scale was administered to collect data about explanatory factor analyses of the Adolescents Academic Inertia Scale (AAIS). The application was carried out in two high schools in the city centre, which are easy to reach and have a large student group. The scale was applied to 473 students determined randomly enrolled at various high school classes. Among the scales applied, 63 with incomplete data and not answered attentively were excluded during the evaluation process. Of the remaining 410 participants, 234 were female, and 176 were male. 81 (19.7%) were 14; 207 (50.5%) were 15; 57 (13.9%) were 16, and 65 (15.9%) of them were 17 years old.

2.1.3. The Third Study Group: The 25-item scale was administered to the third group to collect data about confirmatory factor analyses of the Adolescents Academic Inertia Scale (AAIS). In addition, the Tuckman Procrastination Scale was applied to this group, and criterion-related validity was used with the data. The application was carried out in a high school in the city centre, which is easy to reach and has a large student group. The scale was applied to 351 students determined randomly enrolled at various high school classes. Among the scales applied, 6 with incomplete data and not answered attentively were excluded during the evaluation process. Of the remaining 345 participants, 182 were female, and 163 were male. 12 (%3,48) were 13; 68 (%19,7) were 14; 80 (%23,2) were 15, and 75 (%21,7) of them were 16 years old.

2.1.4. The Fourth Study Group: Data were collected twice at a four-week interval from a total of randomly determined 45 students (21 females and 24 males) enrolled at different classes in an Anatolian High School in Konya during the 2019-2020 academic year to determine the test-retest reliability coefficient of AAIS. 5 (11.1%) were 13; 19 (42.2%) were 14; 8 (17.8%) were 15, and 13 (28.9%) of them were 16 years old.

2.2. Data Collection Tools

2.2.1 The Tuckman Procrastination Scale

The Tuckman Procrastination Scale was developed to assess students' procrastination tendencies (Tuckman, 1991), and this scale was adapted to Turkish Culture by Özer, Saçkes, and Tuckman (2009). The Turkish scale has a single factor structure consisting of 14 items, which explains 44.26% of the total variance. The Turkish version of TPS with a new scoring system with a five-point Likert scale (1 = strongly agree, 2 = agree, 3 = unsure, 4 = disagree, 5 = strongly disagree) was used. Özer et al. (2013) reported that the internal consistency coefficient for the TPS was $\alpha = 0.90$, and 4 weeks' test-retest reliability correlation for the TPS was 0.80.

2.3. Procedure

During preparing the *Adolescents Academic Inertia Scale* (AAIS) items, national and international literature on inertia was examined; thus, the items were determined (Deemer et al., 2019; Sekman, 2007; Soysal, 2007). An item pool of 63 items, considered to be inertia related features, was determined. Four experts analysed these 63 items – 2 lecturers with a doctoral degree in educational management – 2 associate professors from guidance and psychological counselling. The AAIS was limited to 60 items in line with the feedback given by the experts and submitted to a Turkish Language expert for linguistic and comprehensibility evaluation. The necessary amendments were made based on the suggestions. Then a pilot study was conducted. In this study, adolescents were asked to answer the questions through the researcher, and they were asked to mark items that they found difficult to understand or found meaningless. Reports were received from 30 adolescents. Since there was no unclear item, the 60-item scale was prepared for use as a draft scale. The main AAIS application was conducted throughout the 2019-2020 academic year to 410 volunteering students. The scale was applied in 40 minutes, which is approximately one class period. Before the AAIS administration, the researcher provided the necessary information on how to fill out the scale and its purpose. Subsequently, the AAIS was applied to the volunteering students. The authors declare that they have carried out the research within the framework of the Helsinki Declaration and with the participation of volunteer students. Informed consent was obtained from all individual participants included in the study. All participants were debriefed in the research process.

2.4. Data Analysis

Confirmatory factor analysis was conducted to test whether the explanatory and related variables will provide the expected outcomes on the factors determined to evaluate the factor structure of the AAIS (Sümer, 2000). For the scale's construct validity, data obtained from 410 students attending high schools in Konya were used. The Cronbach Alpha internal consistency coefficient was determined within the scope of the reliability studies of AAIS. Moreover, the test-retest reliability of the AAIS was determined based on the administration of the scale to 50 students enrolled at a four-week interval and calculated using the data obtained. SPSS-22 and Lisrel 8.71 programs were used to evaluate the data obtained in the present study. The significance threshold level in the present study was considered to be $p < .001$.

2.5. Ethical

In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. Ethical Review Board Name: Mehmet Akif Ersoy University Ethics Committee. Date of Ethics Evaluation Decision: 07.07.2021 Ethics Assessment Document Issue Number: GO 2021/285

3. Findings

The statistical processes administered to the study groups' data are presented in this section of the study.

