

## The Roles of Academic Procrastination Tendency on the Relationships among Self Doubt, Self Esteem and Academic Achievement

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### *Abstract*

The purpose of this study was to examine the relationships among self doubt, academic procrastination, self esteem, and academic achievement and to investigate the indirect roles of academic procrastination on the relationships between self doubt- self esteem and self doubt-academic achievement within the framework of structural equation modeling. 261 students aged between 18-30, and studying in different departments at Pamukkale University, Faculty of Education participated in the study. As the data collection tools, Aitken Procrastination Inventory, Rosenberg Self Esteem Inventory, Self Doubt Subscale of Subjective Overachievement Scale and Personal Information Sheet were used. Results showed that academic procrastination has partial mediating role in relation to self doubt-self esteem, and has full mediating role in relation to self doubt and academic achievement. Academic achievement has a partial mediation role in relation to academic procrastination and self esteem. Implications of these findings are discussed within the framework of literature.

*Keywords:* Self doubt, academic procrastination, self esteem, academic achievement.

### **Introduction**

Academic procrastination, which is defined by Tuckman (1991) as an individual's postponing a piece of work, which s/he can actually control, because of the lack of self regulation skills, is seen as a common problem among the university students. For instance, the study done by Balkis and Duru (2009) shows that 23 % of the university students do not complete their academic duties on time, and that they postpone them to a future date. Similar results have been found out in another group of studies in the literature. Özer, Demir, and Ferrari (2009) report that 52 % of the students, Potts (1987) report that 75 % of the students, and Ellis and Knaus (1977) report that 95 % of the students postpone their academic duties.

Correspondingly with the postponing behavior's being common among the university students, it is emphasized in many studies in the literature that there is a relation between the academic procrastination and depression, anxiety, stress, and low academic achievement; and it is seen that the procrastination is conceptualized as a variable that affects the academic and social lives of the individuals in a negative way (Balkis and Duru 2010; Balkis and Duru, 2009; Beck, Koons, and Milgrim, 2000; Deniz, 2006; Durden, 1997; Fritzsche, Young and Hickson, 2003; Klassen, Krawchuk and Rajani, 2008; Milgram and Toubiana, 1999; Özer, Demiri and Ferrari, 2009; Saddler and Sacks, 1993; Tice and Baumister, 1997). In addition to this, Burka and Yuen (1983) claim that procrastination behavior can sometimes protect the self from facing some disturbing circumstances. According to Burka and Yuen (1983), the academic procrastination behaviors can help the individuals to decrease the negative impacts of the disturbing feelings they might experience. Ellis and Knaus (1977), who emphasize the function of procrastination protecting the self from being hurt, state that academic procrastination can sometimes be seen as a self protective strategy. In the similar studies in

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procrastination literature, it has been stated that procrastination serves to the aim of protecting the vulnerable self esteem (Ferrari, Johnson, and McCown, 1995; Solomon and Rothblum, 1984).

As it can be seen in the details of the above mentioned studies, although there are some hypothetical explanations on procrastination having some functions like avoiding failure and protecting the self from being hurt, these explanations and the statements that have been put forward were not tested. If, as it is stated in the literature, the individual shows the procrastination behavior to protect his/her vulnerable self structure or to avoid failure, it can be concluded that academic procrastination might have different roles in the relations between self doubt–self esteem and self doubt-academic achievement. For example, the academic achievement and the self esteem of an individual might decrease since s/he has the academic procrastination (Balkis and Duru, 2010). Similarly, the direct impact of self doubt on self esteem and academic achievement may decrease when the academic procrastination is present. Therefore, it can be put forward that there might be direct and indirect relationships among the related variables. In this study, it was aimed to contribute to fulfil a conceptual gap in the literature by focusing on the possible roles of academic procrastination in relation to self doubt-self esteem and self doubt-academic achievement.

#### *The Relationship between Self Doubt and Self Esteem*

Self doubt is defined as a feeling when an individual is not sure about his/her abilities, skills, and sufficiencies that are necessary to be achievementful in a general or specific area (Hermann, Leonardelli, and Arkin, 2002). Although this uncertainty the individual has while evaluating the personality is directly related to the self efficacy and self value, the self doubt concept is different from the concept Bandura (1997) put forward about individual's beliefs on his/her having a talent on a specific area. It is because while self efficacy concept can be seen as a cognitive structure that can affect academic achievement, self doubt is a feeling that is directly related to the self, and affects the other structures related to the self (Hermann et al., 2002). Another structure that is thought to be affected by self doubt is self esteem (Oleson, Poehlmann, Yost, Lynch and Arkin, 2000).

