THE ROLE OF PERSONALITY TRAITS IN EXPLAINING ACADEMIC SELF-EFFICACY: EVIDENCE FROM A BUSINESS SCHOOL

Tanisha Bukth *

Abstract

Although personality traits and self-efficacy beliefs have typically been studied as offering independent explanations of academic functioning, there is growing contention among researchers that the two are interrelated. Hence, the aim of the present study is to determine whether personality traits, as defined by the Big Five Framework, can explain the academic self-efficacy of students pursuing a degree in business. Undergraduate students from a business school in Bangladesh have been chosen as the sampling frame and responses have been obtained from 178 of these students on two self-reported questionnaires, measuring personality and academic self-efficacy, respectively. Using hierarchical regression, it is found that conscientiousness, openness to experience, extraversion, and agreeableness each has a significant positive association with academic self-efficacy. The study yields the conclusion that academic self-efficacy indeed has a dispositional basis, and the relative influence of different traits is contingent on the academic discipline in question. Hence, in order to raise the self-efficacy of students, educators must take inherent differences in personality into account, as well as the ways in which these interact with the learning environment to influence students’ self-efficacy.

Keywords: Academic Self-Efficacy, Bangladesh, Big Five Framework, Business School, Personality, Undergraduate Students.

1. INTRODUCTION

Personality and self-efficacy are two concepts that have been widely studied in the educational context (Hartman & Betz, 2007; Alegre, 2014). Personality refers to the relatively stable set of characteristics that make an individual unique (Costa & McCrae, 1992) and a plethora of studies have found it to be a vital factor in influencing desired academic outcomes including academic engagement, self-regulated learning, and academic achievement, among others (Komarraju & Karau, 2005; Feyter et al., 2012; Ghyasi et al., 2013). Self-efficacy, on the other hand, constitutes the central variable of social cognitive theory and refers to one’s belief in his/her own ability to perform actions that are needed to accomplish desired outcomes (Byrne et al., 2014). Academic self-efficacy is a subset of the overarching concept of self-efficacy and has been shown to be one of the most important factors affecting academic functioning (Bandura et al., 1996; Sanchez-Cardona et al., 2012; Stajkovic et al., 2018).

Although it seems intuitively appealing that people with different personalities may be inclined to have different levels of self-efficacy, few studies have explored this

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relationship (Komarraju et al., 2009; Giunta et al., 2013). However, in recent times, researchers have increasingly come to appreciate that understanding of cognitive processes such as self-efficacy may remain incomplete unless their interlinkage with intrinsic personality traits is examined (Bullock-Yowell et al., 2011). Hence, the aim of the present study is to determine whether personality traits, as defined by the Big Five Framework, can explain the academic self-efficacy of undergraduate students from a business school based in Bangladesh. In conducting the research, a cross-sectional design has been utilized, with a total of 178 participants from different academic years. The statistical model employed is a hierarchical regression model, with self-reported self-efficacy as the outcome variable and personality traits as the predictor variables.

The study has both theoretical and practical significance. First, it can lead to an understanding of whether academic self-efficacy has a dispositional basis and thus address a crucial gap in the extant literature. It is important to remember that while personality is inherent and stable, self-efficacy is malleable (Bandura, 1997). Hence, to the extent that personality shapes self-efficacy, students who are characteristically different might require different interventions to develop their academic self-efficacy, knowledge of which is critical for educators.

Second, although tertiary education represents a critical juncture in an individual’s life, with demands for higher initiative, self-regulation, and self-efficacy (Sachitra & Bandara, 2017), there is a paucity of studies focusing on the academic self-efficacy of students at this level. In addition, since self-efficacy is domain-specific (Alegre, 2014) and based on the interaction between the individual and the environment (Bandura, 1997), the self-efficacy formation process of students in a business school might be distinct from that of students in other disciplines. This study can contribute to the understanding of which personality traits are relevant to the academic self-efficacy of tertiary level students in general, and students of business, in particular, thus making the findings significant not just for Bangladesh, but for other countries as well.

