Psychological, Academic and Demographic Variables Affecting Students’ Academic Achievement Among First Year College Students in Saudi Arabia

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PSYCHOLOGICAL, ACADEMIC AND DEMOGRAPHIC VARIABLES AFFECTING STUDENTS’ ACADEMIC ACHIEVEMENT AMONG FIRST YEAR COLLEGE STUDENTS IN SAUDI ARABIA

by

Ahmed A. Alonazi

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2018
PSYCHOLOGICAL, ACADEMIC AND DEMOGRAPHIC VARIABLES AFFECTING STUDENTS’ ACADEMIC ACHIEVEMENT AMONG FIRST YEAR COLLEGE STUDENTS IN SAUDI ARABIA

by

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Ahmed A. Alonazi
DEDICATION

This dissertation is dedicated to my family
ACKNOWLEDGEMENTS

I would like to express the deepest appreciation to my dissertation chair Dr. Justin Low who has provided me with all the help and support that I needed to work on this dissertation. Without his advices and directions this dissertation would not have been possible.

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Psychological, Academic and Demographic Variables Affecting Students’ Academic Achievement Among First Year College Students in Saudi Arabia

Abstract

By Ahmed A. Alonazi

University of the Pacific
2018

There are many factors that affect academic achievement among first year college students in Saudi Arabia. The aim of this study was to improve our understanding of academic achievement of first year college students in Saudi Arabia by investigating the relationship between a selection of demographic, academic, and psychological variables and their effects on first-year students’ GPA. All first-year students admitted to the King Saud University in fall 2016 or spring 2017 were invited to complete a self-report survey. 1457 students have completed and submitted the survey. Multiple regression analysis was performed with all independent variables in order to determine whether there were any significant relations between the independent variables and academic achievement. Among the study variables, six variables predicted first-year students’ GPA. Those variables were high school, Saudi aptitude test, Saudi achievement test, gender, stress, and mother’s education level.
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Chapter 1: Introduction

Over the past years, both the student population and diversity in higher education in the kingdom of Saudi Arabia has grown rapidly. Both genders and from different backgrounds and educational experiences are now able to enroll in higher education programs. With an increasingly diverse student group attending university, there is an increasing interest in exploring the variables that affect their academic achievement in the first year of higher education because a country’s social and economic development is directly linked to its students’ academic performance (Mushtaq, 2012). Understanding first-year students’ academic performance and the variables affecting it could help educational leaders and administrators predict students’ future performance. In addition, 75% of students who leave college are first- or second-year students (Tinto, 1993). Thus, understanding the variables that may affect this specific group of college students is critical to improving retention.

Many research studies have examined different variables that may affect students’ academic achievement; however, little is known about the Saudi student population. This study aims to explore the psychological, academic, and demographic variables that may predict students’ academic achievement in higher education in Saudi Arabia. This chapter presents the background of the study, statement of the problem, purpose of the study,
Determinants of students’ academic achievement in higher education have been the subject of research for decades. A lot of previous research has been conducted on student academic performance and the variables affecting it all over the world (Elias, Ping, & Abdullah, 2011; Goff, 2011; Robbins, Lauver, Davis, Langley, & Carlstorm, 2004). The literature suggests that many social, psychological, cognitive, economic, environmental, and demographic variables can affect the academic achievement of college students (Kilminster, Cottrell, Grant, & Brian, 2007; McManus, Smithers, Partridge, Keeling, & Fleming, 2003; Mushtaq, 2012). Other research suggests additional variables to consider like academic goals, achievement motivation, social support, social involvement, financial support, self-esteem, high school grades, standardized tests, and demographics variables (Cardoso, Ferreira, Abrantes, Seabra, & Costa, 2011; Hamaideh & Hamdan-Mansour, 2014; Robbins et al., 2004).

The first year in college is a critical transition period in students’ lives because it is when they build the basis of their higher education, the basis on which their subsequent career success will rest (Olani, 2009). Current literature on academic success and retention shows that most first-year college students are able to successfully complete this transition period in spite of the social, emotional, academic, and other challenges (DeBerard, Julka, & Spielmans, 2004; Olani, 2009). However, some students are not able to manage these challenges and, unfortunately, have to leave college at this early stage (Olani, 2009). According to Tinto (1993), 75% of college students who end up dropping out of college are first- or second-year students. In addition, most of these students have a
low grade point average (GPA) (Olani, 2009). So, first-year academic achievement could be considered one of the major predictable variables for early university attrition (McGrath & Braunstein, 1997; Olani, 2009). Academic failure and premature withdrawal from university can present problems for students, families, and educators (Olani, 2009). Thus, it is very important to study variables affecting academic achievement among this specific group.

Statement of the Problem

As mentioned above, a significant amount research has examined the variables affecting academic achievement among higher education students. In Saudi Arabia, however, there has been little research focused on academic achievement among university students, and the studies that do exist examined the academic achievements of higher education students only in the health science field (Hamaideh & Hamdan-Mansour, 2014; Salem, Al-Mously, Nabil, Al-Zalabani, Al-Dhawi, & Al-Hamdan, 2013). No research has been conducted in Saudi Arabia that looked at the psychological, academic, and demographic variables affecting academic achievement of first-year university students in other majors.

Purpose of the Study

The purpose of this study was to improve our understanding of academic achievement of freshmen college students in Saudi Arabia by investigating the relationship between a selection of psychological, academic, and demographic variables and their effects on first-year students’ GPA. The goal of this research is also to create a multidimensional model of variables that could predict students’ academic achievement in Saudi Arabia.
**Research Questions**

The main research question for this study was this: Which variables predict student academic achievement among first-year college students in Saudi Arabia? Which of these variables are the most important in predicting first-year students’ academic achievement?

The dependent variable in this study was the students’ first-year GPA. Independent variables were psychological variables (i.e., academic motivation, self-esteem, stress, depression and anxiety, and perceived social support), academic variables (i.e., high school GPA, Saudi achievement test, and aptitude test), and demographic variables (i.e., age, gender, and parental education).

**Significance of the Study**

Understanding the variables that affect academic achievement of first-year college students will bring attention to the needs of students who are at risk of low academic achievement. This research will be helpful for students, parents, and educators (Sansgiry, Bhosle, & Sail, 2006). Also, college administrators could benefit from this study when designing and implementing policies that they feel will improve student academic performance and the quality of education (Mushtaq, 2012). Parents can use the results of the study to assist their children with academic difficulties. Students can also benefit from knowing more information, such as their rights and responsibilities in receiving high-quality education (Mushtaq, 2012). Moreover, when all those involved in the university education system are aware of the variables that determine college students’ success, it can improve our students’ university experience and help direct resources to those students who need them the most (Willenborg, 2016).
Theoretical Framework

Students with different characteristics and varied social and cultural backgrounds come to universities with different educational experiences and academic needs (McKenzie & Schweitzer, 2001). Many variables could be examined in an effort to uncover the diversity of student needs. However, the focus of this study was the major variables affecting academic achievement in higher education, as identified in previous research, that could also affect the Saudi population. The goal was to develop a model that could be used to identify students at risk of academic failure in that population. For example, ethnicity was included in many previous studies as a major variable of academic achievement. However, it was excluded from this study because the Saudi population is homogenous.

Variables investigated in this study have been categorized as psychological variables (academic motivation, self-esteem, stress, depression and anxiety, and perceived social support); academic variables (high school GPA, Saudi achievement tests, and aptitude tests); and demographic variables (age, gender, and parental education). The aim of the study was to examine how these selected variables predict Saudi students’ academic achievement during their first year at King Saud University. Chapter 2 provides a review of published research on demographic, psychosocial, and academic variables affecting university students’ academic achievement.

Description of the Study

A summary of the methodology used in this study is described below; however, a comprehensive description of methodology is outlined in Chapter 3. Data were collected
from first-year students at King Saud University, the first and largest public university in Saudi Arabia. All first-year students admitted to the university in fall 2016 or spring 2017 were invited to complete a self-report survey. Multiple regression was used to find the relationship between the independent variables and the dependent variables.

**Limitations of the Study**

There are some limitations to this study that merit attention. First, the sample of this research was limited to one public university in Riyadh, the capital city of Saudi Arabia. Second, all items in the survey were self-reported including the dependent variable (GPA), with an assumption that all participants would accurately represent their status on the variables of interest. Third, this study used a non-experimental quantitative design with no control or treatment group. Experimental design is considered a gold standard for quantitative researches (Moore & McCabe, 2003).

**Chapter Summary**

This study is organized into five chapters. The first chapter states the importance of the study by presenting the background topic and introducing the purpose statement, research questions, and significance of the study. Chapter 2 provides a review of the current literature related to academic achievement in higher education and variables affecting first-year college students. Chapter 3 presents the methodology of the study including the sample selection methods, data collection process, and the data analysis techniques used. Chapter 4 discusses the results of the study while the final chapter discusses those findings and their implications for future research and recommendations for practice.
Chapter 2: Literature Review

Early withdrawal from college due to academic failure can present a critical problem in the higher education system. In an effort to improve our understanding regarding the variables predicting academic success in higher education in Saudi Arabia, different psychological, academic, and demographic variables were examined to predict first-year university students’ academic achievement. The first year in a university is a critical period for students and studying the variables that predict academic achievement could improve students’ higher education retention and success.

Higher Education in Saudi Arabia

The Kingdom of Saudi Arabia was established in 1932. At that time, Saudi Arabia was poor and the educational program was as small as 12 schools with 700 students in the entire kingdom. This situation dramatically changed after oil was discovered in huge amounts in Saudi Arabia in 1938. By 1950, 42,000 students were attending 365 schools (Simmons & Simmons, 1994). In response to this increase, the Ministry of Education was established in 1954 to expand education in Saudi Arabia. However, the schools only offered education to males, not females. In 1957, King Saud University was established in Riyadh, the capital, to educate the students within the country instead of sending them abroad for higher education. Two years later, in 1959, King Saud began discussing the idea of including Saudi women in the education system. He worked with religious
scholars and sought their support to start education for girls. The first school for girls was opened in Riyadh in 1960 (Al-Rawaf & Simmons, 1991). Since that time, both males and females have been able to get an education in Saudi Arabia but in separate schools. Six other universities were created over the next 20 years. As a result, the Ministry of Higher Education was established. In recent years, the higher education system in Saudi Arabia has changed tremendously. The system, which is based on diversification, now includes 23 government universities, 18 primary teacher's colleges for men, 80 primary teacher's colleges for women, 37 colleges and institutes for health, 12 technical colleges, and 33 private universities and colleges (Alamri, 2011).

Over the past 10 years, the student population and diversity in higher education has grown significantly. Men and women from different backgrounds and educational experiences are now able to enroll in higher educational institutions, whereas in the past, higher education was limited to rich Saudi males (Saleh, 1986). With an increasingly diverse student group attending university, there is an increasing interest in exploring the influences affecting their academic performance in higher education because a country’s social and economic development is directly linked to its student academic performance (Mushtaq, 2012). The graduates who perform well academically become the country’s great leaders and labor force and become responsible for the country’s economic and social development (Ali, Jusof, Ali, Mokhtar & Salamat, 2009).

Understanding students’ academic performance and the variables that predict performance, however, is not an easy task. There are several variables related to learning achievement, including personal and environmental variables. However, there is no common agreement on the nature and number of the dimensions that are most important
in predicting achievement in Saudi Arabia (Cardoso et al., 2011; Patrick & Smart, 1998; Shevlin, Banyard, Davies, & Griffiths, 2000).