Rosenberg (1965) conceptualizes the self esteem as a positive or negative attitude developed towards the self that is derived from the evaluations of the self under different impact areas. In other words, self esteem expresses the level of an individual's perceiving himself/herself as valuable (Doğan, 2011). The level of the self esteem can affect an individual's life in many aspects such as the work and school achievement, social relationships such as friendship in the social life, and dealing with the problems faced in daily lives (Yörükoğlu, 2004). Individuals with low levels of self esteem are motivated on protecting the self by focusing primarily on failures, possible losses, and the risk of losing self esteem (Baumeister, Tice and Hutton, 1989), and they have the tendency if giving up or postponing without any effort when they face failure (Di Paula and Campbell, 2002). Thompson (1999) states that if people have doubts about their skills and performances, they apply some strategies such as postponing the duties they will do to protect their selves from being hurt, and to protect their self esteem. James' (1890) judgment "If you do not attempt to do anything, you will not fail... If you do not fail, you are not being humiliated or you will not be embarrassed..." (Pişkin, 2003, p.103) can be seen as the basic belief or thought that feeds the strategies that the individuals who have high levels of self and efficiency doubts use in order not to face failure and to protect their selves from being hurt. The studies in the literature show that when there is a possibility of failure, the individuals that use self protection strategies and avoid facing failure have higher levels of self esteem than the ones that do not use these strategies. (Feick and Rhodewalt, 1997). The studies that analyze the relation between these two concepts report that there is a negative relation between self esteem and self doubt (Hermann et al., 2002; Oleson et al., 2000). In the light of these findings in literature, it can be expected that the higher level of the self doubt predict the lower the self esteem.

#### *The Role of Academic Procrastination in relation to Self Doubt-Self Esteem*

In parallel with self doubt–self esteem relationship, it is mentioned in the academic procrastination literature that the procrastination serves the aim of protecting an individuals' vulnerable self esteem (Balkis and Duru, 2010; Ferrari, Johnson and McCown, 1995; Solomon and

Rothblum, 1984). In these conceptual explanations, it is reported that the procrastination is fed with the fear of failure and that the individual do not take risks to protect the self, therefore, procrastination has a function of protecting the self (Burka and Yuen, 1983; Ellis and Knaus, 1977; Solomon and Rothblum, 1984). Ferrari (1991) states that because of the tendency of procrastination, since the individual do not take risks on the point of his/her performance's being sufficient or not when a task has to be accomplished, s/he protects his/her self from being hurt. Within this context, it can be said that the academic procrastination function as a self protection strategy. Procrastination may also make it possible for the individuals to avoid the negative feelings of efficacy, and keep the unreal beliefs that they have a higher capacity than they really have (Burka and Yuen, 1983; Ellis and Knaus, 1977; Solomon and Rothblum, 1984; Ferrari, 1995). Within the light of the explanations above, it can be considered that academic procrastination may have both direct and indirect roles in relation to self doubt-self esteem. In other words, as it is also emphasized in the literature, if the self esteem level decreases as the self doubt level increases (Hermann et al., 2002; Oleson et al., 2000), it can be expected that the self doubt's direct impact on self esteem will decrease when there is academic procrastination.

#### *The Role of Academic Procrastination in relation to Self Doubt and Academic Achievement*

Although many studies in the literature emphasize that there is a positive relation between self esteem and academic achievement (Alves-Martins, Peixoto, Gouveia-Pereira, Amaral and Pedro, 2002; Balkis and Duru, 2010; Bankston and Zhou, 2002; Schmidt and Padilla, 2003; Zhang, Zhou, and Yu, 2009), it is seen that there are not a lot of studies on understanding the relation between self doubt and academic achievement, and the existing ones do not have consistent results. For instance, Castro and Rice (2003) found out a negative relation between self doubt and academic achievement (GPA) among Asian Americans whereas they could not find a significant relation between the two variables among African and Canadian American university students while analyzing relation between self doubt and academic achievement in their study. This result makes us think that there can be some inter mechanisms besides cultural factors between the two variables. Similarly Wang and Lin (2008) stated that the relation between self concept and academic achievement might not be direct, strong and causal contrary to what was believed. According to Wang and Lin (2008) an individual's assessment of self-sufficiency or self-insufficiency is not related to the academic achievement that is achieved, they rather emphasize that it is related to the perception level of intellectual effort required to learn something. In other words, academic achievement and real effort is related to individual's self- perception towards being able to perform an action and the perceived effort. Therefore we can say that some individuals can show less effort and have more tendencies to academic procrastination in order to avoid academic failure as Oleson and et al. (2000) emphasized. As a result if an individual define self-sufficiency by the effort s/he made and perceived and also the behaviour s/he displayed in order to avoid academic failure rather than academic achievement, it can be claimed that the relation between self doubt and academic achievement can be related to some complicated process and variables. In other words, an individual may fail not because s/he is in self-doubt but because of academic procrastination s/he displayed to avoid academic failure. If this reasoning is true, it can be expected that academic procrastination can also have an indirect role on the relation between self doubt-academic achievement besides direct roles.