2. LITERATURE REVIEW

The concept of academic self-efficacy has its roots in Bandura’s work on self-efficacy and refers to a student’s belief regarding his/her own ability to perform academic activities with the desired level of success (Bandura et al., 1996). Self-efficacy is a core mechanism of behavior change, which determines whether outcome-oriented behaviors will be initiated and sustained (Bandura, 1993). Students who have higher self-efficacy are likely to evaluate the challenges presented by the academic environment more favorably and attempt to overcome those with effort, persistence, and patience. This increases the likelihood of success. In contrast, students with low self-efficacy are likely to evaluate academic challenges as being beyond their capabilities to address and engage in withdrawal behaviors such as procrastinating, avoiding, and reducing effort, which increase the likelihood of failure (Bandura et al., 1996). Such success and failure, in turn, act as positive and negative antecedents respectively, for future self-efficacy beliefs (Robbins et al., 2014).
Personality traits represent stable individual characteristics that mostly derive from genetic endowment (Costa & McCrae, 1992). The Big Five Framework, used in this study, is widely accepted as a robust taxonomy of traits (Judge & Ilies, 2002) and captures the complexity of human nature within five distinct dimensions: conscientiousness, extraversion, agreeableness, neuroticism (often labelled by the opposite pole of emotional stability), and openness to experience (Costa & McCrae, 1992).

Of all five personality traits, conscientiousness has been found to correlate the most strongly and consistently with self-efficacy in a wide variety of contexts (Judge & Ilies, 2002; Hartman & Betz, 2007). Conscientious individuals are defined as being diligent, responsible, and self-disciplined (Costa & McCrae, 1992). They tend to pursue academics with precision and orderliness, which serves to increase their self-efficacy (Poropat, 2009). This has been ratified by several researchers. For instance, using a sample of 80 post-graduate students in India, Shaheen et al. (2013) found that conscientiousness has a strong positive correlation with self-efficacy. Similar results were obtained by Hamid et al. (2020) in a study of learners with disabilities in India and by Hayat et al. (2020) in their study of medical students in Iran. Studies in the Western context have also found evidence in favor of this positive linkage between conscientiousness and students’ self-efficacy (Ojeda et al., 2011; Giunta et al., 2013). In addition, some authors have suggested that self-efficacy fully mediates the relationship between conscientiousness and academic performance, thus making it the critical link between personality and achievement (Caprara et al., 2011; Stajkovic et al., 2018).

Turning to neuroticism, it is seen that this trait has an inverse relation with self-efficacy in most domains. Individuals with high levels of neuroticism are prone to experience stress, anxiety, and depression and find it difficult to maintain emotional stability even in the face of relatively minor challenges (Judge & Ilies, 2002). Not surprisingly, researchers have found that students who score high on this trait suffer from low self-efficacy with respect to a variety of academic behaviors such as adjustment to the educational environment (Feldt et al., 2011), choice of academic major (Schmitt, 2007; Brown & Cinamon, 2016) and general self-efficacy (Hayat et al., 2020). However, when it comes to the link with academic performance, the evidence on neuroticism is not unequivocal as some authors have found it to positively influence the former (Bidjerano & Dai, 2007).

Openness to experience, which is defined as the quality of being imaginative, artistic, and curious (Costa & McCrae, 1992), has been shown to correlate positively with self-efficacy in some extant literature. Bhattacharya & Sarkar (2018), for instance, indicate that higher openness is associated with higher self-efficacy among male post-graduate students in India. Similar results have been obtained among high school students in Italy (Giunta et al., 2013) and university students in Scotland and New Zealand (Peterson & Whiteman, 2007). Hence, it appears that the inclination of more open individuals to perceive educational demands as challenges to be tackled makes them more efficacious (Sanchez-Cardona et al., 2012) and this holds across different academic levels.
Like conscientiousness and openness, extraversion has also been shown to improve self-efficacy. Extraversion is defined as the quality of being sociable, gregarious, and assertive. However, most studies on extraversion have focused on self-efficacy in academic and career decision-making (Page et al., 2008; Bullock-Yowell et al., 2011; Brown & Cinamon, 2016) rather than on self-efficacy regarding academic success. Evidence of the positive linkage between extraversion and career-decision self-efficacy has also been found by Budiningsih et al. (2019) who based their study on 260 first-year undergraduate students in Indonesia. The authors suggest that extroverted individuals can engage better in career exploration and display decisional comfort in the search process. Similar results have been found by Chen et al. (2006) for college students in China.