3.1. Findings Related to the Validity Study of the Adolescents Academic Inertia Scale (AAIS)

Explanatory Factor Analysis

Within the scope of validity studies of AAIS, scope validity and structure validity were studied. Four experts were consulted for content validity. 63 items were written for the first trial version of AAIS, and thus an item pool was created. The 63-item AAIS was examined by four experts related to inertia, and their feedback was considered. Therefore, in line with the feedback provided by the experts, five items were removed, and two items were added to AAIS before it was piloted with 30 students. The pilot study result has shown that the items of the scale were understandable. Subsequently, AAIS was administered to a study group of 410 students for explanatory factor analysis for the main study. The sufficiency of the data for factor analysis was examined using the Kaiser-Meyer-Olkin (KMO) Coefficient and Barlett test. A high KMO value means that other variables can perfectly predict each variable in the scale. It is stated that if the KMO value is lower than .50, explanatory factor analysis cannot be performed (Çokluk et al., 2012). The results of the tests have shown that the KMO value for AAIS was .809, and the Barlett test (2657,319; $p = 0.00$) is also statistically significant. The first analysis showed that the scale was distributed to 24 factors with an eigenvalue greater than one. Furthermore, 35 items with factor loads below .40 or close to each other in more than one factor were removed.

The remaining items were analysed again with the Promax Rotation Technique. As a result of this analysis, five factors considered to be conceptually appropriate were determined, and the scale items were decreased to 25. Five factors in the obtained eigenvalue graph are evaluable (Figure 1 below).

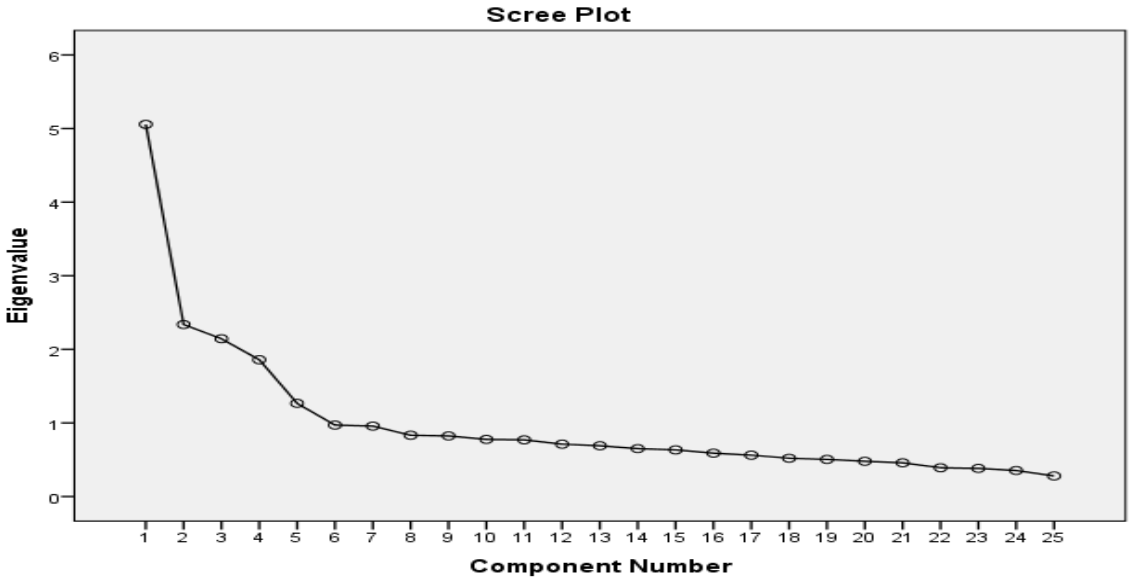

Figure 1. *Explanatory Factor Analysis Eigenvalue Graphic (Scree Pilot)*

As in Figure 1, there are five factors with sudden decreases in the eigenvalues of the factors. There is a steep decline from the first factor and a less steep decline after the second, third, fourth, and fifth factors. Since there were no rapid decreases in the following factors, AAIS is considered to have five factors. As a result of the explanatory factor analysis, five factors were determined to meet the necessary criteria. The items included in each factor were examined in terms of content. The factors were named based on the knowledge in the literature related to inertia.

Table 1. *Sub Factors and Item Factor Loads According to Explanatory Factor Analysis*

Items	Factor 1 Planned Work	Factor 2 Fear of Failure	Factor 3 Procastination	Factor 4 Family Support	Factor 5 School Burnout
m1	,693				
m2	,707				
m3	,776				
m4	,755				
m5		,635			
m6		,821			
m7		,624			
m8		,516			
m9			,777		
m10			,565		
m11			,660		
m12			,648		
m13			,633		
m14				,466	
m15				,685	
m16				,755	
m17				,742	
m18				,739	
m19				,569	
m20				,582	
m21					,647
m22					,657
m23					,781
m24					,850
m25					,497

Accordingly, four factors referring to planned study are labelled Planned work (PW), four items indicating anxiety about failure are labelled as Fear of Failure (FF), five items referring to procrastination are labelled as Procrastination (P), seven factors referring to family support are labelled as Family Support (FS), and the five factors referring to school-related burnout were named School Burnout (SB). It was seen that the items included in the analysis had five factors with eigenvalues greater than one. The total variance rate explained by these five factors is 50.65%. 7.43% of the total variance consisted of Planned Study, 5.06% of Fear of Failure, 8.58% of Procrastination, 20.23% of Family Support, and 9.35% of School Burnout.

