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ACADEMIC SELF-EFFICACY, EMOTIONAL INTELLIGENCE, GPA AND ACADEMIC PROCRASTINATION IN HIGHER EDUCATION

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Abstract

Academic procrastination has been seen as an impediment to students' academic success because it decreases the quality and quantity of learning while increasing the severity of negative outcomes in students' lives. Research findings suggest that academic procrastination is closely related to motivation variables such as self-efficacy and self-regulated learning, and with higher levels of anxiety, stress, and illness. Emotional Intelligence is the ability to assess, regulate, and utilize emotions. It has been found to be associated with academic self-efficacy and a variety of better outcomes, including academic performance. The purpose of the present study was to explore and provide an initial understanding to the relationships between emotional intelligence, academic procrastination and GPA, as mediated by academic self-efficacy. A convenience sampling of 287 college students was collected. Structural equation modeling analysis using AMOS was conducted to examine the mediation role of academic self-efficacy between emotional intelligence, procrastination and GPA. Findings indicated that Emotional intelligence has a negative indirect effect on academic procrastination and a positive indirect effect on academic performance. Further research is needed to explore the effect of emotional intelligence on academic procrastination and performance, and to further understand its implications for academic settings.

Keywords: Academic Self –efficacy, Emotional Intelligence, Academic Procrastination, GPA

1. Introduction

Most college settings require the successful completion of challenging assignments in adherence to clear deadlines. While approximately 10-20% of students will begin their work right away, others will procrastinate, waiting until the last minute to get started (Steel, 2007). In some cases procrastination may lead to positive outcomes, such as anxiety relief, or better grades, but for most students, it tends to lead to negative results in terms of both how the students feel and what they achieve (Schraw *et al.* 2007). Academic Procrastination has typically been defined as a behavioral disposition or trait to postpone or delay performing a task or making decisions (Milgram *et al.* 1998). Defined as unnecessarily postponing or avoiding academic tasks that must be completed (Schraw *et al.* 2007), academic procrastination has been seen as an impediment to academic success because it decreases the quality and

quantity of learning while increasing the severity of stress and negative outcomes in students' lives (Howell and Watson, 2007).

Considerable attention has been given to procrastination in university settings, suggesting that academic procrastination is related to personality and individual difference variables such as self-esteem, perfectionism, and neuroticism (Van Eerde, 2003), motivational factors, goals and planning skills (Howell and Watson, 2007; Dietz *et al.* 2007), and with higher levels of anxiety, stress, and illness (Howell *et al.* 2006). Wolters (2003) explored the relationship between academic procrastination and self-regulated learning, and found that metacognitive self-regulation was the second strongest predictor of procrastination after academic self-efficacy beliefs. Howell and Watson (2007) examined academic procrastination in relation to achievement goal orientation and learning strategies, and also reported that procrastination related positively to a mastery-avoidance goal orientation and to greater disorganization and less use of cognitive and meta-cognitive strategies. Among all the variables that have been investigated in relationship to academic procrastination, self-related variables have received the most attention (Ferrari, 2001; Klassen *et al.* 2010).

Recently, Deniz *et al.* (2009) studied the relationship between emotional intelligence and academic procrastination. They explored the effects of emotional intelligence on the academic procrastination and locus of control tendencies in a group of university students, assuming that the ability to utilize emotions to reduce stress would be related to locus of control and would affect academic procrastination. Results indicated that adaptability and coping with stress were highly correlated with students' academic procrastination tendency, and that adaptability and general mood, significantly predicted students' locus of control. Further findings revealed a negative correlation between emotional intelligence abilities and both academic procrastination and locus of control.

Emotional Intelligence refers to the ability to process emotional information as it pertains to the perception, assimilation, expression, regulation, and management of emotion (Brackett *et al.* 2006). It involves a set of mental abilities with which individuals employ high-level processes regarding their attitudes to feelings, clarity of feelings, ability to discriminate among feelings, and mood-regulating strategies (Brackett and Mayers, 2003). It is the ability to carry out accurate reasoning about emotions and the ability to use emotions and emotional knowledge to enhance thought (Lopes *et al.* 2005). Emotional intelligence has been found to be positively correlated with variables such as empathy, verbal intelligence, extraversion, openness to feelings, self-esteem, and life satisfaction (Fernandez-Berrocal and Extremera, 2006; Chan, 2004; Bastian *et al.* 2005). Emotionally intelligent individuals are often described as well-adjusted, warm, genuine, persistent, and optimistic (Ivcevic *et al.* 2007). The ability to assess, regulate, and utilize emotions has been found to be associated with a variety of better outcomes, including employment and academic performance (Boyatzis, 2006; Daus and Ashkanasy, 2005).

