

*Full Length Research Paper*

# Application of trait anger and anger expression styles scale new modelling on university students from various social and cultural environments

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Received 18 November, 2015; Accepted 08th February, 2016

The purpose of this study is to investigate the differences in anger traits of university students and teacher candidates studying in various social and cultural regions, of Batman and Denizli, Turkey. Modelling anger and anger expression style scale according to some variables such as age, gender, education level, number of siblings, parents' education level was used. The study was carried out in the academic year of 2014-2015. The study population consists of a total of 551 students: 263 are from Batman University; of these, 166 are females and 97 are males; 114 are between the ages of 16-20, and 121 are between the ages of 21 and 24, and 28 are over 25. 288 are from Pamukkale University; of this, 169 are females and 119 are males; 134 are between the ages of 16-20, and 135 are between the ages of 21 and 24, and 19 are over 25. Demographic characteristics and trait anger-anger expression style scale was employed as measurement tools in data collection. In order to test whether the structure of Trait Anger and Anger Expression Styles Scale (TAAESS), defined as 4 factors, was verified in predetermined participation group, Confirmatory Factor Analysis (CFA) (Garson, 2005) was conducted using LISREL program (Joneskog and Sorbom, 1998) and its Turkish version that was translated by Ozer (1994). After TAAESS validity and reliability study was carried out, first level 4 factor Robust ML model was developed in reliability study. Result of this study showed that 4 factors of scale can bring out more consistent results even with 30 items as well. Differences in anger subscales including trait anger, anger-in, anger-out, anger control level differences were found statistically meaningful. It can be proposed that the origin of these differences is probably from the participants' different social and cultural environments. Among suggestions given for professionalization of university students, and future educators against anger, it is proposed that model of 4 factor Robust ML with 30 items should be employed in researches by increasing social and cultural activities, raising awareness of society against anger and utilizing TAAESS.

**Key words:** Anger behaviours, education, Robust ML Model.

## INTRODUCTION

Recently, technology has advanced and improved at unprecedented levels. With this development, it has been

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observed that human values and time shared with others have decreased dramatically. That these values have lost their importance causes people to spend less time together, not to listen to each other and unable to control their anger. Among these feelings, anger is one of the most crucial feelings we suffer from and we have difficulty controlling it. Anger can change from a slight depression to a high state of anger. If expressed properly, anger is extremely important for one's health. When it is out of control, it may cause problems with personal relations at school or work. There lies anger at the root of many problems (Wilde, 2006). Anger is defined as a feeling one has when his requests, needs, plans are hindered or when he feels there is a threat against him as injustice (Kisac, 1999). Anger may stem from inner and outer factors. Inner factors are feelings, while outer factors are threats such as physical injuries, frustrations, exposure to offense and injustice. When all these feelings combine, anger occurs (Kokdemir, 2004).

The behaviours of individuals are explained in three ways: when individuals are exposed to injustice, their level of anger increase; and when they are angry, and express their anger orally or with their behaviour, they express external pulse anger; however, when the individual keeps his anger in him, it represents the inner anger; and when he gets angry with others, how he controls himself is called anger control (Starner and Peters, 2004). It is necessary that individuals be taught that people who can control their anger can be healthier. The healthiest environments where these emotions can be taught are schools. Education programmes are needed at schools so that anger control can be taught (Adana and Aslantas, 2011).

The feeling of anger should be perceived as harm to an individual himself and others. Anger can be converted into a healthier tool by means of good education (Tatlililoglu and Karaca, 2013).

The anger of some individuals is directed to their inner world. These individuals do not show their anger; however, they exhibit their reactions as crossing and sulking. The case can change into suffering or resentment at the end. Individuals with inner anger do not put their anger forth immediately when they get angry. Nevertheless, they think about the type of reactions to people whom they get angry with. They wait for the proper time to display their inner anger (Lulofs and Cahn, 2000). An individual who experiences feelings such as anger, fear and worry in an environment where his/her children are present may have behavioural problems in similar conflict environments. It is stated in the literature that the feeling of anger is intensive during this period (Sahin and Batgun, 2009). When anger levels of parents are high, it leads to the raising up of highly risky children together (Reid et al., 2002).

In general, assessing anger negatively results from the expression style of anger. In order to cope with anger, it is necessary for a person to define anger instead of suppressing it (Morriz, 2002). If parents cannot tolerant

each other, their children become intolerant as well (Ozmen, 2004). It is established that students with constant anger either express their anger more or suppress it; and these students feel lonely. It can be considered that students who exhibit constant anger and cannot control their anger can be set away from friendly atmosphere since they establish inappropriate behaviours (Kaya et al., 2012). Anger and expression of anger is a result of cultural, mental and biological backgrounds (Soykan, 2003).