On examining Table 1, it can be seen that the item load values of the first factor (PW) range between .693 and .776, of the second factor (FF) between .516 and .821, of the third factor (P) between .565 and .777, of the fourth factor (FS) between .466 and .755, and the fifth factor (SB) between .497 and .850. It can be seen that the total item factor load values of AAIS range between .466 and .850. Tabachnick and Fidell (2001) stated that item factor load values should be higher than .32 during the scale development process. In line with these values obtained, it can be said that the item factor load values of all five-factor structures of the scale are sufficient.

Confirmatory factor analysis

Confirmatory factor analysis (CFA) aims to assess how the factors formed from many variables are consistent with the real data by getting support from the theoretical infrastructure. With CFA, statistical data regarding what extent the model put forward regarding the relationships between factors fit the observed data can be reached (Sümer, 2000). CFA is a specially constructed form of the Structural Equation Model (SEM) (Fayers & Hand, 1997) and provides evidence to determine the construct validity of the scale (Lewis, Francis, Shevlin, & Forrest, 2002; McIntire & Miller, 2000).

Confirmatory factor analysis (CFA) was conducted to test the structural validity of AAIS. In this process, data obtained from the second research group were employed. In the model, the hypotheses that items will be represented by five factors and that four items will be categorised under 'planned study', four under 'fear of failure', five under 'procrastination', seven items under 'family support', and five items under 'school burnout' have been confirmed. When Figure 2 below is examined, it can be seen that the chi-square value of the confirmatory factor analysis (CFA) index is $X^2 = 620.58$. Since the chi-square statistic is affected by the sample size (Brown, 2006), the chi-square value is evaluated by dividing it by the degree of freedom. The value below 3 is considered an indicator of a good fit (Schumacher and Lomax, 2004). It is seen that the chi-square value of AAIS is (X2 = 620,58, sd = 270, p = .000; X^2 / df = 620,58 / 270 = 2,29; 2,29 <3.0) and hence statistically significant.

According to the CFA result, the fit indices of the model are RMSEA = 0.061, GFI = 0.87, AGFI = 0.85, CFI = 0.95, NNFI = 0.95, RMR = 0.012 and SRMR = 0.0072'. Among these indexes mentioned above, RMSEA and RMR are expected to give values close to 0 and values equal to, or less than 0.05 indicate a very good fit. Values below 0.08 and 0.10 can be accepted considering the model's complexity (Sümer, 2000). SRMR's being less than 0.08 indicates an acceptable fit (Hu & Bentler, 1999). It can be said that the model tested here has an acceptable level of compliance because it consists of a multidimensional structure and the RMSEA is less than 0.05, and the RMR and SRMR values are between 0.05 and 0.10.

GFI, another index indicating fit, reveals the obtained factors' similarity to the theoretically suggested factors and has been developed to evaluate the fit independently from the sample size. Schumacher and Lomax (2004) stated that a GFI value of .85 and above indicates a very good fit, and a fit between 0.90-0.95 indicates a satisfactory fit. Since Schermelleh-Engel, Moosbrugger, and Müler (2003) stated that an AGFI fit index above 0.90 is a good fit and 0.85-0.90 is an acceptable fit, GFI (0.91) and AGFI (0, 89) values can be said to be acceptable for AAIS compliance.

CFI and NNFI values, which are the incremental fit indices, indicate a very good fit, and between 0.90-0.95 indicates an acceptable fit (Gypsy & Gerard, 2002; Sümer, 2000). According to CFI (0.94) and NNFI (0.93) values calculated in this study, it was understood that the model had an acceptable level of fit. When fit indices

were examined, all indicators showed a fit between the model and the observed data. The findings obtained from the Confirmatory Factor Analysis showed that the model fit of the AAIS was sufficient.