**Variables Affecting Higher Education Students’ Academic Achievement.**

There is international research that focuses on student academic performance and the variables affecting it (Elias et al., 2011; Goff, 2011; Robbins et al., 2004;). The literature suggests that many social, psychological, cognitive, economic, environmental, and demographic variables affect the academic achievement of college students (Kilminster et al., 2007; McManus et al., 2003; Mushtaq, 2012). Moreover, other research suggests additional variables to consider like achievement motivation, academic goals, social support, social involvement, financial support, high school grade point average (GPA), standardized tests, and demographics (Hamaideh & Hamdan-Mansour, 2014; Robbins et al., 2004). Also, Cardoso et al. (2011) recognized that personal and pedagogical variables, such as student–faculty interaction and self-esteem, are influential in the academic achievement of higher education students. Different studies have focused on specific fields of study and what variables may affect those students. For example, in medical schools, proficiency in English, time management skills, self-motivation, learning styles, and socioeconomic status affect students’ GPA (Ahmed, Ahmed, & Al-Jouhari, 1988; AlFayez, Strand, & Carlone, 1990; Amrai, Motlagh, Zalani, & Parhon, 2011; Salem et al., 2013; Sansgiry et al., 2006; Sleight & Mavis, 2006; Wen-Bin, 2008).

The first year in college is a critical transition period in students’ lives because it is when students build the basis of their higher education on which their subsequent career success will rest (Olani, 2009). Current literature on academic success and retention shows that most first-year college students are able to successfully complete this
transition period, despite social, emotional, academic, and other challenges (DeBerard et al., 2004; Olani, 2009); however, some students are not able to manage these challenges and, unfortunately, have to leave college at an early stage (Olani, 2009). Moreover, university attrition rates during a first academic year are typically greater than any other following years and are commonly as high as 20-30% (Mallinckrodt & Sedlacek, 1987). According to Tinto (1993), 75% of college students who end up dropping out of college are first- or second-year students. In addition, most of the students who leave college early have low GPAs (Olani, 2009). Thus, first-year academic achievement could be considered one of the major predictable variables for early university attrition (McGrath & Braunstein, 1997; Olani, 2009). Academic failure and premature withdrawal from a university can present problem for students, families, and educators (Olani, 2009). Thus, it is very important to study variables affecting academic achievement among this specific group of students.

As discussed above, worldwide, a significant amount of research has focused on the variables that predict academic achievement among higher education students. In Saudi Arabia, however, very little research has looked at academic achievements among university students, and the studies that examine the academic achievement among higher education students are only in the health science field (Hamaideh & Hamdan-Mansour, 2014; Salem et al., 2013). No research has examined the psychological, academic, and demographic variables predicting the academic achievement of first-year university students in other majors in Saudi Arabia. Therefore, the goal of this study was to improve our understanding of the academic achievement of undergraduate first-year college students in Saudi Arabia by investigating how different psychological, academic, and
demographic variables predict achievement. The goal of this research was to create a multidimensional model of variables that could predict higher education students’ academic achievement in Saudi Arabia.

Students with different characteristics and varied social and cultural backgrounds come to universities with individual educational experiences and academic needs (McKenzie & Schweitzer, 2001). There are many variables that could be examined in and effort to uncover the diversity of student needs. However, the focus of this study was to examine the major variables affecting academic achievement in higher education, identified in previous research, that could also affect the Saudi population. The goal of this study was to develop a model that could be used to identify students at risk of academic failure in Saudi Arabia. For example, ethnicity was included in many previous literature reviews as a major variable of academic achievement (Allen, 1999; Gloria, Robinson-Kurpius, Hamilton, & Willson, 1999; Rendon, Jalomo, & Nora, 2000). However, it was excluded from this study due to the homogeneity of the Saudi population.

The principal research question addressed in this study was which variables predict student academic performance among first-year college students in Saudi Arabia, taking into consideration variables pertaining to the Saudi society? Variables that were investigated in this study included the following psychological variables (academic motivation, self-esteem, stress, depression and anxiety, and perceived social support); academic variables (high school GPA, Saudi achievement test, and aptitude test); and demographic variables (age, gender, parental education, and socioeconomic status). Thus, the aim of the study was to examine how these selected variables predict college
academic achievement among first-year college student in several majors at King Saud University, the largest public university in the Kingdom of Saudi Arabia.

This research may be helpful to students, parents, and educators (Sansgiry et al., 2006), and college administrators may benefit from this study when designing and implementing policies to improve student academic performance and the quality of education (Mushtaq, 2012). Parents can use the results of the study to anticipate their children’s academic difficulties. Students may also benefit from knowing more information and being able to predict their future academic performance (Mushtaq, 2012). Moreover, when all those involved in the university education system are aware of the variables that determine college students’ success, this can improve students’ university experience by helping direct resources to those students who need them the most (Willenborg, 2016). If such variables can be well understood, it will inform policy derivatives, and further research and intervention programs can be designed to enhance success and retention rates (Olani, 2009).

**Psychological variables.** A great deal of research has focused on the importance of psychosocial variables in forecasting academic performance (Gerdes & Mallinckrodt, 1994; Rickinson & Rutherford, 1996; Tinto, 1975; Wince & Borden, 1995). Furthermore, psychosocial variables have been identified that predict college retention and GPA even when controlling for traditional predictors of college success such as socioeconomic status, standardized achievement (ACT/SAT) scores, and high school GPA (Robbins et al, 2004). Therefore, psychosocial variables are considered to be powerful indicators of college students ‘academic success. (Krumrei-Mancuso, Newton, Kim, & Wilcox, 2013). The first set of variables examined in this study were those related to a psychological
wellbeing construct: academic motivation, self-esteem, stress, depression, anxiety, and perceived social support.

**Academic motivation.** The relationship between academic motivation and academic achievement is well established in the literature. For example, Kaufman, Agars, and Lopez-Wagner (2008) found that motivation is an important variable related to school success. Amrai, Motlagh Elahi, Zalani Azizi, and Parhon (2011) also found a positive significant correlation between academic motivation and academic achievement. In addition, Olani (2009) found that academic motivation is one of the major predictors for higher education student GPA, both male and female.

In this study, motivation was conceptualized in terms of Deci and Ryan’s self-determination theory, which considers motivation to be a continuum with intrinsic (highly motivated) and A-motivation (not motivated) at both ends and extrinsic motivation in the middle (Deci & Ryan, 1985; Ryan & Deci, 2000). People who are intrinsically motivated usually have an internal control center in order to plan for accomplishments, look for intellectual stimulation, and enjoy learning new things. People who are extrinsically motivated usually pursue education as a means to achieve a related goal and not for the basic joy of learning. There are three kinds of extrinsic motivations at play here: external regulation (pursuing academics in order to achieve external rewards and punishments), introjected regulation (understanding the significance of academic goals because of the influences from the surrounding environment), and identified regulation (pursuing academics because of the identity associated with it). On the other hand, A-motivated individuals are not affected by environmental influences, since they are not motivated neither internally nor externally. All three variables of academic
motivation (extrinsic motivation, intrinsic motivation, and A-motivation) have been found to influence cognitive learning strategies and directly affect academic achievement (Hamaideh & Hamdan-Mansour, 2014; Lavasani, Weisani, & Ejei, 2011). Furthermore, positive motivational beliefs have been linked to greater use of learning strategies, which will lead to higher academic achievement (Pintrich & Schrauben, 1992). It has also been found that intrinsically motivated students like to engage in challenging and competitive activities, while A-motivated students often withdraw and drop out (Beaudoin, 2006; Harter, 1981; Vallerand & Bissonnette, 1992). Usually academic settings encourage intrinsic motivation, although environments that encourage performance decrease student motivation and achievement (Ames & Archer, 1988; Barron & Harackiewicz, 2001; Komarraju, Karau & Schmeck, 2009; Meece, Anderman, & Anderman, 2006).

**Self-esteem.** Self-esteem is considered an essential component of good health and has drawn researchers' attention due to its effect on student academic achievement (Saadat, Ghasemzadeh, & Soleimani, 2012). It is defined as the degree to which individuals value themselves, think about themselves as worthy, and assume they will improve and develop over time (Rosenberg, 1965). In other words, self-esteem is the positive or negative dispositions that a person holds about his or her life (Hamaideh & Hamdan-Mansour, 2014). Saadat et al. (2012) found a positive relationship between self-esteem and academic achievement: however for female students, self-esteem was lower than for males. Also, Pullmann and Allik (2008) found that self-esteem was strongly related to school achievement.

One theory that explains why students with higher self-esteem get higher grades is that individuals with higher self-esteem do not give up when they encounter failure and
have greater ambition than individuals with lower self-esteem (Baumeister, Campbell, Kruegger, & Vohs, 2003). Research studies have also represented a statistical correlation between self-esteem and academic achievement ranging between \( r = .10 \) to \( .30 \) (Stupnisky et al., 2007), and a maximum stated \( r = .49 \) for the correlation between self-esteem and freshmen college transfer GPA (Woodard & Suddick, 1992). However, Demo and Parker’s (1988) research found no relationship between self-esteem and academic achievement. Support for their conclusion has been found in studies that find self-esteem to be a weak or non-significant forecaster of academic performance (Midgett, Ryan, Adams, & Corville-Smith, 2002; Stupnisky et al. 2007; Wintre et al., 2011).

**Stress, anxiety, and depression.** Many variables cause stress among students including academic work, and changes in personal lifestyle and social settings (Hamaideh & Hamdan-Mansour, 2014). The effects of high levels of stress have psychological, physical, and cognitive impacts that are related to academic achievement (Hamaideh & Hamdan-Mansour, 2014; Hojat, Gonnella, Erdmann, & Vogel, 2003). In the first year of university, students have new environments to which they must adjust. They have to learn the system of different classes with demanding workloads and new ways of thinking. All of these variables and changes could affect their stress level (Vaez & Laflamme 2008). However, every student has a different experience during his or her transition to university (Birnie-Lefcovitch, 2000; Kerr, Johnson, Gans, & Krumrine, 2004), but the details of these adjustments do not change the majority of research findings that the greater the stress, the lower the academic performance (Baker, 2003; Garden, 1991; Goldman & Wong, 1997; Wintre & Yaffè, 2000; Wintre et al., 2011).

However, some researchers, Abdulghani (2008) and Abdulghani, AlKanhal, Mahmoud,
Ponnamperuma, and Alfaris (2011) found no significant relationship between high stress levels and low academic grades. Their research was conducted on health science students in Saudi Arabian universities. They also found that female students had higher levels of stress than their male counterparts, and the stress level decreased as the year of the study increased (Abdulghani et al, 2011)

Anxiety, which is defined as a mental or emotional strain, nervousness and unease, was found to be a major foreteller of academic performance. One research group (Vitasari, Wahab, Othman, Herawan, and Sinnadurai, 2010) found anxiety levels and academic performance to be significantly correlated. Furthermore, anxiety disorders have been linked to students withdrawing from classes or the university program (Ameringen, Mancini, and Farvolden, 2003; Hamaideh & Hamdan-Mansour, 2014). Houston (1971) and Lecompte, Kaufman, Rousseeuw, and Tassin (1983) found that students who reported a high level of anxiety at the beginning of an academic year performed significantly worse than students who did not report high levels of anxiety.

Depression is another psychological variable that may affect academic performance. Those students who are often sad and discouraged can lose interest in daily activities and express low self-esteem. As a result, depression is believed to negatively influence academic performance (Hamaideh & Hamdan-Mansour, 2014). Moreover, Busari (2012) found that depression had a negative correlation with academic achievement, with female students reporting higher levels of depression. Research has also indicated that 30% of university students report having mild depression and 15% report clinically severe depression (Khawaja & Bryden 2006; Rosenthal & Schreiner, 2000). Furthermore, several research studies have reported a significant connection
between depression and poor university grades (Fazio & Palm, 1998; Lyubomirsky, Kasri, & Zehm, 2003; Vredenburg, O’Brien, & Krames, 1988; Wintre et al., 2011; Wintre & Yaffe, 2000). Depression, anxiety, and stress all contribute to passiveness in daily life, poor academic performance, and lack of interest in learning (Gloster et al., 2008; Hamaideh & Hamdan-Mansour, 2014).