Emotional Intelligence and academic self -efficacy are often studied together as predictors of academic achievement and professional performance (Duran *et al.* 2006;). Some studies have examined the moderating influence of emotional intelligence on the link between academic self-efficacy and achievement among university students (Adeyemo, 2007). Others have explored the development of EI on levels of students' self-efficacy and task performance (Gil-Olarte *et al*. 2006).

Self-efficacy refers to people's judgments of their own capabilities to organize and execute courses of action required to attain designated types of performances (Bandura, 1986). According to Bandura (1997), self -efficacy strongly influences the choices people make, the effort they expend, and how long they persevere in the face of challenge. Much research shows that self-efficacy influences academic motivation, learning, and achievement (Bong, 2001; Pajares, 2007). Self-efficacy beliefs influence task choice, effort, persistence, resilience, and achievement (Bandura, 1997; Britner and Pajares, 2006).

A significant number of researchers have described self-efficacy as being a strong and consistent predictor of procrastination (Steel, 2007; Van Eerde, 2003). The findings of Haycock *et al.* (1998) suggested a significant inverse relationship between self -efficacy beliefs and procrastination. Chu and Choi (2005) found that active procrastinators that choose to procrastinate and view it as a positive learning strategy tend to have higher levels of self-

efficacy than passive procrastinators that view procrastination in a negative way. Seo's (2008) findings suggested that students with self-oriented perfectionism procrastinated less than others, and that self-efficacy completely mediated the relationship between the two. Tuckman and Sexton (1992) reviewed their work and concluded that self-beliefs mediated between external conditions and self-regulated performance, in a way that a lack of academic self-efficacy led to academic procrastination. Along the same lines Klassen *et al.* (2008) argued that referencing self-regulated learning as the key to academic procrastination is limiting, since it neglects the role that motivation plays in the adoption of important metacognitive strategies. They suggested that academic self-efficacy is a key to understanding academic procrastination in adults who have knowledge of cognitive and metacognitive skills and strategies, but may possess less confidence in using them to organize their learning.

Many studies have utilized GPA as a measure of academic performance (Conard, 2006). Several studies have focused on GPA as a predictor of academic success, ability, graduation (Duff *et al.* 2004). However, most studies examined variables that predict academic performance as expressed by GPA scores. Recently findings indicated that GPA is a sensitive measure that is clearly affected by personality traits (O'Connor and Paunonen, 2007), motivational variables (Harackiewicz *et al.* 2002), other self-related factors (Kuncel *et al.* 2004) and at times even by demographic or psychometric variables (Noftle and Robins, 2007). For example Duff *et al.* (2004) studied the relationship between students' approaches to learning, the big five personality factors, and some background demographic variables. Their findings suggested that prior educational attainment and conscientiousness accounted for the most (24.1%) of the variance in academic performance. Further Noftle and Robins (2007) indicated that conscientiousness was the strongest predictor both for college and high school GPA, and college GPA was mediated both concurrently and longitudinally by increased academic effort, and higher levels of perceived academic ability. Harackiewicz *et al.* (2002) examined the role of achievement goals, ability, and high school performance in predicting academic success over students' college careers, and found that mastery goals predicted continued interest, whereas performance-approach goals predicted performance. Klassen *et al.* (2010) found that for both Canadian and Singapore college students higher procrastination rates, predicted lower GPA scores. Parker *et al.* (2004) studied the relationship between EI in high school and academic performance in college and concluded that there was a strong association between the two. Several other studies found academic self-efficacy a robust and consistent predictor of academic performance as measured by GPA (Zajacova *et al.* 2005)

Based on the above literature, it is assumed that emotional intelligence, that is considered a self-related variable and is associated with better academic outcomes, may be associated with academic procrastination. In order to better understand the role of emotional intelligence and its relevance to academic procrastination and academic performance (GPA), the current study aimed to explore academic self-efficacy as a mediator between emotional intelligence and: (a) academic procrastination, (b) GPA, as a measure of academic performance.

2. Methods

2.1. Participants and Procedure

This research is based on a convenience sample of 287 undergraduate students from a college located at Northern Israel (14% males, 86% females, mean age was 25.1, SD = 4.5). Thirteen percent were first-year students, 62% were second-year, 25% were third- (i.e. final) year. The participants were asked to complete the questionnaires during class time of several frontal courses, early in the 2009-2010 academic years. The students had been notified that participation in the research was voluntary and anonymous.

