PREDICTING COLLEGE STUDENTS' INTENTION TO GRADUATE: A TEST OF
THE THEORY OF PLANNED BEHAVIOR

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Chapter 1

Introduction

A college education is a necessity in today’s society. Many jobs are being shipped overseas, and young adults without a post-secondary degree are struggling to find work. This change is due largely to the nature of our economy. The U.S. has transformed from a manufacturing-based economy to one that thrives on knowledge (McGuire, 2011). Technology also has contributed to this movement with many manual labor jobs now being conducted by robotics, automation, and computers. Big employers will continue to find ways to replace limited skilled workers with machines as long as it is cost effective to do so. With the job market becoming increasingly more competitive, students must expand their marketability if they hope to obtain sustainable employment.

Having a limited education restricts an individual’s job opportunities and marketability. For instance, although many individuals are continuing to struggle to find employment after the recession of 2009, nearly 200,000 jobs for workers with at least a bachelor’s degree were added during this period (Webley, 2010). Conversely, almost four out of five jobs that were destroyed by the recession were held by workers with a high school diploma or less. Today the unemployment rate for workers with only a high school diploma is double that for workers with a bachelor’s degree: 8.1 percent versus 3.7 percent (Rampell, 2013). In short, a high school diploma is significantly more limited now than it has been in the past.

Besides increased employment opportunities, there are several other reasons why it is important to extend one’s education past high school. Students with a college degree earn hundreds of thousands of dollars more than those with only a high school diploma.
(Baum et al., 2010; Schneider & Yin, 2011; Woolfolk, 2013). Over time, these lifetime earnings can exceed those of a high school graduate by as much as half a million dollars. Further, families headed by individuals with a bachelor’s degree are expected to make about $1.6 million more than the incomes of families headed by those with only a high school degree (Hansen, 2003). These figures seem to indicate it is more costly than not to earn a college degree.

Individuals with a college degree also tend to contribute more and take less from society. For instance, students with a college education typically pay more in taxes per year than those with only a high school education (Baum et al., 2010). Baum et al. also notes that adults with higher levels of education are more likely to engage in organized volunteer work and civic participation.

Despite these benefits of a post-secondary degree, four-year colleges and universities generally report low graduation rates. Bachelor’s degree attainment is relatively low among 25- to 34-year olds (Lewin, 2010); only about half of today’s college freshmen obtain a four-year degree (Adams, 2011; Ashburn, Hoover, & Lipka, 2011; Jones, 2011). In addition, many first-time students struggle today to obtain a bachelor’s degree within 6 years since enrollment (National Center for Educational Statistics, 2013). To that end, the current study examined how to increase college graduation rates within the U.S. Learning more about why college students stay in school will not only benefit those seeking more advanced career opportunities, but also the institutions and societies in which students reside.

Numerous solutions have been provided on how to increase the low college graduation rate. For example, current President Barack Obama is encouraging students to
work hard and continue their education after high school. His goal is to have all adult Americans committed to at least one year of higher education or career training by 2020. This call for action stems from the United States falling from 1st to 12th place in the percent of young adults with at least an associate’s degree (Nies via, 2010). If more students apply themselves and strive for college, this could possibly increase the college graduation rate in the U.S.

Conversely, others have suggested examining the characteristics of the students already enrolled and what prevents them from obtaining a four-year degree. Often this translates into examining students’ personal attributes (e.g., goal orientations, attitudes, etc.) and background characteristics (e.g., gender, precollege ability, socioeconomic status) that affect their educational goals. In general, researchers have found this approach informative in regard to why some student graduate relative to others (see Bowen, Chingos, & McPherson, 2009; Graunke & Woosley, 2005; Mohr, Eiche, & Sedlacek, 1998).

Although encouraging more students to pursue a college degree is an ideal solution to increasing graduation rates, the fact of the matter is that it is not the most economical. Sources have noted that almost half of incoming freshmen are not academically prepared for the rigors of college-level course work (ACT, 2012; SAT, 2013). Moreover, when students enroll in college but fail to graduate within four to six years, their institutions suffer by losing revenue that could have otherwise supported their school (Raisman, 2013). Taxpayers also are affected by students who enroll but fail to graduate. Researchers have found that students who started college in the fall 2002 as full-time students, but failed to graduate in six years, cost the nation approximately $3.8
billion in lost income; $566 million in lost federal income taxes; and $164 million in lost state income taxes (Schneider & Yin, 2011). For this reason, the current study focuses on increasing the retention rate of students who are already enrolled at four-year institutions.

**Statement of Purpose**

Given that only half of students graduate from college within four to six years (Adams, 2011; Ashburn et al., 2011; Jones, 2011), the purpose of this study was to examine that factors that influence students’ intention to graduate. Specifically, I assessed the following questions:

1. What specific situational and personal factors influence undergraduates’ intention to graduate?

2. Do undergraduates’ attitudes, perceived norms, perceived ability, and intention to graduate vary by their enrollment year?

3. What specific situational and personal factors influence non-traditional students’ (i.e., transfer students) intention to graduate?

To answer these questions, I used the Theory of Planned Behavior (TPB; Ajzen, 1985) as a theoretical framework. According to this theory, there are three major determinants that permit the explanation and prediction of most human social behavior – attitudes, perceived norms, and perceptions of behavioral control (PBC). Each of these variables predicts individuals’ intention to perform a behavior.

Considered separately, intention in the TPB is an indication of a person’s readiness to perform a given behavior and is assumed to be the immediate antecedent of behavior (Ajzen, 2010). Of importance, however, is that behavioral intention can only translate into behavior if it is under volitional control. It is thus postulated that PBC and
behavioral intention can be utilized to directly predict behavioral achievement (Ajzen, 1991). In addition, when behaviors pose no serious problems of control, they can be predicted from intentions with considerable accuracy (Ajzen, 1991). Behavior is the manifest, observable response in a given situation to a specific target. More specifically, behavior is a function of compatible intentions and perceptions of behavioral control (Ajzen, 2010).

