



VCU

Virginia Commonwealth University
VCU Scholars Compass

Theses and Dissertations

Graduate School

2016

Is Your Student Fit For That College? A Study of the Factors That Contribute to Students' Academic Performance in College

Abdulaziz A. Alotaibi
Virginia Commonwealth University

Follow this and additional works at: <https://scholarscompass.vcu.edu/etd>



Part of the [Education Policy Commons](#)

© The Author

Downloaded from

<https://scholarscompass.vcu.edu/etd/4619>

This Dissertation is brought to you for free and open access by the Graduate School at VCU Scholars Compass. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of VCU Scholars Compass. For more information, please contact libcompass@vcu.edu.

©Abdulaziz A. Alotaibi 2016
All Rights Reserved

Is Your Student Fit For That College? A Study of the Factors That Contribute to
Students' Academic Performance in College

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of
Philosophy at Virginia Commonwealth University.

by

Abdulaziz A. Alotaibi
B.S., Information Systems, University of Arkansas, 2007
M.P.A., University of Arkansas, 2009

Director: Richard Huff, Ph.D.
Assistant Professor, Chair, Master of Public Administration Program
L. Douglas Wilder School of Government and Public Affairs

Virginia Commonwealth University
Richmond, Virginia
November, 2016

Acknowledgment

The dissertation phase is truly a test of patience and commitment. It has been six years until I was able to get to this point. It was a difficult time, but enjoyable. The struggle that I have been through would not have been overcome without the collaborative efforts of people around me during that period. I would like to thank all my family members, my committee, and my friends for their help and support throughout my dissertation journey. You all are my heroes.

Table of Contents

	Page
LIST OF TABLES	vi
LIST OF FIGURES	ix
ABSTRACT	x
I. OVERVIEW AND NATURE OF THE STUDY	1
Statement of the Problem	2
Purpose of the Study	3
A Focus on Saudi Students in the United States	4
King Abdullah Scholarship Program (KASP)	6
KASP Admission Policy	6
Defining Student Academic Performance	7
Basic Theoretical Approach	10
Vincent Tinto's Student Integration Model	10
Alexander W. Astin's Theory of Student Involvement	11
Urie Bronfenbrenner's Ecological Systems Theory	12
Overview of Methodology	13
Sampling	14
Definition of Terms	15
Study Rationale: Why Important?	16
Limitations	18
II. LITERATURE REVIEW	20
Student Integration Model	21
Characteristics of the Student: Pre-Entry Attributes	25
Characteristics of the Program: Academic and Social Systems	40
University Resources	47
Interaction Between the Student and the Program	49
The Theory of Student Involvement	53
The Subject Matter Theory	54
The Resource Theory	54
The Individualized Theory	55

	Page
Empirical Findings.....	55
Ecological Systems Theory.....	57
Implications of the Ecological Systems Theory	59
III. METHODOLOGY	60
Research Question	61
Hypotheses.....	62
Characteristics of the Student	62
Characteristics of the Program.....	63
Integration between the Student and the Program	64
Variables of the Study.....	65
Dependent Variable	65
Independent Variable	65
Characteristics of the Student	66
Characteristics of the Program.....	69
Academic and Social Integration between the Student and the Program	70
Research Design.....	73
Statistical Analysis.....	76
Sample.....	77
Sample Size Calculations.....	78
Data Collection	79
Using Web-Based Electronic Survey.....	80
Benefits and Challenges of Using Social Media in Research.....	81
IV. DATA ANALYSIS	84
Data Collection	84
Descriptive Statistics.....	85
Primary Analyses	93
Model 1: Degree GPA and Student Characteristics.....	93
Model 2: Degree GPA and Program Characteristics	97
Model 3: Degree GPA and the Academic and Social Integration Between the Student and the Program	100
Secondary Analysis I	102
Model 4: Predicting Time Frame From Student Characteristics	103
Model 5: Predicting Time Frame From Program Characteristics.....	106
Model 6: Predicting Time Frame From the Academic and Social Integration Between the Student and the Program	108
Secondary Analysis II.....	110
Model 7: Predicting Dropout From Student Characteristics.....	111
Model 8: Predicting Dropout From Program Characteristics	114
Model 9: Predicting Dropout From Interactions.....	116
Summary	119

	Page
V. CONCLUSIONS AND RECOMMENDATIONS	123
Study Overview	123
Theoretical Framework	124
Key Findings	125
Characteristics of the Students	125
Academic and Social Integration Between the Student and the Program	133
Implications for Higher Education Policy	137
Limitations of the Study	139
Recommendations for Further Research	141
REFERENCES	144
APPENDIXES	
A. KASP Admission Policy: Requirements for Admission	160
B. Letter of Consent	166
C. Survey Instrument	168
VITA	176

List of Tables

Table	Page
1. Tinto's Revised Student Integration Model.....	24
2. The Quantity of Student-Faculty Interaction.....	69
3. Students' Perceived Quality of Interaction.....	70
4. Students' Perceived Inclusiveness.....	71
5. The Study's Primary and Secondary Analyses.....	77
6. Respondents' Gender.....	85
7. Respondents' Race.....	85
8. Respondents' Citizenship Status.....	86
9. Respondents' Age.....	87
10. Respondents' Enrollment in ESL Programs.....	87
11. Respondents' Sought Degree.....	88
12. Respondents' Degree Awarded.....	88
13. Respondents' Entry Method.....	88
14. Respondents' College Entrance Examination.....	88
15. Respondents; Intended Major of Study.....	89
16. Respondents' Interest in Their Major.....	89
17. Respondents' Change of Major.....	90
18. Respondents' Major of Study Upon Graduation.....	90

	Page
19. Respondents' Prior Degree GPA	90
20. Respondents' Degree GPA	91
21. Respondents' Family Bonding Rate	91
22. Respondents' Family Annual Income Level.....	92
23. Type of University Attended	92
24. Respondents' Change of University	92
25. Model 1 Summary and Durbin Watson Test	94
26. Model 1 Lack of Fit Tests.....	95
27. Model 1 Analysis of Variance (ANOVA) Test	95
28. Model 1 Coefficients Summary	96
29. Model 2 Summary and Durbin Watson Test	98
30. Model 2 Lack of Fit Tests.....	98
31. Model 2 Analysis of Variance (ANOVA) Test	98
32. Model 2 Coefficients Summary	99
33. Model 3 Summary and Durbin Watson Test	100
34. Model 3 Lack of Fit Tests.....	101
35. Model 3 Analysis of Variance (ANOVA) Test	101
36. Model 3 Coefficients Summary	102
37. Model 4 Omnibus Tests of Model Coefficients.....	103
38. Model 4 Hosmer and Lemeshow Test	104
39. Model 4 Classification Table	104
40. Model 4 Variables in the Equation	105

	Page
41. Model 5 Omnibus Test of Model Coefficients	107
42. Model 5 Hosmer and Lemeshow Test	107
43. Model 5 Classification Table	107
44. Model 5 Variables in the Equation	108
45. Model 6 Omnibus Tests of Model Coefficients.....	109
46. Model 6 Hosmer and Lemeshow Test	109
47. Model 6 Classification Table	109
48. Model 6 Variables in the Equation	110
49. Model 7 Omnibus Tests of Model Coefficients.....	111
50. Model 7 Hosmer and Lemeshow Test	112
51. Model 7 Classification Table	112
52. Model 7 Variables in the Equation	113
53. Model 8 Omnibus Test of Model Coefficients	114
54. Model 8 Hosmer and Lemeshow	114
55. Model 8 Classification Table	115
56. Model 8 Variables in the Equation	116
57. Model 9 Omnibus Test of Model Coefficients	117
58. Model 9 Hosmer and Lemeshow Test	117
59. Model 9 Classification Table	117
60. Model 9 Variables in the Equation	118
61. Summary of thee Study's Test Hypotheses	120

List of Figures

Figure	Page
1. Entry Methods to KASP	8
2. Tinto's Original Student Integration Model	23
3. Tinto's Student Integration Model (Simplified)	24

Abstract

IS YOUR STUDENT FIT FOR THAT COLLEGE? A STUDY OF THE FACTORS THAT CONTRIBUTE TO STUDENTS' ACADEMIC PERFORMANCE IN COLLEGE

By Abdulaziz A. Alotaibi, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2016

Major Director: Richard Huff, Ph.D.
Assistant Professor, Chair, Master of Public Administration Program
L. Douglas Wilder School of Government and Public Affairs

The purpose of this study was to expand the extent of available literature in regard to the factors that contribute to students' academic performance in college. It focused on a neglected segment of the student population, which is Saudi Arabian students studying in the United States. This study utilized a nonexperimental quantitative research design in order to investigate the relationship between the independent variables (the characteristics of the student, the characteristics of the program, and the academic and social integration between the student and the program) and the dependent variables (degree GPA, ability to graduate within academic program time frame, or dropout).

The data were collected from Saudi Arabian students who previously enrolled in the King Abdullah Scholarship Program (KASP) and had graduated or dropped out between the period of 2005 to 2016. A Web-based electronic survey was sent and made available for Saudi students

who entered KASP via any of the entry methods in the United States. There were 1,020 students who participated in the survey, and only 543 of them fully completed the survey. Only completed surveys were considered for analysis.

The results showed that some students' characteristics, some program characteristics, and some academic and social integration attributes were strongly correlated with students' academic performance in college.

This study presented empirical evidence about which factors can impact students' performance in college. It provided some answers to why some students succeed, while others fail. It also offered insights and recommendations for higher education policymakers as well as for scholars in the field of higher education policy, especially those concerned with admission policies of academic programs.

CHAPTER I. OVERVIEW AND NATURE OF THE STUDY

For the past 50 years, scholars have widely researched factors that are important in determining and predicting students' academic performance in college. McNeely (1938) conducted the first study that examined students' academic performance in college (Webster, 2007). The study entitled, *College Student Mortality*, was a joint collaboration between the U.S. Department of the Interior and the Office of Education. The study aimed to gain intelligence about students' academic performance in college in order to ensure success of the higher education system (McNeely, 1938). However, it was not until the 1960s that college and university administrators reported problems with students' academic performance (Seidman, 2005; Webster, 2007). Since then, scholars have conducted many studies to understand key factors that contribute to students' academic performance in college; yet few studies were concerned with studying a certain segment of the student population (Seidman, 2005; Tinto, 2007; Webster, 2007).

This study identified which key factors are involved in students' academic performance in college. It examined students' academic performance for a specific segment of the student population. It looked at Saudi Arabian students studying in the United States. The reasons for studying this specific student segment were to examine the set of challenges that these students may experience when it comes to their academic performance in college, and enhance the literature with findings in regards to the important factors contributing to academic performance of this segment of the student population.

This study presented empirical evidence about which factors can impact students' performance in college. It provided some answers to why some students succeed, while others fail. It also offered insights and recommendations for higher education policymakers as well as for scholars in the field of higher education policy, especially those concerned with admission policies of academic programs. It integrated conclusions previous scholars have reached in order to have a comprehensive understanding of the topic. Specifically, this study looked at (a) the student integration model by Vincent Tinto (1975), (b) the theory of student involvement by Alexander Astin (1984), and (c) the ecological systems theory by Urie Bronfenbrenner (1979). The efforts of these scholars, and many others, in the field of higher education policy were explored in order to form a theoretical framework to guide the research as well as to have a better understanding of the topic.

Statement of the Problem

An enduring problem for higher education policymakers today is students' weak academic performance in college (Khan, 2000; Lawrence & Pharr, 2003). According to Webster (2007), out of the 17 million students attending college in the United States, it is estimated that 8% to 35% of students will face challenges in their higher education pursuit and are more likely to drop out of college. Many of these students will drop out because of their inability to achieve and maintain adequate academic performance (Webster, 2007). As for international students, the dropout rate is around 30% and students' ability to graduate within the 4-year time frame is at 45.7% (Miami University Office of Institutional Research, 2014; Open Doors, 2014).

To get a sense of the crisis in higher education in the United States, the graduation rate within 4 years for males and females in all types of 4-year institutions is 39.4% (National Center for Education Statistics, 2014). Students' academic performance is a concern for any type of

higher education institution or program because there are high costs such as time, resources, and tuition, which are associated with students' inability to graduate or delay in their successful completion of program requirements (Ascend Learning, 2012; Bennett, 2003; Tinto, 1975). A recent study conducted by the American Institute of Research found that students who fail to complete their academic program's requirements cost federal, state, and local governments approximately four billion dollars (Schneider & Yin, 2011). These costs do not include the expenses that students incur for tuition, fees, and materials (Ascend Learning, 2012; Schneider & Yin, 2011).

Students who perform poorly in college will either leave their seats empty for the duration of the program (drop out) or will reserve the seat longer than expected (delay), and in both situations, other students, faculty, institutions, and other members of society will have to bear the costs for such inefficiencies (Ascend Learning, 2012; Bennett, 2003; Gillis, 2007; Schneider & Yin, 2011; Wells, 2003). Therefore, it is important to study the factors that contribute to these inefficiencies in order to improve the overall quality of education and better meet the challenges in today's higher education system.

Purpose of the Study

Scholars in public policy have been motivated to study factors contributing to students' academic performance in college in order to improve the quality of education and to reduce obstacles that might impede their educational attainment (Astin, 1984; Tinto, 1975, 1999, 2007; Ward, Stoker, & Murray-Ward, 1996). In this study, a similar goal was sought. However, the focus here was on a neglected segment of the student population. This study looked at Saudi Arabian students studying in the United States. The lack of data in regard to this specific segment of the student population in the literature inspired the researcher to study this group.

This study diverted from the “one size fits all” type of thinking and focused on one segment of the student population to put a context to the problem.

Investigating the issue of students’ academic performance in college at a student-specific level produced information that is of significance not only to colleges and universities, but also to scholars interested in this area. The need for more student-specific studies is recommended in order to gain more insights about what affects students’ academic performance in college (Tinto, 1975; Webster, 2007). This study offered specific suggestions to why some students perform well, while others do not. It also determined which specific factors contribute to students’ academic performance in college. The overarching question that this study aimed to address was: What factors contribute to Saudi Arabian students’ academic performance in U.S. universities?

A Focus on Saudi Students in the United States

Students’ academic performance in college has been a challenging issue for many decades (Khan, 2000; Seidman, 2005; Webster, 2007). Scholars no longer accept the premise that all students are affected by the same factors when it comes to their academic performance (Astin, 1993; Tinto, 2007; Webster, 2007). It is critical to conduct studies that are designed to assess specific segments of the student population to enhance the data in the literature in regard to this particular group (Khan, 2000; Webster, 2007). Saudi Arabian students are the fourth largest group of international students studying in the United States after the Chinese, Indians, and South Koreans, with more than 123,000 students enrolled in U.S. higher education institutions (Haynie, 2014; Institute of International Education, 2014; Taylor & Albasri, 2014). However, there is limited literature regarding their academic performance in college.

Previous studies show that the learning experience for foreign or international students, such as Saudi students, could be different from American students in that English language

ability, culture, and social integration and communication with their fellow American students and faculty are significant factors (Hunley, 2010; Zhanga & Goodson, 2011). These factors and many others could impact students' academic performance in college, which may enhance or hinder their academic ability to perform well in college.

The statistics regarding the academic performance of Saudi Arabian students in the United States are alarming. According to recent reports published by the Saudi Ministry of Higher Education (2014), only one of every four Saudi Arabian undergraduate students is able to graduate within the time frame of the program. That is only 25% of all Saudi undergraduate students studying in the United States are expected to graduate. Unfortunately, the same problem is occurring for the graduate-level students with graduation rates less than 10% for master's students and approximately 50% for PhD students. These statistics indicate that this segment of the student population needs immediate attention to tease out and address issues they face in higher education.

It is worth noting that there are many scholarship programs offered by the Saudi Ministry of Higher Education, yet this study is only focusing on the King Abdullah Scholarship Program (KASP). The reasons for studying this specific program were: (a) KASP is the largest scholarship program in Saudi Arabia with more than 100,000 students enrolled; (b) it is a current program with unique admission requirements that accepts students for different academic disciplines (science, humanities, arts, health) and degree levels (bachelor's, master's, doctorate); (c) the preliminary findings indicate that Saudi Arabian students enrolled in KASP are facing challenges in their academic pursuit in the United States (Saudi Ministry of Higher Education, 2014).

King Abdullah Scholarship Program

The KASP is a Saudi public scholarship program, which is funded 100% by the Saudi government (Saudi Ministry of Higher Education, 2014). The program is aimed to sustain development of human resources in the kingdom (KASP, 2010). The program started in 2005, and is still in existence. It offers scholarships to Saudi individuals to pursue their studies that lead to degrees such as bachelor's, master's, or doctorates, upon their fulfillment of certain admission requirements (KASP, 2010). The mission of this scholarship program is to sponsor qualified Saudis to study in highly ranked universities around the world in order to compete on the international level in different areas of scientific research, and thereby make Saudi Arabia a self-sufficient country in terms of having a highly qualified workforce (KASP, 2010). According to the Saudi Arabian Cultural Mission (2013), the outcomes of KASP should meet the following standards:

- Students should obtain a minimum grade point average (GPA) of 3.00 at the graduate level, and 2.00 at the undergraduate level.
- Students should graduate within the scholarship's time frame, which varies depending on the academic program level (bachelor's, master's, doctorate).
- Students should not withdraw or get expelled from the university.

KASP Admission Policy

The KASP requires certain qualifications in order to admit students into their program. Requirements such as GPA, college entrance examination scores, age restrictions, and degree awarded time restrictions are used for admission. There are two admission methods that KASP offers:

1. Traditional (Actual): Meeting the actual admission requirements of KASP.

2. Alternative (Self-sponsored): Entering through the Self-sponsored Scholarships Program.

These two methods have different admission requirements, yet students who are admitted to the program, via any entry method, are expected to maintain a GPA above 2.00 for the undergraduate level and 3.00 for the graduate level as well as graduate within the scholarship time frame which is usually 4 years for the undergraduate level, 2 years for the master's level, and 3 years for the doctorate level (Saudi Ministry of Higher Education, 2014).

Saudi students who do not meet the actual admission requirements of KASP can go through the alternative process of the Self-sponsored Scholarships Program in order to qualify for all the benefits of the scholarship. After the students complete the requirements of the Self-sponsored Scholarships Program, they are eligible to enter into KASP. However, if students are unable to complete the requirements of the Self-sponsored Scholarships Program, they will not be granted the King Abdullah Scholarship (Saudi Ministry of Higher Education, 2014).

The admission requirements set in the Self-sponsored Scholarships Program is relatively lower than KASP's actual admission requirements. For example, the actual admission requirements of KASP require high school applicants to have a least a GPA of 90% (3.60 out of 4.00) or above in order to be admitted, whereas if they enrolled in the Self-sponsored Scholarships Program, they only need to meet a minimum GPA of 2.75 out of 4.00 in their first 30 credit hours of college regardless of their high school GPA. Figure 1 depicts the entry methods to KASP.

Defining Student Academic Performance

Although scholars have placed considerable amount of effort in defining student academic performance, they were not able to reach a definitive agreement (Ward et al., 1996).

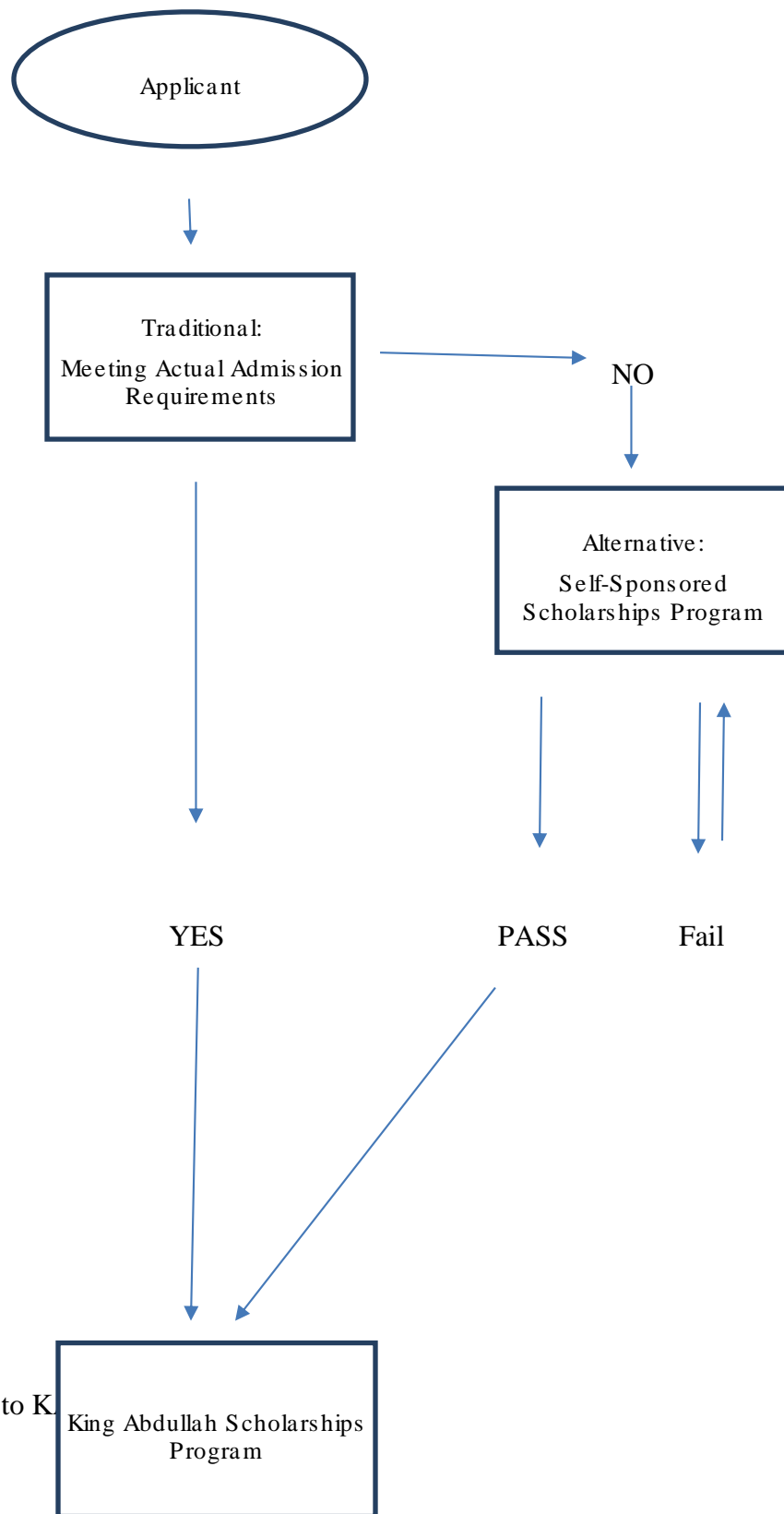


Figure 1. Entry methods to K

Some scholars define student academic performance as student retention rate: the rates at which students are able to persist to graduation from college (Astin, 1997; Demetriou & Schmitz-Sciborski, 2011; Khan, 2000; Seidman, 2005; Tinto, 2004, 2007; Webster, 2007). Other scholars define it as student attrition rate: the rates at which students leave college before earning a degree (Astin, 1975; Spady, 1971; Tinto, 1975, 1993). Although both measurements could serve the purpose of certain studies, this study looks at student academic performance in a broader perspective. It encompasses many evaluation measurements that assess the students' ability to develop in college.

In this study, student academic performance indicated the ability of students to graduate within a certain time frame while maintaining a minimum GPA required by the academic program. This study did not neglect the students who were not able to graduate within the intended time frame (delay) nor graduate at all (dropout). The reason for choosing this definition as a measure of academic performance was because it linked most of what the previous literature has used as well as it emphasized the elements that education policymakers rely upon when they make their college admission decisions (Astin, 1984; Cole, 1990; Saudi Arabian Cultural Mission, 2013; Saudi Ministry of Higher Education, 2015; Seidman, 2005; Tinto, 1975, 2008; Webster, 2007). For example, many leading universities and scholarship programs have identified minimum GPA requirements as an important requisite for acceptance (Saudi Ministry of Higher Education, 2015; University of Arkansas, 2015; University of California, Berkeley, 2015; University of California, Los Angeles, 2015; Virginia Commonwealth University Relations, 2015). In fact, even students who wish to transfer within the university would sometimes need to possess the required GPA. For instance, the Engineering School at Virginia Commonwealth University (VCU) requires a minimum 3.5 GPA to students wishing to transfer

to the Biomedical Engineering program (VCU School of Engineering, 2015). In this study, the GPA variable as a measure of academic performance is measured in a continuous 4.00 scale in accordance to KASP standards. The scholarship time frame variable is measured in a dichotomous scale [0,1], where [0] represents students who graduated within the scholarship time frame and [1] represents students who extended their scholarship time frame. The dropout variable is also measured in a dichotomous scale [0,1], where [0] represents students who graduated from the program and [1] represents students who dropout from the program.

Basic Theoretical Approach

The literature review provides scientific theories, models, and prior studies that discuss students' academic performance in college. There are many developed theories about students' academic performance in college that have been validated through research. Vincent Tinto (1975, 1993, 1999, 2004, 2007), Engle and Tinto (2008), Alexander W. Astin (1971, 1975, 1984, 1985, 1993, 1997, 2006), and Urie Bronfenbrenner (1979, 1993, 2005) have all developed important theories in this area.

Vincent Tinto's Student Integration Model

The student integration model relies heavily on the sociological factors that can contribute to students' academic performance in college (Demetriou & Schmitz-Sciborski, 2001). It is partly based on Durkheim's theory of suicide regarding the factors that cause a person to commit suicide (Tinto, 1975). Tinto's model is believed to be the true start of a long scholarly discussion about student academic performance in college (Demetriou & Schmitz-Sciboski, 2001). It influenced the way scholars think about the issue, as his theory served as a foundation for most research regarding why students leave college (Swail, 2004).

In the model, Tinto (1975, 1993; Engle & 2008) identify (a) characteristics of the student, (b) characteristics of the program, and (c) the interaction between the student and the program as contributing factors to the student's academic performance in college

First, the characteristics of the students are broken into three categories: (a) demographic attributes (age, gender, and race); (b) academic attributes (GPA, standardized tests scores, degree level, and field of study); and (c) social attributes (family bonding and socioeconomic status). Second, the characteristics of the program are divided into two categories: academic program's admission policy and university resources. Third, the interaction between the student and the program includes four categories within the academic and social systems that could contribute to students' academic performance, which are (a) student engagement, (b) living on campus, (c) working on campus, and (d) hours spent studying (Demetriou & Schmitz-Sciborski, 2001; Tinto, 1975, 2007).

It is worth noting that Tinto revised this original theory many times through the course of 40 years. However, he still finds that these factors are common contributors to students' academic performance in college (Demetriou & Schmitz-Sciboski, 2001; Engle & Tinto, 2008: Tinto, 1993, 1999, 2004, 2007).

Alexander W. Astin's Theory of Student Involvement

In 1984, Astin introduced the theory of student involvement for higher education. This theory is based on the broader theory of student development in academia. The theory of student involvement relies on three other traditional education theories. These theories are: (a) the subject-matter theory (also known as content theory), (b) the resource theory, and (c) the individualized theory (also known as eclectic theory). In his theory, Astin (1984) believes that

students' involvement in the academic environment can contribute to their ability to perform well in college.

Astin (1984) describes student involvement as “the amount of physical and psychological energy that the student devotes to the academic experience” (p. 518). He explains student involvement as a form of behavioral action. “It is not so much what the individual think or feels, but what the individual does, how he or she behaves, that defines and identifies involvement” (p. 519). The theory of student involvement assumes that the more the student is involved in college (e.g., spends more time on campus, participates in extracurricular activities, studies at the library, interacts with peers and faculty members), the more likely he/she will do academically better in college (Astin, 1984).

The theory of student involvement does not neglect the precollege attributes or the external factors that could impact the college experience. Astin (1984) claims that along with students' GPAs and scores on standardized tests, factors such as type of university and subject matter are key contributors to students' academic performance in college.

Urie Bronfenbrenner's Ecological Systems Theory

Western theories of academic achievement seem to have neglected the role of culture in students' academic performance in college (King & McInerney, 2014). They appear to be inadequate when trying to explain students' academic performance across a wide range of different cultural groups. The concept of how cultural contexts affect students' learning and developing process is best described by Bronfenbrenner's (1979) ecological systems theory. Bronfenbrenner believes that human development is directly linked to the ability of individuals to function within a certain cultural context. Cultures have different ways of “living” which may affect the learning process of individuals (Bronfenbrenner, 1979; King & McInerney, 2014).

The ecological system theory illustrates four systems that a student interacts with while in college (Bronfenbrenner, 1993; Reason & Renn, 2012). These systems are: (a) microsystem, (b) mesosystem, (c) exosystem, and (d) macrosystem. Reason and Renn (2012) believe that students interact with these four systems, which ultimately impacts their academic performance in college. The ecological system theory illustrates four systems that a student interacts with while in college (Bronfenbrenner, 1993; Reason & Renn, 2012).

Overview of Methodology

This study utilized a nonexperimental quantitative research design in order to investigate the relationship between the independent variables (the characteristics of the student, the characteristics of the program, and the academic and social integration between the student and the program) and the dependent variables (degree GPA, ability to graduate within academic program time frame, or dropout). The data collected included each student's age, gender, race, degree level, field of study, interest in field of study, prior degree GPA, standardized tests scores, family's education background, family bonding, family income, admission policy, type of university, quantity of student-faculty interaction, students' perceived quality of interaction, students' perceived inclusiveness, student engagement, living on campus, working on campus, hours spent studying, friendship support, culture barriers, language barriers, extracurricular activities, honor classes, study abroad programs, internships, workshops, research projects, academic presentations, interaction with peers, interaction with faculty, and leadership roles. In addition, data regarding students' graduation GPA, time frame, or dropout were collected. The data were obtained from students via a Web-based electronic survey called SurveyMonkey®. The participants were reached through an official Saudi organization called Saudis in USA. This organization is active on social media applications or websites with thousands of followers

online. Many of Saudi students in the United States follow this organization for information and news updates (Saudis in USA, 2014).