2.2. Instruments

Emotional Intelligence: The Schutte Self Report Emotional Intelligence Test (SSREIT) is a 33-item self-report measure of emotional intelligence developed by Schutte *et al.* (1998). The items are scored on a Likert scale ranging from 1 (does not describe me well) to 5 (describes me very well). This test is a trait measure of emotional intelligence (EI). This instrument includes the following subscales that reveal a satisfying internal reliability: (a) appraisal and expression of emotions, 13 items (e.g., "I like to share my emotions with others"); (b) regulation of emotions, 10 items (e.g., "I have control over my emotions"); and (c) utilization of emotions, 10 items (e.g., "When I am in a positive mood, solving problems is easy for me").

Academic Self-Efficacy: To measure academic self-efficacy, we used the College Academic Self-Efficacy Scale (CASES) (Owen and Froman, 1988). This instrument consists of 26 items scored on a Likert scale ranging from 1 (do not feel confident) to 5 (feel very confident). Each item is related to one of the three subscales, all of them reveal a sufficient reliability: (a) technical skills (e.g., using computers and library recourses); (b) social situations (e.g., participating in a class discussion, asking a lecturer to repeat his/her explanation); and (c) cognitive operations (e.g., listening carefully during a lecture on a difficult topic, understanding an examination question).

Academic Procrastination: This scale was designed for college students (Milgram *et al.* 1998). It includes items related to three academic assignment categories: (a) homework (e.g., "I do my homework the same day I receive the assignment"), (b) examination (e.g., "As soon as I know when an examination will be given, I start to prepare for it") and (c) papers (e.g., "I begin preparing lengthy papers soon after they are assigned"). Each category consists of seven items measured on a 4-point scale (from 1 – hardly ever to 5 – almost always) (see Table 1 for Cronbach's alpha coefficients).

Table 1. Descriptive statistics and intercorrelations between the research variables

		M (SD)	SD	1	2	3	4	5	6	7	8	9
1	Technical	3.60	0.54	**(.60)**								
2	Social	3.35	0.70	.58***	**(.76)**							
3	Cognitive	3.57	0.60	.63***	.60***	**(.84)**						
4	Expression	3.82	0.45	.22***	.31***	.32***	**(.78)**					
5	Regulation	3.83	0.42	.30***	.40***	.24***	.54***	**(.66)**				
6	Utilization	3.80	0.47	.31***	.42***	.41***	.46***	.61***	**(.77)**			
7	Home works	2.94	0.82	-.31***	-.22***	-.24***	-.08	-.15*	-.25***	**(.85)**		
8	Examinations	3.08	0.71	-.36***	-.27**	-.42***	-.13*	-.13*	-.22***	.64***	**(.74)**	
9	Papers	2.89	0.76	-.36***	-.25***	-.28***	-.12*	-.23***	-.30***	.75***	.55***	**(.85)**
10	GPA	86.75	4.69	.22***	.16**	.28***	-.10	-.10	.15*	.06	.06	-.12*

Notes: N = 287. Internal reliabilities are in parenthesis.
*p<.05; ***p<.001

GPA: A measurement of GPA was based on a self-reported question: "What was your grade point average last year?" In order to assure that the self-reported GPA in our sample reflects a real GPA of the college students, we compared the sample GPA mean (M=86.8) to the overall GPA mean as provided by college authorities (M=86.3). This comparison revealed no significant difference between these means (t=1.36; p>.05), suggesting that the self-reported GPA may be considered as a reliable measure.

3. Results

Structural equation modeling analysis using AMOS was conducted to examine the mediation role of academic self-efficacy between emotional intelligence and procrastination and GPA.

There were three latent variables in our model: EI as an independent variable, academic self-efficacy as a mediating variable and academic procrastination and GPA as

dependent variables. Each latent variable had three indicators. These indicators were the means of items related to latent variable subscales as described in the instruments section (See Figure 1).