Attitudes represent the overall evaluation of the consequences of a particular behavior. If the behavior in question is believed to have positive consequences that are positively valued, the more likely it is the individual will intend to perform the behavior. Perceived norms concern an individual’s perceptions of the social pressure to perform a behavior. If individuals believe that significant others (e.g., parents, friends, or spouse) want them to perform a specific behavior or if individuals feel that they should perform a behavior because important others are doing it, the more likely it is that the behavior will be performed. Lastly, PBC refers to an individual’s perceived degree of difficulty to perform a behavior and whether an individual believes he or she has the ability to perform a behavior. Individuals are more likely to perform a behavior if there are limited perceived factors that prevent them from accomplishing a goal and if they believe they have the capability to do so.

I used the TPB to examine students’ attitudes toward obtaining a four-year degree, perceived social pressure to graduate, and perceived factors that facilitate or hinder their goal of graduation intention. Of importance, I only investigated students’ intention to graduate and not their actual graduation behavior as the current study is not a longitudinal analysis. However, because numerous meta-analyses have indicated that
intentions account for a considerable proportion of variance in performing various behaviors (see Fishbein & Ajzen, 2010), I believe the results from this study are still informative in regard to the central research questions.

**Rationale**

This theory was selected for this study as it assesses many of the personal and situational factors that influence undergraduates’ intention to further their education. Researchers have found it useful to predict a significant amount of variance in students’ intention to graduate from high school (Davis, Ajzen, Saunders, & Williams, 2002) and intention to apply to graduate school (Ingram, Cope, Harju, & Wuensch, 2001). In addition, others have found support for the TPB in predicting why both traditional and nontraditional undergraduates pursue a four-year degree (Sutter & Polush, 2013). It has also been found useful to predict other academic behaviors that are relatable to the current study (Ajzen & Madden, 1986; Phillips, Abraham, & Bond, 2003). All of these studies support the argument that the TPB can be useful to predict college students’ graduation intention.

Lastly, the TPB also emphasizes the role that external factors have on individuals’ decision to perform a behavior by assessing their perceived ability to take action, and their perception of factors that may facilitate or hinder their behavioral goal. In regard to college retention, many of the frequently used models that study this topic often overlook external factors such as finances (Hunt, Boyd, Gast, & Mitchell, 2012), work responsibilities (Crisp & Nora, 2010; Duggan & Pickering, 2008; Hunt et al. 2012), or enrollment status (e.g., part-time enrollment) that may influence students’ degree attainment. Thus, because the TPB equally emphasizes personal as well as situational
factors in regard to an individual’s behavioral intention, it is an appropriate perspective from which to approach this problem.

**Current Study**

Within the current analysis, I expect the TPB to account for a significant portion of variance in undergraduate students’ intention to graduate. This prediction is based on previous research that has used the theory to examine degree obtainment (Davis et al., 2002; Ingram et al., 2001). In addition, others have found that students’ attitudes, perceived norms, and PBC towards graduation vary as they progress throughout school (e.g., Bowen, Chingos, & McPherson, 2009; Graunke & Woosley, 2005; Hunt et al., 2012; Joo, Durband, & Grable, 2009). Because of this, I expect that undergraduates’ intention to graduate will vary at different years of their enrollment. Lastly, research has found transfer students compose a significant portion of students at many colleges and universities, and experience their own unique challenges to earn a degree (Duggan & Pickering, 2008; Kinnick & Kempner, 1988). Thus, it is expected that not all of the TPB variables will significantly predict their intention to earn a four-year degree.
Chapter 2

Review of Literature

Importance of a College Education

A college education is more important now than in the past. Many lower-skilled jobs have been shipped overseas, and technological efficiencies have reduced the number of manufacturing and blue-collar jobs (Hanford, 2013). Professional opportunities for those with only a high school diploma have become increasingly rare (Mangu-Ward, 2011, Goldin & Katz, 2009), and those without some kind of post-secondary education are quickly falling out of the American middle class (Hanford, 2013). Researchers have also noted that approximately 60 percent of all jobs in the U.S. economy require higher education, and occupational postings are increasingly seeking candidates with college experience (Dohm & Wyatt, 2002). If these trends continue, individuals without a post-secondary degree will increasingly struggle to find work.

Further, high school graduates who manage to find a job stand to earn significantly less than those with a college education. Researchers have found the median earning of bachelor’s degree recipients working full-time year-round in 2008 was $55,700 (Baum et al., 2010). This is approximately $21,900 more than the median earnings of high school graduates. The lifetime earnings of a college graduate can also exceed those of a high school graduate by as much as a half million dollars, and young adults between the ages of 25 and 34 with a college degree can earn approximately 40 percent more than similar aged adults with only some college, and about two-thirds more than similar adults with only a high school diploma (Schneider & Yin, 2011). These findings support the notion that a college degree can be a lucrative investment.
Beyond the economic advantages of graduating from college, individuals without a higher education tend to also miss out on various psychological and health benefits associated with earning a higher degree. For instance, adults with higher levels of education are more likely to engage in organized volunteer work and to vote (Baum et al., 2010). Regarding health benefits, college graduates are more likely to have access to health care; smoke less, exercise more, and have lower obesity rates.

The benefits of a college degree extend not only to primary earners but also to their children. For instance, children of adults with a tertiary degree benefit as they often possess increased cognitive skills and engage in more educational activities than other children (Baum et al., 2010). Similarly, children of a college grad tend to have better grades and test scores and are more likely to pursue extended education themselves (Wann, 2013).

Not only do individuals and their children benefit from a college degree, but so too does the broader society. For instance, higher education is associated with greater productivity and increased tax revenues at the local, state, and federal level (Baum et al., 2010). The typical college graduate also pays 80% more in taxes per year than an individual with only a high school degree. Further, a college graduate is less likely to commit crimes and more likely to contribute to social security (Baker, 2011). Taken together the pattern is clear; a college education translates into increased opportunities for individuals, their families, and their communities.

**Current State of Post-Secondary Education**

Despite all the advantages of a college education, the U.S. has a relatively low post-secondary graduation rate. All too often high school graduates borrow large sums of
money to further their education, only to discover they are ill equipped to complete their studies and earn a college degree. Bachelor degree attainment has plateaued since the early 1990s (Bowen, et al. 2009), with the U.S. now ranked 12th in the number of 25- to 34-year olds with a college degree among 36 developed nations (Lewin, 2010). Further, federal data find that in the fall of 2006, only 50 percent of undergraduates who began a four-year bachelor’s program obtained a degree within six years. Unless the nation’s dropout rate changes dramatically and quickly, the current generation of Americans will be less educated than the previous (Jones, 2011).