In recent years, when the studies are examined, it is clearly seen that anger researches have been increasing every passing day. As the results of the studies conducted, it has been witnessed that realistic steps have not been put forward about solution to anger. In both groups, based on many variables, the statistics of anger subscale levels (anger within, anger trait, anger outburst, anger control) have been found meaningful. For the reasons of the differences between both groups, they may stem from social and cultural diversities of the regions where the universities are situated. It is possible to state that social and cultural development may have positive influence on anger level. It is suggested that next generation teachers utilize first level 4 factor Robust ML model. It will help them with their future studies to cope with their anger more professionally, increase the number of cultural and social activities and raise the awareness of their community against anger. This study will help the youths in society to understand anger in, anger out, trait anger and anger under control. Such a study will guide all institutions and organizations in arranging students' and families' oriented education programs.

## METHODS

### Personal information form

In order to determine the ages, genders, education levels, number of siblings, education levels of their fathers, trait anger and anger styles of university students in two different regions, an information form prepared by the researcher is employed. In this study, on 5-7 November 2015, "International Dynamic, Exploratory and Active Learning (IDEAL) Conference" organized by the University of Amasya was presented as a verbal statement.

In Table 1, the distribution of demographic properties of university students is examined. In this study, according to the university variable, there are 288 (52.3%) students attending Pamukkale University, and 263 (47.7%) students attending Batman University. When the gender distributions of the students are examined, there are 335 (60.8%) females and 216 (39.2%) males. When the age distributions of the students are studied, there are 248 (45.0%) students at "16-20" age clearance and 256 (46.5%) students at "21-24" age clearance and 47 (8.5%) students at "25 and over" age clearance. When the distribution of students studying at Pamukkale University is examined, it can be seen that the population consists of 169 (58.7%) female and 119 (41.3%) male students. On the other hand, when the distribution of students studying at Batman University is inspected, it can be seen that the population consists of 166 (63.1%) female and 97 (36.9%) male students. When the age distribution of Pamukkale University students is examined, it is seen that there are 134 (46.5%) students between the ages of "16-

**Table 1.** Frequency and percentage distributions of university students according to demographic properties.

Properties	Categories	<i>f</i>	%
<b>Universities</b>	Pamukkale University	288	52.3
	Batman University	263	47.7
<b>Genders</b>	Female	335	60.8
	Male	216	39.2
	Pamukkale University Female	169	58.7
	Batman University Female	166	63.1
	Pamukkale University Male	119	41.3
	Batman University Male	97	36.9
	16-20	248	45.0
	21-24	256	46.5
<b>Age</b>	25 and more	47	8.5
	Pamukkale University 16-20	134	46.5
	Pamukkale University 21-24	135	46.9
	Pamukkale University 25 and more	19	6.6
	Batman University 16-20	114	43.3
	Batman University 21-24	121	46.0
	Batman University 25 and more	28	10.6
	<b>Education level</b>	Associate Degree	181
Undergraduate Degree		370	67.2
<b>Number of siblings</b>	1	29	5.3
	2	130	23.6
	3	122	22.1
	4	71	12.9
	5	55	10.0
	6 and more	144	26.1
	<b>Father education level</b>	Primary education	327
High School Education		159	28.9
College and University Education		65	11.8
<b>Total</b>		551	100.0

20", and 135 (46.9%) students between the ages of "21-24", and 19 (6.6%) students over 25; while at Batman University there are 114 (43.3%) students between the ages of "16-20", and 121 (46.0%) students between the ages of "21-24" and 28 (10.6%) students "over 25".

When the education levels of the students are investigated, there are 181 (32.8%) students having associate degree, and 370 (67.2%) students have undergraduate degree. When the students are examined based on the number of siblings they have, 29 (5.3%) students have 1 sibling; 130 (23.6%) students, 2 siblings; 122 (22.1%) students, 3 siblings; 71 (12.9%) students, 4 siblings; 55 (10.0%) students, 5 siblings and 144 (26.1%) students, 6 and more siblings. When the distributions of the students based on their fathers' education level are studied, there are 327 (59.3%) students whose fathers are primary school graduates, 159 (28.9%) students whose fathers are high school graduates, and 65 (11.8%) students whose fathers are university graduates. Considering the general population, there are 551 (100.0%) university students in the study.

#### Data collecting tool

The validity and reliability of the tool was carried out by Ozer (1994). The scale consists of 30 items and it has trait anger, anger under control, anger-out, and anger in sub-scales. In the study of validity and reliability, Chronbach Alpha values were as 0.79 for anger trait scale, 0.84 for anger under control scale, 0.78 for anger out scale, and 0.62 for anger in scale. Anger trait subscale can be obtained via total of the first 10 items in the scale; and anger in subscale via items 13, 15, 16, 20, 23, 26, 27 and 31, and anger out subscale via items 12, 17, 19, 22, 24, 29, 32 and 33, and anger control subscale via items 11, 14, 18, 21, 25, 28, 30 and 34, respectively. The high points obtained from trait anger show that anger level is high; the high points obtained from anger under control scale show that anger can be controlled; the high points obtained from anger out scale show that anger can be easily controlled, and the high points obtained from anger in scale show that anger is suppressed (Savasir and Sahin, 1997).