This study was designed to cover students who enrolled and graduated or dropped out between the period of 2005 to 2016 (time dimension). The first cohorts of students were accepted in 2005. Therefore, the first cohort of students should have graduated in 2007 if they were enrolled in the master's level program, 2008 if they were enrolled in the PhD level program, or 2009 if they were enrolled in the undergraduate level program. This time dimension had been chosen because it represented the period from the inception of the KASP program until present time, which helped in providing an accurate depiction of current problems that students faced and continue to face in higher education.

A cross-sectional design was used for this study because degree GPA, graduation time frame, or dropout (dependent variables) were measured once after the completion or drop out of the program. One primary and two secondary analyses were conducted in this study. Two regression analyses techniques were used: multiple linear regression analysis and logistic regression analysis. Statistical Package for the Social Sciences® (SPSS) statistics was employed to predict the association between several factors and students' academic performance in college.

Sampling

Given the purpose of the study, time dimension, and data availability, the target population of this study was all the Saudi students who have studied in the United States from 2005 to present. With little over 100,000 (75% male, 25% female) Saudi students in the United States (population size), 573 graduates and 588 students who were estimated as dropouts were the proposed sample size to conduct this study (Creative Research Systems, 2012; Saudi Ministry of Higher Education, 2014; Taylor & Albasri, 2014). This was a nonexperimental

descriptive study aimed at identifying significant factors that contribute to Saudi students' performance in U.S. colleges. Thus, these calculations were intended as guidance for the study and were based on a confidence level of 95%. All participants in the survey were included in the study to reduce the likelihood of bias results.

Definition of Terms

Ministry of Higher Education: The Department of Education in Saudi Arabia, where all higher education projects and programs are monitored and supported.

Recommended universities: All universities that are recognized by the Ministry of Higher Education, and are recommended for Saudi students to pursue their degree.

Prior degree GPA: The grade point average for the previous degree earned by the applicant and is calculated in the 4.00 scale.

Level of degree earned: The degree the applicant has earned through KASP, such as undergraduate, master's, or doctorate.

Dependent on a scholarship holder: A person who is a legal guardian, spouse, son, or daughter of a scholarship holder who is granted a scholarship, but is not considered a KASP holder rather it is called a dependent scholarship. There is no prior research on the academic performance of a dependent on scholarship holder.

Mature-age students: Students who are 21 years old or over.

Academic performance: The students' school performance, measured by their grade point average (GPAs), completion of the degree, or dropout.

Entry method: The method in which the students were able to obtain the King Abdullah Scholarship. There are two methods to obtain the scholarship: (a) traditional, and (b) alternative:

Traditional method: The method in which the initial KASP admission requirements are met.

Alternative method: The method in which the initial KASP admission requirements are not met and students would have to go through the Self-sponsored Scholarships Program in order to fulfill the alternative admission requirements.

Scholarship time frame: The time available for students to complete their degree requirements. The time frame varies based on the students' degree level (undergraduate level: 4-5 years, master's level: 1-3 years, doctoral level: 3-5 years). Each student was asked to verify their scholarship time frame and their ability to graduate within the available time.

Student involvement: The time the student spends working on his or her academic assignments per week.

Cultural interaction: The students' ability to function and interact with the American culture.

Upgrade a scholarship status: the students' ability to keep their scholarship to obtain higher academic degrees.

Study Rationale: Why Important?

The overarching goal of this dissertation was to provide a scientific and a comprehensive platform to guide higher education officials and scholars in their efforts to enhance the higher education admission policies as they work to achieve the program's related goals. It emphasized the importance of students' academic performance in colleges. According to Harold Howe (1993), poor academic performances make students more likely to leave college. This study was important for many reasons.

First, was to fill the gap in literature in regard to studies conducted on a specific group of students, who share similar attributes, and their academic performance in college. The lack of student-specific studies may produce misconceptions about the essence of the problem of students' academic performance in college (Khan, 2000; Webster, 2007). Providing a student-specific study can improve the efforts in resolving this issue rather than continuing the muddle of generalizations and one size fits all type of thinking (Astin, 1993; Khan, 2000; Webster, 2007).

A second reason was to help academic programs achieve their goals. An increasing number of academic programs were focusing their attention on improving students' academic performance, either to meet program's goals or due to budgetary reasons (Khan, 2000; Killgore, 2009; Lawrence & Pharr, 2003; Webster, 2007). This study provided information about the individual factors that could affect students' performance in college. It focused on the issue at a student-specific level in order to give an in-depth analysis of what contributes to students' academic performance in college. It collected pivotal information from students in order to help academic programs have a better understanding of the issue. Academic programs that do not gather data from their own students are neglecting useful information, which can enhance their perspective about what is actually occurring (Khan, 2000; Webster, 2007). Academic programs that engage students in their process to study past and current situations are more likely to have a clear picture about the strengths and weaknesses of their programs and to achieve better results (Khan, 2000).

A third reason was to ensure effectiveness and reliability of academic program admission policies. Academic programs that implement poorly constructed admission policies are more likely to encounter poor results (Fetter, 1995; Killgore, 2009; Lawrence & Pharr, 2003; Wait & Gressel, 2009). Clearly, academic programs in the United States are facing problems with

student academic performance. However, there has not been much research about the individual factors that contribute to this problem at a student-specific level (Astin, 1984; Khan, 2000; Webster, 2007). As a researcher interested in public policy in higher education, it was important to assess the problem from a policy perspective and ensure that a program's admission policy can serve the intended goals.

The fourth reason of importance was to ensure that students face less adversity. Students who do not perform well in college are more likely to face adversity in their lives (Astin, 1993; Khan, 2000). According to Khan (2000), academic achievement is linked directly to the employment status of individuals. Students who are able to perform well in college are more likely to have better job opportunities (Astin, 1993; Khan, 2000). In addition, students who perform well in college show signs of high intellect, increased independence, and maturity (Astin, 1993; Khan, 2000; Lawrence & Pharr, 2003). Currently, many students are applying for college (Seidman, 2005; Webster, 2007). However, the statistics show that students who are accepted are not performing well (Astin, 1984; Khan, 2000; Saudi Ministry of Higher Education, 2013; Seidman, 2005; Webster, 2007). Therefore, it is an absolute necessity that students who are admitted to college would perform well so that they face less adversity in their lives.

Limitations

There could be some limitations to this study because of the following reasons.

1. First, the study was limited to a certain population, Saudi Arabian students studying in the United States.

2. The response rate to the survey might have been low or unrepresentative of the population. Some students might not have been willing or interested to participate, while others were difficult to reach or find.

3. The survey was sent via social media websites and applications, and only people who have access to them were able to participate.

4. There might be other possible factors that could have influenced students' academic performance other than what this study covers.

5. The dropout population is unknown to the researcher. Therefore, the sample size calculations were based on previous research estimates of international students' dropout rate of 30% (Miami University Office of Institutional Research, 2014; Open Doors, 2014).

6. The number of students who graduated on time or extended their scholarship was also unknown to the researcher. However, the researcher knew that 12,705 had successfully graduated from the program (Saudi Ministry of Higher Education, 2014). Data regarding graduation time frame were collected from this study's survey.

Further research about these factors as well as other segments of the student body can give more accurate measurements and higher confidence level to our model (Creswell, 2003; Frankfort-Nachmias & Nachmias, 2008). More details about the limitations is provided at the end of the study as broader perspective was gained.

CHAPTER II. LITERATURE REVIEW

One theoretical model and two theories serve as a theoretical foundation and framework for this study. They are as follows: (a) the student integration model by Tinto (1975), (b) the theory of student involvement by Astin (1984), and (c) the ecological systems theory by Bronfenbrenner (1979).

First, the student integration model relies heavily on the sociological factors that can contribute to students' academic performance in college (Demetriou & Schmitz-Sciborski, 2001). It is an extension of Spady's (1971) theoretical model that connects Durkheim's (1951) theory of suicide to students' dropout from college (Seidman, 2005). Demetriou and Schmitz-Sciboski (2001) point out that the student integration model is believed to be the true start of a long discussion about student academic performance in college. It influences the way scholars think about the issue, and it serves as a foundation for most research regarding why students stay in or leave college (Swail, 2004). This model identifies characteristics of the student, characteristics of the program, and the interaction between the student and the program as contributing factors to students' academic performance in college (Tinto, 1975; Webster, 2007). It is worth noting that Tinto has revised his original theory many times through the course of 40 years. However, he still finds that these factors are common contributors to students' academic performance in college (Demetriou & Schmitz-Sciboski, 2001).

Second, the theory of student involvement relies on three traditional education theories (Astin, 1984). These theories are: the subject-matter theory (also known as content theory), the

resource theory, and the individualized theory (also known as eclectic theory). The theory of student involvement assumes that students' involvement in the academic environment can contribute to their ability to perform well in college. Astin (1984) explains students' involvement as a form of behavioral action. "It is not so much what the individual think or feels, but what the individual does, how he or she behaves, that defines and identifies involvement" (Astin, 1984, p. 519). The theory of student involvement draws the connection between students' personal, academic, and social attributes with their ability to perform well in college. It assumes that students with certain personal, academic, and social abilities are more likely to perform well in college. The theory acknowledges that factors such as college admission policy or selectivity, GPA, college entrance examination scores, gender, and university type to be key factors in predicting students' performance in college.

Third, the ecological systems theory describes the concept of how cultural contexts affect students' learning and developing process (King & McInerney, 2014). It assumes that culture influences the basic motivational process for students to learn and develop (Bronfenbrenner, 1979). King and McInerney (2014) argue that western theories of academic achievement seem to have neglected the role of culture. They appear to be inadequate when trying to explain students' academic performance across a wide range of different cultural groups. The ecological systems theory assumes that the human development is directly linked to the ability of individuals to function within a certain cultural context. People have different ways of living, which may affect the learning process of individuals (Bronfenbrenner, 1979; King & McInerney, 2014).

Student Integration Model

In 1975, Tinto introduced his student integration model, which is a product of a combination of other scholars' theories and models, as well as Tinto's understanding of issues in

higher education (Astin, 1984; Seidman, 2005; Tinto, 1975). The student integration model is an extension of Spady's (1971) theoretical model that connects Durkheim's (1951) theory of suicide to students' drop out from college (Seidman, 2005).

Durkheim's (1951) book, *Suicide*, shows how society and social integration can influence the rate of suicide. Durkheim was particularly interested in studying suicide rates among Catholics and Protestants. Catholics are viewed to be conservative and to have more social integration. Protestants, on the other hand, are less conservative and have less social integration, but enjoy more social and personal freedom. Durkheim (1951) found that in societies where social integration is high, suicide rates tended to be low.

Durkheim (1951) also found that suicide rates differ among other segments of society based on gender, marital status, and education level. He found that males are more likely to commit suicide than females, single individuals are more likely to commit suicide than those who are married, and people with higher education level tend to have more suicide rate than those with less education.

The student integration model assumes that students' academic performance depends on their interaction experience with the academic and social system in college. In fact, the model views students' academic performance as "a longitudinal process that occurs because of the meanings individual students attribute to their interactions with the formal and informal dimensions of a given college or university" (Seidman, 2005, p. 67). Tinto (1975) concludes that an increase in social and academic interaction will result in an increase in students' commitment to their goals and to the institution, and thus increase their academic performance and their likelihood to stay in college (Harper & Quaye, 2009; Seidman, 2005; Tinto 1975, 2007). Tinto's original student integration model is illustrated in Figure 2.

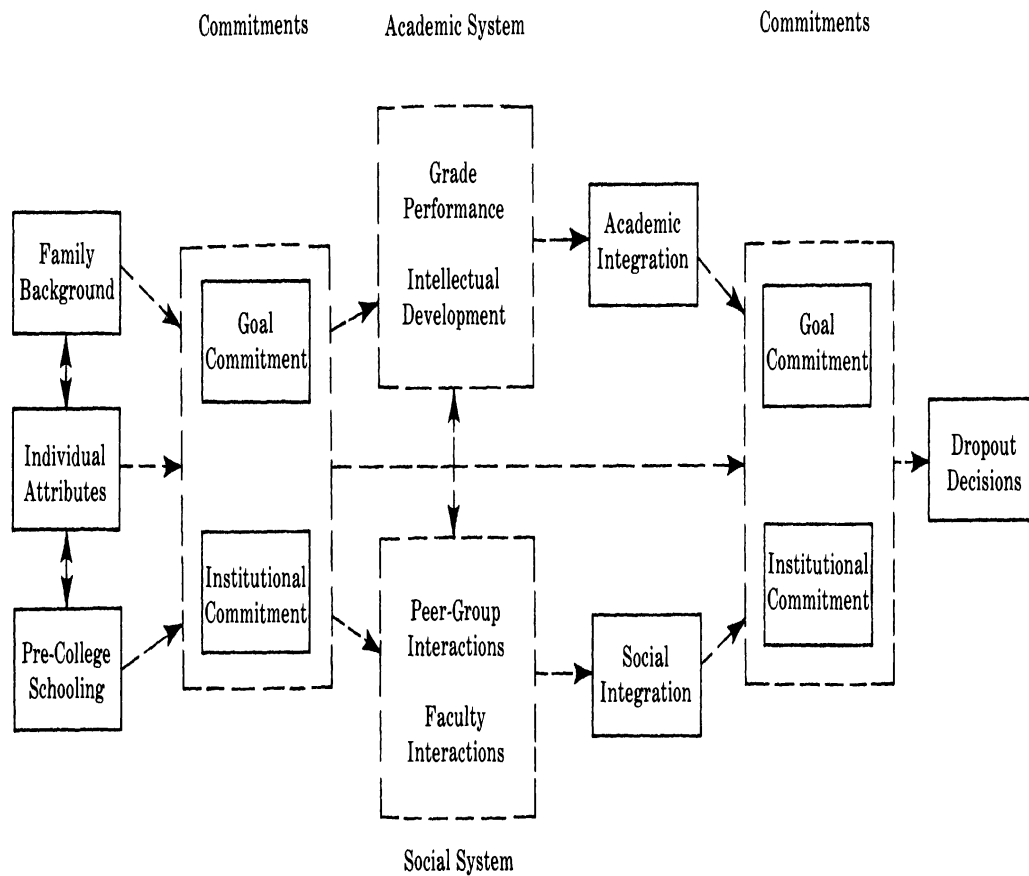


Figure 2. Tinto's original student integration model.
 Source. "Dropouts From Higher Education: A Theoretical Synthesis of Recent Literature, by V. Tinto, 1975, *A Review of Educational Research*, 45, p. 89-125.

Figure 2 shows the process that students go through before they make their decision to drop out from a college or university (Tinto, 1975, 1993). It involves the attributes that students have before entering college, their prelevel of commitment to their goals and to the institution, their academic and social experience, their postlevel of commitment to their goals and to the institution, and their drop out decision. Mantz Yorke (1999) simplifies this complex process in Figure 3.

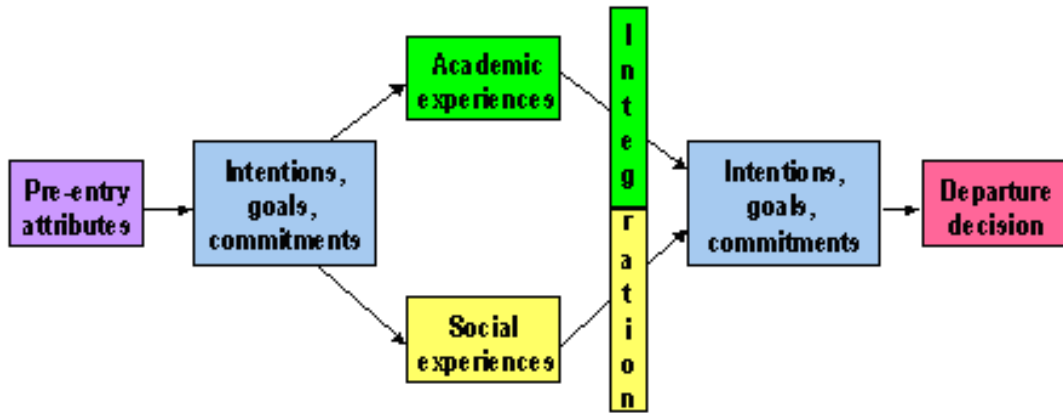


Figure 3. Tinto's student integration model (simplified).
 Source. Yorke, M. (1999). *Leaving early: Undergraduate non-completion in higher education*. London, UK: Falmer.

The student integration model defines three main factors affecting students in their academic performance: (a) characteristics of the student, (b) characteristics of the program, and (c) interaction between the student and the program (Ascend Learning, 2012). Tinto (1975) believes that understanding these characteristics could help in predicting students' academic performance, and subsequently help in fostering the academic process. Tinto's revised student integration model is shown in Table 1.

Table 1

Tinto's Revised Student Integration Model

(A)	(B)	(C)
Characteristics of the student: Pre-entry attribute	Characteristics of the program: Academic and social systems	Interaction between the student and the program
1. Demographic attributes	1. Academic program's admission policy	1. Student engagement
2. Academic attributes	2. University resources	2. Living on campus
3. Social attributes		3. Working on campus
		4. Hours spent studying

Each element of Tinto's (1975) model is discussed thoroughly in this chapter with the emphasis on relevant literature in order to have an understanding of process that students go through in their academic pursuit.

Characteristics of the Student: Pre-entry Attributes

Throughout his journey of 40 years in investigating the factors that influence students' academic performance in college, Tinto believes that student characteristics play important roles in determining their college achievement (Ascend Learning, 2012; Demetriou & Schmitz-Sciboski, 2001; Tinto, 2007). Student characteristics are broken into three categories: (a) demographic attributes (age, gender, and race); (b) academic attributes (GPA and standardized tests scores, degree level, and field of study); and (c) social attributes (family bonding and socioeconomic status). These categories are part of Tinto's pre-entry attributes that could impact students' academic performance in college as illustrated in Figure 3 and Table 1.

Demographic attributes. There are many demographic attributes that have been discussed in relevance to students' academic performance in college. In this section, the demographic characteristics are examined in order to understand their significance in predicting students' performance in college. The demographic characteristics analyzed in this section are age, gender, and race. These demographic characteristics are chosen because they are included in the student integration model, and they demonstrate what previous and recent literatures have found in regard to the subject matter (Astin, 1984; Demetriou & Schmitz-Sciboski, 2001; Fetter, 1995; Sheard, 2009; Smith, 2004; Tinto, 1975, 1993; 1999, 2004; 2007; Wait & Gressel, 2009).

Age. Although age was not initially covered in the student integration model, it is scientifically proven to have an impact on the cognitive processing speed of an individual (Bashore, Ridderinkhof, & Van der Molen, 1997). Research shows that younger people are more

likely to have a faster cognitive processing speed than their older counterparts. As people age, their cognitive processing speed slows down, which could affect their daily functions (Bashore et al., 1997). However, research in the area of age impact on academic performance varies in terms of findings and is relatively limited (Sheard, 2009). There are different views about the level of impact that age has in predicting students' academic performance (Farzaneh et al., 2010; Sheard, 2009). Some scholars believe that age has a great impact on students' ability to perform well in academia, while other scholars say that age has no significant impact on students' academic performance (Farzaneh et al., 2010).

Sheard (2009) found that age could have a great impact students' academic performance in college. In fact, he believes that age could be a good and significant predictor of students' academic performance. He believes that mature-age students are more likely to achieve higher final degree GPA than their young counterparts. In fact, he argues that, generally in higher education, mature-age students tend to outperform young students due to the fact that mature-age students perceive their present situation as their last chance to develop a career. Also, mature-age students work under positive pressure to succeed in their educational life. They tend to have a higher level of confidence, which can be related to their life experience (Sheard, 2009; Shanahan, 2006).

Farzaneh et al. (2010) agrees with Sheard (2009) that age could be an important factor impacting students' academic performance in a university-level education. However, they argue that the age factor alone has a low impact on students' academic performance. They believe that age could be significant when coupled with other factors or variables in the statistical model. They emphasize that previous research provides mixed result between age and academic

performance, and that other factors can influence the age variable, such as degree level or gender.

Studies show that the age variable could have an impact on students' academic performance, yet the impact-level of the age variable is different (Farzaneh et al., 2010; Shanahan, 2006; Sheard, 2009). The reason behind the contradictory findings in the literature could be explained as follows. First, the geographic place or environment of where the study was conducted could influence the impact-level of age. For example, the study that was conducted in the United Kingdom suggests that age has a significant impact on students' academic performance (Sheard, 2009). On the other hand, the study that was conducted in Iran suggests that age has a low impact on students' academic performance (Farzaneh et al., 2010). Second, other factors, such as gender and level of degree could influence the impact-level of age on academic performance. The presence of these factors in the statistical model could influence the age variable. Therefore, it is important to control for other variables in the model when testing for the impact of age on students' academic performance (Farzaneh et al., 2010; Sheard, 2009).

Gender. Tinto (1975) believes that gender is an important attribute that could influence students in their academic pursuit. In fact, several other studies have shown that gender difference has a great impact on students' academic performance (Khwaileh & Zaza, 2011; Sheard, 2009). Female students are believed to outperform male students in the field of academia (Sheard, 2009). Specifically, research shows that, on average, females' GPAs are higher than males' GPAs (Sheard, 2009; Tinto, 1975, 1993, 2007).

Sheard (2009) conducted a study to examine the relationship between students' academic performance and gender. The data were reported from 134 universities on undergraduate students. He found that throughout the undergraduate years female students had a higher mean

GPA than male students. The study showed that females adapt easily to the higher education environment, and that they have a higher desire to finish than their male counterparts.

Another study conducted by Ismail and Othman (2006) examined the effect of students' gender on academic performance while controlling for students' prior degree GPA. The research showed that female students have better academic performance than male students. The results showed that gender is highly significant in predicting academic success.

Smith (2004) provides more empirical and consistent evidence that women can outperform men in university-level education. He found female students to be more likely to attend classes, view GPA as an indicator of their academic ability and performance, and ask for help and support from staff and faculty. On the other hand, Smith (2004) discovered that male students behave differently than females in academic settings. He found that male students are less likely to attend classes, view GPA as an indicator of their academic ability, and ask for help and support from faculty. Smith (2004) believes that these differences in behaviors between the two genders could result in better academic performance for the females.

Much of the research that has investigated the relationship between gender and academic performance is consistent. Scholars agree on the fact that much of the consistency in findings is related to the psychological status (Khwaileh & Zaza, 2011; Sheard, 2009; Smith, 2004). As noted earlier, female students are more likely to be college-ready, perceive GPA as measurement for college success, and are more motivated to engage in academic activities than male students (Khwaileh & Zaza, 2011; Sheard, 2009; Smith, 2004; Tinto, 1975).

Race. Tinto (1975) suggested that further attention is needed in regard to the relationship between race and student academic performance in college. There is clear evidence that race is an independent factor influencing students' academic performance in college (Tinto, 1975).

However, the issue of race is also associated with academic background and preparation measures such as GPA and scores on standardized tests (Thernstrom, 2002). For example, Caucasians and Asians are more likely to meet the English, reading, mathematics, and science ACT College Readiness Benchmarks in comparison to their Hispanic and African American counterparts. Specifically, 77% of White high school graduates were college ready in English, whereas only 35% of Blacks were able to meet the same readiness (Thernstrom, 2002). As students go to college, Blacks' academic performance, on average, tends to be lower than that of any other racial group (Thernstrom, 2002).

Thernstrom (2002) and other scholars believe that there is a racial gap in academic performance due to racial inequality in the United States (Astin, 1984; McCloy, Campbell, & Cudeck 1994). Thernstrom (2002) indicates that with educational reforms, there is still a huge issue that needs to be addressed in order to fill in the gap so that all students have equal learning opportunities. If educational reforms do not actually improve education for those who are failing due to racial inequalities, then these reforms are failing as well (Thernstrom, 2002). She explains that students of different racial backgrounds are not equally educated in their first 12 years of schooling, which impacts their academic performance in college. She asserts that even before kindergarten, the racial gap in academic skills cannot be escaped or ignored and that studies have proven the need to take serious steps to encounter this issue (Thernstrom, 2002).

In the next section, students' academic attributes are discussed. These academic attributes are also part of students' pre-entry attributes illustrated in Figure 2 (Yorke, 1999). In addition, these attributes are the second category of the student characteristics discussed in the student integration model.

Academic attributes. Academic attributes include a set of many competencies and skills that the student need to acquire and maintain in order to be able to perform well in college (Astin, 1975; Seidman, 2005; Tinto, 1975, 1999). In the student integration model, developed in 1975, Tinto makes a connection between students' academic attributes and their ability to perform well in college. Tinto (1975) and other scholars believe that students who possess high academic abilities are more likely to perform well in college (Astin, 1975, 1984; Spady, 1971). For example, Tinto states that students with higher GPAs are more likely to stay in college and make more academic achievements. In his model, Tinto (1975) acknowledged that academic attributes such as prior GPA, college entrance examination scores, degree level, and field of study are the key factors in predicting students' performance in college (Tinto, 1975, 1999, 2007).

Many higher education institutions have realized the importance of academic attributes in predicting students' academic performance in college. Thus, they placed a set of requirements in order to accurately assess students' academic attributes in order to predict their success in college. These requirements are known as admission requirements (Astin, 1975; Fetter, 1995; Seidman, 2005; Tinto, 1975; Wait & Gressel, 2009). Among the most commonly used academic admission requirements are prior degree GPA and scores on standardized tests (e.g., TOFEL, ACT, GMAT, GRE) (Astin, 1975; Shiyko & Pappas, 2009; Wait & Gressel, 2009). Also, these admission requirements change depending on the degree level and field of study. For example, most graduate schools in the United States require applicants to have higher GPAs and submit GRE or GMAT scores for acceptance (Kuncel, Credé, & Thomas; 2007; Pascarella & Terenzini, 2005; Reisig & DeJong, 2005).

In this section, these four academic attributes are evaluated with careful review of the relevant literature. As noted above, these academic attributes are students' GPAs, scores on standardized tests, degree level, and field of study.

GPA. Today, GPA is an important academic preparation measurement unit (Seidman, 2005; Tessema, Ready, & Astani, 2014; Wait & Gressel, 2009). Almost every higher education institution considers GPA as a reliable indicator of students' academic preparation (Seidman, 2005; Wait & Gressel, 2009). Although some former studies have indicated that GPA is considered an invalid academic preparation measurement unit when it comes to predicting student's academic performance in college, recent studies have shown that GPA could be the best quality that measures students' readiness for college (Astin, 1971; Claussen, 2010; Kuncel, Ones, & Hezlett, 2001; Lynn, 1978; Reisig & DeJong, 2005; Stack & Kelley, 2002; Tessema et al., 2014; Tinto, 1975, 1993, 2007).

Previous studies have shown that students' prior GPA is not a valid academic attribute when it comes to measuring their academic performance in college. In fact, in 1971, Astin, who later changed his views regarding GPA after developing the college fit theory in 1975, conducted a study on high school graduates and found that GPA is not a strong predictor of students' academic performance in college (Astin, 1971). He believes that the majority of high school students are expected to have grades in college that are lower than what they used to get in high school. In his study, he finds college entrance exams such as ACT, SAT, and NMSQT to be more accurate predictors of academic performance. His study reveals that students' college entrance exam scores have a positive relationship with their GPA in college. Astin (1971) indicates that there are many factors influencing students' performance in college and need to be put into consideration. These factors include background characteristics (age, income, number of

siblings, etc.); future plans (major, career, graduate school, etc.); and interest (research, music, sports, etc.)

Lynn (1978) reports evidence that some of the most commonly used admissions requirements in many education programs are invalid. Lynn (1978) finds that undergraduate GPA is not a valid academic attribute of graduate students' academic performance. He states that GPAs could exclude qualified students from being considered in some educational programs. In fact, he discovers that the most useful predictors of success can be other factors, such as marital status or age. Claussen (2010) asserts that today GPA should be evaluated (coupled) with other qualifications such as entrance exam scores (e.g., TOFEL, GMAT, GRE), letters of recommendation, and statements of goals.

Current studies, however, show that a student's GPA appears to be an influential attribute in predicting academic performance (Claussen, 2010; Kuncel et al., 2001; Reisig & DeJong, 2005; Stack & Kelley, 2002; Tessema et al., 2014). In fact, Claussen (2010) believes that the most important admission requirement is the undergraduate GPA. He argues that students who tend to do well in their undergraduate studies are more likely to do as well in their graduate level study.

Kuncel et al. (2001), Reisig and DeJong (2005), and Stack and Kelley (2002) agree that the GPA is an essential factor in predicting students' academic performance in college. They believe that higher education programs should set a high GPA requirement in order to accurately predict students' academic performance. According to Reisig and DeJong (2005), justification for using prior GPA as an admission requirement is based on the premise that GPA reflects long-term commitment, knowledge gaining, and ability.

Sternberg (2010) supports the argument that prior GPA is a good indicator of future GPA. His analysis relies on many bases. First, he believes that “the best predictor of future behavior is generally past behavior of the same kind” (Sternberg, 2010, p. 35). Therefore, if a student did well in the past, he/she is more likely to do well in the future. Second, GPA represents the student’s ability to master a wide range of skills as well as his/her academic ability. Third, GPA is a convenient way to get information about students’ ability without the need to incur extra effort from the admission officers. Because of these reasons and because academic work forms a cornerstone of college education, and because failing academic work can cause a student to drop out early, it makes sense that college admissions officers would rely on GPA as a fundamental basis for making their decisions (Sternberg, 2010, p. 35).

Scores on standardized tests. The literature on the validity of college entrance exam scores as a quality that could predict students’ academic performance varies in terms of findings. Different disciplines, tests, and sampling frames have been used in assessing the validity of college entrance exam scores (Reisig & DeJong, 2007). For example, some studies included small samples size; used samples that contained only one set of the population (e.g., undergraduates, master’s, or doctorate); or failed to include important statistical variables (e.g., GPA, age, or gender). Although there are inconsistencies in terms of findings, almost every university or program in the United States requires some form of assessment test such as ACT, SAT, GRE, GMAT, or MCAT (Reisig & DeJong, 2007).