In the light of the explanations above, to examine the relationships among self doubt, academic achievement, self-esteem, academic procrastination and to investigate the indirect roles of academic procrastination on these relationships within the framework of structural equation modeling are main purposes of this study. So testing the direct and indirect relationships among self-doubt, academic procrastination, academic achievement and self-esteem on one model will serve this purpose. When taken into consideration in the framework of developmental guidance, findings of this study may provide a basis for psycho-education programmes that will be created to increase self-esteem and academic achievement of individuals.

Consequently, based on the explanations above the hypotheses below can be stated:

- 1- Higher self doubt level will predict higher academic procrastination level,
- 2- Higher academic procrastination level will predict lower academic achievement level,
- 3- Lower academic achievement level will predict lower self-esteem level.

In addition to research hypotheses above, we will search for an answer for the question “what are the indirect roles of academic procrastination in understanding the impacts of self doubt on self-esteem and academic achievement?” Conceptual relationships among variables and the model showing the directions of the relationships are included below (Figure1).

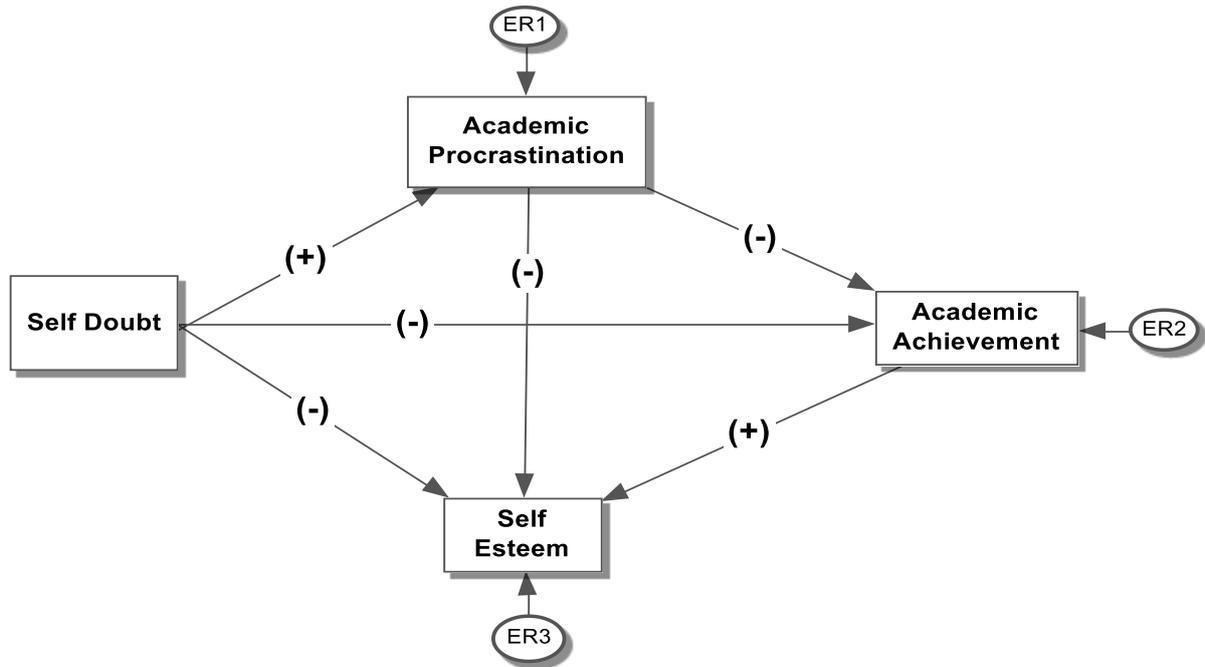


Figure 1. The relationships among self doubt, academic procrastination, self esteem and academic achievement

## Method

### Study Group

261 students, of whom 203 were female and 58 were men and aged between 18- 30 ( $X = 21.34$ ,  $Ss = 1.54$ ), and studying in different departments at Pamukkale University, Faculty of Education participated in the study.