Agreeableness, which is associated with modesty, cooperation, deference, and propensity to trust others (Robbins et al., 2014) has been studied the least among all five personality traits in relation to academic functioning (Judge & Ilies, 2002; Page et al., 2008). Shiner (2000) suggests that agreeableness is linked to positive outcomes in the relationship domain but has no influence on academic efforts. However, there is some evidence that agreeableness improves students’ college adjustment (Feldt et al., 2011) and vocational self-efficacy (Lounsbury et al., 2009).

The above review indicates that while some studies have been conducted on the relationship between personality and self-efficacy, the evidence is sparse when one considers the specific domain of academic self-efficacy, especially in the context of Eastern countries. In Bangladesh, where this study is based, researchers have found higher self-efficacy to enhance academic performance (Chowdhury & Shahabuddin, 2007; Amin & Sharmin, 2016) of tertiary level students. However, not much is known about what drives self-efficacy in the first place. The present study intends to address this very gap, thus contributing to a fuller understanding of the origins of academic self-efficacy.

3. METHODOLOGY

3.1 Population and Sampling

The population for this study may be defined as students pursuing a degree in business. In line with several previous studies on personality and/or self-efficacy such as Feyter et al. (2012), Sachitra and Bandara (2017), Hayat et al. (2020), which have drawn their samples from a single institute, undergraduate students from the Institute of Business Administration (IBA), have been chosen as the sampling frame for this study.

IBA is a business school in Bangladesh, offering six academic programs, ranging from the undergraduate to the doctoral level. A conscious choice was made to focus this study on only undergraduate students for two reasons. First, since graduate and doctoral students have prior exposure to university education, and in most cases, possess work experience, the antecedents of their self-efficacy beliefs are likely to be far more varied than that of undergraduate students who lack such exposure. In
fact, given that mastery experience is known to be the most important source of self-efficacy (Robbins et al., 2014), the past success/failure of graduate/doctoral students in tertiary education may potentially overwhelm the impact of other antecedents, including personality. Hence, the aim of delineating the significance of personality as an antecedent of self-efficacy might be better served by focusing on undergraduate students only.

The labelling of undergraduates as the “at-risk population” where self-efficacy is concerned (Bandura, 1997) constitutes the second rationale behind choosing only this group. As noted by several researchers, the transition from high school to tertiary education comes with a number of unique challenges such as loss of parental supervision, need for greater self-control, and feelings of alienation, all of which may threaten self-efficacy (Wingate, 2007; Christie et al., 2008). Hence, knowledge of what determines the self-efficacy of undergraduate students could be more important for educators than knowledge of the same for students at the graduate/doctoral level.

The self-reported questionnaires for this study were distributed to all current undergraduate students of IBA. Responses were obtained from 178 students. The demographic characteristics of these respondents are summarized in Table 1.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Respondents</td>
<td>110 (61.8%)</td>
<td>68 (38.2%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Academic Year¹</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Respondents</td>
<td>55 (30.9%)</td>
<td>45 (25.3%)</td>
<td>78 (43.8%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>20 years</th>
<th>21 years</th>
<th>22 years</th>
<th>23 years</th>
<th>24 years</th>
<th>25 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Respondents</td>
<td>9 (5.1%)</td>
<td>37 (20.8%)</td>
<td>46 (25.8%)</td>
<td>49 (27.5%)</td>
<td>31 (17.4%)</td>
<td>6 (3.4%)</td>
</tr>
</tbody>
</table>

According to Field (2018), the appropriate sample size is contingent on the power desired and the expected effect size. In line with most social science research (Field 2018), a power of 0.8 is desired for this study. In addition, since past researchers have found that personality traits have low to moderate correlation with self-efficacy (Judge & Ilies, 2002), a medium effect size is expected. Based on Miles & Shevlin (2001), it may be stated that when power of 0.8 is desired and medium effect size is expected, a sample size of 200 will always suffice. However, when there are six or fewer predictors, a sample size of 100 is adequate. Given that five predictor variables have been used in this study (to be defined in Section 3.3), the sample size of 178 is adequate.