Some scholars believe that a composite measure that includes some sort of an assessment test with GPA can be a fairly strong predictor of students’ academic performance especially among master’s and doctoral students (Reisig & DeJong, 2007). Their findings provide empirical support for the use of a composite measure during the application screening process (Reisig &

DeJong, 2005). Many studies support the notion that college entrance exam scores have positive correlation with students' performance (GPA) in college (Astin, 1971; Lynn, 1978; Reisig & DeJong, 2005).

In the book, *Choosing Elites*, Robert Klitgaard (1985) supports the idea of using test scores as measurements of students' preparation for academia. He claims that, in some majors or professions, tests scores are more important than personality or character. He states that for young men and women, test scores and grades can predict later success in majors such as business, law, and medicine, better than existing measures of personality, character, leadership, or diligence.

Stanford University's application information addresses the issue of using test scores when selecting potential candidates. The university believes that when test scores are used with other performance measurements, it can provide valuable perspective on the applicant's abilities (Fetter, 1995).

On the other hand, other scholars argue that college entrance exam scores can eliminate talented individuals during the application screening process. They believe that some of these tests rely on "knowing big words and exotics terms" (McCloy et al., 1994, p. 495). To them, students' performance is measured by earning acceptable grades, finishing their programs in high standing relative to others, and completing the degree requirements on time (McCloy et al., 1994).

Sternberg (2010) mentions that college entrance exams have been gaining value since the 1960s. He indicates it is relatively easy to make a decision relying on numbers rather than to make one that relies on subjective data such as letters of recommendation or list of extracurricular activities. Doing the admission by the numbers creates an easy way to do the job,

but not necessarily better. Sternberg (2010) also believes that the reason for relying on college entrance exam scores currently is because people are attracted to those who are like themselves. He explains that people tend to like others who are similar to themselves in terms of attractiveness, interests, ethnicity and so forth. Since most current decision makers have been through the same process of having to obtain high test scores, they tend to look for people like themselves (who have high test scores).

Quantitative measures such as college entrance exam scores have their limitations. Walker Percy (1980) believes that “it’s possible to get all A’s and flunk life” (p. 93). Many opponents of using test scores in college admission process claim that these tests are “poorly constructed, highly coachable, unfair to underprivileged and minority students, and of very little use because it doesn’t measure what it is supposed to measure” (Walker, 1980, p. 93).

Recently, more than 800 universities in the United States have dismissed standardized tests as a requirement for admission (Buckley, 2015). For example, George Washington University announced that undergraduates no longer would be required to submit SAT or ACT scores for admissions (Anderson, 2015). Also, the president of Virginia Commonwealth University (VCU) called SAT requirement as “fundamentally flawed” (Buckley, 2015, p. 1). Undergraduate applicants with a high school GPA of 3.3 or higher do not have to submit SAT scores to VCU. The University Public Affairs Office states that the university is following a national trend that relies on GPA as a better predictor of student success (Buckley, 2015).

Degree level. Degree level is defined as any degree level acquired after high school (Pascarella & Terenzini, 2005). Studies have shown that the higher the degree level is, the more likely a student is to perform well in academia (Kuncel et al., 2007; Pascarella & Terenzini, 2005). One explanation to this finding is that degree levels are associated with college selective

admission policy. The higher the academic degree level, the more selective the admission policy (Kuncel et al., 2007). This special dynamic indicates that graduate level students are more likely to have higher academic qualities such as analytical thinking and quality writing than their undergraduate level counterparts (Pascarella & Terenzini, 2005). They also could have the college experience necessary to survive in such environment (Astin, 1984; Tinto, 1975)

Another explanation can be associated with age. Students who are enrolled in graduate programs are more likely to be older than students who are enrolled in the undergraduate programs; and since age could impact students' academic performance, graduate-level students are more likely to perform well in college (Sheard, 2009).

Although students, in general, may share the common attitudes such as self-motivation, commitment, and self-esteem, scholars believe that each degree level should be studied individually as each degree level group share common characteristics (Astin, 1975; Coromina, Capo, Guia, & Coenders, 2011). These characteristics represent the benefits and challenges that these groups face. Common characteristics for undergraduate-level students could include peer pressure and parental supervision (Astin, 1975; Khan, 2000). Graduate common characteristics may include marital status and number of children (Coromina et al., 2011).

Field of study. When choosing a field of study, students show their interest (Allen & Robbins, 2010). The more the field of study matches their interest, the more likely students will perform well in college (Allen & Robbins, 2010; Pascarella & Terenzini, 2005). In their study, Allen and Robbins (2010) showed that students who were able to choose their desired field of study were able to attain their degrees in a timely fashion. They believe that this finding points to the importance of effective educational planning for students. If students are not able to choose

their desired field of study, they are more likely to have difficulties in college (Allen & Robbins, 2010).

Allen and Robbins (2010) indicate that there are two explanations to why students, who choose their field of interest, perform well in college. First, students whose field of study matches their interest are less likely to change majors in college. This step means that students are more likely to graduate within the program's time frame because students who change their major are required to take extra coursework to fulfill their new degree requirements. Second, students who are able to choose their field of study tend to be more engaged in their academic coursework. Students who are more enthusiastic about their academic coursework are more likely to accumulate credit hours quickly and have a higher GPA (Allen & Robbins, 2010; Astin, 1975; Khan, 2000).

In the next section, students' social attributes are examined. These social attributes are the third pre-entry attributes discussed in student integration model, and are important characteristics of the students.

Social attributes. Social attributes are another dimension in constructing a profile of the students who are more likely/less likely to perform well in college (Margrain, 1978; Tinto, 1975). In this section, the social attributes include the family's bonding and socioeconomic status. These social attributes are important factors that influence students' academic performance in college (Astin, 1984; Spady, 1971; Tinto, 1975).

Family bonding. Many researchers emphasize the role of family bonding on students' academic performance in college (Astin, 1984; Fetter, 1995; Solon, Page, & Duncan, 2000; Spady, 1971; Tinto, 1975; Wait & Gressel, 2009). According to Björklund and Salvanes (2010), family bonding refers to the family's positive relationship with each other. They state that in

almost every society they have data on, academic performance is positively correlated with family bonding. For example, they find that in the United States, family bonding is highly correlated “above .60” with academic performance (Björklund & Salvanes, 2010, p. 211).

Spady (1971) and Tinto (1975) have already stressed the importance of family bonding on academic performance. In Spady’s theory, family bonding refers to the family’s overall relationships among family members. Spady believes that students who have positive family relationships and are from higher socioeconomic status are more likely to perform well in college (Spady, 1971). Similar to Spady, Tinto (1975) believes that students who have positive relationships with their families are more likely to stay in college and graduate (Tinto, 1975; Webster, 2007). However, Tinto adds that families with higher socioeconomic status and higher formal education have more impact on students’ likelihood to get a degree from college (Tinto, 1975). In fact, he believes that the higher the family’s formal education, the more likely the student to pursue higher academic degrees (Tinto, 1975).

Socioeconomic status. Socioeconomic status is perhaps the most used variable when it comes to issue of students’ academic performance (Sirin, 2005). Tinto (1975) indicated that students’ socioeconomic status could impact their academic performance. Since then many studies have been conducted to explore the significance of socioeconomic status on students’ academic performance. According to Sirin (2005), some of these studies have found strong correlation (e.g., Lamdin, 1996; Sutton & Soderstrom, 1999), while others found no significant relationship (e.g., Ripple & Luthar, 2000; Seyfried, 1998). Such variation could be explained by the way researchers operationalize the socioeconomic status variable (Sirin, 2005).

The term socioeconomic status is a social and economic measure that involves many interrelated variables such as parental educational attainment, parental occupational status, and

family income (National Center for Educational Statistics, 2012). The concept of socioeconomic status has emerged after many observations that students with lower socioeconomic status (e.g., lower parental educational attainment, lower parental occupational status, and lower family income) tend to perform poorly in their academic pursuit (National Center for Educational Statistics, 2012; Sirin, 2005).

Scholars assert that higher socioeconomic status does not guarantee higher academic achievement nor does lower socioeconomic status assure lower academic achievement (Mayer, 1997; National Center for Educational Statistics, 2012; Sirin, 2005). Students' socioeconomic status could suggest the complexity of their home environment (National Center for Educational Statistics, 2012; Spaeth, 1976). The home environment could be affected by the socioeconomic status (Levin & Belfield, 2002; National Center for Educational Statistics, 2012). Thus, students could vary in their learning abilities. For example, Levin and Belfield (2002) suggest that students with lower socioeconomic status are less likely to have a "school-like" home, language interaction with parents, literacy engagements, or follow a daily routine which may limit their future cognitive abilities and academic achievements.

On the other hand, Björklund and Salvanes (2010) claim that parents with higher educational levels and overall socioeconomic status could have better knowledge and application of parenting skill, which in return, may influence their children's academic performance. Parents with lower educational levels and overall socioeconomic status may not have the knowledge about parenting skills to help enrich their children's home environment experience and thus positively contribute to their college experience (Björklund & Salvanes, 2010).

In the next section, the characteristics of the program are carefully evaluated. These characteristics are second part of the student integration model illustrated in Table 1, which could impact students' academic performance in college.

Characteristics of the Program: Academic and Social Systems

Tinto (1975) points out that the characteristics of an academic program can either limit or enhance the students experience in college (Ascend Learning, 2012). He says that 40 years ago, the study of students' academic performance in college was looked at from a psychological perspective. That is, students who did not academically perform well in college were seen as less able, less skilled, and less motivated. The issue of students' academic performance in college was viewed as a students' failure, not the institutions. He states that this kind of perspective is now called "blaming the victim" (Tinto, 2007, p. 2). However, this view began to change in the early 1970s as scholars began to understand the relationship between individuals and society. The new view takes the influence of academic institutions into account when discussing students' academic performance in college. The systems set by the academic institutions or programs are critical and can greatly impact students in their academic pursuit. Tinto (1975) refers to these systems as the characteristics of the program.

The characteristics of the program can be divided into two categories: academic program's admission policy and university resources. Tinto (1975) and other scholars have discussed these two program characteristics in regard to their influence on students' academic performance in college (Astin, 1984, 1997; Bowe, Ball, & Gold, 1992; Hallak, 1990; McNay & Ozga, 1985). In the next section, academic program admission policies will be discussed. It provides scholars' perspectives about how and why an admission policy in higher education is constructed.

Academic program admission policy. Policies should interact with the nature and circumstances of their period (Hallak, 1990; McNay & Ozga, 1985; Tinto, 1975). They embody the aspirations about the good life for the individuals and best practices for the whole society (McNay & Ozga, 1985; Tinto, 1975). However, like any other policy, academic program admission policies are subject to the influence of interests in higher education institutions (Ball, 1990). One of characteristics of any academic program that influences students' academic performance in college is the program's admission policy (Ascend Learning, 2012; Astin, 1984, 1997; Ball, 1990; McNay & Ozga 1985; Tinto, 1975). "If admission criteria are set at minimum and a large number of students are accepted that just meet the minimum requirements, chances are that attrition rate will increase" (Ascend Learning, 2012, p. 5).

Admission policies represent the values of a higher education institution. In other words, values in a policy represent moral proposals about what ought to be done or accomplished through the implementation of the policy (Ball, 1990; McNay & Ozga 1985). They underpin ideologies that are influenced by the society, the economy, the institution, and education at a specific period of time (McNay & Ozga, 1985). If these values change, admission policies will change as well (Ball, 1990; McNay & Ozga 1985). For example, the grants, donations, and gifts that an academic program acquires can change values and subsequently change the admission policy (McNay & Ozga 1985; Tinto, 1975). The values of academic programs can go from merely providing a high quality education to include helping to foster the local and global economy by working with local and global partners to enrich the students' experience. The admission requirements would most likely change based on the new statement of the program (McNay & Ozga, 1985).

McNay and Ozga (1985) provide an interesting perspective about academic programs' admission policies. They state that the demand on higher education is increasing; yet, little has been done to effectively construct the admission policies for better outcomes. They believe that when constructing an admission policy there are many values that need to be put into consideration. These values are social, economic, institutional, and educational. In their book, *Policy-Making in Education* (McNay & Ozga, 1985), each of these values is supported by scientific views of how students learn best. These values are influenced by views of scholars such as Froebel, Montessori, Dewey, Susan Isaacs, and Piaget (McNay & Ozga, 1985). Other scholars have also recognized the impact of these values on admission policy (Ball, 1990; Bowe et al., 1992; Hallak, 1990; Tinto, 1975). It is important to note that these values have no clear boundaries from each other and that they can intersect with each other as they can share common goals (McNay & Ozga, 1985). For example, institutional values can include providing a high quality education that promotes equality and fairness. This goal can also be shared by the social and economic values as well. To explain, the social values are concerned with issues regarding equality and fairness in society, while the economic values aim to enhance the quality of education while reducing the cost associated with it, and these can be shared with institutional values (Ball, 1990; McNay & Ozga, 1985).

Public policy in any context is subject to “authoritative allocation of values” (Ball, 1990, p. 3). The importance of values can be seen through the policy. Policies illustrate what is the most important value and what is the least important value (Ball 1990; McNay & Ozga, 1985). However, the most effective policy is one that can balance between all values, while maximizing the outcomes (Ball, 1990; Bowe et al., 1992; Hallak, 1990; McNay & Ozga, 1985).

Social values. Social values come from the relationship between individuals and society (Ball, 1990; McNay & Ozga, 1985). Most social issues are derived from concerns that these individuals share about the conditions of their society whether it is equality, fairness, democracy, freedom of choice, or availability of choices (Ball, 1990; Bowe et al., 1992; Hallak, 1990; McNay & Ozga, 1985). The conditions of the society can be directly linked to the policies implemented and imposed on society. To clarify, policies shape the way the society operates, and thus individuals in that society are affected (McNay & Ozga, 1985). For example, if admission policies rely heavily on GPA and scores on standardized tests, chances are that less minority students are accepted in the program. According to Thernstrom (2002), such emphasis put on these two elements can be fair but it may also jeopardize equality among students from different backgrounds and with different abilities.

The concept of social values in any system can be best understood from the German sociologist Max Weber's concept of democracy (McNay & Ozga, 1985). Weber was extremely skeptical about the application of ancient conceptions of democracy to political life in modern states (Shaw, 2008). He stated that democracy (social value in politics) is a tool to generate order; however, it cannot predict outcomes (McNay & Ozga, 1985). It is only the policies, within that democratic system, that can shape and change the outcomes. So, for example, democracy, on its face, does not predict fairness among individuals. However, constructing policies that promote such social value can help in predicting the outcomes.

The same concept applies in higher education. The admission system of a given academic program can encompass many social values (e.g., fairness, equality, diversity). Therefore, the admission system is tool to reach a social value. However, it is only the policies' admission requirements implemented in the admission system that can determine if these goals can be

reached or not (Ball, 1990; McNay & Ozga, 1985). The University of Michigan example is a great way to illustrate how social values can be embedded when constructing a policy. The University of Michigan has considered race as part of their admissions policies in order to achieve a diverse student body (University of Michigan Admissions Lawsuits, 2012). Although challenged in courts for having such policy, the courts ruled in favor of the university as they recognized diversity as a compelling interest in higher education (University of Michigan Admissions Lawsuits, 2012).

The social values can no longer be separated from academic programs' admission requirements (McNay & Ozga, 1985). Whenever an admission policy is initiated or revised, the public is concerned with the impact it will make on society (Ball, 1990; Bowe et al., 1992; Hallak, 1990; McNay & Ozga, 1985). If social values are not put into consideration, then students' academic performance in college could be impacted (Ball, 1990; Bowe et al., 1992; Hallak, 1990; McNay & Ozga, 1985). Today, many academic programs consider social values as an important element for admissions (McNay & Ozga, 1985).

Economic values. Many scholars raise economic value concerns when discussing matters about academic programs admission policies (Ball, 1990; Hallak, 1990; Heller & Edwards, 1992; McNay & Ozga, 1985). They believe that the current expansion of higher education brought more costly systems. Governments incur high costs when supporting academic programs, yet the returns on such investments are relatively low (Hallak, 1990; Heller & Edwards; 1992; McNay & Ozga, 1985). The expansion in enrollment requires a considerable amount of expenditure. It is basic mathematics: the more students are admitted, the more costs are experienced (Heller & Edwards, 1992). However, governments that give high priority to education in allocating their resources show a strong political determination in providing

generalized access to education in order to foster the economy (Hallak, 1990; McNay & Ozga). According to McNay and Ozga (1985), education has always been justified by its influence to the economy. In fact, education is a key in the development of human resources, which will contribute to the economic growth of any state (Hallak, 1990; Heller & Edwards; 1992; McNay & Ozga, 1985). Nonetheless, low academic achievers may hinder the economic progress for a country. The lower the academic achievement, the less likely an individual is ready to join the professional workforce (Ball, 1990; Bowe et al., 1992; Hallak, 1990; Heller & Edwards; 1992; McNay & Ozga, 1985).

The issue of economic value in higher education is whether the return on investment has reached the intended goal (Ball, 1990; Hallak, 1990; McNay & Ozga, 1985). Academic programs construct their admissions policies in order to reach a higher economic level for the institution and for society. If admitted students in the program leave early or before graduating, they leave their seats empty for the remainder period. This kind of situation would cause an economic burden on academic programs and on society as a whole. As a result, academic programs might construct more strict admissions policies, and government might spend more taxpayer money to fund the broken higher education system (Ball, 1990; Bowe et al., 1992; Hallak, 1990; Heller & Edwards; 1992; McNay & Ozga, 1985; Thernstrom, 2002; Tinto, 1975).

Institutional values. The institutional values justify the existence of policies. No policy should exist without institutional values that promote reliability and accountability (McNay & Ozga 1985). Policies are implemented to ensure that programs remain on target and reach the projected goals (McNay & Ozga, 1985; Silver, 1990). In order to meet their institutional values, public officials are urged to make reliable policies that can achieve the intended goals while maintaining a sense of accountability to make the necessary adjustments when needed (Silver,

1990). For example, universities and academic programs around the world are competing for prestige, talent, and resources (institutional values) both nationally and internationally (International Association of Universities, 2012). In order to remain in the competition, these higher education institutions have to initiate policies to gain and maintain such values. When it comes to admission policies, institutions will construct their admission policies in a way that the best and brightest students are accepted in the program (Heller & Edwards; 1992; McNay & Ozga, 1985; Silver, 1990).

These institutional values may impact the acceptance rate for so called prestigious universities (McNay & Ozga, 1985). Many students seek acceptance to these universities. However, very few students get admitted. For example, according to a survey conducted by the *U.S. News and World Report* ("Top 100," 2014), the acceptance rate for the top five schools in the United States is as follows: Stanford University (5.1%), Harvard University (6%), Columbia University (7%), Yale University (6.3%), Princeton University (7.4%).

Educational values. The most important values when constructing admission policies are the educational values (Ball, 1990; Bowe et al., 1992; Hallak, 1990; McNay & Ozga, 1985; Silver, 1990). Educational values are concerned with the individual's ability to learn and acquire knowledge (Hallak, 1990; Silver, 1990). Academic program admission policies should be implemented to ensure that admitted individuals are able to learn and progress (McNay & Ozga, 1985). Individuals who are not able to learn and perform well in college send signals to education policymakers that there are problems with the current admission policy (Silver, 1990). Therefore, admissions policies should be constructed to ensure that the educational values be met (Ball, 1990; Bowe et al., 1992; Hallak, 1990; McNay & Ozga, 1985; Silver, 1990; Tinto, 1975).

Academic programs ought to carefully select and implement policies that can promote educational values (Hallak, 1990). If educational values are not met, then policies should be reformed. If students are not able to perform well in college, then fulfillment of such educational values are questioned. Admission policies should be tailored in a way that students are admitted in the right program to ensure high academic performance in college (Hallak, 1990; McNay & Ozga, 1985). For example, most medical schools require applicants to take the Medical College Admission Test, volunteer in a local hospital, and complete 1 year of biology, 1 year of physics, 2 years of chemistry, and 1 year of English in order to ensure readiness for the program (Association of American Medical Colleges, 2015).

The next section offers a discussion about university resources and the impact on students' academic performance in college. It provides scholars' analysis about the issue and how university resources could impact students' academic performance.

University Resources

Tinto (1975) delineates university resources as an important element that influences students' academic performance in college. He believes that these resources characterize the academic program in which it could help or hinder the educational attainment process (Ascend Learning, 2012; Tinto, 1975). For example, Yukselturk and Inan (2006) found that the availability of classes, quality of learning materials, quality of instructors, and interaction between students and instructors are among the most important characteristics that influence students' academic performance in college.

Astin (1984) agrees that the university's resources play a major role in students' academic performance. The resources in Astin's (1984) perspective refers to those available at the university such facilities, quality faculty and staff, and financial resources. These resources

are important in order to enhance students' academic performance in college. The more resources available, the more students are able to use them and learn.

University resources are broken into three categories: faculty, facilities, and type of university (Astin, 1984; Tinto, 2007). These three categories represent the ability of the academic program to provide the adequate learning environment for students (Astin, 1984; Tinto, 1975, 2007).

Faculty. Faculty is the most important element in the academic learning process (Tinto, 2007). Although students' academic performance in college is the production of faculty work, "few faculty see this to be the case" (Tinto, 2005, p 4). Faculty need to focus their efforts on "what works" and leave the traditional way of teaching, which usually causes students to fail in college (Astin, 1984; Tinto, 1975, 2007). Faculties are urged to be innovative and tailor their classroom activities to promote learning among students (Tinto, 2007). "In doing so, it established what is now a widely accepted notion that the actions of the faculty, especially in the classroom, are key to institutional efforts to enhance student retention" (Tinto, 2005, p 4).

Webster (2010) defines six essential skills that faculty must master in order to enhance the overall learning experience for students. He believes that faculty must be able to communicate clearly, provide interesting academic contents, use humor, show immediacy, manipulate the presentation style, and stay attentive to students' verbal and nonverbal behaviors. He states that faculty who are able to master these skills will help students to identify their personal purpose for being in class, realize their full potentials as learners, and ultimately enhance their academic performance.

Facilities. Facilities that a university provides could impact students' academic performance in college (Astin, 1984; Tinto, 2007). Housing, classrooms, and scientific labs are

among many examples of university facilities. Today, research has shown that university facilities are important to promote students' learning experience in college. As it will be discussed further in this section, university resources can help in promoting students' engagement, which will positively influence their academic performance in college. Astin (1984) asserts that the impact of facilities can be found in comparing 2-year institutions with 4-year institutions. He states that students in 4-year institutions are more likely to perform better than those in 2-year institutions due to the facilities available at the 4-year institutions such as residential housing.

Type of university. It is believed that research-oriented universities are more likely to be able to recruit highly qualified faculty and staff, have high quality facilities, and acquire more financial resources than other types of universities (Astin, 1984; Tinto, 1975, 2007). Also, research-oriented universities are able to invest in recruiting students with high qualities (higher GPAs, higher scores on standardized tests, and higher research production). Having these resources can enable students to perform well in college. However, there are two limitations to this theory. First, not all research universities can have access to these resources. Second, other nonresearch-oriented universities may have better resources and better student academic success rate than research-oriented universities (Astin, 1984).

Interaction Between the Student and the Program

The interaction between student and the academic program is another important factor that can affect students' academic performance in college (Astin, 1984; Spady, 1971; Tinto, 1975, 2007; Webster, 2007). The concept of interaction measures the degree of compatibility among the students' interests, attitudes, and expectations with the college environment (Spady, 1971).

Astin (1984), Spady (1971), and Tinto (1975) have recognized the importance of students' interaction with the academic world. They believe that if students' interests, attitudes, and expectations fit with the college environment, it is more likely students will perform well in college. As mentioned earlier, the student integration model is partly based on Durkheim's (1951) theory of suicide (Demetriou & Schmitz-Sciborski, 2001). Durkheim (1951) believed that people who commit suicide deal with a complex social process. Suicide results because individuals lack sufficient integration in the broader social fabric of society (Durkheim, 1951; Spady, 1971; Tinto, 1975). "The process of integration is facilitated when moral consciousness is reinforced by intense patterns of affiliation with others who share similar sentiments" (Spady, 1971, p. 39). Spady (1971) and Tinto (1975) indicate that students deal with this complex social process when they go to college.

In a later article, Tinto (1988) confirms that students' integration in higher education institutions is essential for academic performance. He believes that students must integrate in academic and social systems in order to perform well in college. The transition to a new stage is the most critical part, and students are obligated to find a way to adopt the new norms in the academic and social systems. Students who fail to integrate in the academic and social systems may face the reality of isolation and ultimately failure in higher education.

Tinto (1988) states that students in higher education institutions must integrate into the academic and social systems in order to perform well in college.

Having moved away from the norms and behavioral patterns of past associations, the person now faces the problem of finding and adopting norms appropriate to the new college setting and establishing competent membership in the social and intellectual communities of college life. (Tinto, 1988, p. 446)

Tinto (1988) asserts that students who could not integrate in the academic and social systems may suffer bad consequences. “Failure to do so may lead to the absence of integration and to its associated sense of isolation. These in turn may lead to departure from the institution” (p. 446).

Tinto (1988) recognizes four elements within the academic and social systems that could contribute to students’ academic performance, which are: (a) student engagement, (b) living on campus, (c) working on campus, and (d) hours spent studying (Demetriou & Schmitz-Sciborski, 2001; Tinto, 1975, 2007).

Student engagement. One of the significant elements that could influence students’ academic performance is students’ engagement in college (Astin, 1984, 1993; Tinto, 1988, 2007). Student engagement can be defined as any activity that the student does on campus from socializing on campus to participating in extracurricular activities (Astin, 1984; Roberts & McNeese, 2008; Tinto, 1988). It is believed that the more engaged students are with the university, the more likely they will perform well in college (Astin, 1984).

Living on campus. Studies have shown that students’ academic performance is positively correlated with living on campus (Astin, 1984; Pascarella & Chapman, 1983; Tinto, 1988). The positive effect of students’ residence on academic performance “occurred in all types of institutions and among all types of students regardless of sex, race, ability, or family background” (Astin, 1984, p. 523). In their study, Pascarella and Chapman (1983) found that students who live on campus were able to academically outperform their commuter counterparts.

An explanation to this positive correlation is that students who live on campus have more time and opportunity to interact and get familiar with the academic environment (Astin, 1984; Tinto, 1975, 1988). Also, research shows that students who live on campus and participate in extracurricular activities, of any type, are more likely to perform well in college than those who

do not (Astin, 1984; Roberts & McNeese, 2008). For example, students who join social fraternities or sororities, participate in sports, enroll in honors classes or programs, and participate in research projects are positively affected in their academic performance (Astin, 1984; Tinto, 1975, 2007).

Working on campus. Holding a part-time job on campus is another type of students' interaction in college, which could also impact their academic performance (Astin, 1984; Tinto, 1975, 1988; Young, 2002). Despite the fact that holding a part-time job could consume a lot of energy away from studying, part-time employment on campus was associated with fostering the academic performance in college (Astin, 1984; Young, 2002). Astin (1984) states that working on campus and living on campus increases the likelihood that these students would come into contact with other students, professors and staff, which would result in a strong sense of college attachment, and subsequently enhance their academic performance. However, working off campus would most likely hinder the academic learning process as student would consume a lot of time and energy on nonacademic activities (Astin, 1984).

Hours spent studying. Almost every student planning to attend college is concerned with their ability to do well once they get there (Astin, 1971). However, recent studies have shown that current students spend less time studying than their former counterparts (Seidman, 2005; Webster, 2007; Young, 2002). For example, between 1961 and 2003, the number of hours that college students spent studying in the United States decreased (Babcock & Marks, 2010; Tessema et al., 2014). In 1961, students spent 40 hours per week studying materials related to their academic classes in college. However, in 2003, the number of hours declined to 27 hours per week. A report by Young (2002) indicates that only 12% of first-year college students spend 26 or more hours per week studying, whereas the majority of students (63%) spends 15 hours or

less for school preparation. He also points out that 19% spend less than 5 hours per week preparing for classes. Young (2002) discovered that the number of hours spent for school preparation was likely to decrease when students became seniors (Tessema et al., 2014; Young, 2002).

Astin (1984) and Tinto (1988) state that students who spend more time studying are more likely to perform well in college. In fact, a longitudinal study findings indicated that students who reported studying more than 2 hours a day were more likely to graduate with honors than those who studied less (Astin, 1993).

The Theory of Student Involvement

In 1984, Alexander W. Astin introduced the theory of student involvement for higher education. This theory is based on the broader theory of student development in academia. The theory of student involvement relies on three other traditional education theories. These theories are: the subject matter theory (also known as content theory), the resource theory, and the individualized theory (also known as eclectic theory). In his theory, Astin (1984) believes that students' involvement in the academic environment can contribute to their ability to perform well in college.

Astin (1984) describes student involvement as “the amount of physical and psychological energy that the student devotes to the academic experience” (p. 518). He explains student involvement as a form of behavioral action. “It is not so much what the individual think or feels, but what the individual does, how he or she behaves, that defines and identifies involvement” (p. 519). The theory of student involvement assumes that the more the student is involved in college (e.g., spends more time on campus, participates in extracurricular activities, studies at the library,

interacts with peers and faculty members) the more likely they will do better academically in college (Astin, 1984).

In addition, the theory of student involvement does not neglect the pre-college attributes or the external factors that could impact the college experience. Astin (1984) claims that along with students' GPAs and scores on standardized tests, factors such as type of university, and subject matter are key contributors to student's academic performance in college.

The Subject Matter Theory

The subject matter theory is concerned with students-level of interest in the subject matter or their field of study (Astin, 1984). In this theory, it is believed that students who are interested in the subject matter are more likely to perform well than students who are not. Interested students are more likely to attend lectures, read assigned readings, and work in the library, which results in increasing their knowledge about their field of study. However, opponents to this theory state that students are given a passive role in the learning process. If a student is uninterested in the subject, they are more likely to face challenges in college (Astin, 1984).