In addition, the university or college at which a student enrolls also suffers when attrition occurs. Students who drop out take with them tuitions, fees, and other revenue the school may have been able to receive for housing, food, and bookstore purchases (Raisman, 2013). The average school loses $9,910,811 annually due to student dropout. Publicly assisted college and universities suffer the most; they lose an average of $13,267,214 from attrition, whereas the average private colleges and universities, and for-profit schools lose an average of $8,331,593 and $7,921,228, respectively.

In sum, although a college degree offers numerous benefits, the U.S. has a relatively low graduation rate with only half of incoming students graduating within four to six years. In addition, dropping out of college is costly to individuals, society, and institutions of higher education. To that end, it is important to understand what factors affect retention and influence undergraduates to persist in college.

**Retention of Students Throughout Years of Enrollment**

Research finds that retention is a complex issue, and that the most important components of students’ satisfaction with their education changes from year to year.
(Lorenzetti, 2009). Thus, the following describes both cognitive and noncognitive factors that influence freshmen, sophomore, junior, and senior undergraduates to persist in college. Factors that contribute to transfer student persistence will also be discussed as transfer students make up a sizable portion of college and universities populations.

First-year students. First-year students experience a number of events between the time they enter college and the time they leave (with or without a degree). One of the most significant predictors of obtaining a degree for freshmen is grades. Ninety percent of freshmen students with at least a B average go on to graduate (Bowen et al., 2009). Freshmen who earned higher scores in high school and on high school standardized tests are also more likely to graduate from college (Calcagno, Crosta, Bailey, & Jenkins 2007; Donhardt, 2013; Harackiewicz, Barron, Tauer, & Elliot, 2002; Shivpuri, Schmitt, Oswald, Kim, 2006).

In addition to academic achievement, personal factors also contribute to freshmen persistence in college. For example, academic self-confidence and the availability of faculty support predicts persistence among freshmen (Robertson & Taylor, 2009; Soria & Stebelton, 2012). Thus, the more professors help first-year students succeed academically, the higher their chance of graduating. Research also finds that students who live on campus were more likely to stay in school (Campbell & Fugua, 2009; Schudde, 2011). This suggests that social relationships and frequent encounters with an individual’s peers may play a role in degree obtainment.

Finally, familial factors also influence first year students’ likelihood of staying in school. Students whose parents expect them to graduate, are more likely to do so (Vartanian, Karen, Buck, & Cadge, 2007). Similarly, the higher a student’s parents’
education is, the more likely that student is to graduate from college (Baum et al., 2010; Bowen et al., 2009; Owens, 2010).

**Second-year students.** Unlike the experiences of first-year students, some sophomores experience a phenomenon known as the “sophomore slump” that can affect their ability to achieve in college. The sophomore slump is described as a period of self-doubt and anxiety during students’ sophomore year, which often results in lower academic performance (Shivpuri et al. 2006). Gump (2007) noted the consequences of the sophomore slump can include a decreased interest in school, declining grades, increased absences, and, ultimately, dropping out altogether.

Researchers have identified various factors that may engender the sophomore slump. For example, uncertainty in selecting a major and lack of faculty support are associated with the sophomore slump. Graunke and Woosley (2005) found that sophomores who were certain of their major achieved higher grades. In addition, sophomores who were satisfied with their opportunities to interact with faculty and who felt faculty were concerned with their academic success performed better in college.

Although there is evidence to support the presence of the sophomore slump, some have questioned its universality. Shivpuri et al. (2006) examined academic growth patterns over time and found limited support for the sophomore slump. Their data revealed a rather flat growth trajectory for students during their first two years of college. However, significant variation in their slope suggests that some students may be affected by a sophomore slump experience, whereas others may not.

**Third-year students.** Comparatively fewer studies have investigated factors that affect third-year student attrition. This is likely due to the fact that most juniors have
already successfully coped with the challenges of academic and social integration that cause younger students to withdraw (Neumann & Finaly-Neumann, 1989). Their institutional departure is thus often the result of a voluntary decision to leave rather than a function of academic dismissal. In other words, third-year students who are satisfied with their college experience are more likely to graduate.

Specific factors associated with juniors’ satisfaction with college include having positive relationships with their professors and classmates and the perception that they can grow intellectually in school (Neumann & Finaly-Neumann, 1989; Lorenzetti, 2009). Underscoring this point, a similar study concluded that social connectedness and a commitment to one’s college significantly predicted third-year enrollment status (Allen, Robbins, Casillas, & Oh, 2008).

Lastly, work responsibilities and income needs have also been found to affect the likelihood that third-year students will remain in school. The more time students spend working at a paying job, the less time they have to pursue their educational goals (Crisp & Nora, 2010), and students who are financially stressed are significantly more likely to drop out of school than their peers after holding all other relevant factors constant (Joo et al., 2009). It makes sense that students who cannot afford to pay for their education may direct more attention to their jobs and less to their academic responsibilities.

**Fourth-year students.** Similar to research on third-year student retention, research on fourth-year retention is fairly limited. That said, the small body of research that exists has suggested that fourth-year students are more likely to persist when they feel their college experience is meaningful. Fourth-year students are more likely to drop out when they do not have regular, meaningful contact with faculty and advisors, and
when they are not pointed toward information about services relevant to their educational goals (Mohr et al., 1998). When fourth-year students lack meaningful contact or meaningful educational experiences, they may not feel sufficiently motivated to cope with the challenges of being a student and are more likely to drop-out (Mohr et al., 1998). Similar research have concluded that financial concerns along with feelings of anxiety, stress, depression, and/or burnout can get in the way of seniors’ academic persistence (Hunt et al., 2012). Institutional issues such as the quality of instruction and perceptions of academic advising also play a minor role in seniors’ decision to withdraw. Lastly, Donhardt (2013) noted that, students most likely to persist to their senior year and graduate were those who were continuously enrolled, full-time students.