### Data Collection Tools

In this study, Aitken Procrastination Inventory, Rosenberg Self Esteem Inventory and Self Doubt Subscale of Subjective Overachievement Scale were used to gather data.

### Aitken Procrastination Inventory

It was developed by Aitken (1982) with the aim of assessing students' academic procrastination tendencies. The inventory was a one dimensional 5 point likert type scale with totally 19 items. Individuals were expected to score themselves between 1 and 5 points for each item. High scores indicated that individuals had high academic procrastination tendency. The inventory was adjusted to Turkish by Balkis (2006). Internal consistency coefficient of the inventory was  $\alpha = .89$ , Pearson coefficient of correlation was  $r = .87$  in the analyses carried out for test- retest reliability and significant at the level of  $p < .001$ . Factor analysis was carried out to test construct validity of the inventory. As a result of the analyses carried out, it was found that factor loadings are concentrated on a factor that has 6.14 eigenvalues and constitutes 38.38 % of the factor loadings. As a result of the analyses it was reported that Aitken Procrastination Inventory could be used as a valid and reliable assessment instrument in defining students' academic procrastination tendency (Balkis, 2006).

#### *Rosenberg Self Esteem Inventory*

Rosenberg Self Esteem Inventory was used in many studies in order to define individuals' self esteem level and was developed by Rosenberg in 1968. 63 items were included in that inventory which was composed of multiple choiced 12 sub-categories. In this study, the sub-category of Self Esteem composed of 10 items was used. The Scale is adapted to Turkish culture by Cuhadaroglu (1986) and showed a high level of test-retest reliability (0.75) and criterion-related validity (0.71).

#### *Subjective Overachievement Scale:*

In order to define students' self doubt level Self Doubt Subscale of Subjective Overachievement Scale that was developed by Oleson and et al. (2000) was used. Subjective Overachievement Scale was a 6 point likert scale with 17 items. Individuals were expected to score themselves between 1 and 6 points for each item. The scale was consisted of two sub-dimensions that self doubt and concern with performance. Self doubt sub-dimension included 8 items while concern with performance sub-dimension included 9 items. Internal consistency coefficient of scale's sub-dimension was reported as  $\alpha = .82$  for self doubt and  $\alpha = .76$  for concern with performance (Oleson and et al., 2000) The scale was first translated into Turkish by researchers then it was translated from Turkish to English by two lecturers at Educational Sciences department and finally it was put into final form by a third lecturer at the same department and who can use both of the languages in an effective way, after comparing the translations made. The final form of the scale was applied to a group of university students including 170 people and internal consistency coefficient was found as  $\alpha = .78$  for self doubt subscale and  $\alpha = .70$  for concern with performance sub-dimension. Factor analysis was carried out for construct validity. The analyses regarding factor structure of the scale indicated that the scale was consisted of two factors that were I. factor (self doubt - 8 items) with 3.650 eigenvalue and explaining 21.48 % of the scale's total variance and II. factor (concern with performance - 9 items) with 2.55 eigenvalue and explaining 15 % of the scale's total variance and also indicated that the two factors could explain 36.47 % of the scale's total variance. It was seen that while factor loadings of the scale items changed between .39 and .78, item-total correlations changed between .26 and .66. In this study Self Doubt Subscale was used in accordance with the aim of the study.