## Study of confirmatory factor analysis (CFA) of the scale of trait anger anger style scale (TAAESS)

### Validity of the study

Confirmatory factor analysis (CFA) is used in confirming 4 factor structures obtained as a result of exploratory factor analysis predefined scale utilized in this study. When the following values are studied, related analysis results are analyzed to know whether the scale can provide multivariate normality assumption or not. According to these values, Relative multivariate Kurtosis=1.108. The fact that this value is bigger than 1.00 shows that normality assumption is not provided. Besides, when skewness and kurtosis values are observed, it can be seen that multivariate normality assumption is not provided since it is meaningful according to  $p < 0.05$ .

### Test of multivariate normality for continuous variables

Skewness			Kurtosis		
Value	Z-Score	P-Value	Value	Z-Score	P-Value
25.817	21.171	0.000	996.519	13.334	0.000

#### Skewness and Kurtosis

Chi-Square	P-Value	25.817
626.011	0.000	

According to these results, had the variable normality assumption been provided, it would have used Maximum Likelihood (ML) parameter estimation method. However, since it did not provide this and our sampling was smaller, and since it was not related to sampling, Robust Maximum Likelihood (Robust ML) parameter estimation method was employed. This model is first Level 4 factor Robust ML method.

### Confirmatory factor analysis (CFA)

To uncover the anger and furry reactions of individuals, whether trait anger anger style scale 4 factor and 34 item structure is confirmed or not was examined via CFA. CFA aims to evaluate how much a factorial model, a form of factor of numerous observable variables (secret variables), shows compliance with real data. The model was determined by employing the data of an empirical study or was defined as a manipulated structure depending on a specific theory (Sumer, 2000). In order to assess the validity of CFA, a number of conformity indexes are employed. Of these, the mostly used ones are: Chi-Square Goodness, (Chi-Square Goodness,  $\chi^2$ ), Comparative Fit Index (Comparative Fit Index, CFI), Non- Normed Fit Index (Non-Normed Fit Index, NNFI), Normed Fit Index (Normed Fit Index, NFI), Goodness of Fit Index (Goodness of Fit Index, GFI) (Cole, 1987; Sumer, 2000).

The fact that the values observed in scale model are between the clearance of  $\chi^2/d < 3$ ;  $0 < RMSEA < 0.05$ ;  $0.97 \leq NNFI \leq 1$ ;  $0.97 \leq CFI \leq 1$ ;  $0.95 \leq GFI \leq 1$  and  $0.95 \leq NFI \leq 1$  shows it is a perfect fit; and the clearance of  $4 < \chi^2/d < 5$ ;  $0.05 < RMSEA \leq 0.08$ ;  $SRMR \leq 0.08$ ;  $0.95 \leq NNFI \leq 0.97$ ;  $0.95 \leq CFI \leq 0.97$ ;  $0.90 \leq GFI \leq 0.95$  and  $0.90 \leq NFI \leq 0.95$  shows it is an acceptable fit (Kline, 2005; Sumer, 2000).

### The validity of the scale

In order to evaluate whether 4 factor and 34 items of the scale are confirmed or not, CFA was applied. In the first applied CFA, the items not having non-significant t values were examined statistically. CFA analysis was repeated after 12<sup>th</sup>, 17<sup>th</sup>, 19<sup>th</sup>, and

31<sup>st</sup> items having non-significant t values were removed from the scale. The obtained path diagram is shown in Figure 1.

The fit indexes were found as  $\chi^2=1162.28$ ,  $sd=377$ ,  $\chi^2/sd= 3.08$ ,  $CFI=0.96$ ,  $NNFI=0.95$  and  $NFI=0.93$ ,  $GFI=0.90$   $RMSEA=0.080$ ,  $SRMR=0.072$ . When the coefficients of the relations between variables of the model exhibiting factorial structure of the scale were examined, the fit indexes were at sufficient levels. When fit index values and error values of RMSEA and SRMR were observed, an acceptable fit was reached. When fit statistics calculated via CFA were taken into consideration, it was decided that 4 factor structures defined before were generally in line with data collected. When Figure 1 is examined, it is seen that the scale whose final state is given consists of 30 items and 4 factors. Regression and t values belonging to the items are given in Table 2.

When Table 2 is examined, it is determined that the obtained regression coefficients and t values are significant and that the model is verified. While first factor of m6 is seen to be the most important item with  $R^2=0.47$ , it is concluded that m8 is the least important item with  $R^2=0.09$ . While second factor of m13 is seen to be the most important item with  $R^2=0.42$ , it is concluded that m27 is the least important item with  $R^2=0.023$ . While third factor of m32 is seen to be the most important item with  $R^2=0.19$ , it is concluded that m29 is the least important item with  $R^2=0.038$ . While the fourth factor of m28 is the most important item with  $R^2=0.4$ , it is concluded that m11 is the least important item with  $R^2=0.05$ . Generally, it is concluded that m6 is the most important item of the scale with the value,  $R^2=0.05$ ; however, m27 is the most unimportant item of the scale with  $R^2=0.023$ .

### Reliability study of Scale of Trait Anger Anger Style Scale (TAASS)

For the reliability of the scale, items determined for each factor are shown in Table 3 showing Cronbach alpha inner coefficient consistency. When taking all questions into consideration in calculation, this coefficient is the coefficient number best reflecting the general reliability structure of the test according to other coefficients (Ozdamar, 2004).