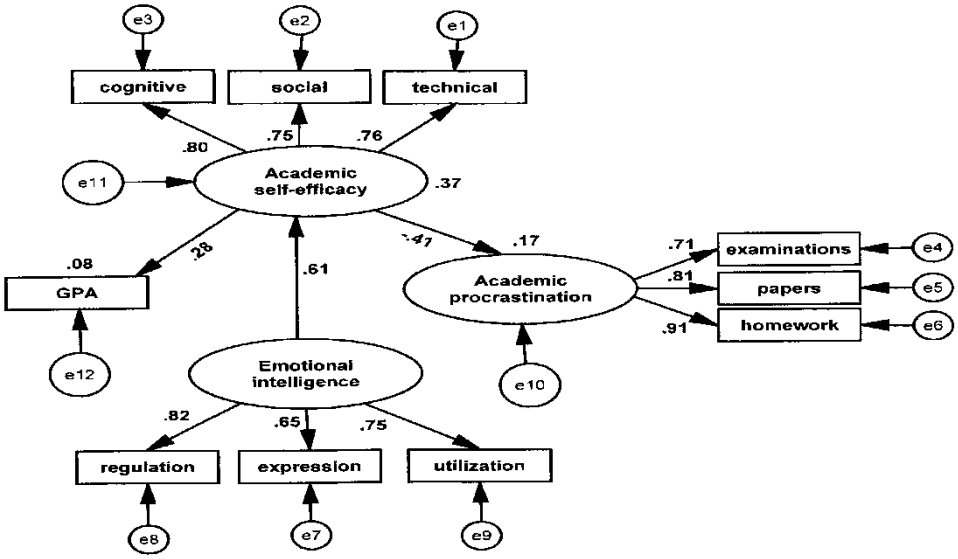

Figure 1. Academic self-efficacy is a full mediator between EI, academic procrastination and GPA: Standardized estimates

The standard criteria for model evaluation were based on the p-value of chi-square (χ^2) greater than .05 (Byrne, 2009), goodness of fit index (GFI) and the comparative fit index (CFI) greater than .95 (Joreskog and Sorbom, 1984), and the root mean square error of approximation (RMSEA) less than .06 (Browne and Cudek, 1993).

The full mediation model showed a good fit to the data in terms of recommended cutoff criteria (See Table 2). It should be noted that the model's p value is significant. But it also should be noted that, given a sample size above 200 cases, the vast majority of SEM models do not fit data via the χ^2 tests (Barret, 2007).

Table 2. Fit statistics of the research models

Model	χ^2	df	p	$\Delta\chi^2$	Δp	GFI	CFI	RMSEA
Full mediation of academic self-efficacy	58.50	31	.002	--	--	.96	.98	.05 (90% CI: 0.04–0.08)
Partial mediation of academic self-efficacy	57.0	29	.001	1.51	.47	.96	.98	.06 (90% CI: 0.03–0.08)

In order to test the indirect effects, we used bootstrapping procedures (resampled 1000 times and used the percentile method to create 95% confidence intervals) (Arbuckle, 2009).

The results indicated that EI has a significant negative indirect effect on academic procrastination (β=-.25; p<.05): higher EI leads to lower academic procrastination, and a significant positive indirect effect on GPA (β=.17; p<.05): higher EI indicates higher GPA (See Table 3).

Table 3. Direct and indirect effects of emotional intelligence on academic self-efficacy, academic procrastination and GPA

		Effect						
		Direct			Indirect			
Independent variable	Dependent variable	B	SE (B)	β	B	SE (B)	β	Bootstrap Estimate (95% CI)
Emotional intelligence	Academic self-efficacy	0.71**	0.10	.61	--	--	--	0.54; 0.93
Academic self-efficacy	Academic procrastination	-0.52**	0.11	-.41	--	--	--	-0.75; -0.30
Academic self-efficacy	GPA	3.84**	0.77	.28	--	--	--	2.40; 5.43
EI	Academic procrastination	--	--	--	-0.37*	0.10	-.25	-0.57; -0.20
EI	GPA	--	--	--	2.74*	0.61	.17	1.58; 3.97

Notes: The upper and lower bounds of the 95% confidence interval (shown in parentheses) are based on results of a bootstrapping analysis using the percentile method.
*p<.05; **p<.01; ***p<.001

To examine whether partial mediation of academic self-efficacy takes place, we added two direct paths: EI to academic procrastination and EI to GPA (See Figure 2). Both paths have been found insignificant (β=-.11; p>.05 and β -.04; p>.05, respectively), and they have not lead to a significantly better model fit (See Table 2). These results suggest that EI has no direct effect on academic procrastination and GPA.