#### *Data Collection and Analysis*

Scale battery was used besides personal information sheet on university students and the study was based on voluntariness. In data analysis SPSS 15 and AMOS 7.0 (Arbuckle, 2006) programmes were used. While Pearson Product-Moment Correlation Coefficient was used to define the relationships among variables, AMOS 7.0 programme was used to test indirect and direct relationships among self doubt, self esteem, academic procrastination and academic achievement variables in the framework of structural equation modeling. Significance level in the study was taken as at least 0.05 and other significance levels were also shown (0.01 and 0.001). The mostly used likelihood ratios among the indexes suggested in assessment of model's compatibility were Chi-Squared statistics ( $\chi^2$ ),  $\chi^2 /s.d.$ , RMSEA (Root Mean Square Error of Approximation) and SRMR (Standardized Root Mean Square). Fit indexes were GFI (Goodness of Fit Index), CFI (Comparative Fit Index), TLI (Tucker Lewis Index), NFI (Normed Fit Index) and RFI (Relative Fit Index). The value of  $\chi^2 /s.d$  that was smaller than 3 corresponded to acceptable fit, values that were bigger than 0.05 or equal to 0.05 corresponded to perfect fit and value of 0.08 or values smaller than 0.08 corresponded to an acceptable fit. While the value of 0.95 or values bigger than 0.95 corresponded to perfect fit, the values between 0.90 and 0.94 corresponded to acceptable fit (Kline, 2005). The compatibility of the model that was composed in the scope of this study was assessed in the framework of fit indexes that were given above. Bootstrapping procedures were used to account for skewed data and to obtain bias-corrected confidence intervals for the indirect effect.

## Findings

### Correlation Analyses

Analyses results indicated that self doubt had negative relationships with self esteem and academic achievement but it had positive relationships with academic procrastination. Besides the analyses indicated that academic procrastination had negative relationships with self esteem and academic achievement but academic achievement had positive relationships with self esteem. Analysis findings were presented in the Table 1.

Table 1

*Means, Standard Deviations and Correlation Coefficients of the Variables (N=261)*

	1	2	3	4
1. Self Doubt	-	.371**	-.588**	-.170**
2. Academic Procrastination Tendency		-	-.401**	-.297**
3. Self Esteem			-	.310**
4. Akademik Achievement				-
<i>M</i>	22.20	36.73	31.79	2.90
<i>SD</i>	5.58	10.52	5.06	.31

\*\* $p < .01$

### Structural Equation Modeling (SEM)

To test the adequacy of model, the SEM was employed using AMOS.7 (Arbuckle, 2006). The results therein indicate that the model was accepted as adequate ( $X^2(1, N = 261) = 1.193, p > .275$ ). ( $X^2/df = 1.193$ ). GFI = .1, RMSEA = .027, SRMR = .021, CFI = 1, TLI = .99, RFI = .97, NFI = .99 (Figure 2).

The results of SEM analysis indicated that self doubt directly affected academic procrastination ( $\beta = .37, p < .001$ ). Besides the analyses also indicated that self doubt both directly affected self esteem ( $\beta = -.50, p < .001$ ) and indirectly affected self esteem ( $\beta = -.16, p < .01$ ) by mediation of academic procrastination. In other words, academic procrastination took partial mediating role in relation to self doubt–self esteem. Structural equation modeling (SEM) analyses indicated that indirect impact of self doubt ( $\beta = -.08, p < .01$ ) on self esteem by mediation of academic procrastination was significant. SEM analyses revealed that self doubt did not have a significant impact on academic achievement ( $\beta = -.07, p > .05$ ) and had an indirect impact by mediation of academic procrastination ( $\beta = -.30, p < .001$ ) and also that the indirect impact ( $\beta = -.11, p < .01$ ) was significant. In other words, academic procrastination took a full mediating role in in relation to self doubt and academic achievement. Finally the analyses pointed out that academic procrastination ( $\beta = -.16, p < .01$ ) and academic achievement ( $\beta = .18, p < .001$ ) directly affected self esteem and in addition analyses revealed that academic procrastination indirectly affected self esteem by mediation of academic achievement and the indirect impact on self esteem was ( $\beta = -.05, p < .01$ ) significant. Stated in other words academic achievement took a partial role in the relationship of academic procrastination tendency-self esteem. It was seen that self doubt explained 14 % of total variance in academic procrastination, self doubt and academic procrastination together explained 9 % of total variance in academic achievement and finally the three variables altogether explained 41 % of variance in self esteem.