3.2 Instruments and Measures

To measure personality traits, participants were asked to fill out the 44-item Big Five Inventory (BFI) developed by John and Srivastava (1999). The Five Factor Model is...
a consensual model of personality (Judge & Ilies, 2002) and several shorter versions of it have been developed for different reasons. Predominant among these is limited time of administration, especially when multiple assessment instruments are involved in a study (Ortet et al., 2017). Since this study uses two research instruments and relied on participants voluntarily completing both online, it was deemed appropriate to use the 44-item version, rather than the longer original version.

The BFI uses eight to ten questions to assess each personality trait, with a total of 44 questions. Each question takes the form of a descriptive statement and respondents are asked to rate their level of agreement with the sentence using a five-point Likert scale. The scale ranges from 1 (Strongly Disagree) to 5 (Strongly Agree). Among the short versions of the Five Factor Model, the BFI has been used by several authors (Ortet et al., 2017) and found to have good validity and reliability (Fossati et al., 2011; Alansari, 2016).

While several instruments have been developed over time to measure academic self-efficacy (Byrne et al., 2014), Bandura (1997) emphasizes that self-efficacy is domain-dependent and hence it is essential that instruments be customized to the specific area of research. Therefore, the questionnaire for measuring academic self-efficacy in the present study has been drawn from the work of Byrne et al. (2014), who specifically designed their instrument for the measurement of academic self-efficacy among undergraduate students. Each question took the form of a descriptive sentence (shown in Table 3) and participants were asked to rate their level of agreement with each on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

It is pertinent to mention at this point, that in the interest of maintaining brevity and relevance to the present study, 15 questions have been used from the original 37-item instrument of Byrne et al. (2014). While choosing these questions, care was taken to adequately capture the two central domains of academic self-efficacy, as identified by previous researchers. These are the perceived capability to reach academic goals and the perceived capacity for self-regulated learning (Caprara et al., 2011; Sachitra & Bandara, 2017). Previous researchers such as Sachitra & Bandara (2017) have also used shortened versions of Byrne et al.’s (2014) instrument.

To assess the internal reliability of the scales used in this study, Cronbach’s Alpha has been used. While the standard cutoff for this measure is 0.7, some related papers in the social science domain such as Djigic et al. (2013) have considered values above 0.6 to be acceptable. Hence, reliability of all scales is deemed to be adequate.
The Role of Personality Traits in Explaining Academic Self-Efficacy: Evidence from a Business School

Table 2: Reliability of Scales Used for Measuring Personality Traits and Academic Self-Efficacy

<table>
<thead>
<tr>
<th>Measurement Scales</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>0.751</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>0.793</td>
</tr>
<tr>
<td>Extraversion</td>
<td>0.780</td>
</tr>
<tr>
<td>Openness to Experience</td>
<td>0.709</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.622</td>
</tr>
<tr>
<td>Academic Self-Efficacy</td>
<td>0.775</td>
</tr>
</tbody>
</table>

3.3 Statistical Model and Hypotheses

The outcome variable that this study seeks to predict is academic self-efficacy. This has been calculated by averaging the ratings of all fifteen questions pertaining to this construct for each respondent. The predictor variables are the five personality traits as defined by the BFI. Ratings given by each participant on questions pertaining to a given trait have been averaged to calculate the said participant’s score for that trait.