According to Table 3, Cronbach alpha internal consistency coefficients are determined that reliability coefficient and high level of reliability are found to be 0.82 for 1<sup>st</sup> Factor; 0.62 for 2<sup>nd</sup> factor; 0.70 for 3<sup>rd</sup> Factor and 0.79 for 4<sup>th</sup> Factor, respectively. These coefficients prove that the scale has acceptable level of internal consistency for all factors. The fact that the items have high level of reliability within themselves is determined by means of reliability coefficients. Tezbasaran (1997: 47) states that a reliability coefficient to be accepted as sufficient in a Likert type scale should be close to 1 as much as possible. According to these results, it can be said that all of the factors of the scale used for this study have high reliability level.

### Data analysis

The data collected in line with the purpose of the study are processed by IBM SPSS-21 program. The frequency and percentage distributions of demographic properties of the university students are inspected. To find out the levels of perception of anger related to Trait Anger Anger Style Scale sub factors, descriptive statistics (mean, standard deviation, minimum and maximum scores) are looked into. With the help of independent sample t-test analysis, the differences between the perception levels of anger obtained from sub-factor of scale used are observed according to university, gender and education states of students. On the other hand, with the help of One-Way Anova analysis, the differences between perception levels of anger obtained from the sub factors of the scale used are looked at according to the ages, number of

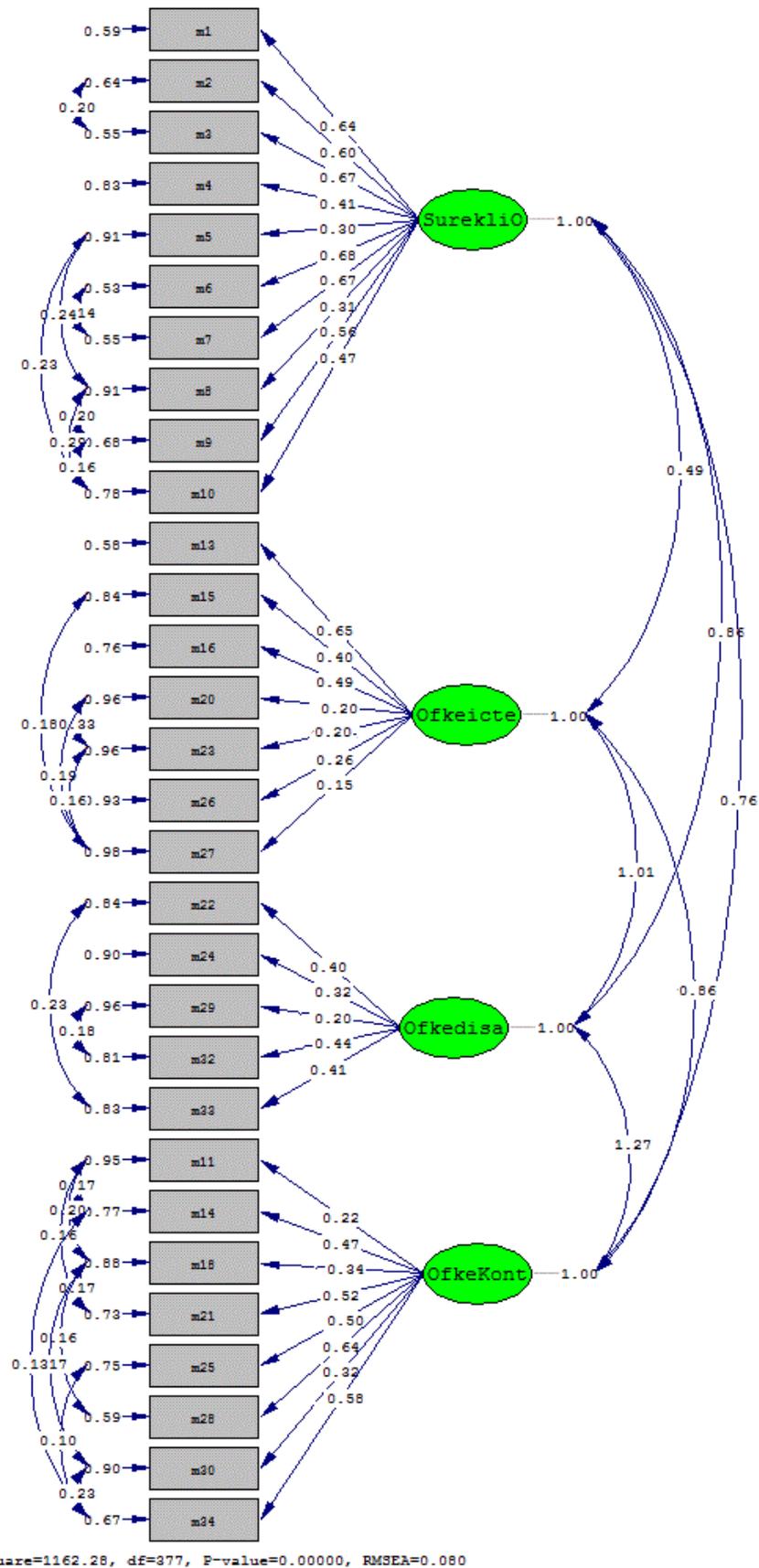


Figure 1. Path diagram based on level 4 factor Robust ML Scale Method.