The Resource Theory

This theory is most favored by administrators and policymakers (Astin, 1984). The resources here refers to the resources available at the university such facilities, quality faculty and staff, and financial resources. These resources are important in order to enhance students' academic performance in college. The more resources available, the more students are able to use them and learn. It is believed that research-oriented universities are more likely to be able to recruit highly qualified faculty and staff, have high quality facilities, and acquire more financial resources than other types of universities. Also, research-oriented universities are able to invest

in recruiting students with high qualities (higher GPAs, higher scores on standardized tests, and higher research production). Having these resources can enable students to perform well in college. However, there are two limitations to this theory. First, not all research universities can have access to these resources. Second, other nonresearch-oriented universities may have better resources and better students academic success rate than research-oriented universities (Astin, 1984).

The Individualized Theory

Many developmental and learning psychologists favor this theory (Astin, 1984). This theory assumes that there is no single right path to academic success in college. It attempts to identify key individual and demographic characteristics of students and connect them to the appropriate university or field of study (Astin, 1984). The theory emphasizes the importance of the advising and counseling role in the admission process. Students' competency level is assessed in order to explore the academic options. This theory is a great tool to enhance students' academic performance in college. However, the limitation to the individualized theory is that it requires considerable amount of time, tends to be extremely expensive, and is difficult to put into practice (Astin, 1984).

Empirical Findings

In 1993, Astin published his book, *What Matters in College?* to show the empirical findings in regard to the relationship between students' involvement in college and their academic performance. A longitudinal study was conducted in more than 200 colleges and universities and about 25,000 students from 1985-1989 to measure student academic performance based on their involvement in college. The data includes students' personal attributes (e.g., admissions scores, gender, race, family background), academic involvement

attributes (e.g., taking honor classes, participating in study abroad programs, internships, workshops, research projects, academic presentations, hours spent studying), and social involvement attributes (e.g., popularity, self-confidence, public speaking ability, leadership, interaction with peers, interaction with faculty).

The personal attributes strongly correlated with student academic performance in college. Students with higher prior GPAs and scores on standardized tests are more likely to perform well in college. Also, females and White students are more likely to perform better than other segments of the student population (Astin, 1993).

The study findings also indicated that any form of student academic involvement was positively associated with student academic performance in college (Astin, 1993). For example, students who reported studying for 2 hours or more a day were more likely to graduate with honors, enroll in graduate school, and score higher in standardized tests. Also, students who participated in study abroad programs, internships, research projects, workshops, presentations, or took honor classes, were benefited academically and personally (Astin, 1993).

In addition, the study showed that student social involvement is a powerful source that influences student academic performance in college (Astin, 1993). Among the most notable student social involvement attributes is students' interaction with their peers. Student-student interaction is positively correlated students' academic performance and overall learning. Student-student interaction is measured through evaluation of many criteria such as, discussing course content with other students, working on group projects, participating in extracurricular activities that involve other students, being a member of a social club, being elected to a student office, and tutoring other students (Astin, 1993).

Student-faculty interaction is another significant factor that positively influences students' academic performance in college (Astin, 1993). Students who report regular meetings with faculty, working with faculty on research projects, and assisting faculty in teaching a class are more likely to graduate with a higher GPA, graduate with honors, and enroll in graduate school.

Ecological Systems Theory

In 1979, Bronfenbrenner published his ecological system theory to show the influence early childhood education on human development. However, his theory goes beyond childhood education to address the role of culture on human development. Other scholars agree with Bronfenbrenner in that culture influences the way a person lives life (Hofstede, 2001; King & McInerney, 2014). In fact, culture influences the basic motivational process for students to learn and develop (King & McInerney, 2014). However, western theories of academic achievement seem to have neglected the role of culture. They appear to be inadequate when trying to explain students' academic performance across a wide range of different cultural groups (King & McInerney, 2014). The concept of how cultural contexts affect students' learning and developing process is best described by Bronfenbrenner's ecological systems theory that has been developed, edited, and modified throughout the course of 25 years (Bronfenbrenner, 1979, 1993, 2005; Reason & Renn, 2012). Bronfenbrenner (1979) believed that human development is directly linked to the ability of individuals to function within a certain cultural context. Cultures have different ways of living which may affect the learning process of individuals (Bronfenbrenner, 1979; King & McInerney, 2014).

The ecological system theory illustrates five systems that a student interacts with while in college (Bronfenbrenner, 1993; Reason & Renn, 2012). It is "a system of nested interdependent,

dynamic structures ranging from the proximal, consisting of immediate face-to-face settings, to the most distal, comprising broader social contexts such as classes and culture” (Bronfenbrenner, 1993, p. 4). The ecological system theory identifies four environmental systems, which are:

1. Microsystem is the immediate environment that the student interacts with such as family, peers, professors, classes, and roommates (Reason & Renn, 2012). Bronfenbrenner (1993) defines microsystem as:

pattern of activities, roles, and interpersonal relations experienced by the developing persons in a given face-to-face setting with particular physical, social, and symbolic features that invite, permit, or inhibit engagement in sustained, progressively more complex interaction with, and activity in, the immediate environment. (p. 15)

2. Mesosystem is the environment that represents the interaction between the microsystems (Reason & Renn, 2012). Bronfenbrenner (1993) describes mesosystem as:

a linkage and processes taking place between two or more settings containing the developing person. Special attention is focused on the synergistic effects created by the interaction of developmentally instigative or inhibitory features and processes present in each setting. (p. 22)

3. Exosystem is the external environment that the student interacts with such as government policies, university policies, campus housing, campus employment, and programs of study. Bronfenbrenner (1993) explains that events in the exosystem indirectly influence the context in which the student lives. An example would be “federal and state financial aid policies affect the resources available, which in turn may determine how many hours a student will have to work while in college” (Reason & Renn, 2012, p. 128)

4. Macrosystem is the system that lies beyond the exosystem (Reason & Renn, 2012). It is the system that represents the sociohistorical context that includes: community and cultural influences, ethical values, and economic influences. Bronfenbrenner (1993) describes macrosystem as:

the overarching pattern of micro-, meso-, and exosystem characteristics of a given culture, subculture, or other extended social structure, with particular reference to the developmentally instigative belief systems, resources, hazards, lifestyles, opportunity structures, life course options, and patterns of social interchange that are embedded in such overarching systems. (p. 25)

5. Chronosystem represents the time dimension in regard to a person's development. The time that a college student attends college can be critical. For example, a person attending college during an economic recession might impact the availability of grants, scholarships, government assistance, and jobs.

Implications of the Ecological Systems Theory

Although the ecological systems theory is concerned with early childhood development, it also can be transferred “easily across the lifespan and can be applied to college student development” (Renn, 2003, p. 287). The ecological systems theory clearly shows how students' academic performance can be impacted by many other factors such as family, friends, faculty, culture, government policies, social forces, and historical events. Most of these factors are shared by Tinto's student integration model and Astin's theory of student involvement. However, the ecological systems theory is important in a field that is becoming more complex and the student population is becoming more diverse. Without understanding the environment that students come, scholars will continue to muddle through the issue.

CHAPTER III. METHODOLOGY

This study was designed as a nonexperimental quantitative research in order to investigate the relationship between the independent variables (the characteristics of the student, the characteristics of the program, and the academic and social integration between the student and the program) and the dependent variables (degree GPA, ability to graduate within academic program time frame, and dropout). The data collected included each student's age, gender, race, degree level, field of study, interest in field of study, prior GPA, standardized tests scores, family's education background, family bonding, family income, admission policy, type of university, quantity of student-faculty interaction, students' perceived quality of interaction, students' perceived inclusiveness, student engagement, living on campus, working on campus, hours spent studying, friendship support, culture barriers, language barriers, extracurricular activities, honor classes, study abroad programs, internships, workshops, research projects, academic presentations, interaction with peers, interaction with faculty, and leadership roles. In addition, data regarding students' graduation GPA, time frame, and dropout were collected. The data were obtained from students via a Web-based electronic survey called SurveyMonkey®.

This study measured students' academic performance at a student-specific level. In other words, a specific segment of the student population was studied. It looked at Saudi Arabian students studying in the United States who enrolled at KASP. Unlike most previous studies (Astin, 1993; Demetriou & Schmitz-Sciborski, 2011; Pascarella & Chapman, 1983; Spady, 1970; Tinto, 1975, 1993, 1999, 2005; Wells 2003; Yukselturk & Inan, 2006), this study was concerned

with both retention and attrition rates in college. Student retention rate is concerned with the rate of students who are able to stay and graduate from college, whereas student attrition rate is concerned with the rate of students who leave college before earning a degree (Astin, 1997; Demetrious & Schmitz-Sciborski, 2011; Khan, 2000; Seidman, 2005; Tinto, 1993). In this study, student academic performance was defined as the ability of students to graduate within a certain time frame while maintaining a minimum GPA required by the scholarship program. Yet, this study did not neglect the students who were not able to graduate within the intended time frame (delay) nor graduate at all (dropout). The GPA variable as a measure of academic performance was measured on a 4.00 scale in accordance to KASP standards. The scholarship time frame variable was measured in a dichotomous scale [1,0], where [1] represented students who graduated within the scholarship time frame and [0] represented students who extended their scholarship time frame. The dropout variable was also measured in a dichotomous scale [1,0], where [1] represented students who graduated from the program and [0] represented students who dropped out from the program.

Research Question

According to Vogt, Gardner, and Haeffele (2012), the research question should be derived from the literature review, which ultimately helps in setting up the right research design. The literature review showed several factors as contributors to students' academic performance in college. Yet, the significance of these factors changes from one study to another. To date, the researcher is unaware of any research conducted to examine academic performance among Saudi Arabian students' in the U.S. colleges. Therefore, this research aimed to study this unique cohort of students with the hope that it could tease out issues these students may face throughout their

academic pursuits. Therefore, this study aimed to provide answers to the following question:

What factors contribute to Saudi Arabian students' academic performance in U.S. universities?

Hypotheses

The purpose of this study was to expand the extent of available literature in regard to the factors that contribute to students' academic performance in college. It focused on a neglected segment of the student population. The student integration model (Tinto, 1975), the student involvement theory (Astin, 1984), and ecological system theory (Bronfenbrenner, 1979) have all addressed factors that could impact students' academic performance in college. They agree that the characteristics of the student (demographic attributes, academic attributes, social attributes); characteristics of the program (admission policy, university resources); and the integration between the student and the program (student engagement, living on campus, working on campus, hours spent studying) are common factors that influence the academic learning process and student achievement in college. Based on the literature review, the hypotheses section was broken into three major subsections to address the research question of this study.

Characteristics of the Student

The characteristics of the student were all the qualities and skills that the student has or acquires such as demographic attributes (age, gender, race), academic attributes (degree level, field of study, prior GPA, scores on standardized test), and social attributes (family educational background, family relationships, socioeconomic status). These qualities have been also discussed in Tinto's student integration model, Astin's (1984) student involvement theory, and Bronfenbrenner's (1979) ecological system theory. These theories developed the foundations to the following hypotheses. These hypotheses were designed to tease out the important student characteristics that contribute to students' academic performance in college.

First, GPA as an academic performance indicator:

1. Some *students' characteristics* are more likely to contribute to students' academic performance based on *degree GPA* than other students' characteristics.

Second, graduation time frame as academic performance indicator:

2. Some *students' characteristics* are more likely to contribute to students' academic performance based on *graduation time frame* than other students' characteristics.

Third, dropout as academic performance indicator:

3. Some *students' characteristics* are more likely to contribute to students' academic performance based on *dropout* than other students' characteristics.

Characteristics of the Program

The characteristics of the program had a great influence on student academic performance (Astin, 1984; Bronfenbrenner, 1979; Tinto, 1975). The admission policy and university resources are the two major characteristics addressed in the literature, and they derived the following hypotheses.

First, GPA as an academic performance indicator:

4. Some *program characteristics* are more likely to contribute to students' academic performance based on *degree GPA* than other program characteristics.

Second, graduation time frame as academic performance indicator:

5. Some *program characteristics* are more likely to contribute to students' academic performance based on *graduation time frame* than other program characteristics.

Third, dropout as academic performance indicator:

6. Some *program characteristics* are more likely to contribute to students' academic performance based on *dropout* than other program characteristics.

Integration Between the Student and the Program

The integration process indicated the ability of the student to fit in the complex environment of college (Astin, 1984, 1993; Bronfenbrenner, 1979; Tinto, 1975, 2007). The integration process included many aspects discussed in different theories. The student integration model (Tinto, 1975) emphasizes student engagement, living on campus, working on campus, and hours spent studying as important integration factors in college. The student involvement theory (Astin, 1984) and others stress “the amount of physical and psychological energy that the student devotes to the academic experience” (p. 518). The student involvement theory finds that academic involvement attributes (e.g., taking honor classes, participating in study abroad programs, internships, workshops, research projects, academic presentations, hours spent studying), and social involvement attributes (e.g., popularity, self-confidence, public speaking ability, leadership, interaction with peers, interaction with faculty) are common integration factors that would impact students in their academic performance. The ecological systems theory (Bronfenbrenner, 1979) also agrees with the previous findings, yet it adds cultural and language barriers as factors that would impact student integration and ultimately their academic performance. The integration process between the student and the program addressed in the literature derived the following hypothesis. First, GPA as an academic performance indicator:

7. Some *integration attributes* are more likely to contribute to students’ academic performance based on *degree GPA* than other integration attributes.

Second, graduation time frame as academic performance indicator:

8. Some *integration attributes* are more likely to contribute to students’ academic performance based on graduation *time frame* than other integration attributes.

Third, dropout as academic performance indicator:

9. Some *integration attributes* are more likely to contribute to students' academic performance based on *dropout* than other integration attributes.

Variables of the Study

Dependent Variable

The dependent variables of the study were the Saudi Arabian students' academic performance based on degree GPA, ability to graduate within academic program time frame, and dropout. These students must be part of KASP. The GPA is measured on the 4.00 scale; all other GPA scales, such as 5.00 or percentage scales, were converted into the 4.00 scale. The scholarship time frame variable was measured in a dichotomous scale [1,0], where [1] represented students who graduated within the scholarship time frame and [0] represented students who extended their scholarship time frame. According to the Ministry of Higher Education, degree time frames are as follows: (a) 4 years for the undergraduate level, (b) 2 years for the master's level, and (c) 3 years for the doctoral level. The dropout variable was also measured in a dichotomous scale [1,0], where [1] represented students who graduated from the program and [0] represented students who dropout from the program.

Independent Variables

The independent variables of this study were: (a) the characteristics of the student, (b) the characteristics of the program, and (c) the academic and social integration between the student and the program. Each independent variable contained a list attributes. These attributes helped to determine which variable had the greater impact, and which variable had the lesser impact (Hardy, 1993). Also, we could examine the correlation level among the variables, and thus enhance our model (Hardy, 1993).

Characteristics of the Student

Age. Research in the area of age impact on academic performance varies in terms of findings and is relatively limited. Some researchers believe that older students can outperform younger students. However, other researchers believe that cognitive processing speed slows down as people age, which could affect their daily functions. The age variable was measured in years.

Gender. Based on previous research, female students have better academic performance than their male counterparts. Therefore, it would be of interest in this research to expand on the available literature and study the impact of gender on academic performance. Female students were coded as 1.00, while male students were coded as 0.00.

Race. Students may vary in terms of their racial background. The race variable was measured as follows: (1.00 = Arabian, 2.00 = Asian, 3.00 = White [European], 4.00 = Black [African], 5.00 = Other).

Citizenship. Previous research has shown that American and international students vary in their academic performance in college (Webster, 2007; Miami University Office of Institutional Research, 2014; Open Doors, 2014). Although Saudi students are considered as international students in the United States, some Saudis are U.S. citizens (dual citizenship). To study the effect of citizenship on academic performance, this variable was measured as follows: (1.00 = U.S. Citizen, 2.00 = Permanent Resident, 3.00 = Not a U.S. Citizen).

English as a Second Language (ESL). English ability is an important factor that could contribute to students' academic performance (Tinto, 1975; Thernstrom, 2002). This variable was coded as follows: Students who enrolled in ESL programs were coded as 1.00, whereas students who did not enroll in ESL programs were coded as 0.00.

Entry method. Students vary in their entry method to KASP (Saudi Ministry of Higher Education, 2014). The impact of the method in which the students were able to obtain the King Abdullah Scholarship is examined. This variable was coded as follows: Students who enrolled in KASP via the traditional method were coded as 1.00, whereas students who enrolled in KASP via the alternative method were coded as 0.00.

Prior degree GPA. Prior degree GPA is an important academic preparation measurement unit (Seidman, 2005). Although some former studies have indicated that GPA is considered an invalid academic preparation measurement unit when it comes to predicting student's academic performance in college, recent studies have shown that GPA could be the best quality that measures students' readiness for college (Astin, 1971; Claussen, 2010; Kuncel, et al., 2001; Lynn, 1978; Reisig & DeJong, 2005; Stack & Kelley, 2002; Tessema et al., 2014; Tinto, 1975, 1993, 2007). The prior degree GPA was measured on a 4.00 scale with the following categories: 5.00= (4.00-3.50), 4.00= (3.49-3.00), 3.00= (2.99-2.50), 2.00= (2.49-2.00), 1.00= (below 2.00).

Scores on standardized tests. This variable included all the test scores that are used by KASP for admission (ACT, SAT, GRE, GMAT). Students who enter KASP vary in their test scores. Students who meet KASP test score requirement were coded as 1.00, whereas students who do not meet the test score requirement are coded as 0.00.

Level of degree earned. The level of degree earned is the degree in which the applicant has earned through KASP, such as undergraduate, master, or doctorate. This variable measured the variation in degree level among Saudi students. Saudi students were classified based on their level of degree. Also, this variable was measured upon the completion of the degree and was

coded as follows: (1.00= no degree earned, 2.00 = undergraduate, 3.00 = master's, 4.00 = doctorate).

Field of study. Students vary in their academic disciplines, and this variation could impact student academic performance (Astin, 1984). This variable was measured as follows: (1.00 = business, 2.00 = science, 3.00 = humanities, 4.00 = engineering, 5.00 = medical).

Interest in field of study. Students' interest in their field of study is an important factor that could influence their academic performance in college (Allen & Robbins, 2010). The interest in the field of study was measured as follows: (1.00 = interested in field of study, 0.00 = not interested in field of study).

Family educational background. Students were asked about their parents' educational background to assess the role of family education background on students' academic performance in college. This variable was measured as follows (1.00 = no formal education, 2.00 = some formal education, 3.00 = high school, 4.00 = undergraduate, 5.00 = master's, 6.00 = doctorate).

Family bonding. In the literature, academic performance is positively correlated with family bonding (Björklund & Salvanes, 2010). In the study, students were asked to rate their bonding with their families. This variable was measured as follows (4.00 =excellent, 3.00 = good, 2.00 = fair, 1.00 = poor).

Family income. Students with lower family income tend to perform poorly in their academic pursuit (Sirin, 2005). This variable measured the students' economic status based on their family's income (1.00 = less than \$15,000, 2.00 = between \$15,000-\$30,000, 3.00 = between \$30,000-\$50,000, 4 = between \$50,000-\$100,000, 5.00 = more than \$100,000).

Characteristics of the Program

University type. Data regarding the type of university the student attended was collected in this study in order to see if there was any impact of the universities on students' performance. Since there were different types of universities, the focus was on two types that were significant in the literature: research oriented or nonresearch oriented. This variable was measured as follows (1.00 = research-oriented, 2.00 = nonresearch-oriented, 3.00 = N/A).

Quantity of student-faculty interaction. The interaction between students and their faculty could contribute to student's academic performance (Talbert, 2013; Tinto, 2007). This construct had three survey items and was measured as follows in Table 2.

Table 2

The Quantity of Student-Faculty Interaction

Construct	Survey item	No. of items in the scale	Response categories
Quantity of interaction	How many times do you meet a faculty member during office hours?	3	None
			1-2
			3-4
	How many times do you meet a faculty member outside of class or office hours?		5-6
			7-8
			9-10
	How many times do you communicate via e-mail with a faculty member?		11-12
			13-14
			14 or more

Perceived quality of interaction. Students who feel better about their school and the quality of interaction with their faculty are more likely to do well in college (Talbert, 2013; Tinto, 2007). This construct was measured and coded as follows, as seen in Table 3.

Table 3

Students' Perceived Quality of Interaction

Construct	Survey item	No. of items in the scale	Response categories
Perceived quality of interaction	I feel very comfortable interacting with my faculty.	5	1. Strongly disagree, 2. Disagree somewhat, 3. Agree somewhat, 4. Strongly agree
	It is easy for me to see and interact with my faculty outside of regular office hours.		
	Faculty is interested in students' personal problems.		
	Faculty is interested in students' academic problems.		
	I think interacting with faculty has been a source of stress for me.		

Perceived inclusiveness. Students' sense of belonging is an important factor that can influence their academic performance in college (Astin, 1984, Talbert, 2013; Tinto, 2007). Table 4 shows how this construct was measured and coded.

Academic and Social Integration between the Student and the Program

Extracurricular activities. Students who participate in extracurricular activities are more likely to perform well in college (Astin, 1993). All students were asked whether they participated in extracurricular activities or not during college. Students who participated in extracurricular activities were coded as 1.00, whereas students who did not participate in extracurricular activities were coded as 0.00.

Live on campus. Studies have shown that students' academic performance is positively correlated with living on campus (Astin, 1984; Pascarella & Chapman, 1983; Tinto, 1988).

Table 4

Students' Perceived Inclusiveness

Construct	Survey item	No. of items in the scale	Response categories
Perceived inclusiveness	Faculty have adapted teaching to students with different cultural backgrounds.	4	1. Strongly disagree, 2. Disagree somewhat, 3. Agree somewhat, 4. Strongly agree
	I have felt discriminated against from faculty.		
	Cultural diversity should be more strongly reflected in curriculum.		
	A culturally diverse faculty body enhances the educational experience of all students.		

Students who lived on campus were coded as 1.00, whereas students who did not live on campus were coded as 0.00.

Work on campus. Working on campus is another type of students' interaction in college, which could also impact their academic performance (Astin, 1984; Tinto, 1975, 1988; Young, 2002). Students who worked on campus were coded as 1.00, whereas students who did not work on campus were coded as 0.00.

Hours spent studying. Astin (1984) and Tinto (1988) state that students who spend more time studying are more likely to perform well in college. All students were asked to report the hours they spent studying per week. This variable was measured as follows (1.00 = less than 7 hours a week, 2.00 = between 7-14 hours a week, 3.00 = between 14-21 hours a week, 4.00 = between 21-28 hours a week, 5.00 = more than 28 hours a week).

Honor classes. Students who took honor classes are more likely to perform well in college (Astin, 1993). Students who took honor classes were coded as 1.00, whereas students who did not take honor classes were coded as 0.00.

Study abroad programs. Students who participated in study abroad programs are more likely to perform well in college (Astin, 1993). Students who participated in study abroad programs were coded as 1.00, whereas students who did not participate in study abroad programs were coded as 0.00.

Internships. Astin (1993) reports that students who took internships are more likely to perform well in college (Astin, 1993). Students who did internships during college were coded as 1.00, whereas students who did not do internships during college were coded as 0.00.

Workshops. Students who participate in workshops are more likely to perform well in college (Astin, 1993). Students who participated in workshops during college were coded as 1.00, whereas students who did not participate in workshops during college were coded as 0.00.

Research projects. In his study, Astin (1993) found that students who participated in research projects were more likely to perform well in college (Astin, 1993). Students who did research projects during college were coded as 1.00, whereas students who did not do research projects during college were coded as 0.00.

Academic presentations. Students who were involved in academic presentations are more likely to perform well in college (Astin, 1993). Students who did academic presentations during college were coded as 1.00, whereas students who did not do academic presentations during college were coded as 0.00.

Leadership roles. Students who served in leadership roles were more likely to perform well in college (Astin, 1993). Students who served in leadership roles during college were coded

as 1.00, whereas students who did not maintain leadership roles during college were coded as 0.00.

Friendship support. Students who have friendship support are more likely to perform well in college (Astin, 1993). Students were asked to rate their friendship support in college. This variable was measured and coded as follows: (4.00 =Excellent, 3.00 = Good, 2.00 = Fair, 1.00 = Poor).

Cultural interaction. Cultural barriers could impact students' academic performance in college (Bronfenbrenner, 1993). Students, in this study, were asked to rate their cultural experience in U.S. colleges. This variable was measured and coded as follows: (4.00 = excellent, 3.00 = good, 2.00 = fair, 1.00 = poor).

English ability. Language is an important element in educational attainment (Bronfenbrenner, 1993). Students were asked to rate their English language ability while attending college. This variable was measured and coded as follows: (4.00 = excellent, 3.00 = good, 2.00 = fair, 1.00 = poor).

Interaction with peers. Among the most notable student social involvement attributes is students' interaction with their peers (Astin, 1993). Students were asked about the number of times they interact with their peers regarding school-related work outside the classroom. This variable was measured and coded as follows: 5.00 = interact in a daily basis, 4.00 = interact once every week, 3.00 = interact once every month, 2.00 = interact once every semester, 1.00 = no interaction.

Research Design

“Design is fundamental because everything ultimately flows from the design choice, and because this choice is the one most closely tied to the investigator's research questions and

theories” (Vogt et al., 2012, p. 3). This study aimed to identify significant factors that contribute to Saudi students’ performance in U.S. colleges. Therefore, it was appropriate to say that this study utilized a descriptive research design. According to Vogt et al. (2012), descriptive research designs are best when the investigator is trying to develop theories, describe phenomena, identify problems, justify practices, or make judgment.

This study was designed to cover students who enrolled and graduated or dropped out between the period of 2005 to 2016 (time dimension). The first cohorts of students were accepted in 2005. Therefore, the first cohort of students should have graduated in 2007 if they were enrolled in the master’s-level program, 2008 if they were enrolled in the doctoral-level program, or 2009 if they were enrolled in the undergraduate level program. This time dimension had been chosen because it represented the period from the inception of the KASP program until present time, which helped in providing an accurate depiction of current problems that students faced and continue to face in higher education.

A survey was developed and electronically sent and made available for all Saudi students who entered KASP via any of the entry methods in the United States. According to Vogt et al. (2012), a survey could be used as an instrument to collect data for a given study when the following conditions are met:

1. Answering the research question requires answers to questions asked directly to large group.
2. The data about the research question can be obtained by asking forced choice or short-answered questions.
3. A need for a high percentage of intended respondents to respond to your questionnaire (Vogt et al., 2012, p. 16).

It is believed that more than 100,000 students (75% male, 25% female) were able to successfully obtain the King Abdullah Scholarship (Saudi Ministry of Higher Education, 2014; Taylor & Albasri, 2014). These students were reached through a nonprofit organization called Saudis in USA. This online organization is active on social media applications or websites with thousands of followers online. Saudi students in the United States follow this organization for information and news updates (Saudis in USA, 2014). Through this organization, KASP's students were asked to complete the electronic Web-based survey via a website link which generated their responses. It is important to note that not all followers of the Saudis in USA organization are KASP's students. Some of these followers are scholarship holders from other programs. Therefore, only KASP's students were asked to complete the survey.

The study included the data on Saudi students' academic performance based on degree GPA, graduation time frame, or dropout. The survey did not ask any personal or identification information that was irrelevant to the study such as name, address, or phone number.

Since the research aimed to study the academic performance of Saudi students, based on degree GPA, graduation time frame, or dropout, it was appropriate to say that cross-sectional design is the most suitable for this study. The reason for choosing cross-sectional design for this research was because GPA, graduation time frame, or dropout (dependent variables) were measured once after the completion of the degree or dropout (Creswell, 2003; Frankfort-Nachmias & Nachmias, 2008; Vogt et al., 2012).

There was no manipulation of the subjects in this study. The data were studied and analyzed as collected. There were no pretests or post-tests because the aim of the study was to study students' academic performance based on degree GPA, graduation time frame, or dropout. Based on the previous reasoning, it is believed that the type of research design that is the most

appropriate for answering the research hypothesis for this study was nonexperimental (Creswell, 2003).

Statistical Analysis

One primary and two secondary analyses were conducted in this study using SPSS®. First, the primary analysis investigated the relationship between degree GPA as an academic performance indicator (outcome) and the independent variables: (a) the characteristics of the student, (b) the characteristics of the program, and (c) the academic and social integration between the student and the program. A multiple linear regression analysis was utilized to examine the relationship. The reason for choosing the multiple linear regression analysis technique was because: (a) degree GPA was a categorical variable [4.00 scale], (b) the number of students who graduated from the program (population) was known to the researcher, and (c) one model was created to assess the impact of the independent variables on students' degree GPA.

Second, a secondary analysis examined the relationship between graduation time frame as an academic performance indicator (outcome) and the independent variables: (a) the characteristics of the student, (b) the characteristics of the program, and (c) the academic and social integration between the student and the program. A logistics regression analysis was employed for the examination. The reason for choosing the logistics regression analysis technique was because: (a) graduation time frame was defined as a dichotomous variable measured as [1,0] scale, where [1] represented students who graduated within the scholarship time frame and [0] represents students who extended their scholarship time frame, (b) the number of students who graduated within or extended their scholarship time frame (population) was unknown to the researcher, (c) one model was created to assess the difference in the discriminatory power amongst the independent variables and students' graduation time frame.

Third, another secondary analysis examined the relationship between dropout as an academic performance indicator (outcome) and the independent variables: (a) the characteristics of the student, (b) the characteristics of the program, and (c) the academic and social integration between the student and the program. A logistics regression analysis was used for the test. The reason for choosing the logistics regression analysis technique was because: (a) dropout was a dichotomous variable measured in [1,0] scale, where [1] represented students who graduated from the program and [0] represented students who dropped out from the program, (b) the number of students who dropped out from the program (population) was unknown to the researcher, (c) one model was created to assess the difference in the discriminatory power amongst the independent variables and students' decision to dropped out from the program.