**Transfer students.** With regards to transfer students’ persistence, the research is mixed. Some studies conclude that transfer students are more likely than non-transfers to earn a four-year degree (Kinnick & Kempner, 1988), whereas others find that these young adults are less likely to graduate (Duggan & Pickering, 2008). One reason for this discrepancy may be due to the fact that these studies look at students who transfer at different times. Factors that lead transfer students to drop-out differ depending on whether transfer students are freshmen, sophomores, juniors, or seniors (Duggan & Pickering, 2008). For freshmen transfers, barriers to graduation include the need to balance employment with classes, dissimilarity between their self-rated abilities and their first year performance (i.e., overconfidence), and an incongruence between their attitudes and behaviors towards college (i.e., positive response-set towards college career, low first-year GPA; Duggan & Pickering, 2008). Similar findings have been noted with sophomore transfer students; sophomore transfer barriers to graduation include difficulty
balancing work and school and obtaining financial aid (Duggan & Pickering, 2008).
Lastly, barriers to graduation for upper division transfer students include low academic ability, spending excessive amounts of time talking with instructors outside of class, and not taking advantage of opportunities to socialize with peers. For example, upper level transfers were more likely to drop out if they needed to spend significant amounts of time talking to their professors about academic assignments. Duggan and Pickering (2008) speculated that this could be an indication of being academically underprepared to graduate.

In sum, it is clear that personal, familial, academic, and social reasons contribute to a relatively high college dropout rate in the United States. It is also clear that specific factors vary based on students’ grades in school and their transfer status. Although it is important to understand why students fail to graduate, it is also important to understand why they succeed to graduate. Several theories exist that attempt to explain college student retention. In addition to reviewing the primary theories in this area, I will also address the strengths and weaknesses of each theory in light of the present analysis.

Models of College Retention

Given that numerous factors influence students’ intention to graduate, the question remains whether a theory exists that can integrate all of them and help predict which students are mostly likely to persist towards graduation. To that extent, three competing theories were considered that describe why students struggle academically and may dropout: goal orientation theory, expectancy-value theory, and Tinto’s (1975) model of institutional departure. Goal theory and expectancy-value theory were considered because they are regularly used in the field of educational psychology to predict
academic achievement, a concept closely related to retention. Tinto’s model was considered because it is one of the most frequently cited models of post-secondary persistence. The following discussion describes each theory and addresses the limitations of each for use in this particular study.

**Goal orientation theory.** Goal orientation theory (Yough & Anderman, 2009) is a social-cognitive theory of achievement motivation that focuses on the reasons students engage in academic behaviors. It has been utilized widely in education. According to goal orientation theory, an individual’s academic goals generally fall into two major classes – mastery-oriented goals and performance-oriented goals. Mastery goals are evident when individuals seek to master the task at hand. Students who hold mastery goals are interested in self-improvement and often compare their current level of achievement to their own prior performance. In contrast, performance-oriented goals are evident among students who seek to demonstrate their ability relative to others. Students who are performance-oriented are interested in competition and tend to compare themselves to others rather than to their prior achievement level.

In general, researchers have found that students who pursue mastery-oriented learning goals tend to learn more than their performance oriented peers. When students set mastery-oriented goals, the quality of their engagement is higher because they are more invested in what they are doing (Woolfolk, 2013). Further, compared with performance-oriented students, mastery-oriented students are more likely to use deeper cognitive processing strategies, apply better study strategies, and approach academic tasks with greater levels of confidence (Anderman & Patrick, 2012; Kaplan & Maehr, 2007). In contrast, compared with mastery-oriented students, performance-oriented
students are more likely to act in ways that interfere with learning by cheating or using short-cuts (Anderman & Anderman, 2010; Stipek, 2002; Woolfolk, 2013). In addition, performance-oriented students tend to choose tasks that are easy and only work hard on graded assignments.

Research has provided support for students’ goal orientation and academic achievement. For example, Meece, Blumenfeld, and Hoyle (1988) found that students who emphasized task-mastery goals reported more active cognitive engagement characterized by self-regulatory activities (e.g., reviewing material not understood). In a similar analysis, Elliott and Dweck (1988) gave students feedback indicating they had either high or low ability. In addition, students were given instructions for a task that emphasized the importance of a learning goal of developing competence or a performance goal of appearing competent. Mastery-oriented students, regardless of the feedback they received, sought challenges that helped increase their competence and problem-solving strategies. Performance-oriented students who received high-ability feedback persisted at the task, but avoided challenges where their peers could take note of their failure. Conversely, performance-oriented students who received low-ability feedback also tended to select easier tasks but did not persist in overcoming mistakes and displayed negative effects, such as learned helplessness.

Goal orientation theory would suggest that students who hold mastery-oriented learning goals are more likely than those who hold performance-oriented learning goals to succeed academically and to graduate. However, while this theory is useful for predicting academic success, it does not adequately account for the external factors that are likely to influence undergraduate persistence in college. As discussed earlier, external
factors such as students’ peer relations (Campbell & Fugua, 2009; Neumann & Finaly-Neumann, 1989), faculty support (Lorenzetti, 2009; Soria & Stebelton, 2012), and work responsibilities (Crisp & Nora, 2010; Duggan & Pickering, 2008; Hunt et al. 2012) can influence college retention rates, and because student retention is expected to influence graduation rates, external factors need to be considered in a study examining undergraduate retention.

**Expectancy-value theory.** The expectancy-value theory is another highly regarded theory of academic achievement. This theory links achievement-related choices to two sets of beliefs: the individual’s expectations for success and the importance or value the individual attaches to the various options perceived by the individual as available (Eccles, Wigfield, & Schiefele, 1998). Specifically, Eccles et al.’s expectancy-value model reduces an individual’s motivation to two questions: “Can I do the task?” and “Do I want to do the task?” Students who answer no to the first question are unlikely to fully engage in pursuing a particular goal. However, even if the answer to the former is yes, full and sustained engagement in a particular goal depends on the answer to the latter. If the answer to this question is no, there will be little likelihood the student will pursue the goal. Expectancies and values are assumed to influence achievement choices, along with performance, effort, and persistence.