**Table 2.** Regression and t values for CFA.

First factor			Second factor			Third factor			Fourth factor	
m	R <sup>2</sup>	T	m	R <sup>2</sup>	t	m	R <sup>2</sup>	t	m	R <sup>2</sup>
m1	0.41	11.83	m13	0.42	10.46	m22	0.16	7.10	m11	0.05
m2	0.36	10.85	m15	0.16	6.37	m24	0.10	5.83	m14	0.23
m3	0.45	12.45	m16	0.24	7.86	m29	0.038	3.10	m18	0.12
m4	0.17	6.99	m20	0.04	3.13	m32	0.19	7.47	m21	0.27
m5	0.10	5.08	m23	0.042	3.14	m33	0.17	7.12	m25	0.25
m6	0.47	12.64	m26	0.07	4.09				m28	0.41
m7	0.45	12.40	m27	0.023	2.31				m30	0.10
m8	0.09	5.07							m34	0.33
m9	0.32	10.07								
m10	0.22	8.14								

**Table 3.** Alpha reliability coefficients of factors.

	1 <sup>st</sup> Factor	2 <sup>nd</sup> Factor	3 <sup>rd</sup> Factor	4 <sup>th</sup> Factor
Number of items	10	7	5	8
Cronbach α	0.82	0.62	0.70	0.79

**Table 4.** Descriptive statistics for perceptions of students for sub factors of scale applied.

	N	Minimum	Maximum	$\bar{X}$	S
Trait anger	551	11.00	31.00	20.87	4.50
Anger in	551	8.00	21.00	13.91	3.25
Anger out	551	5.00	16.00	9.78	2.49
Anger control	551	14.00	31.00	21.33	4.08

siblings and education levels of fathers of the students. CFA is carried out employing LISREL program to test whether the described trait anger anger style scale with 4 factor structure is confirmed or not in participants' group determined. In order to test the reliabilities of sub factors of scale, Cronbach Alpha internal consistency analysis is checked.

**FINDINGS**

In Table 4, it is seen that when the perception levels belonging to "Trait Anger" sub-factor of university students are compared with ( $\bar{X}$ =20.87) maximum (31.00) and minimum (11.00) values, it approximately has medium level perception; that is to say, the anger level is at medium level. It is seen that when perception levels belonging to "anger-in" sub-factor are compared with ( $\bar{X}$  =13.91) maximum (21.00) and minimum (8.00) values, it approximately has medium level perception; that is, its levels of transferring anger in are at medium level. When perception levels belonging to "anger-out" sub-factor are

compared with ( $\bar{X}$ =9.78) maximum (16.00) and minimum (14.00) values, the students approximately have medium level perception; that is, the anger is not controlled and its levels of diverting out or other objects are at medium level.

It is seen that when perception levels belonging to "anger-in" sub-factor are compared with ( $\bar{X}$  = 21.33) maximum (31.00) and minimum (11.00) values, it approximately has medium level perception; that is, its levels of anger controllability are at medium level. Based on the students' university, when the differences between the perceptions of sub factors of trait anger anger style scale are examined, under "Trait Anger" sub-factor, there is no significant difference between the anger levels of the students attending Pamukkale University ( $\bar{X}$ =20,92) and Batman University ( $\bar{X}$  = 20.82), according to  $t_{(549)}=0.26, p=0.796>0.05$  (Table 5).

With regard to sub-factor of "Anger-in", there is significant difference between the levels of anger suppression of students attending Pamukkale University

**Table 5.** Independent-sample T-test results of differences between perceptions of applied scale sub-factors of students according to attended university variables.

	University	N	$\bar{X}$	S	t	sd	p
Trait Anger	Pamukkale University	288	20.92	4.51	.26	549	0.796
	Batman University	263	20.82	4.49			
Anger in	Pamukkale University	288	13.59	3.16	2.48	549	0.014*
	Batman University	263	14.27	3.31			
Anger out	Pamukkale University	288	9.75	2.47	0.34	549	0.738
	Batman University	263	9.82	2.52			
Anger control	Pamukkale University	288	20.82	3.97	3.10	549	0.002*
	Batman University	263	21.89	4.13			

\*p&lt;0.05.

**Table 6.** Results of independent sample T-test for difference between perceptions related to sub-factors of scale applied according to genders of students.