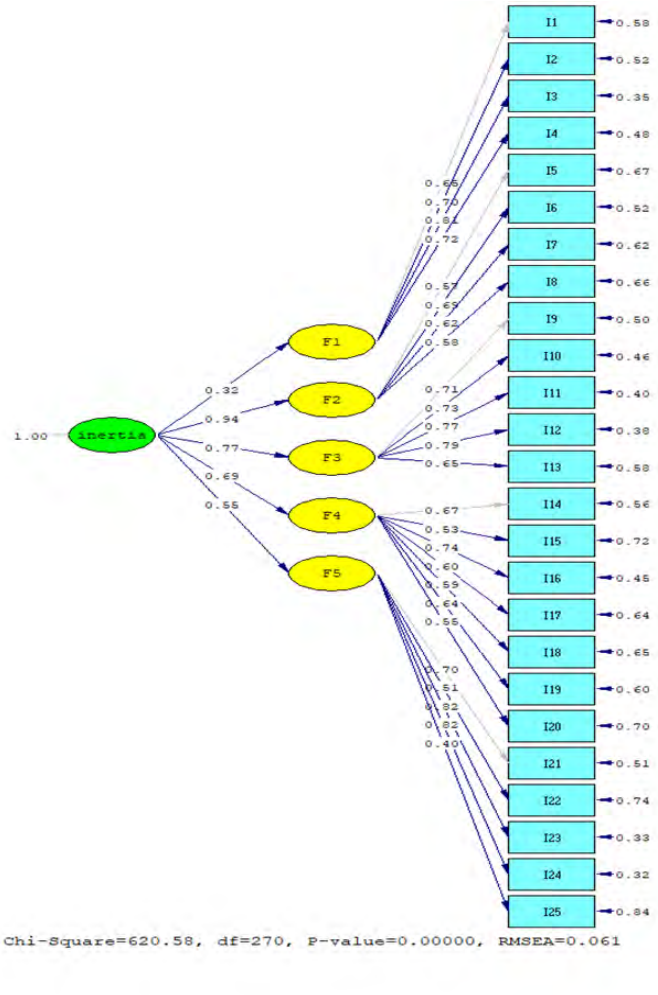

Figure 2. *Confirmatory Factor Analysis*

As a result of the second level DFA, no modification was made because the model fitted well. As shown in Figure 2, the factor loads of the model range from .35 to .58 for the planned work sub-dimension, between .52 and .67 for the fear of failure sub-dimension, between .38 and .58 for the procrastination sub-dimension, between .56 and .72 for the family support sub-dimension, and between .32 and .84 for the school burnout sub-dimension. After the standard solutions, the t-values between the factors and the items were checked, and it was determined that there was no red arrow. Joreskog and Sörbom (1996) state that the absence of a red arrow related to the t-value is significant at the .50 level for all items. In this context, it can be said that all the scale items gave a significant result at the .50 level.

Criterion-Related Validity

The correlation between the Tuckman Academic Procrastination Scale was examined to examine the criterion-related validity of the Academic Inertia Scale in Adolescents, and the results are presented in Table 2 below.

Table 2. *Correlation Values Between Inertia and Academic Procrastination*

	1	2	3	4	5	6	7
1-Planned work	1						
2-Fear of failure	,419**	1					
3-Procrastination	,354**	,500**	1				
4-Family Support	,353**	,569**	,410**	1			
5-School burnout	,243**	,307**	,384	,379**	1		
6-Academic Inertia	,606**	,761**	,759**	,774**	,671**	1	
7-Academic Procrastination	,487**	,562**	,798	,451**	,438**	,766**	1

***p<.01*

When Table 2 is examined, the Tuckman Academic Procrastination Scale scores and Adolescent Academic Inertia Scale's total score and procrastination sub-dimension have a high and strong positive correlation. It is seen that the Academic Inertia Scale for Adolescents has a moderate positive correlation with the Planned Study, Fear of Failure, Family Support, and School Burnout sub-dimensions

3.2. Findings Related to The Reliability Study of the Adolescents Academic Inertia Scale (AAIS)

To determine the reliability level of the scale, Cronbach Alpha, item-total and item-remainder correlation, independent groups t-test, test-retest correlation, and dependent groups t-test analyses between the upper 27% and lower 27% groups were performed. The "Cronbach alpha reliability coefficient" is widely used to determine the reliability of the scales used to measure psychological characteristics. The alpha coefficient method, which Cronbach developed in 1951, is an internal consistency estimation method that is convenient when the items are not scored as true-false (two-state dichotomous) and ordinally scored such as 1-3, 1-4, 1-5. The Cronbach alpha coefficient is a weighted standard average of change found by proportioning the total variances of k items in the scale to the general variance (Dawson, 2004; Haladyna, 1999)

Within the scope of the reliability studies of the scale, the item-total correlation and item-remainder correlation of the scale were calculated after the Cronbach's alpha internal consistency coefficient. Item-total correlation explains the relationship between the scores obtained from the items in the measurement tool and the total score. The fact that the item-total correlation is high and positive indicates that the items in the measurement tool exemplify similar behaviors, and the scale's internal consistency is high. It is also stated that the item-total correlations of 0.30 and above will be sufficient for the items in the measurement tool and that the items with these values are good (Büyüköztürk, 2017; Tavşancıl, 2002). The findings of the item-total correlation and item-remainder correlation of the scale are presented in Table 3 below.