**Perceived social support.** Social support is defined as the perception of supportive behavior an individual receives from people in daily and social life, such as parents, teachers, classmates, and friends; it is an important variable in academic performance. Many researchers have found that people who provide strong support and receive support from family or spouse are likely to complete courses and achieve academic success (Gerdes & Mallinckrodt, 1994; McKenzie & Schweitzer, 2001; Pantages & Creedon, 1975; Tracey & Sedlacek, 1982). Support behaviors are believed to improve working and could shield an individual from negative consequences (Malecki & Demaray, 2006). Tardy (1985) agreed that social support comes from different sources and has different types; social support was categorized as either emotional, appraisal, instrumental, and informational. *Emotional support* is the caring one receives from others. *Appraisal support* refers to evaluations and feedback provided to an individual. *Instrumental support* consists of resources that are given to a person in need, such as money or time. Lastly, *informational support* includes offering advice or information. *Social support* refers to both providing and receiving. It is also refers to what is available, not just what is used. In the current study, social support was actualized through Tardy's model and was the support that students viewed as being accessible from their parents, teachers,
classmates, close friends, or academic institutions. This study used Tardy's four types of support (emotional, appraisal, informational, and instrumental) to gauge social support.

Social support is an important variable in academic performance especially among first-year college students. As discussed earlier, transition to college may involve an increase in stress level (Fisher & Hood, 1987; Towbes & Cohen, 1996). One possible buffer of stress is social support (Arthur, 1998). It was evidenced that social support could be helpful in a successful transition to the college environment (Hays & Oxley, 1986). Moreover, one research study indicated that the presence of parental social support was positively related to college achievement (Cutrona, Cole, Colangelo, Assouline, & Russell, 1994). There is also some consistent evidence that low perceived social support is related to low academic achievement and dropping out (DeBerard, Spielmans & Julka, 2004; Mallinckrodt, 1988;).

**Academic variables.** A discussion of academic achievement warrants a preliminary discussion on how to measure achievement. Some ways are cumulative grade point average (CGPA), semester grade point average (GPA), and the student’s test results (Mushtaq, 2012). However, the most commonly academic performance indicator used in literature is grade point average (GPA) for the entire undergraduate education (Sansgiry et al., 2006). Worldwide, GPA is used to measure student performance (Mushtaq, 2012). In addition, GPA is considered by many to be a conclusive indicator of undergraduate academic achievement (Cassidy, 2012).

**High school GPA.** Research studies have found a significant correlation between early academic achievement in high school and successful college performance. Good high school grades and high scores on the achievement, aptitude, or standardized tests all
are connected to good performance in college (Al-Alwan, 2009; Al-Nasir & Robertson, 2001; Martin, Montgomery, & Saphian, 2006; Newton, Smith, Moore, & Magnan, 2007; Olani, 2009; Scott, Glen, & Deana, 2004). In fact, these variables are so important and predictive that they are used for college admission worldwide (Al-Alwan, 2009; Hamaideh & Hamdan-Mansour, 2014).

Academic performance in high school is positively correlated with college academic achievement (Koh & Koh, 1999; National Audit Office, 2002). Some studies, however, have found no correlation (Bartlett, Peel, & Pendlebury, 1993; Bourner & Hamed, 1987). Yet, Peers and Johnston’s (1994) meta-analysis of 20 studies found a correlation of +.28 between A-level grades in the normal school leaving examination in the UK and their college performance. Moreover, Wolfe and Johnson (1995) found that high school GPA accounted for 19% of the variance in college GPA. Anastasi (1988) summarized several research that correlated SAT scores to college GPA and concluded that the SAT scores, the standardized test used for admission in the United States, predicted 18% of the variance in freshman GPA. The combination of these two measures has been found to predict 25% of the variance in college GPA (Wolfe & Johnson, 1995). It was also found that higher high school GPA and SAT scores are positively correlated with first-year college students’ GPA and negatively correlated to attrition (DeBerard et al., 2004).

**Saudi National Aptitude and Achievement Exams.** In 2002, the Saudi National Aptitude and Achievement Exams were established. These exams were created and are administered by the National Centre for Assessment at the Ministry of Higher Education. They have two sections: linguistics and mathematics, and both use the multiple-choice
question format (MCQ). Students have the opportunity to take the exam three times
during their last year of high school; the best score is submitted as part of the college
application. Another exam distributed in Saudi Arabia is the Saudi National Achievement
Exam. It is given once a year, after the final high school exams have been completed. It
is also an MCQ exam but it is divided into five sections, each worth 20%. It includes
English language, biology, chemistry, physics, and mathematics (Al-Alwan, 2009). A
Saudi study has shown that the scores on the Saudi National Achievement Exam correlate
significantly with first-semester health sciences total scores as do scores from the Saudi
National Aptitude Exam and final high school marks, having Pearson correlation
coefficients equal to 0.96, 0.93, and 0.87, respectively (Al-Alwan, 2009).

**Demographic variables.** Demographic variables are also predictive of college
academic performance (Green & Celkan, 2011; Hamaideh & Hamdan-Mansour, 2014;
Martin et al., 2006; Salem et al., 2013). Betts and Morell (1999) explored different
features that are related to college undergraduate GPA. Gender, ethnicity, and family
socioeconomic status were strongly related to college GPA. Many other demographic
variables have a strong influence on academic success (Wintre et al., 2011).
Demographic variables of interest in this study included age, gender, and parental
education.

**Age.** Age has not clearly been connected to academic achievement. Rather,
studies have inconsistently reported a significant relationship between age and academic
achievement. A significant negative relationship between age and academic achievement
has also been reported. These studies report that younger students just out of high school
achieve higher grades and tend to persevere more in a university than mature students
(Clark & Ramsay, 1990; Pantages & Creedon, 1975). However, other studies have found the opposite. Older students who have different experiences, a clearer career direction, and fewer orientation needs were more likely to achieve higher academic results (McInnis, James, & McNaught, 1995; McKenzie & Schweitzer, 2001). Both Sheard (2009) and Naderi, Abdullah, Tengku, Sharir, and Kuman (2009a) found similar results where age had significant relationships with GPA. They found more mature undergraduate students performed better on intermediate and final GPA than their younger counterparts. Yet, when Hoskins, Newstead, and Dennis (1997) reported the difference between the youngest and oldest groups of students tested in their study, older students achieved higher results.

Some reasons why more mature students are thought to have greater success is higher motivation (Eppler & Harju, 1997; McInnis et al., 1995) and better study and time management skills (Murray-Harvey, 1993; Richardson, 1994; Trueman & Hartley, 1996). However, as previously stated, older students do not always have an advantage over younger students. Some reports show younger students outperforming mature students (Koh & Koh, 1999). But this contradiction has been attributed to the field of study. Younger students perform better in fields like science and engineering or technology-related fields (Bourner & Hamed, 1987), and other age-related variations in performance differ in subject areas (Richardson & Woodley, 2003). Some reasons why younger students might have an advantage are the continuity of study and having the essential knowledge recently from high school (Burke da Silva, Hunter, & Auburn, 2008). Mature students, on the other hand, often have more complex lifestyles such as family responsibilities and combining life responsibilities with academics (Knapper & Cropley,
These variables may be especially relevant for meeting the high expectations of certain courses such as sciences or for completing large content and contact time (Burke da Silva et al., 2008; Cassidy, 2012).

**Gender.** Another significant demographic variable related to academic achievement is gender (Richardson & Woodley, 2003). Sheard (2009) found that women outperformed men in final GPA. Moreover, Olani (2009) found that high academic accomplishments, calculated by university GPA, represented 29% of the variance for female students but only for 14% of the variance among male students. Also, McCarey, Barr, and Rattray (2007) reported differences in academic achievement between male and female nursing students. However, Naderi, Abdullah, Hamid, and Sharir (2008) did not find gender to be a significant variable in academic success for Iranian students studying in Malaysia. Also, Hoskins et al. (1997) and Naderi et al. (2009a, 2009b) did not find a relationship between gender and undergraduate GPA. Due to these reports, when examining variables on academic achievement; prior achievement, age and gender are usually investigated together (Cassidy, 2012).

In regards to positive attitudes toward learning, Lupart, Cannon, and Teifer (2004) found that female students have a higher positive attitude compared to male students. When asked if learning new things motivated them to complete schoolwork, 73.6% of the females either agreed or strongly agreed while only two-thirds (66.7%) of males reported a similar endorsement. Marjoribanks (1987) also reported girls had significantly more positive attitudes at school than boys.

**Parental education.** Parental education also predicts student academic success (Davis-Kean, 2005; Haveman & Wolfe, 1995; Klebanov, Brooks-Gunn, & Duncan,
1994; Smith, Brooks-Gunn, & Klebanov, 1997). However, some reports show a different association between academic accomplishments and parental education. Etcheverry, Clifton, and Roberts (2001) found no significant relation between parental education and their children’s undergraduate academic success. Others found students to have lower GPAs or even drop out more if their parents did not have a lot of higher education than did students with parents with a lot of higher education (Clifton, Perry, Stubbs, & Roberts, 2004; Tinto, 1975). Wintre and Yaffe (2000) reported a relationship between fathers and sons and mothers and daughters. The fathers’ level of education predicted the males’ first-year GPA, and a similar pattern emerged for mothers and daughters. However, Kaufman et al. (2008) found that there were many indicators besides the mother's educational level for college students’ academic success. Additionally, Clifton, Perry, Roberts, and Peter (2007) proposed that parents with higher education could give financial and social support to their children in college, which becomes increasingly important as tuition, as well as other related costs, rise. Thus, it is important to investigate the parents’ education levels and socio-economic status when considering indicators of academic achievement. (Wintre et al., 2011).

**Conclusion**

Psychological, academic, and demographic variables significantly correlate with academic achievement, yet little is known about the Saudi student population. Specifically, research has shown that motivation, including extrinsic motivation, intrinsic motivation, and A-motivation, affects academic achievement such that the higher the motivation, the better the academic performance. Similarly, high self-esteem predict high academic achievement. Stress, depression, and anxiety all have negative effects on
academic achievement. Female students are more likely to suffer from these problems. In conclusion, good psychological health is important for academic success.

In most cases, strong academic performance before college predicts strong academic performance in college. This finding reflects why colleges use high school scores as a method of acceptance into their schools.

The demographic information for gender and parental education are significantly correlated to academic achievement in the research literature. Age is the only demographic variable that does not have a clear correlation because the research yields results that favored both younger and older students. Most studies reported females as performing better than males in college. Students with higher parental education also performed better in college than students with lower parental education.

In conclusion, to ensure academic success for undergraduate students in Saudi Arabia, it is important to study which variables have a significant effect on college students’ performance. This will help create a supportive and motivating environment and create opportunities to give students with low academic achievement more support, assistance, and guidance.
Chapter 3: Methodology

Worldwide, a significant amount of research has examined a variety of variables affecting academic achievement among higher education students. In Saudi Arabia, however, few research studies have examined academic achievement among university students. This quantitative study was designed to improve our understanding of academic achievement of first-year college students in Saudi Arabia by investigating the relationship between different psychological, academic, and demographic variables and their effects on first-year King Saud University students’ GPA. The goal of this research was also to create a multidimensional model of variables that could predict students’ academic achievement in Saudi Arabia.

The main research question for this study was which variables predict student academic achievement among first-year college students in Saudi Arabia. Second, which of these variables were the most important in predicting first-year students’ academic achievement? Fifteen independent variables were assessed in this study to explore their relation to one dependent variable: academic achievement. The dependent variable was measured using the students’ cumulative GPA. Independent variables were psychological variables (academic motivation, self-esteem, stress, depression and anxiety, and perceived social support), academic variables (high school GPA, scores on the Saudi achievement test and Saudi aptitude test) and demographic variables (age, gender, and
Understanding these variables that affect academic achievement of first-year college students can help bring attention to the needs of students who are at risk of low academic achievement.