Parameter	Gender	N	$\bar{X}$	S	t	sd	p
Trait Anger	Female	335	20.87	4.47	0.03	549	0.973
	Male	216	20.86	4.55			
Anger in	Female	335	14.04	3.23	1.19	549	0.235
	Male	216	13.71	3.28			
Anger out	Female	335	9.78	2.54	0.02	549	0.982
	Male	216	9.79	2.42			
Anger control	Female	335	21.18	3.90	1.09	549	0.277
	Male	216	21.57	4.35			

( $\bar{X}$ =13.59) and the levels of anger suppression of students attending Batman University ( $\bar{X}$ =14.27), according to  $t_{(549)}=2.48$ ,  $p=0.014<0.05$ . This significant difference stems from the fact that the levels of transferring anger in and suppression of the students attending Batman University are higher than those of Pamukkale University. In relation to sub-factor of "Anger-out", there is no significant difference between the levels of not controlling but directing anger out among the students attending Pamukkale University ( $\bar{X}$ =9.75) and Batman University ( $\bar{X}$ =9.82) according to  $t_{(549)}=0.34$ ,  $p=0.738>0.05$ .

In relation to sub-factor of "Anger-control", there is a significant difference between the levels of controlling anger with the students attending Pamukkale University ( $\bar{X}$ =20.82) and Batman University ( $\bar{X}$ =21.89), according to  $t_{(549)}=3.10$ ,  $p=0.002<0.05$ . This significant difference stems from the fact that the students receiving education in Batman University have higher anger control levels than those of Pamukkale University.

In Table 6, the differences between perceptions belonging to sub factors of trait anger anger style scale are examined according to the genders of the students; there is no significant difference between the female students' anger level heights ( $\bar{X}$ =20.87) and the male students' anger level heights ( $\bar{X}$ =20.86) in relation to sub factor of "Trait Anger" according to  $t_{(549)}=0.03$ ,  $p=0.973>0.05$ . In relation to sub factor of "Anger-in", there is no significant difference between the female students who suppress their anger levels ( $\bar{X}$ =14.04) and male students who suppress their anger levels ( $\bar{X}$ =13.71) according to  $t_{(549)}=1.19$ ,  $p=0.235>0.05$ .

In relation to sub factor of "Anger-out", there is no significant difference between the levels of female students' not controlling their anger and expressing it out with ( $\bar{X}$ =9.78) and the levels of male students' not controlling their anger and expressing it out with ( $\bar{X}$ =9.79), according to  $t_{(549)}=0.02$ ,  $p=0.982>0.05$ .

In relation to sub factor of "Anger control", there is no significant difference between the levels of the female

**Table 7.** One way ANOVA results of differences between perceptions related to sub factors of applied scale according to ages of students.

Parameter	Age	N	$\bar{X}$	S	F (2/548)	p
Trait Anger	16-20	248	20.77	4.60	0.114	0.893
	21-24	256	20.96	4.49		
	25 and more	47	20.89	4.04		
Anger-in	16-20	248	13.91	3.21	0.02	0.982
	21-24	256	13.90	3.34		
	25 and more	47	14.00	2.99		
Anger-out	16-20	248	9.66	2.45	0.61	0.544
	21-24	256	9.90	2.57		
	25 and more	47	9.81	2.27		
Anger control	16-20	248	21.43	3.75	0.13	0.879
	21-24	256	21.25	4.29		
	25 and more	47	21.26	4.58		

\*p<0.05.

**Table 8.** Independent-sample T-test results of differences between sub-factors of applied scale according to students' education.

Parameter	Education	N	$\bar{X}$	S	t	sd	p
Trait Anger	Associate degree	181	21.19	4.30	1.18	549	0.237
	Undergraduate degree	370	20.71	4.59			
Anger-in	Associate degree	181	14.31	3.27	2.04	549	0.042*
	Undergraduate degree	370	13.72	3.22			
Anger-out	Associate degree	181	10.23	2.68	2.93	549	0.003*
	Undergraduate degree	370	9.57	2.37			
Anger control	Associate degree	181	21.03	3.91	1.23	549	0.218
	Undergraduate degree	370	21.48	4.16			

\*p<0.05.

students' controlling their anger ( $\bar{X}$ =21.18) and the levels of male students' controlling their anger ( $\bar{X}$ =21.57) according to  $t_{(549)}=1.09$ ,  $p=0.277>0.05$ . When the differences between the perceptions belonging to TAASS sub factors are examined according to the ages of the students, in relation to the "Trait Anger" sub factor, there is no significant difference between the anger levels of the students' ages according to  $F_{(2/548)}=0.11$ ,  $p=0.893>0.05$  (Table 7).

In relation to "Anger-in" sub factor, there is no significant difference in anger suppression levels of the students in terms of age according to  $F_{(2/548)}=0.02$ ,  $p=0.982>0.05$ .

In relation to "Anger-out" sub-factor, there is no

significant difference between not controlling their anger but directing it out in terms of the age of students according to  $F_{(2/548)}=0.61$ ,  $p=0.544>0.05$ .

In relation to "Anger Control" sub-factor, there is no significant difference between keeping their anger under control in terms of their ages according to  $F_{(2/548)}=0.13$ ,  $p=0.879>0.05$ . When differences between perceptions belonging to sub-factors of TAASS according to students' education levels, in relation to "Trait Anger" sub factor, there is no difference between the anger level of those with associate degree ( $\bar{X}$ =21.19) and those with undergraduate degree level ( $\bar{X}$ =21.19), according to  $t_{(549)}=1.18$ ,  $p=0.237>0.05$  (Table 8).