Table 3. *Item-Total Correlation and Item-Remaining Correlation Values of Academic Inertia Scale for Adolescents*

Item number and ıts' factor		Item-total corelation (r)	Item-remainder corelation (r)	Item number and its' factor		Item-total corelation (r)	Item-remainder corelation (r)
1		,685**	,454**	14		,629**	,452**
2	Planned Work	,741**	,508**	15		,640**	,499**
3		,772**	,562**	16	Family	,709**	,592**
4		,750**	,510**	17	Support	,709**	,570**
5		,694**	,441**	18		,682**	,546**
6	Fear of failure	,765**	,542**	19		,677**	,510**
7		,636**	,364**	20		,617**	,457**
8		,742**	,473**	21		,719**	,523**
9		,676**	,480**	22		,649**	,438**
10		,665**	,441**	23	School	,776**	,617**
11	Procrastination	,720**	,524**	24	Burnout	,793**	,635**
12		,732**	,544**	25		,584**	,359**
13		,639**	,400**				

***p<0.01*

When Table 3 is examined, the item-total correlations of the Planned Study sub-dimension are between r=.685 and r=.772. The item-total correlations of the items in the Fear of Failure sub-dimension are between r=.636 and r=.765. The item-total correlations of the items in the Procrastination sub-dimension are between r=.685 and r=.772. Item-total correlations of items in the Family Support sub-dimension are between r=.617 and r=.709.

Finally, the item-total correlations of items in the School Burnout sub-dimension are between r=.584 and r=.793. It is seen that the item-total values are significant at the .001 level. Considering that 0.30 and above are acceptable values for item-total correlation by Büyüköztürk (2017) and Tavşancıl (2002), it can be said that all 18 items in the scale are above the desired item-total correlation value and representing good items.

While calculating the item-remainder correlation coefficient, the item-remainder value was found by subtracting the item's score from the scale score. The correlation coefficients obtained were tested whether they were significant or not. Accordingly, the item-remainder correlations of the items in the Planned Study sub-dimension are between r=.454 and r=.562, between r=.364 and r=.542 in the Fear of Failure sub-dimension, between r=.454 and r=. in the Procrastination sub-dimension, between r=.400 and r=.544, between r=.452 and r=.592 in the Family Support sub-dimension, and between r=.359 and r=.617 in the School Burnout sub-dimension.

The total scores of the 410 students who make up the second study group were ranked from largest to smallest to reveal the distinctive features of each of the five factors that make up the scale. Then, the lower and upper 27% groups were determined according to this order. Independent group t-test analysis was performed to determine whether there is a difference between the arithmetic mean scores of the adolescents in the lower and upper 27% of the study group. Analysis results are presented in Table 4 below.

Table 4: *T-Values between Lower and Upper Group Means of Academic Inertia Scale for Adolescents*

Factor	Group	n	Mean	ss	t	sd	p
Planned work	Üst	111	3,18	,29	5,960	220	.000
	Alt	111	1,75	,23			
Fear of failure	Üst	111	2,23	,80	17,205	220	.000
	Alt	111	1,67	,58			
Procrastination	Üst	111	3,46	,81	16,142	220	.000
	Alt	111	1,74	,67			
Family Support	Üst	111	3,79	,71	16,354	220	.000
	Alt	111	2,32	,64			
School Burnout	Üst	111	2,71	,87	19,275	220	.000
	Alt	111	1,27	,31			
Inertia Total	Üst	111	3,69	,79	40,734	220	.000
	Alt	111	1,92	,56			

p<0.01

For "item analysis based on the difference between lower and upper group means", for each item, the t-value of the difference between the mean attitude scores of the upper and lower groups was calculated. The difference between the upper and lower groups according to all sub-dimensions of the scale and total average scale scores was significant at the 0.01 level for all items.

Test-retest analysis was used to determine the stability of the scale. The test-retest application was applied to 43 students at four-week intervals. In Table 5 below, the test-retest correlation coefficients and the findings related to the dependent groups t-test are given.

Table 5. *Test-Retest Reliability Coefficients of AAIS and Dependent Groups t-test results*

Factors of AAIS	Group	n	r	p	Mean	Ss	t	sd	p
Planned Work	Pretest	43	,83	.000	3,8953	,73443	-,393	42	,697
	Posttest	43			3,9244	,86866			
Fear of failure	Pretest	43	,64	.000	2,1395	,85618	3,477	42	,001
	Posttest	43			1,7791	,73438			
Procrastination	Pretest	43	,79	.000	2,4186	,86279	1,721	42	,093
	Posttest	43			2,2605	,97934			
Family support	Pretest	43	,80	.000	1,3123	,38213	,272	42	,787
	Posttest	43			1,3023	,38460			
School burnout	Pretest	43	,63	.000	1,9023	,65665	-1,953	42	,058
	Posttest	43			2,0837	,73967			
Total score	Pretest	43	,77	.000	2,1972	,38171	1,226	42	,227
	Posttest	43			2,1460	,41467			

For the test-retest reliability of AAIS, data were collected twice at a four-week interval from 43 students enrolled at three different High Schools. The test-retest reliability coefficient obtained for AAIS was .83 for the Planned Study subscale; .64 for the Fear of Failure sub-dimension; .79 for the Procrastination subscale, .80 for the Family Support subscale; .63 for the School Burnout sub-dimension, and 0.77 for the whole AAIS. The reliability coefficient obtained is at an acceptable level. As a result of the dependent groups t-test performed between the factors and the total score, there is no significant difference at the .05 level, except for the fear of failure.