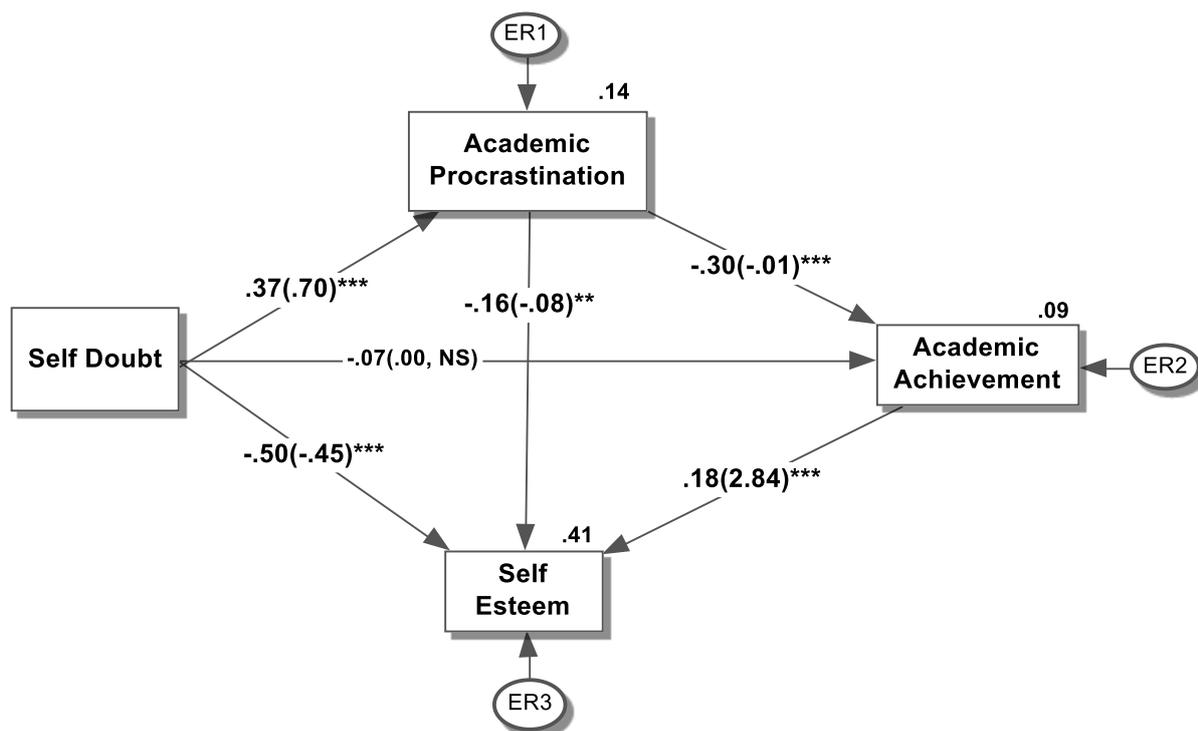


Figure 2. Structural modeling of the relationships among self doubt, academic procrastination, self esteem and academic achievement

## Discussion

This study examines the relationships between self doubt, academic procrastination, self esteem, and academic achievement and investigates indirect roles of academic procrastination on the relationships between self doubt- self esteem and self doubt-academic achievement by structural equation modeling. The findings indicated that the relationships among variables are as expected. According to analyses results, self doubt directly predict academic procrastination and self esteem; academic procrastination directly predict academic achievement and self esteem and finally academic achievement directly predict self esteem. In other words, as self doubt level increased academic procrastination increased; increasing academic procrastination decreased individual's achievement and as the achievement level decreased, individual's self esteem decreased. Findings also pointed out that academic procrastination took different mediating roles in relation to self doubt-self esteem and self doubt-academic achievement. The direct impact of self doubt on self esteem decreased when academic procrastination intervened and academic procrastination took partial mediating role in the relationship between the two variables. Similarly self doubt did not directly predict academic achievement but it predict academic achievement when academic procrastination intervened and academic procrastination took a full mediating role in the relationship of the two variables. Finally the direct impact of academic procrastination on self esteem decreased when academic achievement intervened and academic achievement took a mediating role in the relationship of the two variables. In the light of study findings, when analysis results were considered as a whole it can be said that theoretical explanations regarding that academic procrastination in the literature had functions such as failure avoidance and protection of self against being hurt (Balkis & Duru, 2012) are provided a partial support

Consistently with the first hypothesis of the study, the analyses higher level of self doubt is related to higher level of academic procrastination. This finding is consistent with theoretical explanations in the literature and similar empirical study findings (Burka and Yuen, 1983; Ellis and Knaus, 1977; Ferrari, 1991; Ferrari and Diaz-Morales, 2007; Ferrari and Tice, 2000; Lay, Knish and Zanatta, 1992; Solomon and Rothblum, 1984; Thompson, 1999). When an individual with a high level

of self doubt face to a duty in which s/he is possible to fail, s/he may feel her/himself under threat and may have tendency to avoid from performing the duty because of doubt in self-efficacy and self-competence. That avoidance tendency may occur as academic procrastination.