In relation to "Anger-in" sub-factor, there is significant

**Table 9.** One-way ANOVA results of differences between perceptions related to sub-factors of scale applied according to students' siblings number.

Parameter	Siblings number	N	$\bar{X}$	S	F (5/545)	P	Post Hoc (Turkey)
Trait Anger	1 Sibling	29	20.17	4.62	1,95	0.085	
	2 Siblings	130	20.76	4.52			
	3 Siblings	122	21.41	4.56			
	4 Siblings	71	20.96	4.33			
	5 Siblings	55	22.02	4.24			
	6 and more siblings	144	20.17	4.50			
Anger in	1 Sibling	29	14.69	3.86	1,14	0.340	
	2 Siblings	130	13.64	3.30			
	3 Siblings	122	14.08	3.06			
	4 Siblings	71	13.99	3.23			
	5 Siblings	55	14.45	3.41			
	6 and More siblings	144	13.62	3.16			
Anger out	1 Sibling	29	9.45	2.64	3,79	0.002*	3 Siblings> "6 and More siblings"
	2 Siblings	130	9.83	2.52			
	3 Siblings	122	10.43	2.47			
	4 Siblings	71	10.01	2.44			
	5 Siblings	55	9.78	2.52			
	6 and More siblings	144	9.15	2.35			
Anger Control	1 Sibling	29	21.62	4.63	4,03	0.001*	3 Siblings< "6 and More siblings" 4 Siblings< "6 and More siblings"
	2 Siblings	130	21.27	3.95			
	3 Siblings	122	20.75	3.66			
	4 Siblings	71	20.15	3.87			
	5 Siblings	55	21.22	4.14			
	6 and More siblings	144	22.46	4.28			

\*p&lt;0.05.

difference between anger suppression levels of students with associate degree education ( $\bar{X}=14.31$ ) and those with undergraduate degree ( $\bar{X}=13.72$ ), according to  $t_{(549)}=2.04$ ,  $p=0.042<0.05$ . This significant difference stems from the fact that the levels of anger-in or anger suppression in students with associate degree are higher than those with undergraduate degree.

In relation to "Anger-out" sub-factor, there is a significant difference between the levels of not controlling anger but expressing it out of students with associate degree ( $\bar{X}=10.23$ ) and those of undergraduate students ( $\bar{X}=9.57$ ) according to  $t_{(549)}=2.93$ ,  $p=0.003<0.05$ . This significant difference stems from the fact that the levels of not controlling anger but expressing it out with the students receiving associate degree education are higher than those of undergraduate students. In relation to "Anger Control" sub-factor, there is no significant difference between the levels of anger control of students with associate degree ( $\bar{X}=21.03$ ) and undergraduate students ( $\bar{X}=21.48$ ), according to  $t_{(549)}=1.23$ ,  $p=0.218>0.05$ .

With reference to Table 9, when the students' perceptions belonging to sub-factors of TAASS according to the number of the siblings that the students have, under "Trait Anger" sub-factor, there is no significant difference between anger levels of the students in terms of sibling number according to  $F_{(2/545)}=1.95$ ,  $p=0.085>0.05$ .

In relation to "Anger-in" sub-factor, there is no significant difference between anger suppression levels of students in terms of sibling number according to  $F_{(5/545)}=1.14$ ,  $p=0.340>0.05$ . In relation to "Anger out" sub factor, there is significant difference between the levels of not taking their anger under control but directing them out with students based on the number of siblings they have, according to  $F_{(5/545)}=3.79$ ,  $p=0.002<0.05$ . This significant difference stems from the fact that the levels of not taking under control their anger but directing it out with students who have 3 siblings ( $\bar{X}=10.43$ ) are higher than those of having 6 and more siblings ( $\bar{X}=9.15$ ).

In relation to "Anger Control" sub-factor, there is a significant difference between the levels of taking their anger under control in terms of number of siblings,

**Table 10.** One-way ANOVA results of differences between perceptions related to sub-factors of scale applied according to education levels of students' fathers.

Parameter	Father's education	N	$\bar{X}$	S	F(2/548)	p	Post Hoc (Tukey)
Trait Anger	Primary education	327	20.70	4.60	1.75	0.175	
	High school education	159	21.41	4.50			
	College-university education	65	20.38	3.88			
Anger In	Primary education	327	13.60	3.06	4.34	0.013*	1<3
	High school education	159	14.23	3.40			
	College-university education	65	14.72	3.60			
Anger Out	Primary education	327	9.45	2.39	7.89	0.000*	1<2, 1<3
	High school education	159	10.17	2.46			
	College-university education	65	10.52	2.81			
Anger Control	Primary education	327	21.60	4.14	2.24	0.107	
	High school education	159	20.77	3.76			
	College-university education	65	21.38	4.44			

\*p<0.05. Categories: Primary school education = 1; high school education = 2; college-university education = 3.

according to  $F_{(5/545)}=4,03$ ,  $p=,001<,05$ . This significant difference stems from the fact that the levels of taking their anger under control with students who have 3 siblings ( $\bar{X}=20.75$ ) are found to be smaller than those having 4 siblings ( $\bar{X}=20.15$ ), and those having 6 and more siblings ( $\bar{X}=22.46$ ).