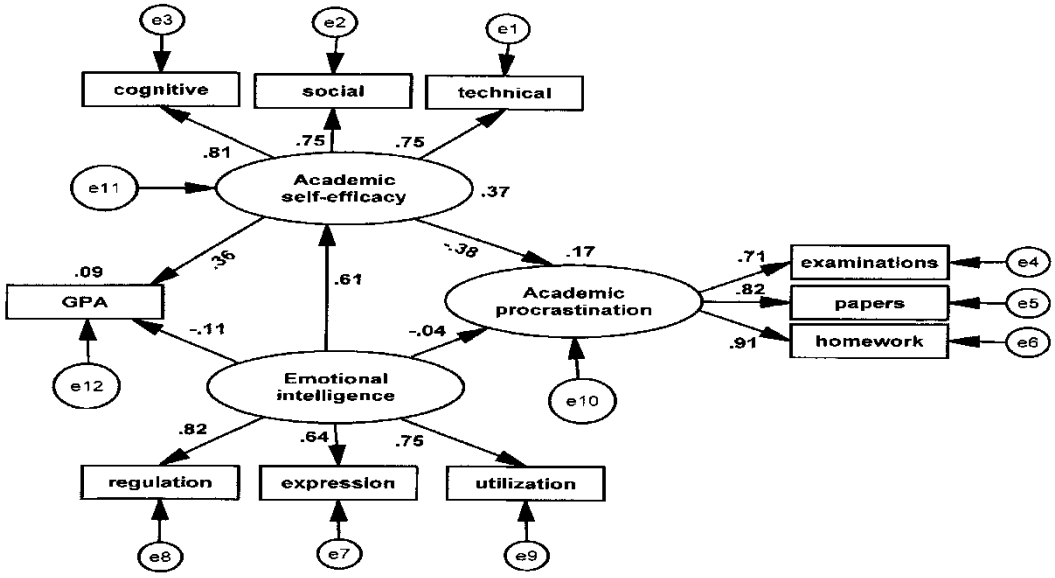

Figure 2. Academic self-efficacy is a partial mediator between EI, academic procrastination and GPA: Standardized estimates

4. Discussion

There are a growing number of studies exploring the relationship between academic procrastination and self-related variables (Steel, 2007). Most of these studies emphasize the motivational and cognitive factors of self-regulated learning (Klassen *et al.* 2008; Wolters, 2003). Emotional Intelligence is considered a self-related variable that is associated with a variety of better outcomes, including academic performance (Boyatzis, 2006). The purpose of this study was to contribute to the above literature by exploring the link between emotional intelligence

and academic procrastination, and to examine the role of self-efficacy as a mediator in that relationship. The relationship between emotional intelligence and academic performance (GPA) as mediated by self-efficacy were examined as well.

The most important finding in this study indicated that academic self-efficacy fully mediates the relationship between emotional intelligence and academic procrastination, as well as the relationship between EI and academic performance as measured by GPA.

These findings support other findings that suggested self - efficacy as a mediator between skills, other self -beliefs and performance (Pajares and Valiante, 2002; Seo, 2008), and are similar to the findings of Klassen *et al.* (2008; 2010) regarding relationships between self-efficacy, self-regulation and academic procrastination. It also supported studies that indicated academic self-efficacy as a robust predictor of academic performance as measured by GPA (Zajacova *et al.* 2005).

Our findings did not indicate a direct effect of EI on academic procrastination, suggesting that emotional intelligence , similar to cognitive self-regulation is a trait or an ability that overall is affected by motivational components (Usher and Pajares, 2008), and specifically in relation to procrastination (Wolters, 2003; Klassen *et al.* 2008). These findings differ from findings in a previous study that indicated a strong correlation between adaptability and coping with stress EI subscales and academic procrastination tendency (Deniz et al. 2009). This difference may be due to the variation in the conceptual framework underlying the two measurements utilized in these studies (Bar-On, 1997; Schutte *et al.* 1998). While Deniz *et al.* (2009) explored EI and procrastination as parallel modes for coping with stress and adapting to academic situations, we studied Emotional Intelligence as an emotional self-regulatory mechanism that may serve to decrease academic procrastination.

Interestingly there was no direct effect of EI on students' GPA. This may sound surprising and inconsistent with EI theory and the empirical evidence that ties EI positively to academic performance (Petrides *et al.* 2004; Parker *et al*. 2004); However, association between EI and GPA seems to be inconsistent and complex (Tapia and Marsh, 2006) and reveals many different outcomes (Parker *et al.* 2005).

5. Conclusions

Following the literature that argues that academic procrastination is associated with self-related variables, this study examined EI in association to academic procrastination. Further we examined the role of academic self-efficacy in mediating between the two. Findings indicated that academic self-efficacy serves as a full mediator between EI, GPA and academic procrastination. These are initial findings, but since EI is usually associated with better academic outcomes, it raises the need to further explore these relationships. Maybe EI abilities can function as an emotional self-regulatory mechanism that may serve to decrease academic procrastination.

This is an initial study and has to be further studied in different populations and in relation to other predictors and possible causes of academic procrastination. Although this study included a good number of participants, it utilized mostly self-reported measurements, GPA scores that are considered a weak measurement of performance, and students were self - referred.

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