**Research Hypotheses**

There are ten hypotheses that were tested in this study. These hypotheses are:

- Intrinsic and extrinsic academic motivations positively predict first-year students’ GPA while A-motivation negatively predicts first-year college students’ GPA.
- Self-esteem positively predicts first-year students’ GPA.
- Stress, depression, and anxiety negatively predict first-year students’ GPA.
- Perceived social support positively predicts first-year students’ GPA.
- High school GPA positively predicts first-year students’ GPA.
- Saudi achievement test scores positively predict first-year students’ GPA.
- Saudi aptitude test scores positively predict first-year students’ GPA.
- Age does not predict first-year students’ GPA.
- Gender does not predict first-year students’ GPA.
- Higher parental education positively predicts first-year students’ GPA.

**Participants**

The study data were collected from King Saud University, the first and largest public university in Saudi Arabia with an annual student population exceeding 10,000 students every year. The target population of the current study was first-year students enrolled in the Preparatory Year Program at King Saud University during the fall
semester of 2016 and spring of 2107. The total number of the target population was 11,250 students.

**Data Collection Procedure**

All students who were enrolled in the university during 2016-2017 academic year were invited to participate in the study. They received a recruitment email with a link to the electronic survey; students who agree to volunteer would sign the informed consent and complete the research survey. The consent form was included as first page of the survey. Students answered a questionnaire composed of 46 self-report items and adapted from various standardized scales including the Academic Motivations Scale (AMS; Vallerand & Bissonnette, 1992); the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965); the Depression, Anxiety, and Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995) and the Multidimensional Perceived Social Support Scale-Adapted (MPSSS-Adapted; Frison & Eggermont, 2015). Demographic and academic achievement items were also included. Two versions of the questionnaire, English and Arabic, were provided to the students to choose from. A double translation method was used to translate the survey. The questionnaire was first translated into Arabic; then, another translator translated it back into English. The two English versions were compared to insure translation accuracy.

**Instruments**

**Academic Motivations Scale.** The Academic Motivation Scale (AMS; Vallerand & Bissonnette, 1992) draws on self-determination theory by measuring intrinsic, extrinsic, and A-motivation in different academic situations. It is a 28-item instrument and there is broad support for psychometric properties of the scale (Fairchild, Horst,
Finney, & Barron, 2005; Vallerand & Bissonnette, 1992). The AMS yields scores on three subscales of intrinsic motivation: to know, to accomplish things, and to experience stimulation; three subscales of extrinsic motivation: external regulation, introjected regulation, and identified regulation; and one subscale for A-motivation. Each subscale consists of 4 items; to shorten this research questionnaire, 2 items were selected from each subscale: intrinsic motivation: 2, 23, 13, 20, 11, 25; extrinsic motivation: 3, 24, 7, 14, 1, 15; A-motivation: 5, 12

On the AMS scale, all items use a 7-point scale ranging from 1 = does not correspond at all to 7 = corresponds exactly. However, this study used a 5-point scale to be consistent with other items and scales in our questionnaire and to reduce the chance of confusion among our participants. One study reported that the internal consistency coefficients for the AMS were intrinsic motivation of .92, extrinsic motivation of .88, and A-motivation of .82 (Komarraju, Karau, & Schmeck, 2009).

**Rosenberg self-esteem scale.** The Rosenberg Scale (RSES) is a 10-item scale that measures the participants’ self-esteem, with items answered on a 4-point scale ranging from strongly disagrees (0) to strongly agree (3). All items were used in our study; however, the Likert scale was adapted to 1=strongly agree to 5 =strongly disagree. In the original RSE, scores range from 0 to 30, with 30 being the highest score. The higher the total scores, the higher the level of self-esteem. Scores below 15 suggest low self-esteem. However, in this study, the scores ranged from 10 to 50, with 50 as the highest score and any score lower than 30 suggesting low self-esteem.

The scale has a strong convergent, discriminant, and predictive validity (Rosenberg, 1965). The RSES presents high ratings in reliability areas; internal
consistency was 0.77 while the minimum coefficient of reproducibility was at least 0.90 (Rosenberg, 1965). Test–retest reliability for the 2-week interval was 0.85, the 7-month interval was 0.63 (Silber & Tilppett, 1965). The RSES Cronbach’s alpha is .86 (Wintre et al., 2011). In this study, Cronbach’s alpha was also tested.

**Depression, Anxiety, and Stress Scale.** The DASS scale measures depression (D), anxiety (A), and stress (S) among college students using a self-report format of statements referring to the past week. The DASS is composed of 21 items that measure distress along the axes of depression, anxiety, and stress, with 7 items for each subscale. In this study, 3 questions were chosen from each subscale: Depression: 3, 10, 17; Anxiety: 4, 9, 20; Stress: 6, 8, 12. All responses originally ranged from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). However, in this study, the question responses were adapted into a 5-point Likert scale to match the other scales used in the survey. In the original DASS scale, the total score for each subscale ranged from 0 to 21 whereas this study used a score for each subscale of 3 to 15, because only 3 items out of the 7 original items were chosen. The higher the total score for each subscale, the higher the level of depression, anxiety, and/or stress. The DASS has overall good psychometric properties including internal consistency, convergent validity, and discriminative validity. Internal consistency reliability has been reported for the DASS total score as 0.94 (Gloster et al., 2008). Scale reliabilities were slightly lower for DASS-Depression (0.87) and DASS-Stress (0.89) but less than expected for DASS-Anxiety (0.69) (Gloster et al., 2008). In this study, the internal consistency reliability for the total scale was measured by Cronbach's alpha for the whole scale as well as depression, anxiety, and stress individually.
**Multidimensional Perceived Social Support Scale-Adapted.** The MPSSS-Adapted is a 4-item scale employing a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). A mean score indicates the perceived social support students gain from their family, friends, and others.

**Academic variables.** Academic variables were measured through high school GPA, Saudi achievement test score, and Saudi aptitude test score. High school GPA was an individual's total score of all subjects taught during the three years before entering college and it ranged from 0 (lowest) to 100 (highest). The achievement test score and aptitude test score were the subject's scores on tests given by the Higher Education Entrance Examination Center. Achievement and Aptitude test scores ranged from 0 (lowest) to 100 (highest). Current academic achievement refers to students’ current cumulative college GPA with scores ranging from 0 to 5.

**Data Analysis**

All student data were analyzed using the SPSS statistical software (version 24). Simple descriptive statistics (including means, standard deviations, and percentages) are reported. Multiple regression analysis were performed with all independent variables in order to determine whether there were any significant relations between the independent variables and academic achievement. For all analyses, the level of significance was .05.

**Limitations**

Some limitations to this study merit attention. First, the sample of this research was limited to one public university in Riyadh, the capital city of Saudi Arabia. Second, all items in the survey were self-reported including the dependent variable (GPA), with an assumption that all participants truly reflected their status. Unfortunately these data
cannot be verified. Third, this study did not employ an experimental design, a design that is considered a gold standard for quantitative research (Moore & McCabe, 2003). Replication with similar findings for other universities in the Kingdom of Saudi Arabia could improve the external validity of this study.
Chapter 4: Results

The sample of student data was cleaned and analyzed using Statistical Package for the Social Sciences Release 24. Descriptive statistics, including means, standard deviations, and percentages, were developed for the sample. For all analyses, the level of significance was .05. For the multiple regression analyses, categorical data were dummy-coded. The research questions were as follows: What variables predict student academic achievement among first-year college students in Saudi Arabia? Which of these variables are the most important in predicting first-year students’ academic achievement?

Preliminary Analyses

Reliability and validity results. The 28-item AMS assesses students’ motivations for attending college, and there is extensive support for psychometric properties of the scale (Fairchild et al., 2005; Vallerand 7 Bissonnette, 1992). This scale assesses seven types of constructs: intrinsic motivation towards knowledge, accomplishments, and stimulation as well as external, introjected, and identified regulations, and finally A-motivation. In this study, two items were chosen from each subscale, which resulted in 6 items for intrinsic motivation, six items for extrinsic motivation and two items for A-motivation. For intrinsic and extrinsic motivation, the total score ranged from 6 to 30. In this study, total scores were divided into two categories; so it would be more reliable to use for multiple regression and in the write-up
and interpretation. Scores from 6 to 18 were considered low motivation and 19 to 30 is high motivation. However, for A-motivation scores were ranged from 2 to 10, 2 to 6 is low A-motivation (which means high motivation), and higher than 6 is a highly A-motivated student (which means highly not motivated). In the present study, the internal consistency coefficients were intrinsic motivation (.64), extrinsic motivation (.84), A-motivation (.67), and for the whole scale, AMS (.73).

The Rosenberg Self-Esteem Scale was used to measure students' overall self-esteem. The original scores range from 0 to 30, with 30 the highest score. The higher the total scores, the higher the level of self-esteem. Scores below 15 suggest low self-esteem. In this study, scores ranged from 10 to 50, with 50 is the highest score and any score lower than 30 suggesting low self-esteem. The RSES presents high ratings in reliability areas: internal consistency was 0.77, and the minimum coefficient of reproducibility was at least 0.90 (Rosenberg, 1965). In this study, the internal consistency reliability for RSES as measured by Cronbach's alpha was .81.

The Depression, Anxiety, and Stress Scale-21 was used to measure depression, anxiety, and stress among participants. It is a self-report format consisting of 21 items, 7 for each subscale. For this study, 3 items were chosen from each subscale and the scale responses were adapted into a 5-point Likert scale. In the original DASS scale, the total score for each subscale ranged from 0 to 21. However, in this study the score for each subscale ranged from 3 to 15, because only three items out of the seven original items were used in the survey. The higher the total score for each subscale, the higher the level of depression, anxiety, and/or stress. Scores ranging from 3 to 7 were considered mild, 8
to 11 were moderate, and 12 to 15 were associated with high depression, anxiety, and/or stress.

DASS-21 has overall good-to-excellent internal consistency, very good convergent validity, and acceptable discriminative validity. Internal consistency reliability for the DASS-21 whole scale was 0.94. Scale reliabilities were slightly lower for DASS-Depression (0.87) and DASS-Stress (0.89), but less than expected for DASS-Anxiety (0.69) (Gloster et al., 2008). In this study, the internal consistency reliability for the total scale as measured by Cronbach's alpha was .88, for the depression subscale (.70), anxiety subscale (.80), and stress subscale (.72)

The MPSSS-Adapted is a 4-item scale employing a 5-point Likert scale. A mean score indicates the perceived social support students gain from their family, friends, and others. In this study Cronbach’s alpha for MSPSS was .84.