4. Discussion, Results and Suggestions for Further Study

Academic inertia is a newly proposed construct; studies on the concept of inertia are quite limited. The study of academic inertia may explain how behavioural movement on academic tasks is engendered, which could further illuminate how and to what degree career-related interests, goals and academic performance are pursued (Deemer et al., 2019). The development of the academic inertia scale will effectively identify and evaluate the adolescents' situation and make more research on this subject. The current study aims to conduct the validity and reliability studies of the Academic Inertia Scale for Adolescents (AAIS). Nonetheless, the current scale also incorporates measuring dimensions of academic inertia that may include planned work, fear of failure, procrastination, family support, and school burnout.

A confirmatory factor analysis (CFA) was conducted to determine whether the five-factor and 25-item scale obtained with explanatory factor analysis (EFA) constitute a compatible model. Findings obtained from the Confirmatory Factor Analysis have verified the five-factor model of AAIS was sufficient. The correlation between the Tuckman Academic Procrastination Scale was examined to examine the criterion-related validity of the Academic Inertia Scale in Adolescents. Tuckman Academic Procrastination Scale scores, Adolescent Academic Inertia Scale's total score, and the procrastination sub-dimension have a high and strong positive correlation. Independent groups t-test, test-retest correlation, and dependent groups t-test analyses between the upper 27% and lower 27% groups were performed to determine the reliability level of the scale, Cronbach Alpha, item-total and item-remainder correlation. When EFA, CFA, and reliability studies were evaluated, it was determined that the Adolescents Academic Inertia Scale was a valid and reliable scale to determine the inertia levels of adolescents.

As a result of this study, the 25-item AAIS was developed. It consists of five sub-dimensions: Planned Study, Fear of Failure, Procrastination, Family Support, and School Burnout. The lowest score that can be obtained from this scale is 25, and the highest score is 125. While high scores in the Fear of Failure, Procrastination, Family Support, and School Burnout sub-dimensions indicate high inertia levels, low scores in the planned study sub-dimension indicate an increasing level of inertia. There are four items on the scale, items 1, 2, 3, and 4, which are scored reverse. As a result of this study, it was determined that the Adolescents Academic Inertia Scale, which consists of five sub-dimensions and 25 items, is a valid and reliable measurement tool.

It appears that inquiries into the influence of academic inertia may also hold promise for developing interventions aimed at helping students overcome academic and career obstacles. Based on these results, the following recommendations for researchers and those who will administer AAIS are made.

- Future research would do well by further exploring the task-dependent nature of academic inertia.

-Using the scale in studies that include different samples and students at different educational levels such as primary school, middle school, and university.

- It is recommended that school psychological counsellors determine the inertia level of the students with AAIS and carry out activities that will take measures to mobilise the students and reduce their inertia levels.

5. References

Balcı, A. (2001. *Sosyal bilimlerde araştırma: yöntem teknik ve ilkeler*. Pegem.

Bingöl, D.: (1997). *Personel yönetimi* (3. Baskı). Beta.

Brown, T. A. (2006). *Confirmatory factor analysis: for Applied research*. The Guilford Press.

Büyüköztürk, Ş. (2003). *Sosyal bilimler için veri analizi el kitabı* (3. Baskı). Pegem.

Cırcır, O. (2018). *Ergenlerde, okul tükenmişlik düzeylerinin aleksiti ve okul iklimi açısından yordanması* [Yüksek lisans tezi]. Necmettin Erbakan Üniversitesi, Konya.

Çankaya, H.İ. (2010). İlköğretim okul yöneticilerinin vicdan odaklı yaklaşım düzeyleri ile atalet algıları arasındaki ilişki. *Ahi Evran Üniversitesi Eğitim Fakültesi Dergisi*, 11, 2, 65-74.

Çankaya, H.İ., Demirtaş, Z. (2010). Öğretmen adaylarının görüşlerine göre üniversite iklimi ve atalet arasındaki ilişki. *Pamukkale Üniv., Eğitim Fakültesi Dergisi*, 2010,2, 28, 1-9.

Çokluk, Ö., Şekercioğlu, G. ve Büyüköztürk, Ş. (2012). *Sosyal bilimler için çok değişkenli istatistik: SPSS ve Lisrel uygulamaları.* Pegem.

Dawson B, Trap RG. (2004). *Basic and clinical biostatistics*. Lange Medical Books/McGraw-Hill.

Deemer, E. D., Derosa, P. A., Duhon, S. A., & Dotterer, A. M. (2019). Psychological momentum and inertia: Toward a model of academic motivation. *Journal of Career Development*, 0894845319848847.

Eymen, U. A. (2007). *Cezasız disiplin*. Kaliteofisi Yayınları.

Farooq, M. S., Chaudhry, A. H., Shafiq, M., & Berhanu, G. (2011). Factors affecting students' quality of academic performance: a case of secondary school level. *Journal of quality and technology management*, *7*(2), 1-14.

Fayers, P.M., & Hand, D.J. (1997). Factor analysis, causal indicators, and quality of life. *Quality of Life Research, 6*, 139–150.