Wigfield and Eccles (2002) provided support for their model by noting that both children and adolescents distinguish between their competency beliefs and subjective values. Students have distinct beliefs about what they are good at and what they value in different domains. These distinctions are less differentiated during elementary school but become more differentiated during early adolescence. Similarly, in a series of
longitudinal studies, Wigfield and Eccles (2000) found that children’s ability-related beliefs and values became more negative through early adolescence. Youth believe they are less competent in many activities (notably math), and consequently value those activities less. Other research has noted that youth’s beliefs about the usefulness and importance of math, reading, instrumental music, and sports activities tend to decrease as they mature (Wigfield, 1994). These negative views can consequently affect students’ motivation of goal attainment in particular subjects and activities. Lastly, others have found goal orientation theory useful for predicting undergraduates’ final class grades (Husman & Hilpert, 2007).

This theory suggests that students who believe they can graduate from college and who want to graduate from college will be more likely to do so. Although this may be part of the story, like goal theory, this model fails to account for the external factors that have been found to significantly influence college student retention.

**Tinto’s model of institutional departure.** The third model that was considered for the present analysis is Tinto’s (1975) model of institutional departure. This theory attempts to explain undergraduate attrition. Tinto’s model argues that personal attributes and students’ background characteristics (i.e., gender, socioeconomic status, ethnicity, precollege ability, etc.) produce varying levels of initial commitments to educational goals and specific institutions. These initial commitments interact with the academic and social aspects of the institution, resulting in different levels of academic and social integration. Specifically, academic performance and social integration help shape a student’s progress through college. Academic integration originates from the student’s academic performance and interactions with faculty and staff, whereas social integration
stems from the student’s participation in and satisfaction with extracurricular activities and peer-group relations. With all other factors being equal, the higher the levels of academic and social integration, the less likely the student is to voluntarily leave the institution.

Various studies have found support for Tinto’s (1975) model of institutional departure. Campbell and Fuqua (2009) identified factors related to student completion in a collegiate honors program. Among other things, they found that students’ first-semester cumulative GPA, high school grade point average, high school rank, and first-semester housing were significant predictors of honors award completion. This suggests that social integration and working hard predict graduating with honors. In a similar analysis, Pascarella and Terenzini (1977) found students who persisted toward graduation had a significantly higher number of informal interactions with faculty than did voluntary leavers. Again, this suggests that social integration influences graduation retention.

Although Tinto’s (1975) model does account for some external factors, it was not selected for the current analysis because of its narrow assumption of the primary contributors to college graduation. Specifically, Tinto’s model downplays some critical, external factors in college persistence, including parental involvement (Vartanian et al. 2007), finances (Hunt et al., 2012), and peer support (Cabrera, Castaneda, Nora, & Hengstler, 1992; Mallette & Cabrera, 1991). As noted above, these external factors play a critical role in college persistence and graduation. Further, others have noted that Tinto’s (1975) model does not generalize to those who do not live on campus or who are not enrolled full-time, and it does not fully account for students who have little desire to become involved in the social aspects of student life (Rovai, 2002). Because it is
expected that at least some students in the current analysis will not live on campus or be enrolled full-time, Tinto’s (1975) model, like goal theory and the expectancy-value theory, was not appropriate for the current study.

An Integrated Theory of Graduation Intention

Thus far numerous factors have been identified that facilitate or hinder undergraduates’ likelihood of graduating. However, because external factors play a significant role in college student retention, I selected a theory for the current analysis that could account for such influences along with the others that determine the probability of degree obtainment. Based on the existing research, it seems clear that the following factors influence undergraduate retention: attitudes toward graduation, expectations of others for undergraduates to graduate, and perceptions of their ability to graduate. Considering first students’ attitudes towards graduation, the retention research discussed previously suggests that students need to want to obtain a degree (Braxton, Vesper, & Hossler, 1995) and be motivated to graduate (Graunke & Woosley; 2005; Kinnick & Kempner, 1988). In other words, students who do not value a college degree are less likely to persist towards graduation.

Concerning social expectations, studies have found that students are more likely to graduate if they have positive relationships with their peers or professors (Campbell & Fugua, 2009; Mohr et al., 1998; Neumann & Finaly-Neumann, 1989) or are expected to graduate by their parents (Vartanian et al. 2007). This suggests that students may feel the need to graduate if similar others are also striving toward this objective or if they feel they are disappointing professors or parents if they do not graduate.
Finally, research has found that numerous factors can facilitate or hinder students’ ability to graduate from college. These factors include belief in one’s ability to succeed (Hunt et al., 2012; Soria & Stebelton, 2012), academic ability (Bowen, Chingos, & McPherson, 2009; Calcagno et al. 2007; Donhardt, 2013), and finances (Hunt et al., 2012; Joo et al., 2009).

The theory of planned behavior (TPB) was selected for this analysis because it incorporates each of these critical factors to assess college student retention. The following is a brief history of the theory and a fuller discussion of why it is appropriate for predicting graduation intentions.

Theory of Planned Behavior

The TPB was preceded by the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975), which is a model for predicting behavior and behavioral intentions based on the assumption that people consider the consequences of their actions prior to forming intentions to engage in the behavior. More specifically, the TRA posits that individuals’ intentions to act are a function of their attitudes and subjective norms (Ajzen, 1985). Individuals are more likely to perform a behavior if they believe their behavior will produce a positive outcome, if they value the outcome, and if they believe significant referents would want them to perform the behavior, and if they are motivated to comply with the expectations of significant others.

Although research has revealed that both subjective norms and attitudes are important determinants of the intention to perform a behavior (Ajzen, 1985), the degree to which intentions predict actual behavior is decreased when the behavior under investigation is low in volitional control. Ajzen noted that personal deficiencies and
external obstacles obstruct the intention-behavior relation and interfere with the ability to carry out intentions. For example, if an individual is attempting to predict the behavioral intention of a mother to pick-up her children after school, various factors beyond her attitudes and subjective norms could affect her ability to do so. The mother could have a suspended driver’s license, become ill, experience car trouble, or be asked to work late. In this way, the TRA has limited predictive abilities because it does not consider an individual’s abilities or situational barriers (Armitage, & Christian, 2003).