In line with several related papers such as Ojeda et al. (2011), Ghyasi et al. (2013), Martey and Aborakwa-Larbi (2016), regression analysis has been used in this study for testing the association between personality and self-efficacy. While several forms of regression analysis exist, hierarchical regression has been utilized since it is theory-driven and allows the experimenter to decide the order in which predictors are entered into the model, based on evidence from past research. It is also useful for judging incremental importance of predictors (Field, 2018). Since past research has shown conscientiousness and emotional stability to be consistently stronger predictors of self-efficacy than the other traits (Judge & Ilies, 2002), they were entered together into the regression model as Block 1. Next, extraversion, openness to experience, and agreeableness were entered together as Block 2.

The Regression Model can be specified as follows:

\[
\text{Mean}_{-}\text{Efficacy}_i = \beta_0 + \beta_1\text{Conscientiousness}_i + \beta_2\text{Emotional Stability}_i + \beta_3\text{Extraversion}_i + \beta_4\text{Openness}_i + \beta_5\text{Agreeableness}_i + \epsilon_i
\]

Where,

\[
\beta_{1,2,3,4,5} = \text{Coefficient of conscientiousness, emotional stability, extraversion, openness and agreeableness, respectively}
\]

\[
\beta_0 = \text{Constant}
\]

\[
\epsilon_i = \text{Error term}
\]

In line with previous research, it is hypothesized that all five traits are able to predict academic self-efficacy in the target population. The null hypotheses of no significant association between each predictor and the outcome are tested at a 5% level of significance.
4. EMPIRICAL FINDINGS

4.1 Descriptive Statistics

The descriptive statistics pertaining to self-efficacy are presented in Table 3. Since the rating scale ranges from 1 to 5, the overall mean of 3.60 indicates that the undergraduate students sampled in this study have moderate levels of academic self-efficacy. Upon closer inspection, it is clear that while efficacy regarding goal attainment is high, the same cannot be said with respect to efficacy regarding self-regulated learning. Only five out of the fifteen questions in the table have mean ratings above 4 and four of these deal with some goal, such as completing the degree on time, finishing assigned projects within deadline, and learning course content. In contrast, questions relating to drawing up study plans and proactively preparing for examinations have two of the lowest scores in the table. There is also a clear lack of self-efficacy with respect to participating in lectures and asking questions when a lecture is difficult. These findings resound with those of Sachitra and Bandara (2017) and Byrne et al. (2014) for undergraduate students in Sri Lanka and Ireland respectively.

Table 3: Descriptive Statistics for Self-Efficacy Dimensions

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can maintain a positive attitude towards learning even when tense</td>
<td>3.43</td>
<td>1.197</td>
</tr>
<tr>
<td>If I try hard, I can learn even the most difficult content</td>
<td>4.31</td>
<td>0.825</td>
</tr>
<tr>
<td>I am confident in my ability to learn even if I am having a bad day</td>
<td>3.65</td>
<td>1.236</td>
</tr>
<tr>
<td>If I try hard enough, I can achieve the academic goals I desire</td>
<td>4.26</td>
<td>0.933</td>
</tr>
<tr>
<td>I know I can finish assigned projects even when others think I can’t</td>
<td>4.19</td>
<td>0.934</td>
</tr>
<tr>
<td>I feel confident that I can complete my degree within 4 years</td>
<td>4.56</td>
<td>0.736</td>
</tr>
<tr>
<td>I respond to questions asked in lectures</td>
<td>2.92</td>
<td>1.230</td>
</tr>
<tr>
<td>I can draw up a study plan when needed</td>
<td>2.75</td>
<td>1.331</td>
</tr>
<tr>
<td>I have the ability to plan time ahead and prepare well for my exams</td>
<td>2.84</td>
<td>1.324</td>
</tr>
<tr>
<td>I pay attention during every lecture</td>
<td>3.15</td>
<td>1.130</td>
</tr>
<tr>
<td>I engage in academic discussions with my friends</td>
<td>3.71</td>
<td>1.064</td>
</tr>
<tr>
<td>I try to make sense of feedback on my assignments and exams</td>
<td>4.01</td>
<td>0.960</td>
</tr>
<tr>
<td>I make a genuine attempt to meet deadlines</td>
<td>4.53</td>
<td>0.753</td>
</tr>
<tr>
<td>I express my opinion when I do not understand a lecture</td>
<td>2.63</td>
<td>1.158</td>
</tr>
<tr>
<td>I come forward to do presentations in group assignments</td>
<td>3.43</td>
<td>1.365</td>
</tr>
<tr>
<td>Overall self-efficacy</td>
<td>3.60</td>
<td>0.484</td>
</tr>
</tbody>
</table>

The descriptive statistics for the personality traits are shown in Table 4. The respondents appear to have high levels of openness to experience and moderate levels of conscientiousness and agreeableness as the mean ratings of these traits.