Table 5

The Study's Primary and Secondary Analyses

(A)	(B)	(C)
Primary analysis (outcome) Degree GPA	Secondary analysis (outcome) Graduation time frame	Secondary analysis (outcome) Dropout
Multiple linear regression analysis	Logistics regression analysis	Logistics regression analysis
Outcome (GPA) is measured on a continuous scale (4.00)	Outcome (graduation time frame) is measured on a dichotomous scale (0,1)	Outcome (dropout) is measured on a dichotomous scale (0,1)

Sample

The study examined the relationship between the dependent variables (degree GPA, graduation time frame, or dropout) and the independent variables (the characteristics of the student, the characteristics of the program, and the academic and social integration between the student and the program). This was a nonexperimental descriptive study aimed at identifying

significant factors that contribute to Saudi students' performance in U.S. colleges. Thus, the following calculations were intended as guidance for the study and are based on a confidence level of 95%. All participants in the survey were included in the study to reduce the likelihood of bias results.

Given the purpose of the study, time dimension, and data availability, the target population of this study was all the Saudi students who have studied in the United States from 2005 to present. With little over 100,000 (75% male, 25% female) Saudi students in the United States (population size), 573 graduates and 588 students who were estimated as dropouts were proposed sample size to conduct this study (Creative Research Systems, 2012; Saudi Ministry of Higher Education, 2014; Taylor & Albasri, 2014).

Sample Size Calculations

According the Saudi Ministry of Higher Education (2014), during the period from 2006-2014, the number of Saudi students who graduated from higher education institutions in the United States was 12,705. The number of male students who were able to graduate was 9,810 (77.2%), whereas the number of female students who were able to graduate was 2,895 (22.7%). Therefore, the sample size proposed to conduct the *primary analysis* of this study to investigate the relationship between degree GPA as an academic performance indicator (outcome) and the independent variables (the characteristics of the student, the characteristics of the program, and the academic and social integration between the student and the program) was 573 students (Creative Research Systems, 2012; Saudi Ministry of Higher Education, 2014).

The sample size proposed to conduct the *secondary analyses* was 588 participants. The sample size was estimated based on: (a) approximately 100,000 Saudi students in the United States (population size), (b) the number of students who graduated within or extended their

scholarship time frame is unknown to the researcher, (c) the number of students who dropped out from the program was unknown, and (d) an estimation that 30% would face difficulty in their educational pursuit and were more likely to dropout (Creative Research Systems, 2012; Miami University Office of Institutional Research, 2014; Open Doors, 2014; Saudi Ministry of Higher Education, 2014).

Data Collection

As noted before, Saudi students who enrolled and graduated or dropped out between the period of 2005 to 2016 were the target population of this study. The data were obtained from students via a Web-based electronic survey called SurveyMonkey®. These electronic surveys were sent to students via an active social media group called Saudis in USA, a nonprofit organization concerned with Saudi student affairs in the United States. The collected dataset included information about each student's entry method, age, gender, race, degree level, field of study, interest in field of study, prior GPA, standardized tests scores, family's education background, family bonding, family income, type of university, student engagement, living on campus, working on campus, hours spent studying, friendship support, culture barriers, language barriers, extracurricular activities, honor classes, study abroad programs, internships, workshops, research projects, academic presentations, interaction with peers, interaction with faculty, self-confidence level, popularity, public speaking ability, and leadership roles. In addition, data regarding students' graduation GPA, time frame, or dropout was collected.

Since there was no subjective interpretation of the data, it was concluded that manifest content analysis was the most appropriate for this study (Creswell, 2003; Frankfort-Nachmias & Nachmias, 2008). Manifest content analysis is taking exactly what is in the provided dataset without any subjective interpretation (Creswell, 2003; Frankfort-Nachmias & Nachmias, 2008).

With the provided data and information, students' academic performance was examined by taking exactly what was in the dataset.

Using Web-Based Electronic Survey

The reasons for using an electronic survey over other traditional survey methods were (a) lower costs, (b) higher response rate, and (c) more time efficient (Jansen, Corley, & Jansen, 2007). The definition of electronic survey is a research method in which computers play an important role in both delivering surveys and collecting data from potential respondents. There are many instruments of electronic surveys such as, point of contact, e-mail based, and Web-based. Each of these instruments is commonly used to collect data from respondents. However, this study used the Web-based surveys, which have currently been receiving the most interest from researchers (Jansen et al., 2007). Unlike other electronic survey instruments, Web-based surveys are directly connected to a database where all collected data are organized for analysis (Lazar & Preece, 1999).

Jansen et al. (2007) indicate that Web-based surveys can help researchers in their sampling method. They state that

web-based surveys can be either sampled or self-selected. The sampled category describes respondents who were chosen using some sampling method (i.e., randomly selected from larger population), notified of the chance to participate, and directed to the survey's web site. In contrast the self-selected category includes those respondents that happen across the survey in the course of their normal browsing [e.g., search results, web advertisement, etc.] and are not proactively solicited by the researcher. (p. 3)

Although there are many advantages of using Web-based surveys, the issues regarding using such instrument need to be considered as well. The issues of reliability, validity, sampling, and generalizability in Web-based surveys are similar to those traditional survey methods such as pencil-and-paper survey. However, with recent automation tools, researchers can now allow for data quality checking by providing access to those who are only solicited to participate, study a

larger sample size, and ensure security, privacy, and ethics by tailoring data collection procedures in such direction (Jansen et al., 2007). Jansen et al.(2007, p. 4) point out benefits and drawbacks to using Web-based surveys:

Benefits:

- Turnaround time (quick delivery and easy return).
- Ease of reaching large numbers of potential respondents.
- Can use multiple question formats.
- Data quality checking.
- Ease of ensuring confidentiality.
- Can provide customized delivery of items.
- Can capture data directly in database.

Drawbacks:

- Time-consuming development.
- Potential for limited access within target population.
- Potential for technology problems to decrease return rate.
- Security issues may threaten validity or decrease return rate.
- Lack of control over sample (applies only to unsolicited surveys).
- Potential for bias in sample (applies only to unsolicited surveys).

Benefits and Challenges of Using Social Media in Research

There are many benefits as well as challenges when collecting data from social media. An article, *Using Social Media in Your Research* (Phillips, 2011), posted on the American Psychology Association website shows that social media networks, such as Facebook®, Twitter®, and Instagram® have made it convenient for researchers to draw study participants

from a large group of people. Sam Gosling (Gosling & Johnson, 2010), a psychology professor at the University of Texas at Austin, states that people tend to express their real personalities on Facebook® rather than idealized versions of themselves. Also, Kung and Oh (2014), state that social media has been used to conduct research since 2006 resulting in more than 500 peer-reviewed journal articles. The research methods used in social media can take the forms of interviews, surveys, content analysis, and data mining (Kung & Oh, 2014). Kung and Oh (2014) believe that social media made it easy to recruit research participants, obtain responses directly from personal experiences, and have exploratory findings for a follow-up study (Kung & Oh, 2014). However, there are some concerns when using social media that need to be considered when conducting a research study (Kung & Oh, 2014; Phillips, 2011).

According to Phillips (2011), there are three main concerns when using social media to recruit participants. First, privacy and confidentiality of the participants is very important, and therefore their consent is mandatory. Second, in some cases, permission must be obtained from the social media network provider in order to access data. Third, social media users might not necessarily be representative of any larger group due to some demographics such as socioeconomic status, race and ethnicity. Kung and Oh (2014) add that, in some cases, using social media for research can be time-consuming and expensive.

In this study, many steps were taken to ensure that proper following of scientific research guidelines. First, a consent form must be signed before participants were able to participate in the study. Second, the researcher did not collect data from a social media network provider (data mining), yet the participants willingly went to another website (Survey Monkey®) to take the survey. Therefore, no permission was required from social media providers. Third, it was difficult to reach every KASP scholarship holder through social media. Therefore, a

representation concern was included in the limitation section. However, social media was a useful source to recruit participants given all the benefits mentioned previously.

CHAPTER IV. DATA ANALYSIS

The objective of this study was to identify the factors that contribute to students' academic performance in college. In particular, the study aimed to address the following research question: What factors contribute to Saudi Arabian students' academic performance in U.S. universities?

Data Collection

The data were collected from Saudi Arabian students who previously enrolled in KASP and had graduated or dropped out between the period of 2005 to 2015. A Web-based electronic survey was sent and made available for Saudi students who entered KASP via any of the entry methods in the United States. These students were reached through the nonprofit organization Saudis in USA. The online organization reached out to students via their social media applications.

In this chapter, the collected data are analyzed and presented in four sections. Section one presents a descriptive analysis to show the important characteristics of the study's sample. Section two provides the primary analysis of the study which was to investigate the relationship between the dependent variable degree GPA as an academic performance indicator and the independent variables: (a) the characteristics of the student, (b) the characteristics of the program, and (c) the academic and social integration between the student and the program. Section three offers a secondary analysis that explores that relationship between the dependent variable time frame as an academic performance indicator and the study's three independent

variables. Finally, section four provides another secondary analysis that describes the relationship between the dependent variable dropout as an academic performance indicator and the study's three the independent variables.

Descriptive Statistics

There were 1,020 students who participated in the survey, and only 543 of them fully completed the survey. Only completed surveys were considered for analysis. The data processed and analyzed via SPSS® shows the following descriptive statistics about the sample. Table 6 shows that 25.8% were females and 74.2% were male, which is a similar representation of the actual target population (Saudi Ministry of Higher Education, 2014; Taylor & Albasri, 2014).

Table 6

Respondents' Gender

Gender	Frequency	%
Female	140	25.78
Male	403	74.22

Table 7 indicates that an overwhelming majority of students (96.13%) were Arabians, followed by Asians (1.47%), then mixed race (1.1%).

Table 7

Respondents' Race

Race	Frequency	%
Arabian	522	96.13
Asian	8	1.47
Black	4	.74
White	3	.55
Other	6	1.10

Black students accounted for .74% and White students were only .55%. Also, most respondents (86.4%) were not U.S. citizens whereas students who were U.S. citizens and permanent residents were 13.6% as depicted in Table 8.

Table 8

Respondents' Citizenship Status

Citizenship status	Frequency	%
U.S. citizen	39	7.18
Permanent resident	35	6.45
Not a U.S. citizen	469	86.3

Table 9 shows that most respondents (97.62%) were under the age of 30 when they enrolled in the program. The data show that 90.6% of respondents had enrolled in English as a second language program as illustrated in Table 10. Table 11 indicates that respondents who were seeking a bachelor degree were roughly 44.2%, whereas respondents who were seeking master's and doctoral degrees were 47.9% and 7.9%, respectively. Table 12 shows that of the 543 respondents, 11.42% have dropped out from the program, 39.96% earned a bachelors' degree, 44.94% got their master's, and roughly 4% got their doctorate.

Table 13 shows that 56.54% of respondents enrolled at KASP by meeting the initial admission requirement set by the Saudi Ministry of Higher Education, followed by students who enrolled by going through the Self-sponsored Scholarship Program (31.86%), and lastly students who enrolled in the program by being a dependent of a scholarship holder (11.60%). Table 14 shows that 68.32% of respondents had taken or submitted some form of college entrance examination such as TOFEL, IELTS, GMAT, GRE, or MCAT.

Table 9

Respondents' Age

Age	Frequency	%
18	89	16.39
19	47	8.66
20	28	5.16
21	37	6.81
22	37	6.81
23	54	9.94
24	59	10.87
25	50	9.21
26	40	7.37
27	28	5.16
28	19	3.50
29	10	1.84
30	11	2.03
31	5	.92
32	6	1.10
33	10	1.84
34	3	.55
35	4	.74
36	3	.55
37	0	0.00
38	0	0.00
39	0	0.00
40+	3	.55

Table 10

Respondents' Enrollment in ESL Programs*

ESL enrollment	Frequency	%
Yes	492	90.61
No	51	9.39

Note. ESL = English as Second Language

Table 11

Respondents' Sought Degree

Degree	Frequency	%
Bachelor	240	44.20
Master	260	47.88
Doctorate	43	7.92

Table 12

Respondents' Degree Awarded

Degree awarded	Frequency	%
Bachelor	217	39.96
Master	244	44.94
Doctorate	20	3.68
Dropout	62	11.42

Table 13

Respondents' Entry Method

Entry method	Frequency	%
Meeting initial requirements	307	56.4
Going through SSP*	173	31.86
Being a dependent	63	11.60

Note. SSSP = Self-sponsored scholarship program

Table 14

Respondents' College Entrance Examination

Submitted college entrance exam	Frequency	%
Yes	371	68.32
No	172	31.68

The frequency distribution of respondents based on the intended major of study shows that about 40% of students chose business, followed by respondents who selected science and engineering at 19%, then humanities and medicine at 11% and 10%, respectively, as shown in Table 15.

Table 15

Respondents' Intended Major of Study

Major	Frequency	%
Business	216	39.78
Science	108	19.89
Humanities	62	11.42
Engineering	104	19.15
Medicine	53	9.76

Table 16 shows that the majority of respondents (88.21%) were interested in their field of study, whereas only 11.79% were not interested in their intended major. However, of the same respondents, 27.44% changed their major while on the scholarship (Table 17), which resulted in a slight change in the frequency distribution of respondents based on field of study upon their graduation from KASP as depicted in Table 18.

Table 16

Respondents' Interest in Their Major

Interest in field of study	Frequency	%
Yes	479	88.21
No	64	11.79

Table 17

Respondents' Change of Major

Changed major	Frequency	%
Yes	149	27.44
No	394	72.56

Table 18

Respondents' Major of Study Upon Graduation

Major	Frequency	%
Business	214	39.41
Science	104	19.15
Humanities	86	15.84
Engineering	100	18.42
Medicine	39	7.18

Respondents who had a prior degree GPA of 3.00 and above were almost 74%, while respondents who did not meet the initial GPA requirement accounted for 26% as shown in Table 19. The frequency distribution of respondents' degree GPA was slightly higher than the prior degree GPA where 80% had a GPA of 3.00 or above. However, respondents who had a GPA below 2.00 more than doubled as illustrated in Table 20.

Table 19

Respondents' Prior Degree GPA

GPA	Frequency	%
4.00-3.50	191	35.17
3.49-3.00	208	38.31
2.99-2.50	105	19.34
2.49-2.00	34	6.26

Table 20

Respondents' Degree GPA

GPA	Frequency	%
4.00-3.50	246	45.30
3.49-3.00	189	34.81
2.99-2.50	63	11.60
2.49-2.00	32	5.89
Below 2.00	13	2.39

Most respondents thought to have a positive relationship with their families where 53.59% reported having an excellent bonding level, 37.02% had good bonding, 7.73% thought they had fair bonding, and only 1.66% stated having poor bonding relationship with their families (see Table 21). Respondents varied in their socioeconomic status as 30% reported less than \$30,000 as their family's annual income, 22.10% were between \$30,000-\$50,000, 24.86% were between \$50,000-\$100,000, and 23.02% had more than \$100,000 in their family annual income as shown in Table 22.

Table 21

Respondents' Family Bonding Rate

Bonding rate	Frequency	%
Excellent	291	53.59
Good	201	37.02
Fair	42	7.73
Poor	9	1.66

Table 22

Respondents' Family Annual Income Level

Family annual income	Frequency	%
More than \$100,000	125	23.02
Between \$50,000-\$100,000	135	24.86
Between \$30,000-\$50,000	120	22.10
Between \$15,000-\$30,000	98	18.05
Less than \$15,000	65	11.97

Table 23 shows that 39.04% of respondents were attending research oriented universities, whereas 24.68% were in nonresearch-oriented universities. A total of 36.28% of respondents were not knowledgeable about the type of university they were attending.

Table 23

Type of University Attended

Type of university	Frequency	%
Research-oriented	212	39.04
Nonresearch-oriented	134	24.68
I do not know	197	36.28

Table 24 shows that 31.12% of respondents indicated that they have changed their university while on KASP scholarship, while 68.88% have never changed their university.

Table 24

Respondents' Change of University

Change of university	Frequency	%
Yes	169	31.12
No	374	68.88

Primary Analyses

The primary analysis of this study investigated the relationship between the dependent variable degree GPA as an academic performance indicator and the independent variables: (a) the characteristics of the student, (b) the characteristics of the program, and (c) the academic and social integration between the student and the program. There are three primary analyses models that are discussed in this section, which are: model 1: degree GPA and students' characteristics; model 2: degree GPA and programs' characteristics; and model 3: degree GPA and the academic and social integration between the student and the program. A multiple linear regression analysis was utilized to describe these relationships.

Model 1: Degree GPA and Students' Characteristics

This study is a descriptive study in that it attempted to discover the factors that contribute to students' academic performance in college. In model 1, degree GPA was used as an academic performance indicator to test the significance of students' characteristics. Therefore, the following hypothesis was formed:

H1: Some *students' characteristics* are more likely to contribute to students' academic performance based on *degree GPA* than other students' characteristics.

The characteristics of the student are all the qualities and skills that the student has or acquires such as demographic attributes (age, gender, race), academic attributes (prior education level, field of study, prior GPA, scores on standardized test), and social attributes (family educational background, family relationships, socioeconomic status). Model 1 was created to test the hypothesis using multiple linear regression analysis. It investigated the association significance between the following variables: degree GPA (dependent variable) and students' characteristics: gender, race, age, citizenship status, degree level, field of study, change of major,

second major (if different from original field of study) prior GPA, took a standardized test, ESL program enrollment, English language ability, mother’s education, father’s education, family bonding, and socioeconomic level.

In order to ensure that the model is appropriate for the analysis, three different tests need to be carefully examined. First, Table 25 shows that the Durbin Watson Test is 1.926, which indicates that errors are independent. According to Frankfort-Nachmias and Nachmias (2008), the Durbin Watson test has to be between 1.5 and 2.5 in order to meet the assumption of independent errors. Also, the results show that the model explains between 39.7% of the variance (adjusted *R*-squared) to 43.5% of the variance (unadjusted *R*-squared). In other words, whether a student will get a high degree GPA or a low degree GPA, the predictors (independent variables) in the model explained about 39.7% to 43.5% of the variance. This means that roughly 56.5% to 60.3% of the variance in degree GPA is explained by other predictors (e.g., characteristics of the program and the academic and social integration between the student and the program).

Table 25

Model 1 Summary and Durbin Watson Test

Model	<i>R</i>	<i>R</i> square	Adjusted <i>R</i> square	Std. error of the estimate	Durbin-Watson
1	.659	.435	.397	.777	1.926

Second, Table 26 shows the model’s lack of fit tests. The lack of fit tests show that the model is not significant for linearity of general linear models suggesting that the model is linear.

Third, the analysis of variance (ANOVA), as depicted in Table 27, was used to test the student characteristics association with degree GPA. The test shows that model 1 was statistically significant; that is, at least one of the coefficients was not equal to 0. In particular,

Table 26

Model 1 Lack of Fit Tests

Source	Sum of squares	<i>df</i>	Mean square	<i>F</i>	Sig.
Lack of fit	306.646	507	.605	2.419	.338
Pure error	.500	2	.250		

Table 27

Model 1 Analysis of Variance (ANOVA) Test

Model	Sum of squares	<i>df</i>	Mean square	<i>F</i>	Sig.
Regression	235.824	34	6.936	11.500	.000
Residual	306.389	508	.603		
Total	542.214	542			

Table 28 shows that students’ age, Self-sponsored Scholarship Program entry, prior education level, prior GPA, and English ability as significant factors that contribute to their academic performance based on GPA. According to the results, there is a positive relationship between age and students’ academic performance based on GPA. The model suggests that as age increases, degree GPAs will increase as well. Therefore, older students are more likely to earn higher GPAs than younger counterparts. Also, students who entered KASP through the Self-sponsored Scholarship Program are more likely to have a higher GPA than those who are dependent. Master’s and doctoral-level students are more likely to have higher GPAs than undergraduate level students. In addition, students’ prior GPA have a positive relationship with degree GPA, that is, as prior GPA increases, so does degree GPA. Furthermore, the model shows that students who rated their English ability as poor or fair

Table 28

Model 1 Coefficients Summary

Model	<i>B</i>	Std. error	Beta	<i>t</i>	Sig.	<i>e</i>	VIF*
(Constant)	1.593	.442		3.605	.000		
Gender	.071	.087	.031	.817	.414	.775	1.289
Age	.026	.011	.112	2.315	.021	.479	2.087
ESL	-.146	.128	-.043	-1.137	.256	.793	1.261
GPA prior	.306	.042	.287	7.201	.000	.701	1.426
Interest in major	.116	.116	.037	1.001	.317	.800	1.249
Change major	-.057	.082	-.025	-.693	.488	.830	1.205
College exam	.023	.078	.011	.288	.773	.836	1.196
Race-Arabian	.116	.181	.022	.641	.522	.913	1.096
U.S. citizen	.077	.147	.020	.527	.599	.776	1.289
Permanent resident	.057	.141	.014	.405	.686	.930	1.075
Meeting admission requirement	.206	.119	.102	1.734	.084	.321	3.117
SSP*	.298	.120	.139	2.477	.014	.353	2.834
Education prior- Bachelor's	.902	.098	.451	9.180	.000	.461	2.168
Education prior- Master's	.830	.158	.224	5.246	.000	.608	1.643
Family bonding-poor	-.520	.274	-.066	-1.893	.059	.904	1.106
Family bonding-fair	-.152	.135	-.041	-1.130	.259	.855	1.170
Family bonding-good	-.028	.076	-.014	-.371	.710	.821	1.217
SES*-Between \$15,000-\$30,000	-.053	.127	-.020	-.414	.679	.463	2.162
SES*-Between \$30,000-\$50,000	-.156	.125	-.065	-1.248	.213	.413	2.418
SES*-Between \$50,000-\$100,000	-.107	.130	-.046	-.820	.413	.352	2.843
SES*-More than \$100,000	-.161	.134	-.068	-1.206	.228	.351	2.846
English ability-poor	-.865	.329	.091	-2.627	.009	.937	1.067
English ability-fair	-.641	.138	-.180	-4.659	.000	.743	1.346
English ability-good	-.094	.075	-.047	-1.261	.208	.795	1.258

*Note. VIF = variance inflation factor; SSP = Self-sponsored Scholarship Program;
SES = socioeconomic status.

had significantly lower GPAs compared to those who rated their English ability as excellent. There was no statistically significant difference between students who rated their English ability as good or excellent.

As the multiple linear regression analysis revealed that five of the students' characteristics (age, entry method, prior education level, prior GPA, and English ability) were statistically significant, it means that these independent variables do contribute to students' academic performance based on degree GPA. Since some students' characteristics variables were found statistically significant, we can conclude that the results support the stated hypothesis for this model.

Model 2: Degree GPA and Program Characteristics

In model 2, program characteristics were represented in six different variables in the database: the type of university, whether the students changed/transferred from their university, the quantity of student-faculty interaction, students' perceived inclusiveness, students' perceived quality of interaction, and students' perceived stress and discrimination levels were all measured to assess their significance in relation to students' degree GPA and degree level. A multiple linear regression analysis was run to test the following hypothesis:

H2: Some *students' characteristics* are more likely to contribute to students' academic performance based on *degree GPA* than other students' characteristics.

Pertinent data are as follows. Table 29 shows the model 2 summary, which includes the Durbin Watson test. The model explains between 21.8% to 22.8% of the variance. The Durbin Watson test = 1.933, which indicates that the residuals are independent. In other words, the model meets the assumption of independence and that the residuals are not auto-correlated.

Table 29

Model 2 Summary and Durbin Watson Test

Model	R	R square	Adjusted R square	Std. error of the estimate	Durbin-Watson
2	.478	.228	.218	.884	1.933

The lack of fit test shows that model 2 is linear = .502 (see Table 30). Also, the ANOVA test, depicted in Table 31, indicates that the model is significant. This means that at least one of the coefficients was not equal to 0.

Table 30

Model 2 Lack of Fit Tests

Source	Sum of squares	df	Mean square	F	Sig.
Lack of fit	411.884	518	.795	1.035	.502
Pure error	13.833	18	.769		

Table 31

Model 2 Analysis of Variance (ANOVA) Test

Model	Sum of squares	df	Mean square	F	Sig.
Regression	123.828	7	17.690	22.620	.000
Residual	418.386	535	.782		
Total	542.214	542			

Table 32 shows that there is no multicollinearity as all variance inflation factors are below 10. In addition, five predictors were found to be statistically significant factors that contribute to students' academic performance based on GPA. The results indicate that university type, whether the student changed the university or not, faculty availability, faculty quality of

Table 32

Model 2 Coefficients Summary

Model	B	Std. error	Beta	t	Sig.	e	VIF*
(Constant)	3.540	.245		14.475	.000		
Nonresearch-oriented university	2.90	.100	.125	2.913	.004	.780	1.282
Does not know type university	.147	.091	.072	1.619	.106	.731	1.368
University change	-.255	.083	-.118	-3.062	.002	.970	1.031
Faculty availability	.081	.022	.147	3.671	.000	.896	1.116
Faculty quality of interaction	.218	.063	.164	3.479	.001	.651	1.535
Faculty inclusiveness	.114	.073	.070	1.558	.120	.719	1.391
Stress and discrimination	-.336	.052	-.262	-6.434	.000	.871	1.148

*Note. VIF = variance inflation factor.

interaction, and perceived stress and discrimination as significant predictors. The model suggests that students enrolled in nonresearch-oriented universities are more likely to get higher GPAs than students enrolled in research-oriented universities. Also, students who did not change their university are more likely to get higher GPAs than those who changed their university at least once in their degree-seeking journey. When it comes to students' rating of faculty availability and quality of interaction, a positive relationship occurs. Students' higher rating on faculty availability is associated with higher GPAs. Similarly, students' higher rating on faculty quality of interaction is associated with higher GPAs. On the other hand, there was a negative relationship between students' perceived stress and discrimination levels and their academic performance based on GPA. That is, the more the students feel stressed and discriminated against from faculty, the lower their GPAs.

Since the multiple linear regression analysis in model 2 revealed that five of the programs' characteristics (university type, university change faculty availability, faculty quality

of interaction, and perceived stress and discrimination) were statistically significant, we can conclude that the results support the stated hypothesis for this model as well.

Model 3: Degree GPA and the Academic and Social Integration Between the Student and the Program

The academic and social integration indicates the ability of the student to fit in the complex environment in college (Bronfenbrenner, 1979). The integration variables in this model are: students’ rating of the American culture, hours spent studying, living on campus, working on campus, taking leadership role, taking honor classes, participating in a study abroad program, taking an internship, participating in a workshop, participating in a research project, doing academic presentations, quantity of peer interaction, quantity of faculty interaction, and rating friendship support. A multiple linear regression analysis was run to test the following hypothesis:

H3: Some *integration attributes* are more likely to contribute to students’ academic performance based on *degree GPA* than other integration attributes.

Table 33 shows the model 3 summary. The Durbin-Watson test is equal to 1.913, which indicates that there is no auto-correlation between the residuals meeting the assumption of independence. Also, the model explains between 22.8% to 26.6% of the variance, the lack of fit tests, depicted in Table 34, indicate that the model is linear, and the ANOVA test shows that the model is significant (Table 35).

Table 33

Model 3 Summary and Durbin Watson Test

Model	R	R square	Adjusted R square	Std. error of the estimate	Durbin-Watson
3	.516	.266	.228	.879	1.913

Table 34

Model 3 Lack of Fit Tests

Source	Sum of squares	df	Mean square	F	Sig.
Lack of fit	375.483	484	.776	1.069	.431
Pure error	22.500	31	.726		

Table 35

Model 3 Analysis of Variance (ANOVA) Test

Model	Sum of squares	df	Mean square	F	Sig.
Regression	144.230	27	5.342	6.913	.000
Residual	397.983	515	.773		
Total	542.214	542			

Statistical evidence in Table 36 suggests that living on campus, taking honor classes, participating in research projects, making presentations, hours spent studying, student-faculty interaction, and students' perceived American culture are significantly associated with students' academic performance based on degree GPA. In particular, the results show students who lived on campus tend to have lower degree GPAs than those who live off campus. Nonetheless, students who took honor classes, participated in research projects, and made presentations had higher GPAs than those who did not. In terms of hours spent studying, the data show that there is a linear relationship between hours of study and degree GPA. That is, as hours of study increase, degree GPA increases as well. Student-faculty interaction was associated with lower degree GPA. Students who interact with their faculty in a weekly or monthly basis were found to have lower degree GPA than those who had no faculty interaction. As for the perspective of the American culture, students who rated their interaction with the American culture as fair, good, and excellent had significantly higher degree GPA than those who had poor interaction.

Table 36

Model 3 Coefficients Summary

Model	B	Std. error	Beta	t	Sig.	e	VIF*
(Constant)	1.593	.442		3.605	.000		
Living on campus	-.343	.098	-.141	-3.522	.000	.885	1.130
Honor classes	.223	.092	.097	2.146	.016	.883	1.132
Research projects	.246	.092	.119	2.666	.008	.717	1.395
Presentations	.309	.134	.100	2.313	.021	.766	1.305
Study-7-14 hrs. a week	.287	.120	.138	2.384	.017	.427	2.345
Study-14-21 hrs. a week	.508	.129	.217	3.950	.000	.473	2.115
Study-21-28 hrs. a week	.695	.145	.241	4.802	.000	.565	1.769
Study over 28 hrs. a week	.688	.159	.213	4.325	.000	.589	1.697
Faculty interaction-month	-.428	.131	-.195	-3.268	.001	.400	2.500
Faculty interaction-week	-.272	.132	-.131	-2.060	.040	.353	2.834
American culture-fair	.636	.215	.231	2.958	.003	.233	4.284
American culture-good	.687	.209	.334	3.288	.001	.38	7.242
American culture-excellent	.845	.218	.417	3.880	.000	.123	8.104

*Note. VIF = variance inflation factor.

There was no multicollinearity detected as all variance inflation factors were below 10. Since the multiple linear regression analysis in model 3 revealed that seven of the academic and social integration variables (living on campus, taking honor classes, participating in research projects, making presentations, hours spent studying, student-faculty interaction, and students' perceived American culture) were statistically significant, we can conclude that the results support the stated hypothesis for this model as well.

Secondary Analysis I

To remind the reader, there are two secondary analyses in this study. In this section, the first secondary analysis examined the relationship between graduation time frame as an academic performance indicator (outcome) and the independent variables: (a) the characteristics of the student, (b) the characteristics of the program, and (c) the academic and social integration

between the student and the program. A logistics regression analysis was employed for the examination.