Guay, F., Ratelle, C., & Chanal, J. (2008). Optimal learning in optimal contexts: The role of selfdetermination in education. *Canadian Psychology, 49*, 233–240. doi:10.1037/a0012758

Gypsy, M. D. ve Gerard, J. K. (2002). Confirmatory factor analysis of the assessment for living and learning scale: A cross-validation investigation. *Measurement and Evoluation in Counseling and Development*, 35(1), 14-26. DOI: https://doi.org/10.1080/07481756.2002.12069044

Haladyna, T. M. (1999). *Developing and validating multiple-choice exam items* (2nd ed.). Lawrence Erlbaum.

Kaplan, R. M. ve Saccuzzo, D.P. (2005). *Psychological testing: Principles, applications and issues, Thomson Wadsworth*. University of Nebraska Press.

Karayel, G. (2014). *Ortaöğretim öğretmenlerinin örgütsel atalet düzeyleri Bayrampaşa ilçesi örneği* [Yüksek lisans tezi]. Okan Üniversitesi, İstanbul.

Kinnear, C., Roodt, G. (1998). The development of an instrument for measuring organisational ınertia. *Journal of Industrial Psychology*, *24*(2), 44-54. DOI: https://doi.org/10.4102/sajip.v24i2.652

Kuhnle, C., Hofer, M., & Kilian, B. (2012). Self-control as predictor of school grades, life balance, and flow in adolescents. *British Journal of Educational Psychology*, *82*, 533–548. doi: 10.1111/j.2044- 8279.2011.02042.x

Kutlu, Ö. (2004). *Gelişmiş ülkeler ve Türkiye'de kamu reformu ve yönetimin yeniden düzenlenmesi*. Nobel.

Larson, R. W., Wilson, S., Brown, B. B., Furstenberg, Jr, F. F., & Verma, S. (2002). Changes in adolescents' interpersonal experiences: Are they being prepared for adult relationships in the twenty-first century? *Journal of Research on Adolescence*, *12*(1), 31-68.

Pierce, J. L., Gardner, D. G., & Dunham, R. B. (2002). *Managing organizational change and development management and organizational behavior: An ıntegrated perspective.* Cincinnati, OH: South-Western College Publishing, USA.

Salanova M., Schaufeli W. B., Martineza, I. Ve Breso E. (2009). How obstakles facilitators predict academic performance: The mediating role of study burnout and engagement. *Anxiety Stress and Coping*. 23, 53-70. DOI: 10.1080/10615800802609965

Schermelleh-Engel, K., Moosbrugger, H., and Müler, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive. Goodness-Of-Fit Measures. *Methods of Psychological Research Online*, (8), 2, 23-74.

Sekman, M. (2007). *Kişisel ataleti yenmek*. Alfa Yayınları.

Soysal, A. (2007). *Boş zaman etkinlikleri rehberi.* M. Ş. Şimşek, A. Çelik ve A. Soysal (Ed.), *Zaman yönetimi ve yönetsel zamanda etkinlik* içinde. Gazi Kitabevi.

Soysal, A.: (2010), Atalet: Etkin yönetim için kişisel ve örgütsel düzeyde bir analiz, *Çimento İşveren Dergisi, 24*(3), 16-26.

Subotnik, R. F., Olszewski-Kubilius, P., & Worrell, F. C. (2011). Rethinking giftedness and gifted education: A proposed direction forward based on psychological science. *Psychological Science in the Public Interest, 12*, 3–54. doi:10.1177/1529100611418056.

Sümer, N. (2000). Yapısal eşitlik modelleri: Temel kavramlar ve örnek uygulamalar. *Türk Psikoloji Yazıları*, 3(6), 49- 74.

Şaştım, Z. (2019). *Öğretmenlerin algılarına göre atalet ve tükenmişlik düzeyleri arasındaki ilişki* [Yüksek lisans tezi]. Uşak Üniversitesi, Uşak.

Şimşek, Ö. F. (2007). *Yapısal eşitlik modellemesine giriş*. Ekinoks Yayınları.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics*. Allyn ve Bacon.

Tekindal, S. (2002). *Duyuşsal özelliklerin ölçülmesi için araç oluşturma*. Kocaeli Kitap Kulübü Yayınları.

Uzun Özer, B., Saçkes, M. & Tuckman, B. W. (2009). Psychometric properties of the Tuckman procrastination scale in a Turkish sample. Paper presented at *6th Biannial International Conference on Procrastination*, Toronto, Canada.