The hypothesis proposed regarding the relationship of academic procrastination and academic achievement was that higher level of academic procrastination would predict lower level of academic achievement. The findings show consistency with expectations. Many studies in the literature emphasize that academic procrastination has a negative relationship with academic achievement (Balkis and Duru 2010; Balkis and Duru, 2009; Beswick, Rothblum and Mann, 1988; Fritzsche, Young and Hickson, 2003). Individuals with a high level of academic procrastination have a tendency to leave academic duties such as completing homework, studying the courses and getting prepared to exam to the last minute (Jackson, Weiss, Lundquist and Hooper, 2001) and therefore they are to perform these duties or responsibilities in a limited time (Tice and Baumeister, 1997) and as a result they thought to be affected in a negative way in terms of academic achievement by this situation. When the literature is examined, it is seen that academic procrastination is related to low academic performance (Balkis and Duru, Buluş and Duru, 2008; Beswick, Rothblum and Mann, 1988; Fritzsche, Young and Hickson, 2003; Orpen, 1998; Tice and Baumeister, 1997), avoiding courses (Rothblum, Solomon and Murakami, 1986), slight effort for achievement (Saddler and Buley, 1999), low self-efficacy (Haycock, McCarthy and Skay, 1998), low capacity (Milgram, Marshevsky and Sadeh, 1995) and low motivation (Sene'cal, Koestner and Vallerand, 1995). When the studies above are evaluated as a whole, it can be said that academic procrastination has negative impacts on students' academic life.

The hypothesis of our study that was regarding the relationship of self esteem-academic achievement was that higher level of academic achievement would predict higher level of self esteem. This finding is consistent with research findings that indicate a positive relation between self esteem and academic achievement in the literature (Alves-Martins, Peixoto, Gouveia-Pereira, Amaral and Pedro, 2002; Balkis and Duru, 2010; Bankston and Zhou, 2002; Can, 1990; Lockett and Harrell, 2003; Ross and Broh, 2000; Schmidt and Padilla, 2003; Verkuyten and Brug, 2002; Wong and Watkins, 2001; Zhang, Zhou and Yu, 2009). Nevertheless it can be seen that the relationship of self esteem and academic achievement includes some complicated processes, when the literature is examined. For example, in some studies it was reported that self esteem affected academic achievement (Chapman 1988; Marsh, Byrne and Shavelson, 1988), and in another study it was emphasized that self esteem was affected by academic achievement (Hoge, Smit and Crist 1995). When the studies above were evaluated as a whole, it can be thought that there is a mutual interaction between self esteem and academic achievement. In other words, self esteem both affected academic achievement and was affected by academic achievement at the same time.

The analyses about research question of our study revealed that academic procrastination took a mediating role in the relationship of self doubt-self esteem. This finding show consistency with the literature regarding that academic procrastination had a function of protecting individual's vulnerable self construal/worth (Burka and Yuen, 1983; Ellis and Knaus, 1977; Ferrari, 1991; Oleson and et al., 2000, Thompson, 1999). This finding also indicates that academic procrastination behaviours function as self protection strategy so as to protect self esteem and self-worth. In other words, if individual were in doubt about self and efficacy, s/he would exhibit more academic procrastination instead of taking a risk that would damage his/her self esteem. Therefore academic procrastination has a function of reducing the directly disturbing impact of self doubt on self esteem and as a result they protect an individual's self against benign hurt even partially. In the procrastination literature, procrastination is emphasized to serve the purpose of protecting individual's vulnerable self esteem (Burka and Yuen, 1983; Ferrari, Johnson and McCown, 1995; Solomon and Rothblum, 1984). Similarly when the studies carried out within the context of academic procrastination-self worth relationship in the literature are analyzed, it was seen that academic procrastination was negatively related to self-worth (Pychyl, Coplan and Reid, 2002) and self esteem (Balkis and Duru, 2010; Beswick, Rothblum and Mann, 1988; Harrington, 2005; Klassen and Kuzucu, 2009); and was positively related to self-