Model 4: Predicting Time Frame From Student Characteristics

The time frame variable in this model indicates the time students spend to earn their degree. Students’ graduation time frame is defined as a dichotomous variable measured as [1,0] scale, where [1] represents students who graduated within the scholarship time frame and [0] represents students who extended their scholarship time frame. In model 4, time frame was used as an academic performance indicator to test the significance of students’ characteristics.

Therefore, the following hypothesis was formed:

H4: Some *students’ characteristics* are more likely to contribute to students’ academic performance based on graduation *time frame* than other students’ characteristics.

The results show that the model was found significant at $\leq .005$, which means that there are statistically significant differences between the characteristics of students who graduated on time and those who did not (Table 37).

Table 37

Model 4 Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	68.894	24	.000
	Block	68.894	24	.000
	Model	68.894	24	.000

Table 38 represents the Hosmer-Lemeshow test. This statistical test is for goodness of fit for logistic regression models. The results show that the model is not significant indicating adequate model fit.

Table 38

Model 4 Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	13.002	8	.112

The classification table, depicted in Table 39, shows the ability of the model to predict students' academic performance based on time frame. The model correctly predicts 20.8% of those who graduate on time and 93.8% of those who fail to graduate on time.

Table 39

Model 4 Classification Table

Observed	Time frame predicted		% correct	
	0	1	%	
Step 1 time frame	0	365	24	93.8
	1	122	32	20.8
Overage percentage				73.1

Table 40 show that ESL enrollment, prior GPA, fair family bonding, and income are statistically significant predictors of students' academic performance based on time frame. Having enrolled in ESL program is associated with an odds of graduating on time that is .25 the odds of graduating on time if you didn't enroll in ESL. In other words, if the students did not enroll in ESL, they are almost four times as likely to graduate on time as ESL students. As for prior GPA, the data show that the higher the prior GPA, the higher the probability of graduating on time. In fact, for each category higher on GPA, the odds of graduating on time increases by 29.6%. In terms of family bonding, students who rated their family bonding as fair were 5.59 times more likely to graduate on time than those who had excellent family bonding. That is, if students have fair family bonding the odds of graduating on time are 5.59 times as great as the

Table 40

Model 4 Variables in the Equation

Step 1	B	S.E.	Wald	df	Sig.	Exp(B)
Gender	.182	.258	.498	1	.480	1.200
Age	.058	.032	3.230	1	.072	1.059
ESL1*	-1.370	.356	14.826	1	.000	.254
gpa_prior 1	.259	.128	4.104	1	.043	1.296
interest_in_major1	.405	.353	1.318	1	.251	1.499
change_major1	.452	.260	3.032	1	.082	1.572
college_exam1	-.244	.241	1.027	1	.311	.783
race1-Arabian	-1.027	.677	2.303	1	.129	.358
citizenship1-U.S. citizen	-.654	.390	2.804	1	.094	.520
citizenship1-Permanent resident	-.297	.402	.544	1	.461	.743
entry1-meeting initial admission requirement	.141	.353	.160	1	.690	1.151
entry1-going through the SSP	-.621	.361	2.958	1	.085	.537
education_prior1-bachelor's	-.126	.292	.187	1	.665	.881
education_prior1-master's	.026	.457	.003	1	.954	1.027
family_bonding2-poor	1.760	1.118	2.481	1	.115	5.814
family_bonding2-fair	1.720	.637	7.290	1	.007	5.586
family_bonding2-good	-.118	.222	.284	1	.594	.889
SES1*-between \$15,000-\$30,000	.121	.364	.111	1	.739	1.129
SES1-between \$30,000-\$50,000	.808	.367	4.833	1	.028	2.243
SES1-between \$50,000-\$100,000	.248	.355	.488	1	.485	1.282
SES1-more than \$100,000	.733	.379	3.739	1	.053	2.080
english_ability1-poor	-.532	.977	.297	1	.586	.587
english_ability1-fair	-.537	.412	1.704	1	.192	.584
english_ability1-good	-.139	.223	.389	1	.533	.870
Constant	-4.969	2.400	4.287	1	.038	.007

*Note. ESL = English as Second Language; SES = socioeconomic status

odds of those with excellent family bonding. No statistically significant differences in other levels of family bonding. This finding does not fully reflect what the literature review has suggested, which is better family bonding is associated with better academic performance. However, this could mean that students with fair family bonding might feel more pressure to graduate on time as they have less support than those with excellent family bonding. As for

income, the only statistically significant difference is between \$30,000 to \$50,000 and those below \$15,000 per year. Particularly, students who come from families whose income are between 30,000 to 50,000 have odds of graduating on time 2.2 times the odds for those with less than 15,000 in family income. However, higher levels of income are not significantly different from very low income. It means that students from families with average income are more likely to graduate on time than those who are have poor family income. However, rich kids and poor kids have no statistically different odds of graduating on time.

Since the logistics regression analysis in model 4 showed that four of the students' characteristics variables (ESL enrollment, prior GPA, fair family bonding, and income) were statistically significant, we can conclude that the results support the stated hypothesis for this model.

Model 5: Predicting Time Frame From Program Characteristics

Logistics regression was used to examine the relationship between academic program characteristics and students' academic performance based on time frame. The hypothesis tested was:

H5: Some *program characteristics* are more likely to contribute to students' academic performance based on graduation *time frame* than other program characteristics.

Table 41 shows that the model used was significant. The Hosmer and Lemeshow test, depicted in Table 42, was not significant, which indicates adequate model fit. However, the model predicts 0% of students graduating on time, and 100% of those who would fail to graduate on time (Table 43).

Table 41

Model 5 Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	12.691	6	.048
	Block	12.691	6	.048
	Model	12.691	6	.048

Table 42

Model 5 Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	4.744	8	.785

Table 43

Model 5 Classification Table

Observed	Time frame predicted			% correct
	0	1		%
Step 1 time frame	0	389	0	100.0
	1	154	0	.0
Overage percentage				71.6

The results in Table 44 show that the type of university was the only significant programs characteristics predictor of student academic performance based on time frame. In particular, students who enroll in a nonresearch university have higher odds ($B = 1.930$) of graduating on time than those who are in a research university. Strenuous research universities might have longer time frames than 2 years for master's and 4 years for the doctorate. However, Saudi students are required to finish on a 4-year undergraduate, 2-year masters, and 4-year PhD scale. Also, students who did not know the type of university in which they were enrolled had higher odds ($B = 1.579$) than those enrolled in research-oriented university. Since there was at least one

Table 44

Model 5 Variables in the Equation

Step 1	B	S.E.	Wald	df	Sig.	Exp(B)
Nonresearch-oriented university	.658	.258	6.491	1	.011	1.930
Does not know type university	.457	.226	4.068	1	.044	1.579
Faculty availability	-.051	.056	.824	1	.364	.950
Faculty quality of interaction	.139	.160	.753	1	.386	1.149
Faculty inclusiveness	-.009	.185	.002	1	.963	.991
Stress and discrimination	-.234	.135	3.029	1	.082	.791
Constant	-1.384	.728	3.614	1	.057	.251

significant program characteristic that was found to contribute to students' academic performance based on time frame, we can conclude that the results support the stated hypothesis in this model.

Model 6: Predicting Time Frame From the Academic and Social Integration Between the Student and the Program

In model 6, the academic and social integration attributes are examined in relation to students' academic performance based on time frame. The following hypothesis was tested:

H6: Some *integration attributes* are more likely to contribute to students' academic performance based on graduation *time frame* than other integration attributes.

Table 45, which is the omnibus tests for model coefficients, shows that the model was statistically significant. The Hosmer and Lemeshow test, depicted in Table 46, was not significant, which indicate adequate model fit. The model correctly predicts 97.2% of students who do not graduate on time, and 12.3% of those who would graduate on time as shown in Table 47.

Table 45

Model 6 Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	36.489	24	.049
	Block	36.489	24	.049
	Model	36.489	24	.049

Table 46

Model 6 Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	7.629	8	.471

Table 47

Model 6 Classification Table

Observed	Time frame predicted		% correct	
	0	1	%	
Step 1 time frame	0	378	11	97.2
	1	135	19	12.3
Overage percentage				73.1

When it comes to significant academic and social integration predictors, Table 48 shows that peer interaction and students' rating of the American culture were found statistically significant. The results show that having daily peer interaction has odds of graduating on time that are 2.67 times the odds of having no peer interaction. Also, rating the interaction with the American culture as fair has odds of graduating on time that are .49 times the odds of rating the American culture as excellent. In other words, students who had excellent experience with the American culture have odds 2.0 times the odds of graduating on time than those who had fair

Table 48

Model 6 Variables in the Equation

Step 1	B	S.E.	Wald	df	Sig.	Exp(B)
Living on campus	-.021	.253	.007	1	.933	.979
Working on campus	.377	.288	1.715	1	.190	1.458
Leadership role	-.362	.242	2.243	1	.134	.696
Honor classes	-.311	.234	1.770	1	.183	.732
Study abroad	-.300	.313	.920	1	.338	.741
Internships	-.182	.246	.548	1	.459	.833
Workshops	-.106	.240	.196	1	.658	.899
Research project	.055	.240	.053	1	.818	1.057
Presentations	.332	.337	.971	1	.324	1.393
Hours studying	-.117	.089	1.738	1	.187	.889
Peer interaction-every semester	.824	.657	1.575	1	.209	2.280
Peer interaction-every week	.468	.430	1.184	1	.277	1.597
Peer interaction-daily	.983	.464	4.479	1	.034	2.672
Faculty interaction-every semester	.498	.405	1.510	1	.219	1.645
Faculty interaction-every month	.364	.326	1.243	1	.265	1.438
Faculty interaction-every week	.567	.335	2.872	1	.090	1.764
Faculty interaction daily	-.355	.448	.628	1	.428	.701
Friendship support-poor	.119	.545	.047	1	.828	1.126
Friendship support-fair	.082	.360	.052	1	.820	1.085
Friendship support-good	-.365	.261	1.951	1	.162	.694
American culture-poor	.579	.642	.813	1	.367	1.785
American culture-fair(1)	-.721	.322	5.030	1	.025	.486
American culture-good(1)	-.203	.251	.655	1	.418	.816
Constant	-2.939	1.852	2.518	1	.113	.053

experience with the American culture. Thus, since there were two significant predictors found in the model, we conclude that the results support the stated hypothesis.

Secondary Analysis II

In this section, the second secondary analysis examined the relationship between students' academic performance based on dropout (outcome) and the independent variables: (a) the characteristics of the student, (b) the characteristics of the program, and (c) the academic and

social integration between the student and the program. A logistics regression analysis was employed for the examination as well.

Model 7: Predicting Dropout From Student Characteristics

The dropout variable indicates whether the student withdrew from the program or not. Dropout is a dichotomous variable measured in [1,0] scale, where [1] represents students who did not drop out from the program and [0] represents students who dropout from the program. A logistics regression analysis is used to test the following hypothesis:

H7: Some *students’ characteristics* are more likely to contribute to students’ academic performance based on *dropout* than other students’ characteristics.

The results show that the model was found statistically significant at $\leq .005$, which means that there are statistically significant differences between the characteristics of students who graduated and those who did not as shown in Table 49.

Table 49

Model 7 Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	98.590	23	.000
	Block	98.590	23	.000
	Model	98.590	23	.000

On the other hand, the Hosmer and Lemeshow test, depicted in Table 50, was not significant indicating adequate model fit. This is important because it ensures that the data are not in conflict with the assumptions made by the model.

Table 51 shows the ability of the model to predict students’ academic performance based on dropout. The model correctly predicts 25.8% of students who drop out and 98.5% of those who do not drop out.

Table 50

Model 7 Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	4.513	8	.808

Table 51

Model 7 Classification Table

Observed	Time frame predicted		% correct	
	0	1	%	
Step 1 time frame	0	16	46	25.8
	1	7	474	98.5
Overage percentage				90.2

Table 52 shows that there were six of the students' characteristics which were statistically significant predictors of students' academic performance based on dropout. In particular, the model indicates that age, prior GPA, entry method to the program, prior education, and English ability were significant predictors. The results show that older students are more likely to not drop out; for each year older, a student's odds of not dropping out (graduating) increase by 16%. As for prior GPA, students with higher prior GPAs are less likely to drop out. For each increase in prior GPA category, odds of graduating increase by 1.57 or 57%. Also, student who entered the program by being a dependent face the odds of dropping out that is .26 times higher than those who entered by meeting the initial admission requirements. In other words, students who entered the academic program by being a dependent are roughly four times more likely to drop out than those who entered through meeting the admission requirements. There were no statistically significant differences between students who entered through the self-sponsored program and those who met the initial admission requirement. As for prior degree, master's

Table 52

Model 7 Variables in the Equation

Step 1	B	S.E.	Wald	df	Sig.	Exp(B)
Gender	.143	.433	.109	1	.741	1.154
Age	.149	.058	6.607	1	.010	1.161
ESL*	.188	.695	.073	1	.787	1.207
GPA prior	.449	.191	5.518	1	.019	1.566
Interest in major	.341	.457	.557	1	.456	1.406
Change major	0.382	.392	.953	1	.329	1.466
College exam	.052	.333	.025	1	.875	1.054
Race-Arabian	.362	.719	.253	1	.615	1.436
Citizenship-U.S. citizen	1.708	1.086	2.473	1	.116	5.520
Citizenship-Permanent resident	.755	.824	.839	1	.360	2.127
Entry1-being a dependent	-1.315	.469	7.862	1	.005	.269
Entry2-going through the SSP*	-.329	.381	.747	1	.387	.719
Education prior-bachelor's	1.192	.513	5.403	1	.020	3.294
Education prior-master's	-.783	.680	1.328	1	.249	.457
Family bonding-fair	.242	1.009	.058	1	.810	1.274
Family bonding-good	.904	.959	.889	1	.346	2.469
Family bonding-excellent	1.588	.970	2.678	1	.102	4.893
SES1*-between \$15,000-\$30,000	-5.41	.571	.898	1	.343	.582
SES1-between \$30,000-\$50,000	-5.22	.563	.861	1	.354	.593
SES1-between \$50,000-\$100,000	.336	.617	.296	1	.586	1.399
SES1-more than \$100,000	-.011	.642	.000	1	.986	.989
English_ability1-fair	2.618	1.192	4.826	1	.028	13.714
english_ability1-good	3.438	1.144	9.031	1	.003	31.127
english_ability1-excellent	3.994	1.169	11.673	1	.001	54.283
Constant	9.020	3.671	6.038	1	.014	8270.707

*Note. ESL = English as Second Language; SSP = Self-sponsored Scholarship Program; SES = socioeconomic status

students are more likely to graduate than undergraduate students. The results show that master's students have higher odds of graduating that is 3.3 times more than undergraduate students. In terms of English ability, students with fair, good, and excellent English skills were more likely to graduate than those with poor English ability. In fact, students with excellent, good, and fair English ability had higher odds of graduating that is 54.2, 31.1, and 13.7, respectively than those with poor English ability.

Since the logistics regression analysis in model 7 showed that six of the students' characteristics variables (age, prior GPA, entry method to the program, prior education, and English ability) were statistically significant, we can conclude that the results support the stated hypothesis for this model.

Model 8: Predicting Dropout From Program Characteristics

In model 8, logistics regression was also used to examine the relationship between academic program characteristics and students' academic performance based on dropout. The hypothesis tested was:

H8: Some *program characteristics* are more likely to contribute to students' academic performance based on *dropout* than other program characteristics.

Table 53 shows that the model was found statistically significant at $\leq .005$, which means that there are statistical differences between program characteristics when it comes to students who graduated and those who did not. However, Table 54 indicates that the model is not adequately fit, which means that the data are in conflict with the assumptions made by the model.

Table 53

Model 8 Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	109.389	6	.000
	Block	109.389	6	.000
	Model	109.389	6	.000

Table 54

Model 8 Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	17.125	8	.029

Table 55 shows the ability of the model to predict students' academic performance based on dropout. The model correctly predicts 30.6% of students who dropout and 98.5% of those who graduate.

Table 55

Model 8 Classification Table

Observed		Time frame predicted		% correct
		0	1	%
Step 1 time frame	0	19	43	30.6
	1	7	474	98.5
Overage percentage				90.8

The model's results, depicted in Table 56, indicate that three program characteristics were found to be statistically significant when it comes to students' academic performance based on dropout: faculty availability, faculty interaction, and students' perceived stress and discrimination levels. In particular, students who reported higher scores on faculty availability had lower probability of dropping out. For each point higher on faculty availability, the odds of graduating increased by 1.7 or 70%. Also, students who reported higher scores on faculty interaction had a lower probability of dropping out. The model shows that for each point higher on faculty interaction, the odds of graduating increased by 2.82. As for perceived stress and discrimination, students who reported higher scores of stress and discrimination when interacting with faculty had a higher probability of dropping out. That is, for each point decrease in stress and discrimination score, the odds of graduating increased by roughly .476. In other words, for each point increase in stress and discrimination score, the odds of dropping out increased by almost two times.

Table 56

Model 8 Variables in the Equation

Step 1	B	S.E.	Wald	df	Sig.	Exp(B)
Nonresearch-oriented university	.636	.431	2.177	1	.140	1.889
Does not know type university	.502	.373	1.813	1	.178	1.652
Faculty availability	.533	.122	19.019	1	.000	1.704
Faculty quality of interaction	1.038	.247	17.633	1	.000	2.823
Faculty inclusiveness	-.289	.317	.827	1	.363	.749
Stress and discrimination	-.742	.231	10.341	1	.001	.476
Constant	-.051	1.022	.002	1	.961	.951

Since the logistics regression analysis in model 8 showed that four of the program characteristics variables (faculty availability, faculty interaction, and students' perceived stress and discrimination levels) were statistically significant, we can conclude that the results support the stated hypothesis for this model.

Model 9: Predicting Dropouts From Interactions

In model 9, the academic and social integration attributes are examined in relation to students' academic performance based on dropout. The following hypothesis was tested:

H9: Some *integration attributes* are more likely to contribute to students' academic performance based on graduation *dropout* than other integration attributes.

Table 57, which is the omnibus tests for model coefficients, shows that the model was statistically significant. The Hosmer and Lemeshow test, depicted in Table 58, was not significant, which indicate adequate model fit. The model correctly predicts 40.3% of students who would dropout, and 99.0% of those who would graduate as shown in Table 59.

Table 57

Model 9 Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	126.122	27	.000
	Block	126.122	27	.000
	Model	126.122	6	.000

Table 58

Model 9 Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	9.788	8	.280

Table 59

Model 9 Classification Table

Observed	Time frame predicted		% correct	
	0	1	%	
Step 1 time frame	0	25	37	40.3
	1	5	476	99.0
Overage percentage			92.3	

The model's results, as depicted in Table 60, show that four of the academic and social integration attributes to be statistically significant when it comes to students' academic performance based on dropout, which are living on campus, participating in workshops, participating in academic presentations, and interacting with the American culture. Specifically, if students who live on campus odds of graduating increase by 4.999 or 399.9%. Also, if students participate in workshops odds of graduating increase by 2.922 or by 192.2%. In addition, if students participate in academic presentations, odds of graduating increase by 3.504 or by 250.4%. When it comes to the culture interaction, students who rated their interaction with

Table 60

Model 9 Variables in the Equation

Step 1	B	S.E.	Wald	df	Sig.	Exp(B)
Living on campus	1.609	0.713	5.091	1	.024	4.999
Working on campus	-.108	.620	.030	1	.862	.897
Leadership role	.335	.509	.432	1	.511	1.397
Honor classes	.008	.476	.000	1	.987	1.008
Study abroad	.358	.817	.192	1	.661	1.431
Internships	-.099	.490	.041	1	.840	.906
Workshops	1.072	.435	60.69	1	.014	2.922
Research project	.431	.390	1.223	1	.269	1.540
Presentations	1.254	.427	8.613	1	.003	3.504
Hours studying	-.129	.155	.691	1	.406	.879
Peer interaction-every semester	.884	1.026	.742	1	.389	2.420
Peer interaction-every month	.647	.689	.880	1	.348	1.909
Peer interaction-every week	.800	.653	1.500	1	.221	2.225
Peer interaction-daily	.541	.709	.584	1	.445	1.718
Faculty interaction-every semester	.072	.731	.010	1	.922	1.074
Faculty interaction-every month	-.726	.533	1.858	1	.173	.484
Faculty interaction-every week	-.235	.562	.175	1	.676	.790
Faculty interaction daily	.596	.937	.405	1	.525	1.815
Friendship support-poor	-.102	.672	.023	1	.879	.903
Friendship support-fair	1.110	.683	2.641	1	.104	3.035
Friendship support-good	.717	.735	.953	1	.329	2.048
American culture-fair	2.026	.671	9.120	1	.003	7.580
American culture-good	2.091	.628	11.081	1	.001	8.092
American culture-excellent	1.564	.683	5.247	1	.022	4.779
Constant	-2.765	.894	9.563	1	.002	.063

the American culture as fair, good, or excellent were significantly more likely to graduate than those who had poor interaction.

Since the logistics regression analysis in model 9 showed that four of the students' characteristics variables (living on campus, participating in workshops, participating in academic presentations, and interacting with the American culture) were statistically significant, we can conclude that the results support the stated hypothesis for this model.

Summary

In this chapter, three different analyses containing nine regression models were run to describe the relationship between students' degree GPA, graduation time frame, and dropout (dependent variables) and students' characteristics, program characteristics, and academic and social integration between the student and the program (independent variables).

The results showed that all nine models were found statically significant and they support the stated hypotheses proposed in this study. Table 61 provides summary of all of the tested hypotheses, which were proven to be statistically significant at a 95% confidence level.

In terms of students' characteristics, the results show prior GPA was a significant factor across all students' academic performance indicators. In fact, the higher the prior GPA was the more likely the student to do better in college. Also, it seems that age, entry method, prior education, and English ability to be common students' characteristics that contribute to both academic performances based on degree GPA and dropout. As for students' graduation, time frame, ESL enrollment, prior GPA, family bonding, and income were significant factors.

The models examining the program characteristics relationship to students' academic performance show that the type of the university, whether the students changed their university or not, faculty availability, faculty quality of interaction, and students' perceived stress and discrimination levels were significant factors that contribute to students' academic performance based on degree GPA. As for graduation time frame, the type of the university was the only factor that contribute to students' ability to graduate on time. Students who were in a nonresearch-oriented universities were more likely to graduate on time than those who were in research-oriented universities. Also, faculty availability, faculty quality of interaction, and

Table 61

Summary of the Study's Tested Hypotheses

Significant variables in the model	Hypothesis	Results
Model 1: Age, entry method, prior education level, prior GPA, and English ability.	H1: Some <i>students' characteristics</i> are more likely to contribute to students' academic performance based on <i>degree GPA</i> than other students' characteristics.	Results support the stated hypothesis.
Model 2: University type, university change, faculty availability, faculty quality of interaction, and perceived stress and discrimination.	H2: Some <i>program characteristics</i> are more likely to contribute to students' academic performance based on <i>degree GPA</i> than other program characteristics.	Results support the stated hypothesis.
Model 3: Living on campus, taking honor classes, participating in research projects, making presentations, hours spent studying, student-faculty interaction, and American culture.	H3: Some <i>integration attributes</i> are more likely to contribute to students' academic performance based on <i>degree GPA</i> than other integration attributes.	Results support the stated hypothesis.
Model 4: ESL enrollment, prior GPA, fair family bonding, and income.	H4: Some <i>students' characteristics</i> are more likely to contribute to students' academic performance based on <i>graduation time frame</i> than other students' characteristics.	Results support the stated hypothesis.
Model 5: Type of university.	H5: Some <i>program characteristics</i> are more likely to contribute to students' academic performance based on <i>graduation time frame</i>	Results support the stated hypothesis.

Table 61 - continued

Significant variables in the model	Hypothesis	Results
	than other students' characteristics.	
Model 6: Peer interaction and American culture.	Some <i>integration attributes</i> are more likely to contribute to students' academic performance based on <i>graduation time frame</i> than other integration attributes.	Results support the stated hypothesis.
Model 7: Age, prior GPA, entry method to the program, prior education, and English ability.	H7: Some <i>students' characteristics</i> are more likely to contribute to students' academic performance based on <i>dropout</i> than other students' characteristics.	Results support the stated hypothesis.
Model 8: Faculty availability, faculty interaction, and students' perceived stress and discrimination levels.	H8: Some <i>program characteristics</i> are more likely to contribute to students' academic performance based on <i>dropout</i> than other program characteristics.	Results support the stated hypothesis.
Model 9: Living on campus, participating in workshops, participating in academic presentations, and American culture.	H9: Some <i>integration attributes</i> are more likely to contribute to students' academic performance based on <i>graduation dropout</i> than other integration attributes.	Results support the stated hypothesis.

faculty quality of interaction, and students' perceived stress and discrimination levels were significant factors that students' ability to graduate (not dropout) from college.

When it comes to the academic and social integration attributes, this study shows that students' perceived quality of interaction with the American culture was a significant factor

across all academic performance indicators. In fact, students who rated their interaction with the American culture as fair, good, or excellent were more likely to get higher degree GPA, graduate on time, and not dropout than those who rated their interaction with the American culture as poor. Also, students who live on campus are more likely to have lower degree GPA than those who live off campus. However, living on campus was associated with the ability to graduate from college. In particular, students who live off campus are more likely to dropout than those who live on campus. Participating in research project, doing academic presentations, and hours spent studying were clearly contributing factors to degree GPA. As for graduation time frame, students who interact daily with their peer are more likely to graduate on time than those who have no peer interaction. In addition, students who participate in academic workshops and presentations are more likely to graduate than those who do not.

CHAPTER IV. CONCLUSIONS AND RECOMMENDATIONS

The intention of this study was to tease out the factors that contribute to Saudi Arabian students' academic performance in college. This chapter provides a summary of the key findings, implications, as well as recommendations for future research. Before discussing the main finding, it is important to remind the reader about the research question of this study:

What factors contribute to Saudi Arabian students' academic performance in U.S. universities?

Study Overview

This study identified key factors that are involved in Saudi Arabian students' academic performance in college. To remind the reader, the reasons for studying a specific student segment was to examine the set of challenges that these students may experience when it comes to their academic performance in college, and enhance the literature with findings in regards to the important factors contributing to academic performance of this segment of the student population.

The study utilized a nonexperimental quantitative research design in order to investigate the relationship between the independent variables:

1. The characteristics of the student.
2. The characteristics of the program.
3. The academic and social integration between the student and the program,

and the dependent variables: degree GPA, ability to graduate within academic program time frame, and dropout.

Theoretical Framework

This study utilized one conceptual model and two theories as a structure for its theoretical foundation. The student integration model by Vincent Tinto (1975), the theory of student involvement by Alexander Astin (1984), and the ecological systems theory by Urie Bronfenbrenner (1979) were used to carry this study forward. The previous literature suggested that students' academic performance depends on their interaction experience with the academic and social system in college. It showed that an increase in social and academic interaction will result in an increase in students' commitment to their goals and to the institution, and thus increase their academic performance and their likelihood to stay in college (Harper & Quaye, 2009; Seidman, 2005; Tinto 1975, 2007). Also, it does not neglect the important characteristics of the academic program and the students in order to create an environment that can ensure students' survival and well performance in academia (Astin, 1984; Bronfenbrenner, 1979; Tinto, 1975).

The premise of this study was to describe and tease out the important factors that contributed to Saudi Arabian students' academic performance in college whether they were characteristics of the student, characteristics of the academic program, or academic and social integration attributes. To reach this goal, the target population of this study was all the Saudi students who have studied in the United States from 2005 to present. The data were obtained from students via a Web-based electronic survey called SurveyMonkey®. These electronic surveys were sent to students via an active social media group called Saudis in USA. The collected dataset included information about each student's entry method, age, gender, race, degree level, field of study, interest in field of study, prior GPA, standardized tests scores, family's education background, family bonding, family income, type of university, student

engagement, living on campus, working on campus, hours spent studying, friendship support, culture barriers, language barriers, extracurricular activities, honor classes, study abroad programs, internships, workshops, research projects, academic presentations, interaction with peers, interaction with faculty, self-confidence level, popularity, public speaking ability, and leadership roles. In addition, data regarding students' graduation GPA, time frame, or dropout were collected. In the following section, each of these independent variables are discussed in relation to their contribution to students' academic performance in college.

Key Findings

Characteristics of the Students

Age. Previous research in the area of age impact on academic performance varies in terms of findings and is relatively limited. In this study, students' age was measured in years and it was found to be a statistically significant factor when it comes to academic performance based on degree GPA and dropout. In particular, the older the student was, the more likely the student to have higher degree GPA and not drop out. Sheard (2009) explained that there could be many reasons for older students to do better than their younger counterparts. He argues that older students perceive their present situation as their last chance to develop a career, they work under positive pressure to succeed in their educational life, and they generally tend to have a higher level of confidence. Also, given the fact that older students are more likely to be enrolled in higher academic programs (master's, doctoral), studies show that they are more likely to have a higher degree GPA than their undergraduate level counterparts. In fact, in this study, master's and doctoral-level students were found to have higher GPAs than undergraduate level students. No multicollinearity was found between these variables.

Gender. In terms of gender, the sample in this study was a similar reflection of the actual population. The Saudi Ministry of Higher Education (2014) reported that 75% of Saudi students studying in the United States were male and 25% were female. This study showed that the participants who took the survey were 74.22% male and 25.78% female. Previous research showed that female students have better academic performance than their male counterparts. In this study, the results showed that there were no statistical differences between Saudi Arabian students' academic performance based on gender. Further research is recommended to investigate the relationship between gender and students' academic performance in college.

Race. The literature asserted that race could influence students' academic performance in college (Tinto, 1975; Thernstrom, 2002). The study showed no statistical differences between Saudi Arabian students' academic performance in college based on their race. Further research is recommended to carefully examine the impact of race on students' academic performance in college. This study was not ideal for measuring the impact of race, as 96.13% of participants were Arabians while all other groups were less than 1.5% in their representations in this study.

Citizenship. Saudi Arabian students are considered as international students in the United States. However, some Saudis are U.S. citizens (dual citizenship) or permanent residents. In this study, 7.18% of participants were Saudi-U.S. citizens, 6.45% were permanent residents, and 86.37% were not U.S. citizens. The results show that there were no statistical significant differences between Saudi students in terms of citizenship.