	ERGENLERDE AKADEMİK ATALET ÖLÇEĞİ(EAAÖ)					
	Aşağıdaki her bir cümle sizin için: " Hiç uygun değil" ise 1 " Pek uygun değil" ise 2 " Biraz uygun" ise 3 " Çoğunlukla uygun" ise 4 " Tamamen uygun" ise 5 seçiniz.	**Hiç uygun değil**	**Pek uygun değil**	**Biraz uygun**	**Çoğunlukla uygun**	**Tamamen uygun**
1	Geleceğe yönelik planlama(üniversite, meslek ,iş vs.)yaparım.	1	2	3	4	5
2	Geleceğe yönelik beklentilerime ulaşabileceğime inanırım.	1	2	3	4	5
3	Geleceğe yönelik ulaşılabilir planlarım var.	1	2	3	4	5
4	Geleceğe yönelik somut planlarım var.	1	2	3	4	5
5	Derslerime planlı çalışsam da başarılı olamayacağımı düşünüyorum.	1	2	3	4	5
6	Yanlış yapma korkusuyla yapabileceğim şeyleri bile yapamıyorum.	1	2	3	4	5
7	Ailemin benden beklentilerinin yüksek olmasından dolayı başarısız olma korkusuyla ders çalışamam.	1	2	3	4	5
8	Küçük düşürülme korkusuyla derslere katılmam.	1	2	3	4	5
9	Yaptığım planlara uymakta güçlük yaşarım.	1	2	3	4	5
10	Derslerime nasıl çalışmam gerektiğini bilmiyorum.	1	2	3	4	5
11	Ders çalışmaya başladığımda farklı düşüncelere kapılıp odaklanamam.	1	2	3	4	5
12	Ders çalışmak için program yapmama rağmen genellikle yorgun hissedip çalışmayı bırakırım.	1	2	3	4	5
13	Teknolojik aletlere olan ilgimdendolayı derslerime çalışmak için zaman bulamam.	1	2	3	4	5
14	Ailemin baskısından dolayı derslerime çalışmak istemem.	1	2	3	4	5
15	Ailem ev işlerine yardımcı olmamı istediği için yeterince çalışmam.	1	2	3	4	5
16	Ailemin benimle ilgilenmemesinden dolayı ders çalışmam.	1	2	3	4	5
17	Aile içinde yaşanan şiddet nedeniyle derslerime odaklanamam.	1	2	3	4	5
18	Aile içinde yaşanan huzursuzluk nedeniyle derslerime odaklanamam.	1	2	3	4	5
19	Ailemin bana olan inancının düşük olmasından dolayı motivasyonum düşer.	1	2	3	4	5
20	Maddi imkansızlıktan dolayı verimli ders çalışma ortamına sahip değilim.	1	2	3	4	5
21	Okula devam zorunlu olmasa okula düzenli gitmem.	1	2	3	4	5
22	Okul ve ödevlerin yoğunluğundan bitkinim.	1	2	3	4	5
23	Okula gitsem de olur gitmesem de olur.	1	2	3	4	5
24	Okula gitmek bana çok gereksiz geliyor.	1	2	3	4	5
25	Ne kadar plan da yapsam her şey olacağına varır.	1	2	3	4	5

	Adolescents Academic Inertia Scale (AAIS)					
	Considering each of the sentences below is: " Not appropriate at all" choose 1 " Quite not appropriate" choose 2 " Somewhat appropriate " choose 3 " Mostly appropriate" choose 4 " Totally appropriate ″ choose 5.	Not appropriate at all	Quite not appropriate	Somewhat appropriate	Mostly appropriate	Totally appropriate
1	I make plans for the future (university, profession, job, etc.).	1	2	3	4	5
2	I believe that I can achieve my expectations in future.	1	2	3	4	5
3	I have achievable plans for the future.	1	2	3	4	5
4	I have concrete plans for the future.	1	2	3	4	5
5	I think that I won't succeed despite planned studying for my classes.	1	2	3	4	5
6	I can't do the activities that I can do because of the fright of doing wrong.	1	2	3	4	5
7	I can't study because of the high expectations of my family from me.	1	2	3	4	5
8	I can't join the classes because of being humiliated.	1	2	3	4	5
9	I have problems in following the plans that I have had made.	1	2	3	4	5
10	I don't know how to study for my classes.	1	2	3	4	5
11	I can't focus on my classes since I am lost in thoughts when I begin studying for my classes.	1	2	3	4	5
12	Although I have plans to study for my classes, I generally feel tired and quit studying.	1	2	3	4	5
13	I do not have the time to study for my classes due to my interest in technological devices.	1	2	3	4	5
14	I don't want to study because of the pressure of my family.	1	2	3	4	5
15	I can't study enough because my family wants me to help in the household chores.	1	2	3	4	5
16	I don't study because of the disinterest of my family in my doings.	1	2	3	4	5
17	I can't focus on my classes because of the violence experienced in my family.	1	2	3	4	5
18	I can't focus on my classes because of the unrest experienced in my family.	1	2	3	4	5
19	My motivation drops since my family does not believe in me.	1	2	3	4	5
20	I don't have a futile working environment because of financial needs.	1	2	3	4	5
21	If school would not be compulsory, I would not attend school regularly.	1	2	3	4	5
22	I am exhausted because of school and homework.	1	2	3	4	5
23	It would not make a difference If I would go to school or not.	1	2	3	4	5
24	Going to school seems to me as useless.	1	2	3	4	5
25	Regardless of how much I plan, everything turns out to be as destined.	1	2	3	4	5