To address these limitations, Ajzen (1985) added perceived behavioral control (PBC) to the theory, thereby creating the Theory of Planned Behavior (TPB). PBC is defined as the extent to which people believe they can perform a behavior (Fishbein & Ajzen, 2010). At its most basic level, the TPB still postulates that a central factor to predicting behavior is the individual’s intention to perform the behavior being assessed (Ajzen, 1991). However, intention to perform a behavior is predicted by an individual’s behavioral beliefs and attitudes toward the behavior, normative beliefs and perceived norms, and control beliefs and PBC.

When combined, an individual’s PBC and behavioral intentions are able to predict behavior with a considerable degree of accuracy (Ajzen, 1991). Two rationales have been offered for this hypothesis. First, holding intention constant, the effort expended to bring a course of behavior to a successful conclusion is likely to increase with PBC. For example, if two individuals possess equally strong intentions to learn to ski, and both try to do so, the individual who is more confident that he can master this behavior is more likely to attempt to ski than the individual who doubts his abilities (Ajzen, 1991). The second reason for the expected link between PBC and behavioral achievement is that
PBC can be used as a substitute for a measure of actual control. However, this depends on the accuracy of an individual’s perceptions. If an individual’s PBC is accurate, it can serve as a proxy of actual control and be used for the prediction of behavior (Ajzen, 1991).

By including PBC as a predictor, Ajzen believed his model would be more successful. Indeed, one meta-analysis found that PBC adds – on average – 6% to the prediction of intention, after control for attitude and subjective norms (Armitage & Conner, 2001). In addition, others have found that PBC’s ability to predict behavior is based on amount of control individual’s possess with a behavior (Madden, Ellen, & Ajzen, 1992). When behaviors are perceived to be low in volitional control, PBC contributes significantly to the prediction of behavior. However, when behaviors are perceived to be high in control, researchers have failed to find a significant relationship between PBC and target behavior (Madden, Ellen, & Ajzen, 1992). Thus, the TPB improves upon the theory of reasoned action by not only explaining behavioral plans by invested efforts, but also an individual’s sense of control, as reflected by having requisite information, skills, and abilities, including a workable plan, willpower, presence of mind, time, opportunity, etc. (Ajzen, 1985). Each of the TPB constructs is discussed in detail below.

**Intention.** Considered individually, intention is based on an individual’s attitude toward the behavior, perceived norms, and PBC, with each predictor weighted for its importance in relation to the behavior and population under assessment (Ajzen, 2010). The stronger an individual’s intention to perform a behavior, the more likely it will be performed.
Behavior. Ajzen (2010) described behavior as the observable response in a given situation to a specific target. More specifically, behavior is a function of compatible intentions and perceptions of behavioral control. When behaviors pose no serious problems of control, they can be predicted from intentions with considerable accuracy (Ajzen, 1991).

Behavioral beliefs and attitudes toward the behavior. Behavioral beliefs correspond to the favorable or unfavorable evaluations an individual has towards performing the behavior in question (Ajzen, 2010). Often we form beliefs about a behavior by associating it with certain attributes (i.e., other objects, characteristics, or events), and because these attributes can be positively or negatively valued, we often automatically and simultaneously acquire an attitude toward the behavior. Through this process, people form favorable attitudes towards behaviors that lead to desirable consequences and unfavorable attitudes towards behaviors we associate with mostly undesirable consequences (Fishbein & Ajzen, 2010). For example, if students believe that a college degree can help them obtain a high paying job, they are likely to also have a positive attitude toward pursuing a degree.

Normative beliefs and perceived norms. Normative beliefs concern the likelihood that important referent groups or individuals will approve or disapprove of performing a given behavior. Moreover, there are two types of perceived social pressures recently added to Fishbein and Ajzen’s (2010) model that may influence an individual to perform a behavior: injunctive norms and descriptive norms. Considered separately, injunctive norms are perceptions concerning what important others think should or ought to be done with respect to performing a given behavior. Individuals experience perceived
norms as social pressure from friends, family, significant others, etc. As a result, they feel compelled to perform a behavior. For example, if students perceive pressure from their parents to earn a college degree and are motivated to comply with their parents’ wishes, then they are more likely to conform to these injunctive norms.

Descriptive norms refer to perceptions of what important other people are actually doing. If an individual feels that it is important to perform a behavior because of peer pressure or the thought that “everyone else is doing it,” he or she is influenced by a descriptive norm. Of importance, the variance explained by descriptive norms can be significantly informative as many researchers have found peer pressure to influence young people to engage in various behaviors (see Fishbein & Ajzen, 2010) To offer an example of a descriptive norm, if a significant majority of an individual’s friends are also intending to graduate from college, this can create social pressure on the student to also graduate.

Control beliefs and PBC. Control beliefs refer to the perceived presence of factors that may facilitate or hinder performance of a behavior (Ajzen, 2010). However, Fishbein and Ajzen (2010) noted that factor analysis of items utilized in previous studies to assess perceived control revealed two subcomponents of this construct. Often when individuals are considering their ability to perform a behavior, they consider how difficult it is to perform that behavior and the level of control over that behavior. These two subcomponents were labeled as perceived autonomy and perceived capacity, respectively.

Perceived autonomy usually concerns a single behavioral focus, and deals primarily with an individual’s degree of control over performing the behavior (Fishbein
& Ajzen, 2010). When an individual feels that performance of a behavior is “up to me,” such assessments usually concern one’s perceived autonomy. For example, if students strongly believe they can graduate from college, they also have high perceived autonomy to accomplish this goal.

Perceived capacity refers to an individual’s judgments of the perceived ease or difficulty to perform a behavior (Fishbein & Ajzen, 2010). When individuals question their belief that they can, are able to, or are capable of performing a behavior, they are essentially assessing their perceived capacity. To offer an example of perceived capacity, if students perceive few factors will impede their ability to obtain a degree, the higher will be their perceived capacity to achieve this goal. Figure 1 diagrams the relationship between each variable in the TPB.