**Participants.** 1457 students have completed and submitted the survey. The response rate was 12.95%. Of the total sample, 590 (40.5%) were male and 867 (59.5%) were female. The majority of the participants, 870 (59.7%), were in the 20-25 age range. 560 students (38.4%) reported that their father had graduated from college and 552 (37.9%) indicated that their mother had graduated from college. The majority of the participants had high school GPAs higher than 90% (84.4%); however, fewer than 15% of the participants had earned 90% or higher on the Saudi aptitude and achievement tests.
Table 1. Frequency Distribution of Academic and Demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>867</td>
<td>59.5</td>
</tr>
<tr>
<td>Male</td>
<td>590</td>
<td>40.5</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
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</tr>
<tr>
<td>Younger than 20</td>
<td>477</td>
<td>32.7</td>
</tr>
<tr>
<td>20 to 25</td>
<td>870</td>
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<tr>
<td>26 to 30</td>
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<td>Older than 30</td>
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<td>2.5</td>
</tr>
<tr>
<td><strong>Father’s Education Level</strong></td>
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</tr>
<tr>
<td>Less than high school</td>
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<td>20.4</td>
</tr>
<tr>
<td>High school</td>
<td>348</td>
<td>23.9</td>
</tr>
<tr>
<td>College</td>
<td>560</td>
<td>38.4</td>
</tr>
<tr>
<td>Post-graduate</td>
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<td>17.3</td>
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<tr>
<td><strong>Mother’s Education Level</strong></td>
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<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>485</td>
<td>33.3</td>
</tr>
<tr>
<td>High school</td>
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<tr>
<td>College</td>
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<td>Post-graduate</td>
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<td><strong>High School GPA</strong></td>
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<tr>
<td>&lt; 70%</td>
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<td>&gt; 95%</td>
<td>880</td>
<td>60.4</td>
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<tr>
<td><strong>Achievement Test</strong></td>
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<td>&lt; 70%</td>
<td>70</td>
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<tr>
<td>&gt; 95%</td>
<td>46</td>
<td>3.2</td>
</tr>
</tbody>
</table>
Aptitude Test

<table>
<thead>
<tr>
<th>Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 70%</td>
<td>190</td>
<td>13.0</td>
</tr>
<tr>
<td>70% to 74.9%</td>
<td>227</td>
<td>15.6</td>
</tr>
<tr>
<td>75% to 79.9%</td>
<td>304</td>
<td>20.9</td>
</tr>
<tr>
<td>80% to 84.9%</td>
<td>300</td>
<td>20.6</td>
</tr>
<tr>
<td>85% to 89.9%</td>
<td>227</td>
<td>15.6</td>
</tr>
<tr>
<td>90% to 94.9%</td>
<td>167</td>
<td>11.5</td>
</tr>
<tr>
<td>&gt; 95%</td>
<td>42</td>
<td>2.9</td>
</tr>
</tbody>
</table>

College First-Year GPA

<table>
<thead>
<tr>
<th>Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.00 to 2.74</td>
<td>3</td>
<td>.2</td>
</tr>
<tr>
<td>2.75 to 3.74</td>
<td>95</td>
<td>6.5</td>
</tr>
<tr>
<td>3.75 to 4.49</td>
<td>402</td>
<td>27.6</td>
</tr>
<tr>
<td>4.5 to 5.00</td>
<td>957</td>
<td>65.7</td>
</tr>
</tbody>
</table>

Levels of psychological variables. The majority of the students expressed high intrinsic and extrinsic motivation with low A-motivation. In addition, self-esteem was high among 98% of the participants. However, 76% of the participants expressed moderate to high stress during their first year. Multidimensional perceived social support was high among 90% of the participants (Table 2).
Table 2. Frequency Distribution of Psychological Variables

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intrinsic motivation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>80</td>
<td>5.5</td>
</tr>
<tr>
<td>High</td>
<td>1377</td>
<td>94.5</td>
</tr>
<tr>
<td><strong>Extrinsic motivation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>327</td>
<td>22.4</td>
</tr>
<tr>
<td>High</td>
<td>1130</td>
<td>77.6</td>
</tr>
<tr>
<td><strong>A-motivation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1381</td>
<td>94.8</td>
</tr>
<tr>
<td>High</td>
<td>76</td>
<td>5.2</td>
</tr>
<tr>
<td><strong>Self-esteem</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>22</td>
<td>1.5</td>
</tr>
<tr>
<td>High</td>
<td>1435</td>
<td>98.5</td>
</tr>
<tr>
<td><strong>Stress</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>337</td>
<td>23.1</td>
</tr>
<tr>
<td>Moderate</td>
<td>657</td>
<td>45.1</td>
</tr>
<tr>
<td>High</td>
<td>463</td>
<td>31.8</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>1116</td>
<td>76.6</td>
</tr>
<tr>
<td>Moderate</td>
<td>273</td>
<td>18.7</td>
</tr>
<tr>
<td>High</td>
<td>68</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Anxiety</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>710</td>
<td>48.7</td>
</tr>
<tr>
<td>Moderate</td>
<td>464</td>
<td>31.8</td>
</tr>
<tr>
<td>High</td>
<td>283</td>
<td>19.4</td>
</tr>
</tbody>
</table>
Participants (N = 1457) reported below the midpoint in A-motivation (m=1.05, SD=.22), anxiety (m=1.70, SD=.77), and depression (m=1.28, SD=.54). Participants reported above the midpoint in intrinsic motivation and extrinsic motivation (m=1.94, SD=.22; m=1.77, SD=.41 respectively), stress (m=2.08, SD=.73), MSPSS (m=3.75, SD=1.02), and RSES (m=1.98, SD=.12) (Table 3).

Table 3. Levels of Psychological Variables

<table>
<thead>
<tr>
<th></th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Error</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic motivation</td>
<td>1.00</td>
<td>1.00</td>
<td>2.00</td>
<td>1.9451</td>
<td>.00597</td>
<td>.22788</td>
</tr>
<tr>
<td>Extrinsic motivation</td>
<td>1.00</td>
<td>1.00</td>
<td>2.00</td>
<td>1.7756</td>
<td>.01093</td>
<td>.41735</td>
</tr>
<tr>
<td>A-motivation</td>
<td>1.00</td>
<td>1.00</td>
<td>2.00</td>
<td>1.0522</td>
<td>.00583</td>
<td>.22243</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>1.00</td>
<td>1.00</td>
<td>2.00</td>
<td>1.9849</td>
<td>.00320</td>
<td>.12199</td>
</tr>
<tr>
<td>Stress</td>
<td>2.00</td>
<td>1.00</td>
<td>3.00</td>
<td>2.0865</td>
<td>.01929</td>
<td>.73618</td>
</tr>
<tr>
<td>Depression</td>
<td>2.00</td>
<td>1.00</td>
<td>3.00</td>
<td>1.2807</td>
<td>.01424</td>
<td>.54356</td>
</tr>
<tr>
<td>Anxiety</td>
<td>2.00</td>
<td>1.00</td>
<td>3.00</td>
<td>1.7069</td>
<td>.02023</td>
<td>.77205</td>
</tr>
<tr>
<td>MSPSS Mean</td>
<td>4.00</td>
<td>1.00</td>
<td>5.00</td>
<td>3.7593</td>
<td>.02679</td>
<td>1.02271</td>
</tr>
</tbody>
</table>

**Statistical assumptions.** The assumption of normality should be satisfied to conduct a regression analysis. The skewness and kurtosis for normal variables should be within the value range of –2 through +2. In this study, the skewness and kurtosis for most variables were within that range (Table 4). However, the skewness and kurtosis for intrinsic motivation, A-motivation, self-esteem, high school GPA, and depression were not within the values range of -2 through +2. Rank transformation was used to transform non-normal variables into normal variables. Rank transformation is defined as “the replacement of data by their ranks, with a subsequent analysis using the usual normal
theory procedure, but calculated on the ranks rather than on the data” (Conover & Iman, 1982, p. 715). Rank transformation procedures have been shown to have properties of strength and power in both regression and analysis of variance (Conover & Iman, 1982).

Table 4. Skewness and Kurtosis

<table>
<thead>
<tr>
<th></th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic motivation</td>
<td>-3.912</td>
<td>13.320</td>
</tr>
<tr>
<td>Extrinsic motivation</td>
<td>-1.322</td>
<td>-.252</td>
</tr>
<tr>
<td>A-motivation</td>
<td>4.032</td>
<td>14.279</td>
</tr>
<tr>
<td>RESE</td>
<td>-7.961</td>
<td>61.457</td>
</tr>
<tr>
<td>Stress</td>
<td>-.137</td>
<td>-1.146</td>
</tr>
<tr>
<td>Depression</td>
<td>1.809</td>
<td>2.320</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.557</td>
<td>-1.120</td>
</tr>
<tr>
<td>MSPSS</td>
<td>-.711</td>
<td>-.246</td>
</tr>
<tr>
<td>High School GPA</td>
<td>-1.948</td>
<td>4.629</td>
</tr>
<tr>
<td>Achievement Test</td>
<td>-.203</td>
<td>-.479</td>
</tr>
<tr>
<td>Aptitude Test</td>
<td>.115</td>
<td>-.875</td>
</tr>
<tr>
<td>Age</td>
<td>.816</td>
<td>1.689</td>
</tr>
<tr>
<td>Gender</td>
<td>.388</td>
<td>-1.852</td>
</tr>
<tr>
<td>Father’s Education Level</td>
<td>-.165</td>
<td>-1.051</td>
</tr>
<tr>
<td>Mother’s Education Level</td>
<td>.068</td>
<td>-1.271</td>
</tr>
</tbody>
</table>

Linearity is established by a straight-line relationship between variables. Bivariate scatter plots were examined to confirm linearity (see Appendix A). Linearity between most variables was apparent. However, linearity between intrinsic motivation and GPA was not apparent, nor was, linearity between A-motivation and GPA. In addition, linearity between RESE and GPA was not apparent. Thus, I transformed intrinsic motivation, RESE, and A-motivation by rank transformation. Rank transformation is most appropriate for converting a nonlinear relationship between variables to a linear relationship.
There should be no significant outliers. I detected outliers using Casewise Diagnostics and Studentized Deleted Residuals. Sixteen outliers were removed (see Appendix G).

Independence of observations (i.e., independence of residuals) was checked using the Durbin-Watson statistic. The Durbin-Watson statistic should be between 1.5 and 2.5 (Nerlove & Wallis, 1966). In the study, the Durbin-Watson statistic was 1.41.

The assumption of homoscedasticity should be met. The assumption of homoscedasticity was checked using scatterplots (see Appendix C). The Q-q plot of the residuals indicated that the assumptions of normality of residuals were not violated (see Appendix D).

The data also should not show multicollinearity, which occurs when two or more independent variables are highly correlated with each other. Multicollinearity were detected for all variables by inspecting tolerance/VIF values. Small VIF values (<3) indicate low correlation among variables (Mansfield & Helms, 1982). In the study, the data do not show multicollinearity since the VIF values were less than 3 for all independent variables (Table 5).
Table 5. Multicollinearity

<table>
<thead>
<tr>
<th>Model</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic motivation</td>
<td>0.872</td>
<td>1.147</td>
</tr>
<tr>
<td>Extrinsic motivation</td>
<td>0.829</td>
<td>1.207</td>
</tr>
<tr>
<td>A-motivation</td>
<td>0.820</td>
<td>1.220</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>0.930</td>
<td>1.076</td>
</tr>
<tr>
<td>Stress</td>
<td>0.809</td>
<td>1.236</td>
</tr>
<tr>
<td>Depression</td>
<td>0.771</td>
<td>1.297</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.756</td>
<td>1.323</td>
</tr>
<tr>
<td>MSPSS</td>
<td>0.910</td>
<td>1.099</td>
</tr>
<tr>
<td>High School GPA</td>
<td>0.915</td>
<td>1.093</td>
</tr>
<tr>
<td>Achievement test</td>
<td>0.536</td>
<td>1.864</td>
</tr>
<tr>
<td>Aptitude test</td>
<td>0.512</td>
<td>1.953</td>
</tr>
<tr>
<td>Age</td>
<td>0.913</td>
<td>1.095</td>
</tr>
<tr>
<td>Gender</td>
<td>0.871</td>
<td>1.148</td>
</tr>
<tr>
<td>Father’s Education Level</td>
<td>0.800</td>
<td>1.250</td>
</tr>
<tr>
<td>Mother’s Education Level</td>
<td>0.791</td>
<td>1.264</td>
</tr>
</tbody>
</table>

Dependent Variable: College First-Year GPA

Main Analysis

The research question was what variables predict student academic achievement among first year college students in Saudi Arabia? The second was which of these variables are the most important in predicting first year students’ academic achievement? In this study, ten hypotheses were tested. These hypotheses are:

H1. Intrinsic and extrinsic academic motivations positively predict first-year students’ GPA, while A-motivation negatively predict first-year college students’ GPA.