handicapping (Beck, Koons and Milgrim, 2000; Ferrari, 1991; Ferrari and Diaz-Morales, 2007; Ferrari and Tice, 2000; Lay, Knish and Zanatta, 1992), the discrepancy between true self and ideal self (Orellana-Damacela, Tindale and Suarez-Balcazar, 2000) and vulnerability dimension of self concept (Ferrari and Diaz-Morales, 2007). When the empirical studies presented above evaluated as a whole, the fact that procrastination is negatively related to self-worth and self esteem; and positively related to self-handicapping, discrepancy between ideal and real self and vulnerable dimension of self concept supports theoretic explanations regarding that academic procrastination may function as a defence strategy intended to protect individual's vulnerable self structural. The analyses regarding self doubt-academic achievement relationship demonstrate that the impact of self doubt level on academic achievement changes depending on students' academic procrastination. According to analysis results, self doubt did not directly predict academic achievement but did indirectly predict academic achievement by mediation of academic procrastination and procrastination took a full mediating role in this relationship. In other words, individual failed academically not because of self doubt but academic procrastination behaviours.

While self doubt increased academic procrastination, academic procrastination decreased academic achievement. This explanation is also supported by studies reporting the relationship of academic procrastination-academic achievement (Balkis and Duru, Buluş and Duru, 2008; Beswick, Rothblum and Mann, 1988; Fritzsche, Young and Hickson, 2003; Orpen, 1998; Tice and Baumeister, 1997). From this point of the finding, it can be said that academic procrastination is a significant variable in relation to self doubt-academic achievement. As a result, in this study the relationships among self doubt, academic procrastination, self esteem and academic achievement are examined within the framework of structural equation modeling. The findings gathered support the idea that in cases which individual is in doubt about his/her skills and abilities, s/he applies to procrastination in order to protect vulnerable self-worth. In other words, in cases which individual is possible to fail, s/he uses academic procrastination as a kind of defence strategy. Moreover analyses indicate that self doubt affects individual's performance not in a direct way but affects depending on academic procrastination. In other words, self doubt level negatively affects the individual's performance and academic success in cases which individual's level of academic procrastination is high. When all the findings in the modelling are evaluated as a whole, as self doubt and lack of self confidence levels increase so academic procrastination increases and academic achievement decreases correspondingly to increasing procrastination so decreasing academic achievement decreases self esteem. Consequently while individual is trying to protect self from being hurt with academic procrastination, s/he cannot completely achieve it therefore academic achievement decreases negatively affecting self esteem. In other words, individual "jumps out of the frying pan into the fire."

### **Conclusion and Suggestions**

The findings of this study can be evaluated within the context of implications and limitations that are provided to empirical and theoretical studies. *First of all*, self reporting measures were used in the research. Therefore measures based on more objective measurements of variables may be preferred in other studies. For example students' grade point averages may be used in assessment of academic achievement. *Secondly*, our research is a study based on quantitative data. So, in terms of getting a more detailed picture of relationships among variables, both qualitative and quantitative methods are used together may be carried out in next researches. *Thirdly* similar studies can be carried out in secondary education and high school education to test whether the modelling works on students studying in different grades. *Fourthly* our research is a cross sectional study. Longitudinal studies may be planned to understand whether our research modelling is effective as regards to time. *Fifthly* this study is the first study that underlines the importance of academic procrastination in the relationships among self doubt-academic achievement and self doubt-self esteem. In other studies that focus on different constructs related to self, it can contribute to test the key role of academic procrastination. *Finally* it was seen in our study that male and female students in our group were not equally

distributed. While interpreting the findings and searching about differences based on gender in the next studies, taking that point into consideration may contribute to scientificity of our judges.

Our research results present some important findings to both psychological counselors studying in the field and academicians carrying out theoretical and empirical studies. Research results indicate that academic procrastination have both directly and indirectly impacts on students' academic achievement and self esteem. Therefore the studies that would decrease academic procrastination and increase academic achievement are supposed to affect individual's self esteem positively. Hence psychological counselors may give consultancy service to class teachers and branch teachers regarding what kind of experiences that students can be gained to meet their needs. Besides counselors can may arrange small group guidance programmes for students that are academically at risk and therefore contribute to increase in academic achievement of students. Moreover our study findings indicate that students in self doubt can have a decrease in self esteem because of high academic procrastination and low academic achievement. As a result, it can be said that individual and group works developing students' skills and increasing students' self-efficacy may contribute to students in increasing academic achievement and self esteem besides studies that will be done to increase self esteem and decrease academic procrastination. Therefore individuals in self doubt can perceive themselves more efficient, exhibit less procrastination and get higher academic achievement.

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