Figure 1. Theory of Planned Behavior.
Decision to Utilize the TPB

The TPB has become a dominant model for predicting attitude-behavior relationships (Ajzen, 2011; Armitage & Christian, 2003; Johnson & Boynton, 2010). Meta-analytic reviews have found that the theory accounts for approximately 27% to 88% of the variance in intention for numerous behaviors (Ajzen, 1991; Armitage & Conner, 2001; Broonen, 2001; Sutton, 1998), and pairwise correlations among the theory’s variables are low to moderate (Notani, 1998). Moreover, Broonen (2001) noted that the TPB provides a promising account for determinates of academic performance behavior, and Sutter and Polush (2013) found that the theory could be useful for practitioners interested in increasing retention and graduation rates of both traditional and nontraditional undergraduates.

Besides its frequent utilization and suggested fit in the current analysis, researchers have found the TPB useful to study various academic intentions and behaviors such as selecting an academic major (Tan, & Laswad, 2009), studying abroad (Goel, De Jong, & Schusenberg, 2010), academic dishonesty (Alleyne, & Phillips, 2011; Stone, Jawahar, & Kisamore, 2010; Thomas, Jawahar, & Kisamore, 2009), seeking employment following graduation (Caska, 1998), conversing about a disappointing grade with a faculty member (Henningsen, Valde, Russell, & Russell, 2011), obtaining an A in a course (Ajzen & Madden, 1986) and examination performance (Phillips, Abraham, & Bond, 2003). In general, these studies have found the theory to be useful for assessing students’ intention to complete both long- and short-term academic goals. Furthermore, many of the factors that influence students to engage in these academic behaviors similarly motivate students to persist in college. For example, Ajzen and Madden (1986)
found that students’ positive attitudes to do well in a class predicts their intention to get an A, whereas others have found that the desire to earn a degree predicts college retention (Cabrera, Nora, & Castaneda, 1993; Mallette & Cabrera, 1991). Perceived autonomy is a significant predictor of academic performance (Phillips, Abraham, & Bond, 2003), and academic performance is an important predictor of college retention (Calcagno et al. 2007; Donhardt, 2013; Harackiewicz et al., 2002; Shivpuri et al. 2006).

Another reason the current study utilized the TPB is because of its ability to focus on the intention-behavior relation. More specifically, Fishbein and Ajzen (2010) noted when appropriately measured, intention could be used to predict behavior with a considerable degree of accuracy. This conclusion was based on several systematic reviews and meta-analyses of empirical findings (see Fishbein & Ajzen, 2010). Thus, because the current study has a limited time frame and is not a longitudinal design assessing whether undergraduate students will obtain a degree, I utilized this feature of the TPB and only focused on students’ intention to graduate. Not only did this save time and resources, but should reasonably be an adequate indicator of students’ actual graduation behavior.

Lastly, another feature of the TPB worth noting is its adaptive function. The TPB is built on the premise that it can both predict and explain various behaviors and allow professionals to alter unfavorable attitudes, perceived norms, or PBC through interventions (Ajzen, 1991; Broonen, 2001). This is based on its ability to identify the factors that are most important in predicting a given behavior and allow researchers to hypothesize why this occurred. Thus, the possibility exists that intervention programs can be created to target relevant factors in need of being altered to increase the likelihood of a
particular behavior. For example, if students in the current analysis are found to have relatively negative attitudes regarding the need for a college degree (e.g., “Why should I bother with a college degree?”) and attitudes are found to be a significant predictor of intentions, intervention programs can be created to emphasize the positive outcomes that a college education has in today’s society. Consequently, this can help colleges and universities increase their graduation rates.

In short, I decided to use the TPB because of the reasons noted above. Examining students’ attitudes, perceived norms, and PBC in relation to their intention to graduate, should help explain why students persist in college, and this information will help colleges put into place better retention plans. Surprisingly, however, very few researchers have utilized the theory to explain graduation behavior. The following describes a few studies that have found the TPB useful in explaining this phenomenon.

**Research Utilizing the TPB to Predict Degree Obtainment**

Despite its frequent use, the TPB has yet to be applied to predict college students’ intention to graduate. Related research suggests the model should be useful in the current study because (a) the model assesses students’ attitudes, beliefs about social influences, and PBC, and these similar factors have been shown to influence retention rates; (b) the model predicts related academic behaviors; and (c) researchers have found support for the TPB to be useful in predicting why students intend to pursue a four-year degree (Sutter & Polush, 2013).

Although the model has not been used to test students’ intention to graduate from college, it has been used to assess students’ intention to graduate from high school. For instance, Davis et al. (2002) utilized the TPB to predict African American youths’
intention to graduate from high school during their freshmen and sophomore years. Davis et al. (2002) used the TPB, in part; because it acknowledges the potential influence external factors may play in hindering graduation (e.g., family conflicts, poverty, poor health, etc.).

Participants were recruited from a large urban high school in the Midwest and completed questionnaires regarding their intention to graduate. From the data analyzed, Davis et al. (2002) found attitudes, injunctive norms, and PBC autonomy accounted for 51% ($p < .05$) of the variance in students’ intention to remain in school. From these three predictors, PBC autonomy had the strongest path coefficient (.44), suggesting that the perceived ease or difficulty of completing the school year played more of a significant role in students’ intention to graduate than their attitudes or injunctive norms. Students’ intention to stay in school and perceptions of control accounted for 25% ($p < .05$) of the variance in high school graduation, with intention being the stronger of these two predictors. In short, this model was appropriate for Davis et al.’s analysis, because it predicted a considerable amount of variance in students’ intention to graduate and actual graduation.

In a related analysis, Ingram et al. (2001) utilized the TPB to predict college students’ intention and behaviors in regard to applying to graduate school. Participants’ attitudes, injunctive norms, and PBC autonomy each contributed to the prediction of intention to apply to graduate school ($R^2 = .60$, $p < .001$), with attitude having the highest correlation with intention ($r = .77$). Phrased differently, participants who had a positive attitude toward graduate school were more likely to report that they intended to apply to graduate school. PBC autonomy and intention were also able to predict students’
application behavior ($R^2 = .35, p < .001$). Thus, individuals who believed they had the ability to apply to graduate school and intended to apply to graduate school were most likely to engage in this behavior. As with Davis et al.’s (2002) analysis, the TPB in Ingram et al.’s study demonstrated how students’ attitudes, injunctive norms, and PBC autonomy can increase our understanding of students’ intention to obtain a degree. Moreover, because a considerable amount of variance was explained in students’ intention to perform a behavior that is similar to the behavior under investigation in the current analysis, this is again an indication that the TPB is an adequate framework for this study.