H2. Self-esteem positively predicts first-year students’ GPA.

H3. Stress, depression and anxiety negatively predict first-year students’ GPA.

H4. Perceived social support positively predicts first-year students’ GPA.

H5. Higher high school GPA positively predicts first-year students’ GPA.
H6. Higher Saudi achievement test scores positively predict first-year students’ GPA.

H7. Higher Saudi aptitude scores positively predict first-year students’ GPA.

H8. Age does not predict first-year students’ GPA.

H9. Gender does not predict first-year students’ GPA.

H10. Higher parental education positively predicts first-year students’ GPA.

Among the study variables, six variables predicted first-year students’ GPA.

Those variables were high school GPA ($p<.001; \beta=.15$), Saudi aptitude test ($p<.001; \beta=.15$), Saudi achievement test ($p<.001; \beta=.14$), gender ($p<.001; \beta=-.09$), stress ($p<.011; \beta=-.08$), and mother’s education level ($p<.011; \beta=.08$) (Table 6). The model accounted for 18.4% of the variance. Saudi students’ previous academic performance was the most important factor in predicting their first-year college GPA. Future research are needed to include more variables to increase the percentage of the variance of the model.
Table 6. Linear Multiple Regression Analysis

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>β</th>
<th>t</th>
<th>p</th>
<th>R</th>
<th>R2</th>
<th>F ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>4.078</td>
<td></td>
<td>17.700</td>
<td>.000</td>
<td>.42</td>
<td>.18</td>
<td>21.67</td>
</tr>
<tr>
<td>Intrinsic motivation</td>
<td>.000</td>
<td>.034</td>
<td>1.333</td>
<td>.183</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extrinsic motivation</td>
<td>.033</td>
<td>.022</td>
<td>.858</td>
<td>.391</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-motivation</td>
<td>4.628E-6</td>
<td>.001</td>
<td>.046</td>
<td>.963</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-esteem</td>
<td>5.391E-5</td>
<td>.008</td>
<td>.315</td>
<td>.753</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>-.074</td>
<td>-.087</td>
<td>-3.302</td>
<td>.001*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-9.644E-5</td>
<td>-.048</td>
<td>-1.810</td>
<td>.070</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>-.011</td>
<td>-.013</td>
<td>-.492</td>
<td>.623</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSPSS Mean</td>
<td>.013</td>
<td>.021</td>
<td>.846</td>
<td>.398</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School GPA</td>
<td>.000</td>
<td>.157</td>
<td>6.322</td>
<td>.000*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achievement Test</td>
<td>.062</td>
<td>.143</td>
<td>4.413</td>
<td>.000*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aptitude Test</td>
<td>.059</td>
<td>.157</td>
<td>4.718</td>
<td>.000*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.044</td>
<td>-.046</td>
<td>-1.844</td>
<td>.065</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.125</td>
<td>-.099</td>
<td>-3.867</td>
<td>.000*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father’s Education Level</td>
<td>-.006</td>
<td>-.009</td>
<td>-.347</td>
<td>.729</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s Education Level</td>
<td>.055</td>
<td>.085</td>
<td>3.181</td>
<td>.002*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes. * p < .05. a. Dependent variable: College First-Year GPA
Chapter 5: Discussion

This chapter discusses the results of this regression analysis study as they relate to previous research findings concerning student academic achievement. Conclusions and interpretations are presented. Implications for practice and recommendations for future research are offered.

Discussion of Results

The research question was what variables predict student academic achievement among first year college students in Saudi Arabia? Second, which of these variables are the most important in predicting first year students’ academic achievement?” In the study, stress, high school GPA, achievement test, aptitude test, gender, and mother’s education level predicted first-year students’ GPA. This complements previous findings that show that stress, previous academic performance, gender, and mother’s education level predict first-year students’ GPA.

Hojat et al. (2003) and Hamaideh and Hamdan-Mansour (2014) found that the impacts of high levels of stress had psychological effects that correlated with academic performance. Baker (2003), Garden (1991), Goldman and Wong (1997), Wintre and Yaffe (2000), and Wintre et al. (2011) all found a significant negative relationship between stress and academic achievement. There are many factors causing stress among first-year Saudi college students including coping with the new academic environment and dealing with changes in personal lifestyle and social setting (Hamaideh & Hamdan-
Mansour, 2014). In Saudi Arabia, many college students get accepted in universities that are far from home. At King Saud University, there are approximately 1,500 students live in the university campus. Abdulghani et al. (2011) found that the stress level among Saudi students in medical school significantly decreased as the year of study increased. All of these factors and changes that first-year college students go through could affect their stress level (Vaez & Laflamme, 2008), and this significantly affects their academic achievement (Baker, 2003; Garden, 1991; Goldman & Wong, 1997; Wintre & Yaffe, 2000; Wintre et al., 2011).

Nevertheless, every student has a different experience during his or her transition to university (Birnie-Lefcovitch, 2000; Kerr et al., 2004). This might explain why students with higher previous academic performance have a higher GPA in their first year of college. Al-Nasir and Robertson (2001), Scott et al. (2004), Martin et al. (2006), Newton et al. (2007), Al-Alwan (2009), and Olani (2009) found that good performance in college was correlated with good high school grades and high scores on the achievement, aptitude or standardized test scores. Moreover, Koh and Koh (1999) and the National Audit Office (2002) found a positive relationship between academic performance in high school and college academic achievement. Similarly, DeBerard et al. (2004) found a significant relationship between high school GPA and first-year college students’ GPA. Al-Alwan (2009) found that first-semester health sciences student’s total scores were correlated with the scores on the Saudi National Achievement Exam and scores from the Saudi National Aptitude Exam. All these studies emphasize the importance of preparing students for higher education beginning in high school. Students who have higher academic performance in high school usually maintain their high achievement in college.
In fact, these variables are so important and predictive that they are used for admission to King Saud University’s Preparatory Year (PY) (King Saud University website, 2018). The findings of this study suggest emphasizing on high school graduates and provide them with preparation programs for college entrance.

Another variable significantly related to academic achievement in the study was gender. This finding is in line with other research. Richardson and Woodley (2003) and Sheard (2009) found that gender significantly affected academic achievement. Olani (2009) found that women outperformed men in college GPA. Moreover, McCarey et al. (2007) found significant differences in academic achievement between women and men, and the women had higher academic achievement. In Saudi Arabia, women were first admitted to higher education in 1961. Since then, female Saudi college students have shown outstanding performance in higher education (Hamdan, 2005). Moreover, since women in Saudi Arabia are still restricted from certain jobs, like the military, they perform better in higher education to increase their chances of achieving professional careers (Hamdan, 2005). The findings suggest that women outperform men in higher education, so we should support their entrance to higher education professional program.

Klebanov et al. (1994), Haveman and Wolfe (1995), Smith et al. (1997), Davis-Kean (2005), Clifton et al. (2004), and Tinto (1975) found that parental education level significantly predicted student academic success. Moreover, Hamaideh and Hamdan-Mansour (2014) found that the mother’s education level significantly predicted college academic achievement among Saudi health sciences students. This study found similar results. As indicated earlier, women’s education in Saudi Arabia was established in 1961. This contemporary progress in women education has certainly affected the next
generation’s academic achievement. The findings suggest that investment in women’s education will have positive effect on children and their potential for their future academic success.

**Implications for Practice**

This study’s findings have several implications for researchers, professors, and policymakers. The findings of this study can add to the existing knowledge base regarding student academic achievement. Specifically, the study extends previous research by focusing on student academic achievement among first-year college students in Saudi Arabia. This study provided significant evidence regarding the possible effects of stress, high school GPA, achievement test, aptitude test, gender, and mother’s education level on first-year students’ GPA in Saudi Arabia.

The study provides a feasible way for professors to help students improve their GPA by reducing their stress levels. Professors can provide counseling services that could help students learn the system of diverse classes with demanding workloads. Moreover, professors and policy makers at higher education institutions in Saudi Arabia can help reduce freshmen stress level by helping them adjust to the university’s new environment. In addition, giving the students the right to choose or change their major could help reducing their stress level. This can be done by establishing well-developed orientation programs that could help students settle into their new academic and social environments and understand their majors and academic requirements. Moreover, providing the students stress relief classes during orientation could benefit first-year students in reducing their stress level and thus improve their academic achievement.
Researchers can use the findings of this study to examine which variables they should use to predict student academic achievement among first year college students in Saudi Arabia. While previous academic performance was the most significant predictor of academic achievement in this group, other factors, like stress, gender, and mother’s education level, were also identified as predictors of academic achievement. This study can also help researchers compare student academic achievement in Saudi Arabia with student academic achievement in other countries. Measuring a broad range of psychological, academic and demographic variables has led to the development of a model that can further understanding of the variables most likely to predict Saudi students’ college GPA. Moreover, this study can help policymakers take good strategic steps in improving Saudi students’ academic achievement.

Limitations

Despite the important findings, this study has some limitations. The sample of this research was one public university. Thus, the findings cannot be generalized to other universities in the kingdom (Remler & Van Ryzin, 2010). Adding other universities would lead to stronger and more generalizable results.

Findings may be affected by students’ perceptions and past experiences. Students may experience events that affect their first year GPA, but are not related to the independent variables (i.e., intrinsic and extrinsic academic motivations, A-motivation, self-esteem, students’ GPA, stress, depression and anxiety, perceived social support, high school GPA, Saudi achievement test scores, Saudi aptitude scores, age, gender, and parental education) (Cooper & Schindler, 2014; Creswell, 2009). In addition, all data, including the dependent variable, were collected using a self-reported questionnaire;
therefore, there is a potential of bias threat that could affect the results due to the students’ personal interpretation of the questions.

In addition, the study did not control for covariates (Bernard & Bernard, 2012). I did not examine the impact of the independent variables on first-year students’ GPA, controlling for students’ previous academic achievement, like high school GPA and scores on the Saudi aptitude and achievement tests. Previous academic performance was one of the major variables that predicted college students academic achievement. Controlling for covariates would lead to stronger results from similar studies (Creswell & Clark, 2010).

Suggestions for Further Research

Future researchers might try to overcome several limitations of this study. A number of suggestions can be offered concerning future research. First, the data were collected from one university in one academic year. Thus, findings cannot be generalized to other universities (Remler & Van Ryzin, 2010). Researchers should add other universities and collect data through several years in order to enhance the generalizability of the results.

Second, data were collected through a self-reported questionnaire, including the dependent variable (GPA); therefore, there might be some over-estimation or under-estimation of the students’ academic achievement due to the students’ understanding and interpretation of the survey questions. Linking the participants’ responses of the questionnaire to the university’s recorded GPAs might improve accuracy of the results.

Third, researchers could apply a hierarchical regression analysis to examine the impact of the independent variables on first-year students’ GPA, controlling for students’
previous academic achievement (Remler & Van Ryzin, 2010). Controlling for covariates could improve future studies (Creswell & Clark, 2010).

Finally, in the study, the effect of self-esteem on first-year students’ GPA was examined. However, the impact of GPA on self-esteem was not included. Researchers should use a regression analysis to examine whether first-year students’ GPA affects self-esteem. In addition, depression, stress, and anxiety were examined as a predictor of GPA. Sometimes, low GPA, especially during the first academic year of higher education, may lead to stress, depression, and anxiety. Future research may help explain if self-esteem, stress, depression, and anxiety are affected by first-year students’ GPA.

Conclusion

The purpose of this study was to understand the academic achievement of freshmen college students in Saudi Arabia by examining the relationship between different psychological, academic and demographic variables and their effects on the students’ GPA.

A multiple regression analysis was used to examine the research question. The results indicated that stress, high school GPA, achievement test, aptitude test, gender, and mother’s education level predicted first-year students’ GPA in Saudi Arabia.