In Table 10, in the differences between perceptions belonging to TAASS sub-factors according to the education levels of students' fathers, under "Trait Anger" sub-factor, there is no significant difference between anger levels in terms of fathers' education levels, according to  $F_{(2/548)}=1.75$ ,  $p=0.175>0.05$ .

In "Anger In" sub-factor, there is a significant difference between anger suppression levels of their fathers' education levels according to  $F_{(2/548)}=4.34$ ,  $p=0.013<0.05$ . This significant difference stems from the fact that the levels of anger suppression of the students whose fathers are primary school graduates ( $\bar{X}=13.60$ ) are lower than those of college and university graduates ( $\bar{X}=14.72$ ).

In "Anger Out" sub-factor, there is a significant difference between the levels of not taking their anger under control but directing it out in terms of education levels of students' fathers according to  $F_{(2/548)}=7.89$ ,  $p=0.000<0.05$ . This significant difference stems from the levels of not taking their anger under control but directing it out with students whose fathers are primary school graduates ( $\bar{X}=9,45$ ) are lower than those of whose fathers are high school graduates( $\bar{X}=10.17$ ); and those whose fathers are college and university graduates( $\bar{X}=10.52$ ). In "Anger Control" sub-factor, there is no difference between the levels of being able to control their anger in terms of their fathers' education levels,

according to  $F_{(2/548)}=2.24$ ,  $p=0.107>0.05$ .

## RESULTS AND DISCUSSION

The aim of this study, according to some variables, is to compare the TAASS model for students attending universities in different social and cultural regions. TAASS was applied to university students in South-eastern Anatolian and Aegean Regions, where Batman and Pamukale Universities are located, respectively.

According to the results of the study, when the differences between perceptions belonging to sub-factors of TAASS are examined according to their gender and age variations, there is no significant difference in " Trait Anger, Anger In, Anger Out, Anger Control" sub factors. The results of this study and those of other researchers in the literature are parallel to each-other. Rice et al. (2008) searched whether there were any differentiations in terms of race and gender between school connectedness and anger expression styles. At the end of the study, they could not find any differences in terms of gender of trait anger scores. In their study carried out in 2007, Kesen et al. observed that there was an increase in trait anger and anger out in adolescents' ages. In the present study, it can be seen that anger is insignificant in respect to age between both groups. The reason could be as an individual gets older, s/he increases the awareness to responsibility and also, that the roles families give males and females have the same values in all parts of the society.

According to university variable, when perceptions belonging to TAASS sub-factors are compared, there is no significant difference in trait anger and anger out sub

factors; conversely, there is a significant difference in anger in and anger control. According to university variable, the fact that anger in and anger control factors have significant differences is thought to stem from the social and cultural life quality of Aegean Region, which is more developed compared to South-eastern Anatolian Region, socially and culturally. In 2014, in a study carried out with Physical Education teacher candidates studying in a university, Cengiz et al. found that one of the problems found in school environment is that some students have difficulty expressing their anger. The above study displays parallelism with our study.

When perceptions about sub-factors of TAASS are compared according to education levels of university students' father, there is no significant difference in trait anger and anger control factors; on the contrary, there is a significant difference in anger in and anger out factors. According to Boulter (2004), Gorman-Smith et al. (2004) and Tolan (2001), problems between parents and miscommunication between a child and his/her child-minder have some connections with violent behaviours witnessed with adolescents. In their study conducted with adolescents, Esre and Ustun (2011) found that adolescents expressed their anger out higher than their parents. In our study, the reasons why there is a significant difference in anger in and anger out factors of fathers' education level are because of the education parents give to their children.

According to the number of siblings that the university students have, there is no significant difference in sub factors of trait anger and anger in; on the contrary, there is a significant difference in anger out and anger control factors. Gok (2009) showed that the adolescents oppressed and mistreated by their families could not keep their anger, so they express their anger out. In this study, students who have few siblings can develop jealousy instinct for each other since they cannot share their parents. On the other hand, with students who have more siblings, it is possible to think that they can express out their anger and control it due to the fact that their parents do not show them enough love. Caglayan (2014) pointed out that those who are most violent to sportsmen were trainers in his study, where he evaluated sportsmen exposure to violence and their anger levels. It was stated that trainers should receive education on anger and violence. The studies carried out show that anger expression styles can be controlled in a positive way.

Generally, anger subscale level (trait anger, anger in, anger out and anger control) differences were found to be statistically significant according to various variables in both groups. The reasons for these differences between both groups may stem from social and cultural differences of the regions where both universities are located, and lack of education. It can be said that social and cultural development affects anger level positively. It is suggested that first Level 4 factor Robust ML model developed for future educators to be professionalized against anger should be used in subsequent studies.

## Conflict of interest

The author has not declared any conflict of interest

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