English as a Second Language. This variable was concerned with whether the students had enrolled in ESL programs or not. The results show that ESL enrollment was a significant factor that can impact student academic performance based on graduation time frame. Students who did not enroll in ESL programs were four times as likely to graduate on time as students

who enrolled in ESL programs. The difference between the two groups could be due to the fact that students who enroll in ESL programs take a year or two to learn English before enrolling in their academic program. Therefore, ESL students are more likely to have longer graduation time frames than those who do not enroll in ESL programs.

Entry method. Students vary in their entry method to KASP (Saudi Ministry of Higher Education, 2014). The impact of the method in which the students were able to obtain the King Abdullah Scholarship was examined. The results show that entry method to the program was found to be statistically significant when it comes to academic performance based on degree GPA, and dropout. Precisely, students who entered KASP through the Self-sponsored Scholarship Program were more likely to have a higher GPA than those who were dependent and students who entered the academic program by being a dependent and are roughly four times more likely to drop out than those who entered through meeting the admission requirements. The difference in academic performance between these groups can be explained based on their variation in previously acquired academic abilities. Saudi students who did not meet the actual admission requirements are viewed as those who did not meet the academic standards of the program. This being said, Self-sponsored Scholarship Program students and dependent students tended to have lower academic qualities than those who met the actual admission requirement. Tinto (1975) and other scholars believe that students who possess high academic abilities are more likely to perform well in college (Astin, 1975, 1984; Spady, 1971).

Prior degree GPA. Prior degree GPA is an important academic preparation measurement unit (Seidman, 2005). Although some former studies have indicated that GPA is considered an invalid academic preparation measurement unit when it comes to predicting students' academic performance in college, recent studies have shown that GPA could be the

best quality that measures students' readiness for college (Astin, 1971; Claussen, 2010; Kuncel et al., 2001; Lynn, 1978; Reisig & DeJong, 2005; Stack & Kelley, 2002; Tessema et al., 2014; Tinto, 1975, 1993, 2007). This study shows that students' prior GPA was significant across all academic performance indicators (degree GPA, graduation time frame, dropout). Sternberg (2010) argued that prior GPA is a good indicator of future academic performance because of the following reasons. First, he believes that "the best predictor of future behavior is generally past behavior of the same kind" (Sternberg, 2010, p. 35). Therefore, if a student did well in the past, he/she is more likely to do well in the future. Second, GPA represents the student's ability to master a wide range of skills as well as his/her academic ability. Third, GPA is a convenient way to get information about students' ability without the need to incur extra effort from the admission officers.

Standardized tests. There was no variation in Saudi students' academic performance based on standardized tests. This result reaffirmed the conclusions reached by more than 800 universities across the United States in that standardized tests were not accurate measures of students' academic abilities (Buckley, 2015).

Level of degree earned. The level of degree earned is the degree in which the applicant has earned through KASP, such as bachelor, master, or doctorate. This variable measures the variation in degree level among Saudi students. The results show that prior education level was found to be statistically significant when it comes to students' academic performance based on degree GPA and dropout. Specifically, master's and doctoral-level students are more likely to have higher GPAs than undergraduate level students. When it comes to dropout, master's students are more likely to graduate than undergraduate students. The results show that master's students have higher odds of graduating that is 3.3 times more than undergraduate students. The

literature suggested that the reasons behind these variations of degree levels are associated with college selective admission policy, and degree levels could be associated with age.

In terms of college selective admission policy, research shows that the higher the academic degree level, the more selective the admission policy is (Kuncel et al., 2007). This special dynamic indicates that graduate level students are more likely to have higher academic qualities such as analytical thinking and quality writing than their undergraduate level counterparts (Pascarella & Terenzini, 2005). They also could have the college experience necessary to survive in such environment (Astin, 1984; Tinto, 1975)

As for age, students who are enrolled in graduate programs are more likely to be older than students who are enrolled in the undergraduate programs; and since age could impact students' academic performance, graduate level students are more likely to perform well in college (Sheard, 2009).

Interest in field of study. Allen and Robbins (2010) argued that students' interest in their field of study is an important factor that could influence their academic performance in college. However, this study found no statistically significant differences between those who were interested in their major and those who were not. Future research is recommended to further examine the impact of students' interest in field of study and their academic performance in college.

Family educational background. Tinto (1975) believed that families with higher formal education would have more impact on students' likelihood to get a degree from college. In fact, he indicated that the higher the family's formal education, the more likely the student to pursue higher academic degrees (Tinto, 1975). However, the results of this study show that there was no statistically significant relationship between family education background and students'

academic performance in college. Further research is recommended to carefully examine the impact of family educational background on students' academic performance in college.

Family bonding. In the literature, scholars have found that academic performance is positively correlated with family bonding (Björklund & Salvanes, 2010). In this study, fair family bonding was positively correlated with Saudi students' academic performance in college based on graduation time frame. In fact, students who rated their family bonding as fair were 5.59 times more likely to graduate on time than those who had excellent family bonding. This finding does not fully reflect what the literature review has suggested, which is better family bonding is associated with better academic performance. However, this could mean that students with fair family bonding might feel more pressure to graduate on time as they have less support than those with excellent family bonding. Scholars have suggested that variables measuring social attributes in relations to students' academic performance could vary in terms of findings (Mayer, 1997; National Center for Educational Statistics, 2012; Sirin, 2005). Higher ratings in social attributes does not necessarily mean higher academic performance. It just suggests the complexity of social environment that students operate within.

Family income. Income is perhaps the most used variable when it comes to the issue of students' academic performance (Sirin, 2005). Tinto (1975) indicated that students' socioeconomic status could impact their academic performance. In this study, the only statistically significant difference was those with family income between \$30,000 to \$50,000 and those who reported their family income below \$15,000 per year. Particularly, students who come from families whose income is between \$30,000 to \$50,000 have odds of graduating on time 2.2 times the odds for those with less than \$15,000 in family income. However, higher levels of income are not significantly different from very low income. It means that students from families

with average income are more likely to graduate on time than those who have poor family income. However, rich kids and poor kids have no statistically different odds of graduating on time. This could also reaffirm what scholars have stated previously, which is that income influences home environment; and since Saudi students live away from their parent's house, they are less likely to be impacted by this variable (Levin & Belfield, 2002; National Center for Educational Statistics, 2012).

English ability. Language is an important element in educational attainment (Bronfenbrenner, 1993). In this study, students who rated their English ability as poor or fair had significantly lower GPAs compared to those who rated their English ability as excellent. There was no statistically significant difference between students who rated their English ability as good or excellent. Also, students with fair, good, and excellent English skills were more likely to graduate than those with poor English ability. In fact, students with excellent, good, and fair English ability had higher odds of graduating that is 54.2, 31.1, and 13.7, respectively, than those with poor English ability. These findings suggest that students' English ability is a very important factor in their educational achievement. Students who struggle with the English language are more likely to struggle in their academic life.

Characteristics of the Program

University type. The university type, in this study, was found to impact students' academic performance based on degree GPA and graduation time frame. The findings suggested that students enrolled in nonresearch-oriented universities are more likely to get higher GPAs than students enrolled in research-oriented universities. Also, students who reported enrollment in nonresearch-oriented universities were more likely to graduate on time than those who were in research-oriented universities. Astin (1984) explained that, in general, research-oriented

universities have more resources than nonresearch-oriented universities. Scholars also agreed that research-oriented universities are more likely to be able to recruit highly qualified faculty and staff, have higher quality facilities, and acquire more financial resources than other types of universities (Astin, 1984; Tinto, 1975, 2007). However, there are two limitations to this assumption (Astin, 1984). First, not all research universities can have access to these resources. Second, other nonresearch-oriented universities may have better resources and better student academic success rate than research-oriented universities (Astin, 1984).

Quantity of student-faculty interaction. The empirical evidence in the study indicated that students who had higher rating on quantity of student-faculty interaction had higher degree GPAs and were less likely to drop out. This finding is consistent with the results from previous studies that found the interaction between students and their faculty to have a positive relationship with students' academic performance in college (Talbert, 2013; Tinto, 2007). No statistically significant relationship was found between students' perceived quality of interaction and graduation time frame.

Perceived quality of interaction. Previous literature suggested that students who feel better about their school and the quality of interaction with their faculty are more likely to do well in college (Talbert, 2013; Tinto, 2007). This study concluded that similar results were found in that students' higher rating on faculty quality of interaction was associated with both higher GPAs and likelihood of graduating from college. No statistically significant relationship was found between students' perceived quality of interaction and graduation time frame.

Perceived inclusiveness. Studies showed that students' sense of belonging was an important factor that can influence their academic performance in college (Astin, 1984, Talbert, 2013; Tinto, 2007). The study showed no significant relationship between students' perceived

inclusiveness and academic performance in college. Further research is recommended to investigate the relationship between students' perceived inclusiveness and academic performance in college.

Perceived stress and discrimination. The results revealed significant and negative relationship between students' perceived stress and discrimination and academic performance based on degree GPA. In particular, the more the students feel stressed and discriminated against from faculty, the lower their degree GPAs. This finding was corroborated by different scholars in that students perceived stress and discrimination levels can negatively impact their academic performance in college (Astin, 1984, Talbert, 2013; Tinto, 2007).

Academic and Social Integration Between the Student and the Program

Extracurricular activities. Astin (1993) suggested that students who participate in extracurricular activities are more likely to perform well in college. In this study, no significant relationship was found between students' participating in extracurricular activities and their academic performance in college. Further research is recommended to meticulously examine the impact of extracurricular activities on students' academic performance in college.

Live on campus. Studies showed that students' academic performance is positively correlated with living on campus (Astin, 1984; Pascarella & Chapman, 1983; Tinto, 1988). However, the study's results showed that Saudi Arabian students who lived on campus tended to have lower degree GPAs than those who lived off campus. However, students who lived on campus were 399.9% more likely to graduate than those who lived off campus. An explanation for such difference is that Saudi students who lived on campus could live the American "college experience" in which they were less focused on their degree GPA and more interested in college involvement (Astin, 1984).

Work on campus. Astin (1984) and Young (2002) suggested that working on campus was associated with fostering the academic performance in college (Astin, 1984; Young, 2002). However, no statistically significant difference was found between students who worked on campus and those who did not. Further research is recommended to examine the relationship between working on campus and students' academic performance in college.

Hours spent studying. Previous studies showed that students who spend more time studying are more likely to perform well in college (Astin, 1984; Tinto, 1988). Students' hours spent studying were found to be significantly correlated to degree GPA. The data showed that there is a linear relationship between hours of study and degree GPA. That is, as hours of study increased, degree GPA increased as well.

Honor classes. Astin (1993) stated that students who took honor classes were more likely to perform well in college. This was found to be also true for this study. Students who took honor classes were more likely to have higher degree GPAs than those who did not take honor classes. This variable could be self-explanatory in that honor classes are usually offered for those with higher GPAs.

Study abroad programs. Astin (1993) argued that students who participated in study abroad programs were more likely to perform well in college. However, this study found no statistically significant results when it came to the relationship between participating in study abroad programs and students' academic performance in college. Further research is recommended to study the relationship between students' participation in study abroad programs and their academic performance in college.

Internships. Astin (1993) reports that students who took internships are more likely to perform well in college (Astin, 1993). However, there was no significant relationship found in

this study when it comes to students' who took internships and their academic performance in college. Further research is also recommended to examine the role of internships on students' academic performance in college.

Workshops. Previous literature asserted that students who participate in workshops are more likely to perform well in college (Astin, 1993). The results of this study revealed that participation in workshops was also associated better academic performance. Specifically, students who participated in workshops were 192.2% more likely to graduate from college than those who did not participate in any workshop.

Research projects. Astin (1993) found that students who participated in research projects were more likely to perform well in college. This study affirms Astin's finding in that students who participated in research projects were more likely to have higher degree GPAs than those who did not. Students who participate in research projects are presumed to be more involved in their academic discipline and therefore, they are more likely to understand the materials that they study and more likely to perform well in college (Astin, 1993).

Academic presentations. This study revealed that academic presentations were found to be a statistically significant contributor to students' academic performance based on degree GPA and graduation. In particular, student who participated in academic presentations in college had higher degree GPAs and were less likely to drop out from college than those who did not. In fact, if students participate in academic presentations, odds of graduating increase by 3.504 or by 250.4%. These findings corroborated with previous research in that students who took part of academic presentations were more likely to perform well in college (Astin, 1993).

Leadership roles. Previous literature showed that students who served in leadership roles are more likely to perform well in college (Astin, 1993). However, this study presented no

significant results when it comes to the relationship between academic performance and students who hold leadership roles in college. Further research is recommended to investigate the importance of students' leadership and academic performance in college.

Friendship support. It was scientifically suggested that students who have friendship support are more likely to perform well in college (Astin, 1993). However, the study does not provide empirical evidence to support this claim. Friendship support was not found to be statistically significant in any of the academic performance indicators. Further research would be appropriate to understand the impact of friendship support on academic performance in college.

Interaction with peers. Astin (1993) suggested that among the most notable student social involvement attributes is students' interaction with their peers. The results of this study indicate that peer interaction can contribute to students' academic performance based on graduation time frame. In particular, the regression analysis showed that having daily peer interaction with peers has odds of graduating on time that are 2.67 times the odds of having no peer interaction.

Cultural interaction. This study showed that culture interaction is one of the most important social integration attributes that could impact students' academic performance in college. In fact, students' rating of their interaction with the American culture was found to be statistically significant across all academic performance indicators (degree GPA, graduation time frame, and dropout). Superficially, students who rated their interaction with the American culture as fair, good, and excellent had significantly higher degree GPAs than those who had poor interaction. Also, students' who rated their interaction with the American culture as fair had odds of graduating on time that are .49 times the odds of rating the American culture as excellent. In other words, students who had excellent experience with the American culture have odds 2.0

times the odds of graduating on time than those who had fair experience with the American culture. In addition, students who rated their interaction with the American culture as fair, good, or excellent were significantly more likely to graduate than those who had poor interaction. These findings corroborated with previous research. For example, Bronfenbrenner (1993) argued that cultural interaction or barriers could impact students' academic performance in college. He believed cultures have different ways of "living," which may affect the learning process of individuals. Therefore, students who do not struggle in their adjustment with the new culture they live in are more likely to perform well in college.

Implications for Higher Education Policy

This study focuses on the factors that contribute to students' academic performance in college in order to improve the quality of education and to reduce obstacles that might impede their educational attainment. The results showed that some students' characteristics, some program characteristics, and some academic and social integration attributes were strongly correlated with students' academic performance in college.

The statistical evidence of this study offers many implications for higher education. First, some policies regarding higher education programs' admission requirements should be revisited, especially for international students. The results show that admission requirements such as prior GPA and English ability were significant when it comes to educational accomplishment. In fact, prior GPA and English ability were very important when it comes to students' degree GPA and ability to graduate from college. However, other admission requirements, such as scores on standardized tests were not found to be an important factor for students' academic performance in college. In fact, this study corroborated the decision made by many leading universities and scholarship programs that dismissed standardized tests as a requirement for admission (Buckley,

2015). McNay and Ozga (1985) cautions higher education institutions from relying heavily on prior GPA as an ultimate requirement on which officials base their admissions. They believe that relying strongly on prior GPA and scores on standardized tests could result on hindering the chances for minority students to get accepted in the educational program.

Second, university officials should consider constructing policies that incentivize and encourage faculty to interact more with students. The results of this study suggested a positive relationship between students-faculty interaction and students' academic performance in college. In fact, the quantity and quality of interaction between the faculty and the students was found significant for both students' degree GPA and ability to graduate from college. As Tinto (2007) found, students' academic performance is the production of faculty work. They are the most important element in the academic learning process. However, faculty find difficulties balancing between their work and life (Philipsen, Bostic, & Mason, 2010). The obstacles that faculty encounter could hinder their faculty-student engagement efforts. Therefore, it is important that academic institutions initiate policies and programs that can effectively address the needs of faculty to ensure that they can provide the optimum work during their journey as academia.

Third, the results show that there is a need for constructing policies that encourage students to be more involved in their academic programs or universities in general. Specifically, students who lived on campus participated in workshops, presentations, and research projects were more likely to graduate from college than those who did not. Also, students who dedicated more time for studying had a positive view of the American culture, and interacted more with their peers, were more likely to do better in college. These findings indicated that students' involvement in college was driving factor to academic success. Astin (1993) found that any form of student academic involvement was positively associated with student academic performance

in college. Universities should offer different types of academic and social activities for their students. They should offer honor classes, workshops, and research projects for their students. In addition, faculty should encourage students to interact with each other. For example, faculty could ask students to work together on assignments, course projects, and presentations.

Limitations of the Study

There were several factors that limit this study. These limitations were: (a) the sample size, (b) variables construction, (c) study design, and (d) type of research. Each of these limitations are discussed in this section.

First, this study is limited to Saudi Arabian students who had studied in the United States' higher education system from 2005 to 2016. The sample size of this study was 543 participants. Saudis in USA sent the survey three times via Facebook® and Twitter®. However, the proposed sample size of 573 graduates and 588 students who are estimated as dropouts was not reached. Although our sample size was close to the projected number of participants, it was relatively a small sample size given the fact that there were about 100,000 recipients of KASP of which only 12,705 had graduated from the program. The dropout rate was unknown to the researcher and had not been officially published by the scholarship program. Not having the intended number of respondents who dropped out of the program did not affect the primary analysis of our study, which was to investigate the relationship between degree GPA as an academic performance indicator (outcome) and the independent variables: (a) the characteristics of the student, (b) the characteristics of the program, and (c) the academic and social integration between the student and the program. As mentioned previously, the study had one primary (degree GPA) and two secondary analyses (graduation time frame and dropout), and only one of the secondary analyses was concerned with students who dropped out. Possible reasons for not taking the

survey could be due to: (a) the survey had an English version only, no Arabic version was provided; (b) the survey was being sent via social media websites and applications, and only people who had access to them were able to participate; (c) some students might not have been willing or interested to participate; (d) other students were difficult to reach or find, and (e) the study was limited to KASP recipients.

Second, prior to conducting this study, the researcher was intending to make the electronic survey as user friendly as possible. Therefore, many variables were constructed in a way that made it easier for the participants to understand when answering the questions. However, some variables should have been constructed differently in order to not limit the type of statistical analysis used. For example, when constructing the GPA variable, the researcher had it as a categorical variable [5.00 = 4.00-3.50, 4.00 = 3.49-3.00, 3.00 = 2.99-2.50, 2.00 = 2.49-2.00, 1.00 = below 2.00]. Constructing this variable as categorical limited the possible types of analyses that could be utilized for this study. In fact, the researcher was obligated to use a multiple linear regression analysis as the only option best suited for this study.

Third, this study utilized a cross-sectional design because the dependent variables degree GPA, graduation time frame, and dropout were measured once after the completion of the degree or dropout (Creswell, 2003; Frankfort-Nachmias & Nachmias, 2008; Vogt et al., 2012). A cross-sectional design is limited to a description of a current event. However, a longitudinal study may reveal more viable information, especially for causation relationship among variables (Creswell, 2003).

Fourth, the study was a quantitative nonexperimental descriptive study aimed at identifying significant factors that contribute to Saudi students' performance in U.S. colleges. This type of research is limited to developing theories, describing phenomena, identifying

problems, justifying practices, or making judgment (Vogt et al., 2012). However, utilizing other types of research could help in understanding the problem more accurately. For example, many survey takers had contacted the researcher about other issues that impacted their academic performance in college other than what had been covered in this study. Some of these issues were health concerns, family emergencies, and homesickness. If the study utilized a mixed method design for instance, some of these issues could have been used in this study.

Recommendations For Further Research

This study presented empirical evidence about which factors can impact students' performance in college. It provided some answers to why some students succeed, while others fail. This section offers insights and recommendations for higher education policymakers as well as for scholars in the field of higher education policy, especially those concerned with admission policies of academic programs.

The results of this study offered several ways of improvements for future research. First, the population of this study was Saudi Arabian students who enrolled at KASP and had studied in the United States. Future research could look into a wider pool of Saudi students from other academic programs to include all Saudi students studying in the United States. In fact, future studies could do a comparative study between Saudi Arabian students' academic performance in U.S. universities and U.K. universities.

Second, the study utilized an electronic survey to generate general information from participants. The survey turnout was close to the needed number to conduct the study. However, future studies could utilize other methods of data collection such as interviews, focus groups, or secondary data if possible. These kinds of data collection techniques may give the researcher

more in-depth information about the obstacles that students face in their academic attainment journey.

Third, the statistical evidence of this study showed that students' higher prior GPAs and positive view of the American culture were consistently significant factors across all academic performance indicators (degree GPA, graduation time frame, and dropout). Future research could look more specifically into these two variables to investigate what helps Saudi Arabian students to acquire higher GPAs and look more positively at the American culture.

Fourth, the study included many variables in order to infer about what factors contribute to students' academic performance in college. Future studies could utilize the findings of this research to focus more on what caused these variables to impact students' academic performance in college. For example, why was the students' age significant when it comes to degree GPA?

Fifth, students' academic performance in college was defined as the ability of students to graduate within a certain time frame while maintaining a minimum GPA required by the academic program. It was measured using three different dependent variables (degree GPA, graduation time frame, and dropout). Future research could utilize only one of these variables as an outcome in order to provide more focused study.

References

References

- Achola, P. P., & Pillai, V. K. (2000). *Challenges of primary education in developing countries*. Hampshire, UK: Ashgate Publishing Limited.
- Al-Anqari, K. M. (2010, August 4). *Achievements and Aspirations*. Retrieved 11 4, 2011, from Ministry of Higher Education: <http://www.mohe.gov.sa/en/aboutus/Pages/Achievements-and-aspirations.aspx>
- Allen, J., & Robbins, S. (2010, January). Effects of interest–major congruence, motivation, and academic Performance on timely degree attainment. *Journal of Counseling Psychology*, 57(1), 23–36.
- Anderson, N. (2015, July 17). *George Washington University applicants no longer need to take admissions tests*. Retrieved from <https://www.washingtonpost.com/news/grade-point/wp/2015/07/27/george-washington-university-applicants-no-longer-need-to-take-admissions-tests/>
- Ascend Learning, LLC. (2012, March). *Student attrition: Consequences, contributing factors, and remedies*. Retrieved from http://www.atitesting.com/Libraries/pdf/Attrition_whitepaper_ATI_2.sflb.ashx
- Astin, A. W. (1971). *Predicting academic performance in college*. New York, NY: The Free Press.
- Astin, A. W. (1975). *Preventing students from dropping out*. San Francisco, CA: Jossey-Bass.

- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25, 297–308.
- Astin, A. W. (1985). *Achieving educational excellence*. San Francisco, CA: Jossey-Bass.
- Astin, A. W. (1993). *What matters in college: Four critical years revisited*. San Francisco, CA: Jossey-Bass.
- Astin, A. W. (1997). How ‘good’ is your institution’s retention rate? *Research in Higher Education*, 28(6), 647–658.
- Astin, A. W. (2006). Making sense out of degree completion rates. *Journal of College Student Retention: Research, Theory and Practice*, 7, 5–17.
- Association of American Medical Colleges. (2015). *Admission requirements*. Retrieved from <https://www.aamc.org/students/applying/requirements/>
- Babcock, P., & Marks, M. S. (2010). *The falling time cost of college: Evidence from half a century of time use data*. Retrieved from <http://ideas.repec.org/p/nbr/nberwo/15954.html>
- Baird, F. E., & Kaufmann, W. (2010). *From Plato to Derrida*. Upper Saddle River, NJ: Pearson Prentice Hall.
- Ball, S. J. (1990). *Politics and policy making in education*. London, UK: Routledge.
- Bashore, T. F., Ridderinkhof, K. R., & van der Molen, M. W. (1997). The decline of cognitive processing speed in old age. *Current Directions in Psychological Science*, 6, 163–169.
- Björklund, A., & Salvanes, K. G. (2010). Education and family background: Mechanisms and policies. In E. A. Hanushek, S. Machin, & L. Woessman (Eds.), *Handbook in economics of education* (Vol. 3, pp. 201–247). Amsterdam: North-Holland.

- Bowe, R., Ball, S. J., & Gold, A. (1992). *Reforming education and changing schools*. London, UK: Routledge.
- Bennett, R. (2003). Determinants of undergraduate student drop out rates in a university business studies department. *Journal of Further and Higher Education*, 27(2), 123–141.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. (1993). The ecology of cognitive development: Research models and fugitive findings. In R. H. Wozniak, & K. Fischer (Eds.), *Development in context. Acting and thinking in specific environments* (pp. 3–44). Hillsdale, NJ: Erlbaum.
- Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Thousand Oaks, CA: Sage.
- Buckley, A. (2015, January 27). *VCU to drop SAT requirement*. Retrieved from http://news.vcu.edu/article/VCU_to_drop_SAT_requirement
- Chapman, D. W., Mahlck, L. O., & Smulders, A. E. (1997). *From planning to action: Government initiative for improving school-level practice*. Oxford, UK: Pergamon.
- Claussen, D. S. (2010). If your master's students aren't doing as well as they (or you) did twenty to thirty years ago, it's probably because they wouldn't and don't. *Journalism and Mass Communication Educator*, 64(4), 349–352.
- Cole, N. S. (1990). Conceptions of educational achievement. *Educational Researcher*, 19(3), 2–7.
- Coromina, L., Capo, A., Guia, J., & Coenders, G. (2011). Effect of background, attitudinal and social network variables on PhD students' academic performance. A multimethod approach. *Estudios Sobre Educación*, 20, 233-253.

- Creative Research Systems. (2012). Sample Size Calculator. Retrieved from <http://www.surveysystem.com/sscalc.htm>
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.
- Demetriou, C., & Schmitz-Sciborski, A. (2011). Integration, motivation, strengths and optimism: Retention theories past, present and future. In R. Hayes (Ed.), *Proceedings of the 7th National Symposium on Student Retention*, 300–312.
- Doermann, H. (1968). *Crosscurrents in college admissions*. New York, NY: Teachers College Press.
- Durkheim, E. (1937, 1951). *Suicide*. Translated by L.A. Spaulding & G. Simpson. Glencoe, IL: The Free Press.
- El-Bizri, N. (2001). Avicenna and essentialism. *The Review of Metaphysics*, 54, 753–778.
- Engle, J., & Tinto, V. (2008). Moving beyond access: College success for low-income, first-generation students. *The Pell Institute for the Study of Opportunity in Higher Education*. Retrieved from <http://files.eric.ed.gov/fulltext/ED504448.pdf>
- Farzaneh, G., Hassan, A., Gholamreza, P., Mirsalaldin, E., Parviz, A., & Alireza, H. (2010). Relationship between creativity, grade point average, achievement motivation, age and entrepreneurship among university students. *Australian Journal of Basic and Applied Sciences*, 4(10), 5372-5378.
- Feldman, S. (1964). Rescher on Arabic logic. *Journal of Philosophy*, 61(22), 724–734.
- Fetter, J. H. (1995). *Questions and admissions: Reflections on 100,000 admissions decisions at Stanford*. Stanford, CA: Stanford University Press.
- Fowler, F. J. (2009). *Survey research methods*. Thousand Oaks, CA: Sage.

- Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the social sciences*. New York, NY: Worth.
- Gillis, C. (2007). *Leaving seats empty: Exploring student attrition in an undergraduate health sciences program* (Master's thesis, Mount Saint Vincent University). Retrieved from <http://ec.msvu.ca:8080/xmlui/bitstream/handle/10587/159/CarolGillis-MAED-2007.pdf?sequence=5>
- Gosling, S. D., & Johnson, J. A. (2010). *Advanced methods for conducting online behavioral research*. Washington, DC: American Psychological Association.
- Gupta, A. (2006). *Empiricism and experience*. New York, NY: Oxford University Press.
- Hallak, J. (1990). *Investing in the future: Setting education priorities in the developing world*. Oxford, UK: Pergamon Press.
- Hardy, M. A. (1993). *Regression with dummy variables*. Newbury Park, CA: Sage.
- Harper, S. R., & Quaye, S. J. (2009). *Student engagement in higher education: Theoretical perspectives and practical approaches for diverse populations*. New York, NY: Routledge.
- Haynie, D. (2014, November 17). Number of international college students continues to climb. *U.S. News and World Reports*. Retrieved from <http://www.usnews.com/education/best-colleges/articles/2014/11/17/number-of-international-college-students-continues-to-climb>
- Heller, H., & Edwards, P. (1992). *Policy and power in education*. London, UK: Routledge.
- Hofstede, G. (2001). *Culture consequences: Comparing values, behaviors, institutions and organizations across nations*. Thousand Oaks, CA: Sage.
- Howe, H. (1993). *Thinking about our kids*. New York, NY: Free Press.

- Hunley, H. A. (2010). Students' functioning while studying abroad: The impact of psychological distress and loneliness. *International Journal of Intercultural Relations*, 34(4), 386–392. doi: 10.1016/j.ijintrel.2009.08.005
- Institute of International Education, Inc. (2014, November 17). *Open door data*. Retrieved from <http://www.iie.org/Research-and-Publications/Open-Doors>
- International Association of Universities. (2012, April). *Affirming academic values in internationalization of higher education: A call to action*. Retrieved from <https://globalhighered.files.wordpress.com/2012/04/affirming-academic-values-in-internationalization-of-higher-education.pdf>
- Ismail, N., & Othman, A. (2006). Comparing university academic performances of HSC students at the tree art-based faculties. *International Education Journal*, 7(5), 668–675.
- Kaplan, J. (2005). *Political theory: The classic texts and their continuing relevance*. The Modern Scholar.
- Jansen, K. J., Corley, K. G., & Jansen, B. J. (2007). *E-survey methodology*. Retrieved from https://faculty.ist.psu.edu/jjansen/academic/pubs/esurvey_chapter_jansen.pdf
- Khan, I. L. (2000). *Institution specific retention issues: A look at college students' persistence and perceptions of their experiences at an urban university* (Doctoral dissertation). Available from ProQuest Dissertations and Theses data base (UMI No. 9989897).
- Khwaileh, F. M., & Zaza, H. I. (2011). Gender differences in academic performance among undergraduates at the University of Jordan: Are they real or stereotyping? *College Student Journal*, 45(3), 633–648.
- Killgore, L. (2009). Merit and competition in selective college admissions. *The Review of Higher Education*, 32, 469–488.