This questionnaire has been adapted from Byrne et al. (2014)
are 3.96, 3.34, and 3.60 respectively. On the other hand, both emotional stability and extraversion have mean ratings below 3 and rather large standard deviations in relation to their respective means. Hence, it may be inferred that the respondents differ more on these two traits than on the other three.

Table 4: Descriptive Statistics for Personality Traits

<table>
<thead>
<tr>
<th>Trait</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>3.342</td>
<td>0.706</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>2.932</td>
<td>0.846</td>
</tr>
<tr>
<td>Extraversion</td>
<td>2.957</td>
<td>0.808</td>
</tr>
<tr>
<td>Openness to Experience</td>
<td>3.967</td>
<td>0.638</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>3.603</td>
<td>0.636</td>
</tr>
</tbody>
</table>

4.2 Regression Diagnostics

Before interpreting the findings of the regression model, it is worth checking whether its underlying assumptions have been met. To test for normality of regression residuals, the histogram, normal probability plot, and P-P plot of standardized residuals have been used (see Appendix, Figures 1 & 2). None of these seem to indicate any significant deviations from normality. In addition, a regression model ideally should not have too many outliers as these tend to bias the parameter estimates. According to Field (2018), an outlier is represented by a standardized regression residual that has an absolute value above 2 and no more than 5% of sample cases should have such residuals. Only 7 cases, i.e., 3.9% of the sample qualify as outliers under this criterion. In addition, since the Cook’s distance for none of the outliers exceed the cutoff of 1\(^3\) (Cook & Weisberg, 1982), it may be said that these exert no undue influence on the model.

Ruling out multi-collinearity between predictor variables is critical in multiple regression. The VIF (Variance Inflation Factor) statistics for the model were found to be well below the threshold of 10\(^4\) (Field, 2018), thus providing strong evidence against the existence of multi-collinearity. The Durbin-Watson statistic of 2.073 is also very close to the threshold value of 2, indicating independence of errors (Field, 2018). Finally, assumptions of linearity and homoscedasticity were examined by looking at the graph of standardized predicted values of the outcome (zpred) versus the standardized residuals (zresid). The scatterplot appears to be randomly distributed around a mean of zero (see Appendix, Figure 3), with no funneling effect or curvilinear tendency. Hence, homoscedasticity and linearity, respectively, can be said to have been fulfilled (Field, 2018).

4.3 Regression Results

Since hierarchical regression has been used for the analysis, two successive models have been tested. Model 1 incorporated only conscientiousness and emotional stability as predictors. Model 2 incorporated all five personality traits as predictors.

\(^3\) The Cook’s distance calculated for the outliers ranges from 0.008 to 0.048

\(^4\) VIF Statistics for Conscientiousness, Emotional Stability, Extraversion, Openness, and Agreeableness are 1.162, 1.132, 1.121, 1.094, and 1.055, respectively.
As shown in Table 5, both models are statistically significant at $p < 0.001$. Model 1 can explain 27.3% of the variability in academic self-efficacy as indicated by the $R^2$ of 0.273. Model 2 can explain an additional 20.2% of variability ($R^2$ change of 0.202), over that accounted for by Model 1. This means that the inclusion of extraversion, openness and agreeableness significantly increase the predictive power of the model. Overall, the five personality traits together account for 47.5% of the variability in academic self-efficacy. The adjusted $R^2$ of 0.460 is also quite close to the $R^2$ of 0.475, thus indicating that there will be little shrinkage in the predictive power of the model when applied to the population.