The study adds to the research literature regarding student academic achievement in Saudi Arabia. The findings of this study provide strong evidence to support the impact of stress, high school GPA, achievement test, aptitude test, gender, and mother’s education level on first-year students’ GPA. Specifically, dealing with stress can help students improve their GPA. In addition, high school achievement and college preparation exams should help improve the academic achievement of first-year students.
The present study adds to the extant literature by providing evidence to suggest that first-year students in Saudi Arabia could benefit more by relieving stress. The implication for professors is that they should help first-year students reduce their stress level to improve their GPA.
REFERENCES


APPENDIX A. INFORMED CONSENT (ENGLISH)

Psychological, Academic and Demographic Variables Affecting Students’ Academic Achievement Among First Year College Students in Saudi Arabia

You are invited to participate in a research study which will involve studying the factors that may affect first year college students’ academic achievement in Saudi Arabia. My name is Ahmed Alonazi, and I am a candidate for Doctor of Education degree in Educational Administration and Leadership at the University of the Pacific, Gladys L. Benerd School of Education- Department of Educational Administration and Leadership. You were selected as a possible participant in this study because you are a first year college student in King Saud University.

The purpose of this research is to improve our understanding of academic achievement of undergraduate freshmen college students in Saudi Arabia by investigating the relation between different psychological, academic and demographic variables and their effects on first year university students’ GPA. This research is also aiming to create a model of the most critical variables that could predict students’ academic achievement in Saudi Arabia. If you decide to participate, you will be asked to complete a questionnaire with 46 self-reported items. Your participation in this study will last no more than 10 mins.

If you have any questions about the research at any time, please call me at +1 415-900-9305, or email me at a_alonazi@u.pacific.edu or you could also contact my advisor, Dr. Justin Low at Jlow1@u.pacific.edu If you have any questions about your rights as a participant in a research project please call the Research & Graduate Studies Office, University of the Pacific (209) 946-7716.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Measures to insure your confidentiality include no requests for or references to your name or identification. The data obtained will be maintained in a safe, locked location and will be destroyed after a period of three years after the study is completed.

Your participation is entirely voluntary and your decision whether or not to participate will involve no penalty or loss of benefits to which you are otherwise entitled. If you
decide to participate, you are free to discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.

By completing and submitting this survey you indicate that you have read and understand the information provided above, that you willingly agree to participate, that you may withdraw your consent at any time and discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled, you may print this form for your record, and that you are not waiving any legal claims, rights or remedies.
APPENDIX B. INFORMED CONSENT (ARABIC)
موافقة مسبقة

العوامل النفسية والأكاديمية والديموغرافية المؤثرة على المستوى الأكاديمي للطلبة الجامعيين الذين
اجتازوا السنة الدراسية الأولى في المملكة العربية السعودية

اعتمد مدعوون للمشاركة في دراسة بحثية تتضمن دراسة العوامل التي قد تؤثر على التحصيل الدراسي
لطلاب جامعة الملك سعود في السنة الأولى. أسي أحمذ العنيزي، واذا مرشح لدرجة الدكتوراه في كلية
التربية في قسم الإدارة التربوية والقيادية. قد تم اختيارك كمشارك في هذه الدراسة لأنك طالب في جامعة الملك سعود.

الهدف من هذا البحث هو تحسين مدى فهمنا للتحصيل الدراسي والأكاديمي لطلبة المرحلة الجامعية في
المملكة العربية السعودية من خلال دراسة العلاقة بين العوامل النفسية والأكاديمية والديموغرافية المختلفة
иأثرها على طلاب السنة الأولى من الجامعة. ويعود هذا البحث أيضاً إلى خلق نموذج لهذه العوامل الأكثر
أهمية التي يمكننا التأثر على التحصيل الدراسي للطلاب الجامعيين في المملكة العربية السعودية. إذا قررت
المشاركة، ستتم مطالبتك باستكمال الاستبيان المرفق الذي يتضمن ستم واربعون سؤال ويستغرق مدة لا
تتجاوز عشر دقائق.

إذا كان لديك أي أسئلة حول البحث في أي وقت، يرجى الاتصال بي على البريد الإلكتروني
a_alonazi@u.pacific.edu
أو يمكنك أيضاً الاتصال باستاذ الدكتور جوستين لو على البريد الإلكتروني
Jlow1@u.pacific.edu

إذا كان لديك أي أسئلة حول حقوقك كمشارك في هذا البحث يرجى الاتصال بمكتب الدراسات العليا
للبحوث في جامعتي بابسيليك على الرقم 2099467716
أي معلومات يتم الحصول عليها فيما يتعلق بهذه الدراسة والتي يمكن تحديدها بك شخصيًا سوف تبقى سرية
ولن يتم الكشف عنها إلا إذا كان ذلك من اللازم. كما سيتم الحفاظ على البيانات التي تم الحصول عليها في مكان آمن،
ومؤمن وسيتم اتخاذها بعد ثلاث سنوات من اكتمال الدراسة.

إذا قررت المشاركة، فأنت حق في وقت المشاركة في أي وقت بدون عقوبة أو فرد المزايا.
إذا قررت المشاركة، فأنت حق في وقت المشاركة في أي وقت بدون عقوبة أو فرد المزايا.

من خلال استكمال هذا الاستبيان وتقديمها، تشير إلى أنك قرأت وفهمت المعلومات الواردة أعلاه، وأنك توافق
على المشاركة طوعاً، وأن تسحب موافتك في أي وقت وتوقف المشاركة في أي وقت دون عقوبة أو خسارة.

تطبيق هذا النموذج لسجلك، وأن لا تتنازل عن أي مطالبات أو حقوق أو تعويضات قانونية.
APPENDIX C. ENGLISH VERSION OF THE SURVEY

What is your gender?
- Male
- Female

Age:
- < 20 years
- 20 to 25 years
- 26 to 30 years
- > 30 years

What was your High School GPA:
- >95%
- 90% to 94.9%
- 85% to 89.9%
- 80% to 84.9%
- 75% to 79.9%
- 70% to 74.9%
- < 70%

What was your Saudi Achievement Test Score:
- >95%
- 90% to 94.9%
85% to 89.9%
80% to 84.9%
75% to 79.9%
70% to 74.9%
< 70%

What was your Aptitude Test Score:
>95%
90% to 94.9%
85% to 89.9%
80% to 84.9%
75% to 79.9%
70% to 74.9%
< 70%

What is your father education level:
Lower than high school
High school
College
Post graduate

What is your mother education level:
Lower than high school
High school
College
○ Post graduate

What is your current GPA in your first-year of university:
○ 4.50 to 5.00 (A)
○ 4.49 to 3.75 (B)
○ 3.74 to 2.70 (C)
○ 2.00 to 2.74 (D)
○ < 2.00 (F)

*Academic Motivations Scale (AMS)* (Vallerand et al., 1992):

Please answer all the following items based on how they apply to you rated on a five-point scale ranging from strongly disagree (=1) to strongly agree (=5).

**Why do you go to college?**

○ Because with only a high-school degree I would not find a high-paying job later on.

    1  2  3  4  5

○ Because I experience pleasure and satisfaction while learning new things.

    1  2  3  4  5

○ Because I think that a college education will help me better prepare for the career I have chosen.

    1  2  3  4  5

○ Honestly, I don't know; I really feel that I am wasting my time in school.

    1  2  3  4  5

○ To prove to myself that I am capable of completing my college degree.

    1  2  3  4  5

○ For the pleasure that I experience when I read interesting authors.

    1  2  3  4  5

○ I once had good reasons for going to college; however, now I wonder whether I
should continue.  
1 2 3 4 5

○ For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.  
1 2 3 4 5

○ Because of the fact that when I succeed in college I feel important.  
1 2 3 4 5

○ Because I want to have "the good life" later on.  
1 2 3 4 5

○ For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.  
1 2 3 4 5

○ Because my studies allow me to continue to learn about many things that interest me.  
1 2 3 4 5

○ Because I believe that a few additional years of education will improve my competence as a worker.  
1 2 3 4 5

○ For the "high" feeling that I experience while reading about various interesting subjects.  
1 2 3 4 5

**Multidimensional Scale of Perceived Social Support-adapted (MSPSS-Adapted)** (Frison & Eggermont, 2015):

Please answer all the following items rated on a five-point scale ranging from strongly disagree (= 1) to strongly agree (= 5).

**When you are feeling down or in a difficult situation . . .**

○ My family and/or friends really try to help me  
1 2 3 4 5

○ I can count on my family and/or friends when things go wrong  
1 2 3 4 5
○ I have family and/or friends with whom I can share my joys and sorrows
        1  2  3  4  5

○ I can talk about my problems with my family and/or friends
        1  2  3  4  5

**Rosenberg self-esteem scale** (RSE; Rosenberg 1965):

Please answer all the following items rated on a five-point scale ranging from strongly disagree (= 1) to strongly agree (= 5).

○ I feel that I am a person of worth, at least on an equal basis with others.
        1  2  3  4  5

○ I feel that I have a number of good qualities. 12345
        1  2  3  4  5

○ All in all, I am inclined to feel that I am a failure. (Reverse-scored) *
        1  2  3  4  5

○ I am able to do things as well as most other people.
        1  2  3  4  5

○ I feel I do not have much to be proud of. (Reverse-scored) *
        1  2  3  4  5

○ I take a positive attitude toward myself.
        1  2  3  4  5

○ On the whole, I am satisfied with myself.
        1  2  3  4  5

○ I wish I could have more respect for myself. (Reverse-scored) *
        1  2  3  4  5

○ I certainly feel useless at times. (Reverse-scored) *
        1  2  3  4  5

○ At times I think I am no good at all. (Reverse-scored) *
Depression, Anxiety, and Stress Scale-21 (DASS-21) (Lovibond and Lovibond, 1995):

Based on your experience at college please answer all the following items rated on a five-point scale ranging from (never applied to me in college = 1) to (always applied to me during my college experience = 5).

- I found it difficult to relax.
  1 2 3 4 5

- I tended to over-react to situations.
  1 2 3 4 5

- I felt that I was using a lot of nervous energy.
  1 2 3 4 5

- I tended to over-react to situations.
  1 2 3 4 5

- I felt that I had nothing to look forward to.
  1 2 3 4 5

- I couldn't seem to experience any positive feeling at all.
  1 2 3 4 5

- I felt that I wasn't worth much as a person.
  1 2 3 4 5

- I experienced breathing difficulty and mouth dryness.
  1 2 3 4 5

- I felt scared without any good reason.
  1 2 3 4 5

- I was worried about situations in which I might panic and make a fool of myself.
  1 2 3 4 5
APPENDIX D. ARABIC VERSION OF THE SURVEY

النوع:
- ذكر
- أنثى

العمر:
- أصغر من 20 عاماً
- ما بين 20 إلى 25 عاماً
- ما بين 26 إلى 30 عاماً
- أكبر من 30 عاماً

المعدل التراكمي للطالب في المرحلة الثانوية:
- أكثر من 95%
- ما بين 91% إلى 95%
- ما بين 86% إلى 90%
- ما بين 81% إلى 85%
- ما بين 76% إلى 80%
- ما بين 71% إلى 75%
- أقل من 70%

درجة الاختبار التحصيلي:
<table>
<thead>
<tr>
<th>درجة اختبار القدرات:</th>
</tr>
</thead>
<tbody>
<tr>
<td>أكثر من 95%</td>
</tr>
<tr>
<td>ما بين 91% إلى 95%</td>
</tr>
<tr>
<td>ما بين 86% إلى 90%</td>
</tr>
<tr>
<td>ما بين 81% إلى 85%</td>
</tr>
<tr>
<td>ما بين 76% إلى 80%</td>
</tr>
<tr>
<td>ما بين 71% إلى 75%</td>
</tr>
<tr>
<td>أقل من 70%</td>
</tr>
</tbody>
</table>

المؤهل التعليمي للأب:

<table>
<thead>
<tr>
<th>ما قبل المرحلة الثانوية</th>
</tr>
</thead>
<tbody>
<tr>
<td>شهادة الثانوية العامة</td>
</tr>
<tr>
<td>مؤهل جامعي</td>
</tr>
<tr>
<td>شهادة الدراسات العليا</td>
</tr>
</tbody>
</table>

المؤهل التعليمي للأم:
المعدل التراكمي الحالي للطالب في السنة الأولى بمرحلة التعليم الجامعي:

- ما بين 4.75 إلى 5 (ممتاز)
- ما بين 4.50 إلى 4.75 (جيد جداً مرفوع)
- ما بين 4.10 إلى 4.49 (جيد جداً)
- ما بين 3.50 إلى 4 (جيد مرفوع)
- ما بين 3 إلى 3.49 (جيد)
- ما بين 2.51 إلى 2.99 (مقبول مرفوع)
- ما بين 2 إلى 2.50 (مقبول)
- أقل من 2 (ضعيف)

**Academic Motivations Scale (AMS)** (Vallerand et al., 1992)

يرجى الإجابة على النقاط التالية من خلال مقياس الخمس درجات لتحديد الدرجة المناسبة بداية من 1= أرفض بشدة إلى 5= أوافق بشدة.