- King, R., & McInerney, D. (2014) Culture's consequences on student motivation: Capturing cross-cultural universality and variability through personal investment theory. *Educational Psychologist, 49*(3), 175–198.
- Klitgaard, R. (1985). *Choosing elites*. New York, NY: Basic Books.
- Kuncel, N. R., Crede, M., & Thomas, L. L. (2007). A meta-analysis of the predictive validity of the graduate management admission test (GMAT) and undergraduate grade point average (UGPA) for graduate student academic performance. *Academy of Management Learning and Education, 6*, 51–68.
- Kuncel, N. R., Ones, D. S., & Hezlett, S. A. (2001). A comprehensive meta-analysis of the predictive validity of the graduate record examinations: Implications for graduate student selection and performance. *Psychological Bulletin, 127*(1), 162–181.
- Kung, Y.M., & Oh, S. (2014). Characteristics of nurses who use social media. *CIN: Computers, Informatics, Nursing, 32*(2), 64–72.
- Lamdin, D. J. (1996). Evidence of student attendance as an independent variable in education production functions. *Journal of Educational Research, 89*(3), 155–162.
- Lawrence, J. J., & Pharr, S. (2003). Evolution of admission standards in response to curricular integration. *Quality Assurance in Education, 11*(4), 222–233.
- Lazar, J., & Preece, J. (1999). Designing and implementing web-based surveys. *Journal of Computer Information Systems, 39*(4), 63–67.
- Levin, H. M., & Belfield, C. R. (2002). Families as contractual partners in education. *UCLA Law Review, 49*, 1799–1824.
- Lynn, J. R. (1978). Graduate program admissions criteria need thorough study. *Journalism Educator, 3*, 20–22.

- Margrain, S. (1978). Student characteristics and academic performance in higher education. *Research in Higher Education, 8*.
- Matuk, C. (2006). Seeing the body: The divergence of ancient chinese and western medical illustration. *Journal of Biocommunication, 32*(1), 1–8.
- Mayer, S. (1997). *What money can't buy: Family income and children's life chances*. Cambridge, MA: Harvard University Press.
- McCloy, R. A., Campbell, J. P., & Cudeck, R. (1994). A confirmatory test of a model of performance determinants. *Journal of Applied Psychology, 79*, 493–504.
- McNay, I., & Ozga, J. (1985). *Policy-making in education*. Oxford, UK: Pergamon Press.
- McNeely, J. H. (1938). *College student mortality*. Washington, DC: U.S. Printing Office.
- Meyers, R. G. (2006). *Understanding empiricism*. Chesham, UK: Acumen.
- Miami University Office of Institutional Research. (2014, January 20). *International student retention and graduation*. Oxford, OH: Miami University. Retrieved from http://www.units.miamioh.edu/oir/Reports_Presentations/2014_Intl_Retn_Grad.pdf
- National Center for Education Statistics. (2012). *Improving the measurement of socioeconomic status for the national assessment of educational progress: A theoretical foundation*. Retrieved from https://nces.ed.gov/nationsreportcard/pdf/researchcenter/Socioeconomic_Factors.pdf
- National Center for Education Statistics. (2014). *Digest of education statistics*. Retrieved from https://nces.ed.gov/programs/digest/d14/tables/dt14_326.10.asp
- Netton, I. R. (2008). Breaking with Athens: Alfarabi as founder, application of political theory by Christopher A. Colmo. *Journal of Islamic Studies, 19*(3), 397–398.

- Open Doors. (2014). *Open doors report on international educational exchange 2014*. Sewickley, PA: The Institute of International Education.
- Orr, M. T. (1987). *Keeping students in school*. San Francisco, CA: Jossey-Bass.
- Owen, T. R. (2003). Retention implications of a relationship between age and GPA. *College Student Journal*, 37, 181.
- Pascarella, E., & Chapman, D. (1983). A multi-institutional, path analytic validation of Tinto's model of college withdrawal. *American Educational Research Journal*, 20, 87–102.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How colleges affect students*. San Francisco, CA: Jossey-Bass.
- Pena, E. V., Bensimon, E. M., & Colyar, J. (2006). Contextual problem defining: Learning to think and act. *Liberal Education*, 92(2) 48–55.
- Percy, W. (1980). *The second coming*. Open Road Media.
- Pharr, S. W., & Lawrence, J. J. (2007). Admission requirements for transfer and non-transfer students: Should one size fit all? *Quality Assurance in Education*, 15(2).
- Phillips, M. L. (2011, November). *Using social media in your research*. Retrieved from <http://www.apa.org/gradpsych/2011/11/social-media.aspx>
- Philipsen, M. I., & Bostic, T. B. (2010). *Helping faculty find work-life balance: The path toward family-friendly institutions*. John Wiley & Sons.
- Reason, R. D., & Renn, K. A. (2012). *College students in the United States: Characteristics, experiences, and outcomes*. New York, NY: John Wiley & Sons.
- Reisig, M. D., & DeJong, C. (2005). Using GRE scores and prior GPA to predict academic performance among criminal justice graduate students. *Journal of Criminal Justice Education*, 16(1), 37–59.

- Ripple, C. H., & Luthar, S. S. (2000). Academic risk among inner-city adolescents: The role of personal attributes. *Journal of School Psychology, 38*(3), 277–298.
- Roberts, J., & McNeese, M. N. (2010). Student involvement/engagement in higher education based on student origin. *Research on Higher Education Journal, 7*. Retrieved from <http://www.aabri.com/manuscripts/09346.pdf>
- Saudi Arabian Cultural Mission. (2013). *Academic supervision: Scholarship*. Retrieved from <http://www.sacm.org/Scholarship.aspx>
- Saudi Ministry Deputy for Scholarship Affairs. (2010, August 4). Retrieved from <http://www.mohe.gov.sa/en/Ministry/SCHOLARSHIPSAGENCY/Pages/default.aasp>
- Saudi Ministry of Finance. (2011). *Statement about the national budget for 2011*. Riyadh, Saudi Arabia: Author.
- Saudi Ministry of Higher Education. (2010, August). *Student Catalog*. Retrieved from http://www.mohe.gov.sa/ar/Ministry/SCHOLARSHIPSAGENCY/Doc1/Dalil_Inside_NEW.pdf
- Saudi Ministry of Higher Education. *King Abdullah scholarship program*. (2010, August 4). Retrieved from <http://www.mohe.gov.sa/en/studyaboard/King-Abdullahstages/Pages/default.aspx>
- Saudi Ministry of Higher Education. (2014). *Planning and information affairs*. Retrieved from <http://he.moe.gov.sa/ar/Ministry/Deputy-Ministry-for-Planning-and-Information-affairs/HESC/Ehsaat/Pages/default.aspx>
- Saudi Ministry of Higher Education. King Abdullah Scholarship Program. (2015, March 25). *Conditions for acceptance in the scholarship program*. Retrieved from

<http://he.moe.gov.sa/en/studyaboard/King-Abdulla-hstages/Pages/conditions-for-acceptance-in-the-scholarship-program-a.aspx>

Saudi Ministry of Higher Education. (2015). *King Abdullah scholarship program*. Retrieved from <http://he.moe.gov.sa/ar/studyaboard/King-salman-hstages/Pages/your-scholarship.aspx>

Saudis in USA. (2014). *Services provided*. Retrieved from <http://www.saudiusa.com/ar/>

Seidman, A. (2005). *College student retention: Formula for success*. Westport, CT: Praeger.

Seyfried, S. F. (1998). Academic achievement of African American preadolescents: The influence of teacher perceptions. *American Journal of Community Psychology, 26*(3), 381–402.

Schneider, M., & Yin, L. (2011, October). *The hidden costs of community colleges*. Washington, DC: American Institute for Research. Retrieved from http://www.air.org/sites/default/files/downloads/report/AIR_Hidden_Costs_of_Community_Colleges_Oct2011_0.pdf

Shanahan, M. (2006). Being that bit older: Mature students' experience of university and healthcare education. *Occupational Therapy International, 7*(3), 153–162.

Shaw, T. (2008). Max Weber on democracy: Can the people have political power in modern states? *Constellations, 15*(1), 33–45.

Sheard, M. (2009). Hardiness commitment, gender, and age differentiate university academic performance. *British Journal of Educational Psychology, 79*, 189–204.

Shiyko, M. P., & Pappas, E. (2009). Validation of pre-admission requirements in a doctor of physical therapy program with a large representation of minority students. *Journal of Physical Therapy Education, 23*(3), 29–36.

- Silver, H. (1990). *Education, change and the policy process*. Lewes, UK: Falmer.
- Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research, 75*(3), 417–453.
- Smith, F. (2004). It's not all about grades: Accounting for gendered degree results in geography at Brunel University. *Journal of Geography in Higher Education, 28*(2), 167–178.
- Solon, G., Page, M. E., & Duncan, G. J. (2000). Correlations between neighboring children in their subsequent educational attainment. *Review of Economics and Statistics, 82*(3), 383–392.
- Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange, 1*(1), 64–85.
- Spady, W. G. (1971). Dropouts from higher education: Toward an empirical model. *Interchange, 2*(3), 38–62
- Spaeth, J. L. (1976). Cognitive complexity: A dimension underlying the socioeconomic achievement process. In W. H. Sewall, R. M. Hauser, & D. L. Featherman (Eds.), *Schooling and achievement in American society* (pp. 103–131). New York, NY: Academic Press.
- Stack, S., & Kelley, T. (2002). The graduate record examination as a predictor of graduate student performance: The case of criminal justice. *Journal of Criminal Justice Education, 13*, 335–349.
- Sternberg, R. J. (2010). *College admissions for the 21st century*. Cambridge, MA: Harvard University Press.
- Studtmann, P. (2010). *Empiricism and the problem of metaphysics*. New York, NY: Rowman & Littlefield.

- Suchting, W. (2012). Historical-critical dictionary of Marxism. *Historical Materialism*, 20(3), 213–218.
- Sutton, A., & Soderstrom, I. (1999). Predicting elementary and secondary school achievement with school-related and demographic factors. *Journal of Educational Research*, 92(6), 330–338.
- Swail, W. S. (2004). *The art of student retention: A handbook for practitioners and administrators*. Austin, TX: Educational Policy Institute.
- Talbert, K. (2013). *Student-faculty interaction and its relation to satisfaction, aspiration, and college GPA for first-generation college students* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database.
- Taylor, C., & Albasri, W. (2014). The impact of Saudi Arabia King Abdullah’s scholarship program in the U.S. *Open Journal of Social Sciences*, 2, 109–118.
- Tessema, M. T., Ready, K. J., & Astani, M. (2014). Does part-time job affect college students’ satisfaction and academic performance (GPA)? The case of a mid-sized public university. *International Journal of Business Administration*, 5(2), 50.
- Thernstrom, A. (2002). *The racial gap in academic achievement. Beyond the Color Line: New Perspectives on Race and Ethnicity in America*. Stanford, CA: Hoover Institute Press.
- Tinto, V. (1975). Dropouts from higher education: A theoretical synthesis of recent literature. *A Review of Educational Research*, 45, 89–125.
- Tinto, V. (1988). Stages of student departure: Reflections on the longitudinal character of student leaving. *Journal of Higher Education*, 59, 438–455.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press.

- Tinto, V. (1999). Taking retention seriously: Rethinking the first year of college. *National Academic Advising Association (NACADA Journal)*, 19(2), 5–9.
- Tinto, V. (2004). *Student retention and graduation: Facing the truth, living with the consequences*. Washington, DC: The Pell Institute.
- Tinto, V. (2005). *Student retention: What next?* Paper presented at the National Conference on Student Recruitment, Marketing, and Retention. Washington, DC: Baywood Publishing.
- Tinto, V. (2007). Research and practice of student retention: What next? *Journal of College Student Retention: Research, Theory and Practice*, 8(1), 1–19.
- Top 100—Lowest acceptance rates. (2014). *U.S. News and World Report*. Retrieved from <http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/lowest-acceptance-rate>
- University of Arkansas. (2015). *Admissions*. Retrieved from <http://uark.edu/admissions/index.php#undergraduate-admissions>
- University of California, Berkeley. (2015). *Admissions overview*. Retrieved from <http://www.berkeley.edu/admissions>
- University of California, Los Angeles. (2015). *Applying for admission*. Retrieved from <http://www.admission.ucla.edu/prospect/applying.htm>
- University of Michigan Admissions Lawsuits. (2012, September 5). Retrieved from <http://diversity.umich.edu/admissions/legal>
- Virginia Commonwealth University, Office of Research and Innovation. (2011). *Types of IRB Review*. Retrieved from <http://www.research.vcu.edu/irb/reviewtypes.htm>

- Virginia Commonwealth University, School of Engineering. (2015, September). *Transfer admissions*. Retrieved from <http://www.egr.vcu.edu/future-students/undergraduate-programs/transfer-admissions/>
- Virginia Commonwealth University Relations. (2014, April 2). *Office of admissions*. Retrieved from <http://admissions.vcu.edu>
- Vogt, W. P., Gardner, D. C., & Haefele, L. M. (2012). *When to use what research design*. Guilford Press.
- Wait, I. W., & Gressel, J. W. (2009). Relationship between TOEFL score and academic success for international engineering students. *Journal of Engineering Education*, 98(4), 389–398.
- Ward, A., Stoker, H. W., & Murray-Ward, M. (1996). Achievement and ability tests—Definition of the domain. *Educational Measurement*, 2, 2–5.
- Webster, C. A. (2010). Increasing student motivation through teacher communication. *Journal of Physical Education, Recreation & Dance*, 81(2), 29–39.
- Webster, C. L. (2007). *The effect of scholarship support, gender, and sport type on retention of collegiate student-athletes* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3286531).
- Wells, M. I. (2003). An epidemiologic approach to addressing student attrition in nursing programs. *Journal of Professional Nursing*, 19(4), 230–236.
- Yorke, M. (1999). *Leaving early: Undergraduate non-completion in higher education*. London, UK: Falmer.
- Young, J. R. (2002, December). Homework? What homework? Students seem to be spending less time studying than they used to. *The Chronicle of Higher Education*, 1–12.

Yukselturk, E., & Inan, F. A. (2006). Examining the factors affecting student dropout. *The Turkish Online Journal of Distance Education*, 7.

Zhang, J., & Goodson, P. (2011). Predictors of international students' psychosocial adjustment to life in the United States: A systematic review. *International Journal of Intercultural Relations*, 35(2), 139–162.

Appendix A

KASP Admission Policy: Requirements for Admission

A. Traditional: KASP Actual Admission Requirements

The selection for academic disciplines is based on the needs of government organizations, national corporations, and the private sector. To grant a scholarship, there are general as well as specific requirements that are to be met by applicants. These requirements vary based on the degree pursued by the applicant.

1. General Conditions for Acceptance in the Program

- The applicant must be a Saudi citizen.
- The applicant must not be a government employee.
- The applicant must study full-time and reside in the country designated.
- The applicant's age must fulfill the specific conditions for each level of study.
- Nomination shall be according to the requirements of the different province and governorates Kingdom-wide, the academic disciplines targeted by the program, and the countries designated.
- All data must be entered accurately and correctly; if it is later determined that some of the data are incorrect in a way that violates the conditions for acceptance in the scholarship program; the applicant's nomination will be cancelled even if the discrepancy is not discovered until issuance of the final scholarship award.
- The applicant's degree must be validated by the Ministry of Higher Education if it was granted by a non-Saudi university; a copy of the degree in Arabic must be presented.

- A female applicant must have a legally acceptable male companion, who will be required to travel with her and remain with her until the completion of her scholarship study.

2. Special Conditions for Acceptance in the Program for the Doctoral Degree

- The grade point average of the applicant at the Master's degree level must have been at least very good or 80/100.
- No more than five years must have passed since the applicant was awarded the Master's degree.
- If the applicant was awarded an academic degree outside the Kingdom, it must be validated by the relevant agency prior to application to the program.
- The applicant must not be more than 30 years old.

3. Special Conditions for Acceptance in the Program for the Master's Degree

- The grade point average of the applicant at the Bachelor's degree level must not be less than 2.75 out of 4.00 or 3.75 out of 5.00 or 80 out of 100.
- No more than five years must have passed since the applicant was awarded the Bachelor's degree.
- If the applicant was awarded an academic degree outside the Kingdom, it must be validated by the relevant agency prior to application to the program.
- The applicant must not be more than 27 years old.

4. Special Conditions for Acceptance in the Program for the Bachelor's Degree

- The applicants' secondary school grade must not be less than 90% in the physical sciences division or its equivalent.

- The applicant must pass a general aptitude test (GAT) with a score not less than 80%.
- The applicant must pass an achievement test (AT) with a score not less than 80%.
- No more than three years must have passed since the applicant graduated from secondary school.
- If the applicant was awarded an academic degree outside the Kingdom, it must be validated by the relevant agency prior to application to the program.
- The applicant must not be more than 22 years old (King Abdullah Scholarships Program, 2010).

B. Alternative: Self-Sponsored Scholarships Program

This program is founded for the Saudi students who did not meet the actual admission requirements of KASP. In this program, students cover their own expenses such as university fees, living expenses, and medical bills. However, the Ministry of Higher Education will pay for their travel expenses from Saudi Arabia to the recommended university. Students will have to pass certain requirements, within the Self-Sponsored Scholarships Program, in order to be eligible to join KASP. These requirements are as follows:

- The applicant must meet the general conditions for acceptance in KASP.
- The applicant must give a prior notice to the Ministry of Higher Education to study abroad.
- The applicant must be of good conduct.
- The applicant has not obtained a scholarship from any government organization previously.

- The applicant must submit an acceptance letter from a recommended university.
- The undergraduate applicant must finish 30 credit hours with grade point average of 2.5 out of 4.
- The graduate applicant must finish 9 credit hours with grade point average of 3.3 out of 4 (Ministry Deputy for Scholarship Affairs, 2010).

GENERAL REQUIREMENTS:

- Saudi citizen.
- Not be a government employee.
- Study full-time and reside in the country designated.
- Age must be appropriate for degree level
- Nomination is based on province, academic disciplines, and the countries designated.
- All data must be entered accurately and correctly.
- Applicant's degree must be validated by MOHE.
- A female applicant must have a legally acceptable male companion.

King Abdullah Scholarship Requirements:

- Meet the general conditions for acceptance in KASP.
- College Entrance Exams scores must be 80% or above.
- Has age restrictions.
- Has time restrictions on previous earned degrees.
- GPA requirements for high school applicants 3.60, undergrad applicants 2.75.
- GPA requirements for Masters 80% or 3.2 out of 4.00.

Self-Sponsored Scholarships Program:

- Meet the general conditions for acceptance in KASP.
- NO College Entrance Exams required
- NO age restriction.
- NO time restrictions on previous earned degree.
- The undergraduate level applicant must finish 30 credit hours with GPA of 2.5 out of 4.00 regardless of high school GPA.
- The graduate level applicant must finish 9 credit hours with grade

Figure A1. Variation in admission requirements based on entry method.

There are four goals of KASP.

- 1) To sponsor qualified Saudis to study in the top universities in the world.
- 2) To achieve a high level of academic and professional standards through the scholarship program.
- 3) To build a work environment filled with professional and qualified Saudis.
- 4) To exchange the cultural, educational and scientific experience with different countries around the world (Ministry of Higher Education, 2014).

Appendix B

Letter of Consent

Virginia Commonwealth University
Wilder School of Public Policy

November 10, 2015

Dear Research Participant,

You are being invited to participate in a research study aimed at addressing public policy issues in higher education. In particular, we are interested in understanding the factors that contribute to Saudi students' academic performance in college. This study specifically focuses on students who graduated from or dropped out of King Abdullah Scholarship Program.

This survey will require less than 15 minutes of your time. During this time, you will be asked to fill out a survey about general information as well as your academic performance as a student in the Program.

Your participation in this research is completely voluntary. There are no anticipated risks or discomforts related to this research. The researcher will use all collected information for scientific purposes only.

Several steps will be taken to protect your anonymity and identity. First, you will NOT be asked for your name, address, or any identifying information. Second, after conducting the survey, all surveys will be destroyed once they have been added and processed in SPSS file. Third, the collected data will be kept in a locked filing cabinet at Virginia Commonwealth University, and ONLY the main researcher and his advisor will have access to the information. Finally, All data collected will be discarded after 5 years.

The data collected in this study is used for the researcher's dissertation titled "Is Your Student Fit For That College? A Study of the Factors That Contribute to Students' Academic Performance in College." The results will be presented in person to the researcher's PhD committee in partial fulfillment of the requirements for the degree of Doctorate of Philosophy in Public Policy and Administration at Virginia Commonwealth. If you wish to receive a copy of the results from this study, you may contact the researcher at the telephone number given below.

If you require any information about this study, or would like to speak to the researcher, please call Abdulaziz Alotaibi at 202-999-6186 or 0507794041.

[] I have read (or have been read) the above information regarding this research study, and consent to participate in this study.

مايو 31، 2016

عزيزي/عزيزتي المشارك في البحث:

أنت مدعو للمشاركة في هذا البحث العلمي الهادف إلى مناقشة قضايا السياسة العامة في التعليم العالي. تحديدًا، نحن مهتمون في فهم العوامل التي تؤثر على الأداء الأكاديمي للطلبة السعوديين في الجامعات الأمريكية. هذه الدراسة ستركز على طلاب برنامج خادم الحرمين الشريفين للإبتعاث الخارجي فقط.

تعبئة هذه الاستبانة يحتاج إلى 15 دقيقة من وقتك. خلال هذا الوقت، سيكون هناك أسئلة عن معلوماتك العامة و الأكاديمية كأحد طلاب برنامج خادم الحرمين الشريفين للإبتعاث الخارجي في أمريكا.

ستكون مشاركتك في هذا البحث بشكل تطوعي. حيث أنه لا يوجد أي مخاطر أو مشاكل متوقعة من مشاركتك في البحث. الباحث سيقوم بجمع المعلومات للأغراض العلمية فقط.

هناك عدة خطوات سيقوم بها الباحث لحماية هوية المشارك في البحث. أولاً، لن يتم سؤالك عن اسمك أو عنوانك أو أي معلومات قد تؤدي إلى تحديد هويتك. ثانياً، بعد جمع المعلومات، سنقوم بإتلاف جميع الإستبانات بعد معالجتها في برنامج اس بي اس اس. ثالثاً، جميع البيانات ستكون في خزانة ملفات خاصة في جامعة فرجينيا كومونويلث الأمريكية. وستكون متاحة للباحث و مشرف البحث فقط. أخيراً، جميع البيانات ستنتلف نهائياً من جميع المصادر بعد 5 سنوات من مناقشة رسالة الدكتوراة.

البيانات التي يتم جمعها في هذا البحث ستستخدم في رسالة الدكتوراة المعنونة كالتالي: "هل الطالب مناسب لهذه الجامعة: دراسة للعوامل التي تؤثر على الأداء الأكاديمي للطالب في الجامعة." سيعرض الباحث النتائج على لجنة رسالة الدكتوراة كجزء من تحقيق متطلبات الحصول على درجة الدكتوراة في الفلسفة في مجال السياسة العامة في جامعة فرجينيا كومونويلث الأمريكية. إذا كنت ترغب في الحصول على نسخة من نتائج هذا البحث، تستطيع التواصل مع الباحث على الرقم المذكور أدناه.

إذا كنت تريد الحصول على معلومات حول هذا البحث أو تفضل التحديث شخصياً مع الباحث، يمكنك التواصل مع عبدالعزيز

العنبيبي على الرقم 0017034190178 او 00966553201236

() اطلعت على المعلومات بخصوص هذا البحث وأوافق على المشاركة في هذا الاستبيان.

Appendix C
Survey Instrument

I. Section One: Characteristics of the Student

Please choose the appropriate answer:

1- What is your gender?

Female
Male

2- What is your race?

Arabian Asian White (European) Black (African) Other

3- What is our U.S. Citizenship?

US citizen Permanent Resident Not a US citizen

4- Did you enroll in any English as a second language (ESL) programs?

Yes No

5- What was your age when you were awarded King Abdullah Scholarship?

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
47 48 49 50+

6- What year were you awarded King Abdullah Scholarship?

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

7- How were you awarded King Abdullah Scholarship?

By meeting the admission requirements

By going through the Self-Sponsored Scholarship Program

The following questions are related to information “prior” to enrolling at KASP:

8- What was your level of education “prior” to enrolling at KASP?

High School Bachelor’s Master’s

9- What was your “prior” degree GPA when you applied to KASP?

4.00-3.50 3.49-3.00 2.99-2.50 2.49-2.00 below 2.00

10- What is your intended field of study when you applied to KASP?

Business Science Humanities Engineering Medical

11- Were you interested in your field of study?

Yes No

12- Did you change your field of study while on the scholarship?

Yes No

13- Were you required to take or submit any College Entrance Examination?

Yes No

If yes, please specify the type of test(s) and score(s):

.....

The following questions are related to information “after” graduating from or dropping out of KASP:

14- What was your earned degree through KASP?

Bachelors Masters Doctorate No Degree Earned (dropout)

15- What year did you graduate/dropout from KASP?

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

16- What is your degree GPA (upon the completion of degree)?

4.00-3.50 3.49-3.00 2.99-2.50 2.49-2.00 below 2.00

17- What is your field of study upon graduating from KASP (if different from original field of study)?

Business Science Humanities Engineering Medical

The following questions are related to information regarding the socioeconomic background:

18- What is your parents' highest educational background?

Father	Mother
No formal education	No formal education
Some formal education	Some formal education
High school	High school
Bachelors	Bachelors
Masters	Masters
Doctorate	Doctorate

19- How would you rate your family bonding?

Excellent

Good

Fair

Poor

20- What is your family's income level?

Less than \$15,000

Between \$15,000-\$30,000

Between \$30,000-\$50,000

Between \$50,000-\$100,000

More than \$100,000

II. Section Two: Characteristics of the program.

Please choose the appropriate answer:

21- What type university/school were you attending when you were granted King Abdullah Scholarship?

Research-oriented

Nonresearch-oriented

I don't know N/A

22- Did you change your university/school while on the scholarship?

Yes No

23- How many times did you change your university/school (if applicable)?

Never One time Two times Three times Four times or more

The following questions are related your university's faculty (of which you have graduated from):

24- How many times do you meet a faculty member during office hours?

None
1-2
3-4
5-6
7-8
9-10
11-12
13-14
14 or more

25- How many times do you meet a faculty member outside of class or office hours?

None
1-2
3-4
5-6
7-8
9-10
11-12
13-14
14 or more

26- How many Times do you communicate via email with a faculty member?

- None
- 1-2
- 3-4
- 5-6
- 7-8
- 9-10
- 11-12
- 13-14
- 14 or more

Please rate the following statements

27- I feel very comfortable interacting with my faculty

Strongly Disagree Disagree Somewhat Agree Somewhat Strongly Agree

28- It is easy for me to see and interact with my faculty outside of regular office hours

Strongly Disagree Disagree Somewhat Agree Somewhat Strongly Agree

29- Faculty is interested in students personal problems

Strongly Disagree Disagree Somewhat Agree Somewhat Strongly Agree

30- Faculty is interested in students' academic problems

Strongly Disagree Disagree Somewhat Agree Somewhat Strongly Agree

31- I think interacting with faculty has been a source of stress for me

Strongly Disagree Disagree Somewhat Agree Somewhat Strongly Agree

32- Faculty have adapted teaching to students with different cultural backgrounds

Strongly Disagree Disagree Somewhat Agree Somewhat Strongly Agree

33- I have felt discriminated against from faculty

Strongly Disagree Disagree Somewhat Agree Somewhat Strongly Agree

34- Cultural diversity should be more strongly reflected in curriculum

Strongly Disagree Disagree Somewhat Agree Somewhat Strongly Agree

35- A culturally diverse faculty body enhances the educational experience of all students

Strongly Disagree Disagree Somewhat Agree Somewhat Strongly Agree

III. Section Three: Interaction between the Student and the Program.

Please choose the appropriate answer:

36- Did you participate in any extracurricular activities while you were in college?

Yes No

37- Did you live on campus while attending college?

Yes No

38- Did you work on campus while attending college?

Yes No

39- Did you hold leadership roles while attending college?

Yes No

40- Did you take any honor classes?

Yes No

41- Did you participate in study abroad programs while attending college?

Yes No

42- Did you take internships while in college?

Yes No

43- Did you participate in workshops while attending college?

Yes No

44- Did you participate in research projects while attending college?

Yes No

45- Did you do any academic presentation in college?

Yes No

46- On average, how many hours did you spend studying per week?

Less than 7 hours a week

Between 7-14 hours a week

Between 14-21 hours a week

Between 21-28 hours a week

More than 28 hours a week

47- On average, how many times did you interact with your peers regarding school-related work outside the classroom?

Interact in a daily bases

Interact once every week

Interact once every month

Interact once every semester

No interaction

48- On average, how many times did you interact with your faculty regarding school-related work outside the classroom?

Interact in a daily bases

Interact once every week

Interact once every month

Interact once every semester

No interaction.

49- How would you rate your friendship support while attending college?

Excellent Good Fair Poor

50- How would you rate your experience with the American cultural while attending college?

Excellent Good Fair Poor

51- How would you rate your English language ability while attending college?

Excellent Good Fair Poor

Vita

Abdulaziz A. Alotaibi was born on April 13, 1984 in Lansing, Michigan. He grew up in Riyadh Saudi Arabia. In 2000, he moved with his family to Fayetteville, Arkansas where he was able to graduate from Fayetteville High School in 2003. He earned his bachelor's degree from the University of Arkansas in Business Administration with a concentration in Information Systems in 2007. Two years later, he earned his Master's degree in Public Administration from the University of Arkansas. His Ph.D. was in Public Policy and Administration focusing in Higher Education Policy from Virginia Commonwealth University.