Table 5: Regression Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$R^2$ Change</th>
<th>F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1:</td>
<td>0.273</td>
<td>0.264</td>
<td>0.273</td>
<td>32.801***</td>
</tr>
<tr>
<td>Predictors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness, Emotional_Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2:</td>
<td>0.475</td>
<td>0.460</td>
<td>0.202</td>
<td>22.111***</td>
</tr>
<tr>
<td>Predictors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness, Emotional_Stability, Extraversion, Openness, Agreeableness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** Indicates significance at $p < 0.001$

The regression coefficients in Table 6 provide deeper insight into the statistical significance and effect size of each individual predictor. As hypothesized, conscientiousness, extraversion, and openness are significant at $p<0.001$. Agreeableness is also significant at $p<0.01$. The coefficients of all four traits are positive, thus attesting that increase in each is associated with rise in academic self-efficacy. In line with past research, conscientiousness has the strongest association with the outcome as evidenced by the Standardized $\beta$ of 0.317. However, openness to experience and extraversion are not too far behind, with Standardized $\beta$ of 0.299 and 0.261, respectively. Agreeableness has the smallest effect size of all four traits. However, in contradiction with the hypothesis, emotional stability lacks statistical significance at an alpha level of 5%.

Table 6: Regression Model Coefficients and Significance

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Coefficient ($\beta$)</th>
<th>Standardized $\beta$</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>0.217</td>
<td>0.317</td>
<td>5.321***</td>
</tr>
<tr>
<td>Emotional_Stability</td>
<td>0.059</td>
<td>0.102</td>
<td>1.743</td>
</tr>
<tr>
<td>Extraversion</td>
<td>0.156</td>
<td>0.261</td>
<td>4.461***</td>
</tr>
<tr>
<td>Openness</td>
<td>0.227</td>
<td>0.299</td>
<td>5.177***</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.119</td>
<td>0.156</td>
<td>2.745**</td>
</tr>
</tbody>
</table>

*** Indicates significance at $p<0.001$; ** Indicates significance at $p<0.01$
4.4 Discussion

Given that conscientiousness is congruent with attributes such as sustained effort, goal-setting and self-discipline (Lounsbury et al., 2009; Brown & Cinamon, 2016) it is not surprising that it leads to the reinforcement of personal beliefs regarding successful performance in the academic context. The positive association between conscientiousness and academic self-efficacy may also be explained in terms of the positive correlation found between this trait and academic performance by several researchers (Komarraju & Karau, 2005; Poropat, 2009; Khan, 2018). As mentioned earlier, mastery experience is the most important source of self-efficacy, meaning that past success in a given context can improve self-efficacy, while past failure can undermine the same. Since students who are more conscientious tend to achieve greater academic success, they accumulate more positive mastery experience, which in turn, builds their self-efficacy.

The positive association between openness to experience and self-efficacy may be explained by the fact that individuals high on openness tend to be intellectually curious and insightful, both of which make them more motivated learners (Komarraju et al., 2009). Hence, when faced with a challenging academic environment, they demonstrate higher self-efficacy, both in terms of believing that they can overcome the challenge and initiating actions that allow them to take advantage of the new learning opportunity. In addition, since openness has been linked to higher academic performance (Komarraju & Karau, 2005; Martey & Aborakwa-Larbi, 2016), it can contribute to higher self-efficacy through mastery experience. One unique aspect of the present study is that the importance of openness almost equals that of conscientiousness. This could be because the study has been conducted in a business school, where the curriculum and pedagogy are highly versatile and distinct from anything that students might have encountered previously (Lounsbury et al., 2009). Hence, students with high openness might be inherently more suited to such an environment, with the person-environment fit contributing to higher self-efficacy.

Extroverted individuals are not only high in energy and enthusiasm but have also been shown in past research to be able to engage with peers and instructors more effectively (Ghyasi et al., 2013). In addition, extraversion has been identified as key to the success of business school students (Lounsbury et al., 2009; Khan, 2018), which serves to explain why the effect size of extraversion in the present study is found to be quite high, almost on par with conscientiousness. Likewise, the small, but significant effect of agreeableness may be explained by the fact that academics involve socialization (Martey & Aborakwa-Larbi, 2016), and that this holds more true for a business school since group work constitutes a common learning and assessment component.