لماذا تحرص على الذهاب إلى الكلية؟

- لأن شهادة الثانوية العامة لا تعد مؤهلاً كافياً للالتحاق بوظيفة عالية الأجر فيما بعد

لا أشعر به من المتعة والسعادة حين أتعلمشيء جديد

- لأنني أعتقد أن الدراسة الجامعية تؤهلي لمزاولة المهن التي أختارها

1 2 3 4 5
لا أعرف السبب تحديداً وأشعر حباً أن الدراسة مضيعة للوقت

لا أثبت لنفسي قدرتي على استكمال دراسي الجامعية

لأنني أشعر بالسرور حين أتفوق في أحد فروع التحصيل الدراسي

لأن التفوق في الجامعة يرفع مكانتي

كي أحظى بحياة متسقة في وقت لاحق

لأن إنجاز الأنشطة الأكاديمية الصعبة يمتحني الشعور بالرضا

لأن الدراسة الجامعية تتيح لي فرصة دائمة لتعلم الأشياء التي أهتم بها

نظراً لاعتقادي بأن تمييزية بضع سنوات إضافية في التعليم تعزز القدرات والمهارات المهنية التي يطلبها

سوق العمل
نظرًا لشعور الحماش الذي يتراوح فيه الباحث في المواقف المختلفة والمثيرة للاهتمام

5 4 3 2 1

**Multidimensional Scale of Perceived Social Support (MSPSS-Adapted)** (Frison & Eggermont, 2015)

يرجى الإجابة على النقاط التالية من خلال مقياس الخمس درجات لتقييم الأهداف المناسبة بدءًا من 1 = أعرض بشدة إلى 5 =افق بشدة.

حين أشعر بالحب أو أواجه موقفًا صعبًا ...

أحصل على الدعم من أفراد الأسرة و/أرفيق...

5 4 3 2 1

أعتمد على أسرتي و/أصدقاء حين تسوء الأمور...

5 4 3 2 1

أنا أحظى بأفراح أسرتي وأصدقاء أستطيع أن أشاركهم أفراحها وأحزانها...

5 4 3 2 1

يمكنني مناقشة المشكلات التي تواجهني مع أصدقاء و/أفراد أسرتي...

5 4 3 2 1

**Rosenberg self-esteem scale (RSE; Rosenberg 1965)**

يرجى الإجابة على النقاط التالية من خلال مقياس الخمس درجات لتقييم الأهداف المناسبة بدءًا من 1 = أعرض بشدة إلى 5 =افق بشدة.

أشعر بأنني إنسان ذو قيمة عالية أو على الأقل لا أشعر بأنني أقل من الآخرين...

5 4 3 2 1

أعتقد أنني أتمتع بعدة سمات جيدة...

5 4 3 2 1

أشعر عادة بأنني فاشل (نتيجة عكسية)
يمكنني القيام بالأعمال مثل ما يستطيع معظم الأفراد

قلما أحق أي إنجاز أتَّخرَ به (نتيجة عكسية)

أناحِز إلى الجانب الإيجابي في شخصيتي

أشعر بالرضا عن نفسي في أغلب الأوقات

أتمنى لو أنني أحظى بمزيد من احترام الذات (نتيجة عكسية)

أشعر أنني بلا جدوى أحياناً

أشعر في بعض الأحيان أنني لا أجد شيئًا على الإطلاق

Depression, Anxiety, and Stress Scale (DASS) (Lovibond and Lovibond, 1995)

يرجى الإجابة على النقاط التالية استنادًا إلى خبرتك كطالب جامعي من خلال مقياس الخمس درجات لتحديد الدرجة المناسبة

بداية من 1= لا تنطبق على بحثي بالدراسة الجامعية إلى 5= تنطبق دائمًا على بحثي بالدراسة الجامعية.

أواجه صعوبة في الشعور بالاسترخاء

أستَنفَذْ قدًّاً كبيرًا من الطاقة العصبية

* (نتيجة عكسية)
إبلاغ في رد فعل تجاه أي موقف

لا أطلع إلى تحقيق أي هدف في المستقبل

لا ينبغيني أي شعور إيجابي على الإطلاق

أشعر بأنني أقل قيمة من الآخرين (الشعور بالدونية)

واجهت صعوبة في التنفس وشعرت بجفاف في الحلق

يغمرني الشعور بالذعر دون سبب

أقلت حيال المواقف التي تصيبني بالذعر وتجعلني أبدو سخيفاً
APPENDIX E. ORIGINAL INSTRUMENTS USED IN THE SURVEY

Multidimensional Scale of Perceived Social Support-Adapted, MSPSS-Adapted (Frison & Eggermont, 2015)

Items rated on a five-point scale ranging from strongly disagree (= 1) to strongly agree (= 5). When you are feeling down or in a difficult situation . . .

(1) My friends really try to help me
(2) I can count on my friends when things go wrong
(3) I have friends with whom I can share my joys and sorrows
(4) I can talk about my problems with my friends

Academic Motivation Scale-College Version (AMS-C 28) (Vallerand et al., 1992):

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you go to college.

1= Does not correspond at all
2,3= Corresponds a little
4= Corresponds moderately
5,6= Corresponds a lot
7= Corresponds exactly

Why do you go to college?
1. Because with only a high-school degree I would not find a high-paying job later on.
2. Because I experience pleasure and satisfaction while learning new things.
3. Because I think that a college education will help me better prepare for the career I have chosen.
4. For the intense feelings I experience when I am communicating my own ideas to others.

5. Honestly, I don’t know; I really feel that I am wasting my time in school.

6. For the pleasure I experience while surpassing myself in my studies.

7. To prove to myself that I am capable of completing my college degree.

8. In order to obtain a more prestigious job later on.

9. For the pleasure I experience when I discover new things never seen before.

10. Because eventually it will enable me to enter the job market in a field that I like.

11. For the pleasure that I experience when I read interesting authors.

12. I once had good reasons for going to college; however, now I wonder whether I should continue.

13. For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.

14. Because of the fact that when I succeed in college I feel important.

15. Because I want to have "the good life" later on.

16. For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.

17. Because this will help me make a better choice regarding my career orientation.

18. For the pleasure that I experience when I feel completely absorbed by what certain authors have written.

19. I can't see why I go to college and frankly, I couldn't care less.

20. For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.

21. To show myself that I am an intelligent person.

22. In order to have a better salary later on.

23. Because my studies allow me to continue to learn about many things that interest me.

24. Because I believe that a few additional years of education will improve my competence as a worker.
25. For the "high" feeling that I experience while reading about various interesting subjects.

26. I don't know; I can't understand what I am doing in school.

27. Because college allows me to experience a personal satisfaction in my quest for excellence in my studies.

28. Because I want to show myself that I can succeed in my studies.

**Rosenberg self-esteem scale (RSE; Rosenberg 1965):**

Rate the items using the following scale:

1 = strongly agree 2 = agree 3 = disagree 4 = strongly disagree

I feel that I am a person of worth, at least on an equal basis with others.

I feel that I have a number of good qualities.

All in all, I am inclined to feel that I am a failure. *

I am able to do things as well as most other people.

I feel I do not have much to be proud of. *

I take a positive attitude toward myself.

On the whole, I am satisfied with myself.

I wish I could have more respect for myself. *

I certainly feel useless at times. *

At times I think I am no good at all. *

*reverse-scored

**Depression Anxiety Stress Scale–21 (DASS–21) (Lovibond and Lovibond, 1995):**

**DASS–21 Stress scale:**

I was intolerant of anything that kept me from getting on with what I was doing (14).

I felt I was rather touchy (18).
I found it difficult to relax (12).
I found myself getting agitated (11).
I felt that I was using a lot of nervous energy (8). I found it hard to wind down (1).
I tended to over-react to situations (6).

**DASS–21 Depression scale**

I felt that life was meaningless (21).
I felt that I had nothing to look forward to (10).
I couldn't seem to experience any positive feeling at all (3).
I was unable to become enthusiastic about anything (16).
I felt that I wasn't worth much as a person (17).
I felt down-hearted and blue (13).
I found it difficult to work up the initiative to do things (5).

**DASS–21 Anxiety scale**

I was aware of the action of my heart in the absence of physical exertion (e.g., . . .) (19).
I experienced breathing difficulty (e.g., . . .) (4).
I experienced trembling (e.g., in the hands) (7).
I felt I was close to panic (15).
I felt scared without any good reason (20).
I was worried about situations in which I might panic and make a fool of myself (9).
I was aware of dryness of my mouth (2).
APPENDIX F. LINEARITY

Fig 1. Partial Regression Plot (Intrinsic motivation and dependent variable)

Dependent Variable: College_first_yr_GPA

Intrinsic_Motivation

College_first_yr_GPA
Fig 2. Partial Regression Plot (Extrinsic motivation and dependent variable)
Fig 3. Partial Regression Plot (A-motivation and dependent variable)

Dependent Variable: College_first_yr_GPA
Fig 4. Partial Regression Plot (Self-esteem and dependent variable)
Fig 5. Partial Regression Plot (Stress and dependent variable)

Dependent Variable: College_first_yr_GPA
Fig 6. Partial Regression Plot (Depression and dependent variable)
Fig 7. Partial Regression Plot (Anxiety and dependent variable)
Fig 8. Partial Regression Plot (Perceived social support and dependent variable)
Fig 9. Partial Regression Plot (High School GPA and dependent variable)

Dependent Variable: College_first_yr_GPA
Fig 10. Partial Regression Plot (Saudi Achievement test and dependent variable)
Fig 11. Partial Regression Plot (Saudi Aptitude test and dependent variable)
Fig 12. Partial Regression Plot (Age and dependent variable)
Fig 13. Partial Regression Plot (Gender and dependent variable)
Fig 14. Partial Regression Plot (Father education level and dependent variable)
Fig 15. Partial Regression Plot (Mother education level and dependent variable)
### APPENDIX G. OUTLIERS

Table 7. Outliers

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Dependent Variable: College First Year GPA
APPENDIX H. SCATTERPLOT

Fig 16. Scatterplot.

Dependent Variable: College First Year GPA

Regression Standardized Residual

College First Year GPA

2.0
3.0
4.0
5.0

-4
-2
0
2
APPENDIX I. NORMAL Q-Q PLOT

Fig 17. Normal Q-Q Plot of the dependent variable

Normal Q-Q Plot of College First Year GPA
APPENDIX J. BAR GRAPH

Gender

Frequency

Male
Female