The absence of a significant association between emotional stability and self-efficacy is rare, but not without precedence, as a number of authors have reported similar findings (Komarraju et al., 2009; Khan, 2018). In fact, some authors have suggested that while emotional stability increases fear of failure, it may also induce students to
intensify their efforts to reduce the prospect of such failure (Bidjerano & Dai, 2007). Hence, such students may try to overcome low self-efficacy regarding goal attainment with a set of proactive behaviors such as preparing well ahead of examinations, trying to be attentive in lectures, and using the resources at their disposal to meet deadlines, thus neutralizing the impact of this trait on self-efficacy.

5. CONCLUSION AND IMPLICATIONS

The objective of this study was to determine whether personality traits as defined by the Big Five Framework can predict the academic self-efficacy of undergraduate students pursuing a degree in business. 178 students from a business school in Bangladesh participated in the study and a hierarchical regression model was used to analyze the said relationship. The findings indicate that four traits, namely conscientiousness, openness to experience, extraversion, and agreeableness can together explain 47.5% of the variability in academic self-efficacy of the target population. It can therefore be concluded that academic self-efficacy does indeed have a dispositional basis, with inherent personality traits predisposing some students to possess higher self-efficacy than others. The implications of this are as follows.

First, since lower conscientiousness is associated with lower self-efficacy, efforts on the part of educators to create structured learning environments with incremental goals can help less conscientious students to gradually develop self-efficacy. Such students typically have difficulty setting goals for themselves and/or following through on these due to lower focus and tenacity. However, if the learning outcomes for a course are better defined and broken down into smaller components, they may perceive it to be within their control to attain desired goals. Use of formative assessment rather than summative assessment alone is crucial here since success achieved on periodic evaluations can improve mastery experience and self-efficacy.

Second, social modelling is a key source of self-efficacy, wherein observing someone successfully achieving a desired goal improves self-efficacy by means of comparison (Robbins et al., 2014). There is also empirical evidence to suggest that peers can be a highly positive influence in the tertiary education setting (Golsteyn et al., 2020). Hence, when forming groups for learning and assessment purposes, instructors can deliberately form groups that are heterogeneous in terms of the personality of students. For instance, students who are low on openness and/or conscientiousness may be paired with those who are high on the same, such that the former may be positively influenced by the self-efficacy of the latter. Since these approaches tend to have stronger effects when initiated early in the student’s academic journey (Golsteyn et al., 2020), educators may be well advised to target such interventions at first-year and second-year students.

Third, verbal persuasion is a major source of self-efficacy, wherein individuals become more confident as a result of being convinced by someone that they have the ability to attain success (Robbins et al., 2014). Hence, educators can directly enhance the self-efficacy of students who are low on conscientiousness, openness, and/or extraversion
by providing encouragement and constructive feedback. In addition, proactive efforts on the part of educators to initiate contact with students who are low on these traits and overall reduction of the power distance in the classroom can be of great help, since the present study finds that self-efficacy dimensions with the lowest scores are found to be the ones related to asking questions and participating in lectures.

To enhance the generalizability of the findings of the present study, future research may incorporate students from multiple universities in the sampling frame. It would also be interesting to combine students from different disciplines in a single study to compare the relative influence of personality traits in influencing self-efficacy. Finally, evidence regarding the mediating role played by academic self-efficacy between personality and achievement merits further investigation in the specific context of Bangladesh. Such evidence can be crucial in reinforcing the importance of elevating students’ self-efficacy, and by extension, their academic performance, through targeted interventions that address individual differences.
REFERENCES


The Role of Personality Traits in Explaining Academic Self-Efficacy: Evidence from a Business School


APPENDIX

Figure 1: Histogram and normal probability plot of standardized residuals

Figure 2: P-P Plot of Standardized Residual

Figure 3: Scatterplot of zpred vs zresid