In summary, the TPB appears to be an adequate theory to predict undergraduate students’ retention and subsequent graduation. It is able to emphasize not only important internal factors, but also key external factors that predict retention. Further, researchers have found it useful for predicting why students intend to graduate from high school (Davis et al., 2002), whereas others believe it can predict undergraduate retention (Sutter & Polush, 2013). However, the question of how well the TPB will fare to predict retention and subsequent graduation remains unanswered. In addition, can the TPB be used to direct interventions designed to help increase graduation rates in the U.S.?

**Current Study**

**Research Questions**

The TPB will be used to examine the following research questions:

1. Do undergraduates’ attitudes, perceived norms, and PBC predict their intention to graduate?
(2) How do undergraduates’ attitudes, perceived norms, PBC, and intention to graduate differ by year in college?

(3) Do transfer students’ attitudes, perceived norms, and PBC influence their intention to graduate?

With regards to the first research question, I expect to find students’ attitudes, perceived norms, and PBC will all uniquely predict their intention to graduate. This prediction is based on research that finds students are motivated to obtain a degree based on their attitudes towards this goal (Mallette & Cabrera, 1991), pressure from parents to graduate (Vartanian et al. 2007), and perceptions of whether they can achieve this goal based on their own abilities (Crisp & Nora, 2010; Duggan & Pickering, 2008; Hunt et al., 2012).

With regards to the second question, I expect to find that first-year students will perceive less social pressure to obtain a college degree and express lower PBC to graduate than sophomore, junior, and senior students. The former hypothesis is based on the observation than many freshmen are not as advanced in their undergraduate careers as upperclassmen and thus may not be overly concerned with earning a degree based on the actions of their peers. The latter hypothesis is based on freshmen’s lack of experience in college and the possibility that they be unaware of what factors may facilitate or hinder their ability to graduate. Second-year students are expected to have more negative attitudes towards graduating, and less perceived ability to obtain a four-year degree than students in other enrollment years. This hypothesis is based on research suggesting that some sophomores experience the sophomore slump (Rubin, Graham, & Mignerey, 1990).
No specific predictions are made on third- or fourth-year students due to the lack of existing, relevant research on these students.

Regarding transfer students, I expect to find only their attitudes and perceived norms predicting graduation intention. This hypothesis is based on research suggesting that transfer students struggle to obtain a degree based on funding, time management issues (e.g., too much socialization), personal limitations (e.g., poor academic performance), and other similar PBC factors that impede their ability to obtain a degree (e.g., balancing work and school) (Duggan & Pickering, 2008).

Lastly, besides testing the applicability of the TPB to predict college students’ intention to graduate, the findings from this analysis may have significant merit for numerous colleges and universities. More specifically, by examining the factors that influence students’ intention to graduate, the possibility exists that colleges and universities could increase their graduation rate by focusing on the critical factors that actually influence students’ intentions. If one of the constructs of the TPB is a significantly weak predictor of graduation intention, retention researchers could possibly increase their institution’s graduation rates by further examining this variable in relation to retention. Conversely, if the TPB explains very little variance in regard to college students’ intention to graduate, these findings will not only indicate a possible limitation of the TPB to explain a specific behavior, but may also indicate other factors besides the TPB variables influence graduation intention. Those interested in increasing graduation rates could then examine other factors perhaps more critical toward their goal.

In addition, it is important to again emphasize the value of a college education and what can be accomplished through this study. By suggesting ways for colleges and
universities to increase their graduation rates, post-secondary institutions could increase their revenue and possibly provide better learning opportunities for prospective students. As more students become capable to earn a degree through intervention programs designed at increasing graduation rates, this would allow more individuals to earn a living wage from a job that provides health care opportunities for their families. This may also translate into increase opportunities for graduates’ children and their educational pursuits as well. Further, the effects of a college degree may also benefit the community in which one lives with higher paid taxes and more volunteered community work due to an increased sense of civic responsibility. In short, the possibilities for this study could significantly impact numerous lives.
Chapter 3

Method

Methods Overview

The current analysis was conducted in two phases. First, I created a TPB measure that assessed students’ attitudes, perceived norms, PBC, and intention to graduate based on the guidelines of Fishbein and Ajzen (2010). Data from the pilot study were used to assess the reliability and validity of the measure. The second phase of the project assessed a representative sample of undergraduate freshmen, sophomores, juniors, senior, and transfer students in regard to their intention to obtain a four-year degree. These data were used to address the research questions of this study.

Pilot Study

Pilot Participants

A total of 129 students from Ball State University’s educational psychology subject pool participated in the pilot study. The majority were female (82%, n = 104), and White/Caucasian (89%, n = 111). Most were education majors between the ages of 18 – 24. Eight percent of the sample were freshmen (n = 10), 38% sophomores (n = 48), 33% juniors (n = 41), and 21% seniors (n = 27). Lastly, all participants were enrolled as either part-time or full-time undergraduates and were pursuing a four-year post secondary degree.

Pilot Measures

Graduation Intention Survey. This study utilized the Graduation Intention Survey. It is primarily based on Fishbein and Ajzen’s (2010) guideline of how to construct a TPB questionnaire with items that assess participants’ attitudes, perceived
norms, PBC, and intention to perform a behavior. All of the questions were based on the undergraduate students’ target behavior of graduating from college within four to six years since enrolling as an undergraduate. For example, attitude items were framed around the target behavior of graduating from college within four to six years from the time they enrolled as undergraduates. The time frame of four to six years was included because many students struggle to earn a four-year degree within four to six years (National Center for Educational Statistics, 2013). In addition, an attitudinal dichotomy (e.g., awful/ nice, bad/ good, valuable/ worthless, etc.) was added to the items. It was necessary to create a new TPB scale, as there was no existing TPB scale designed to assess undergraduates’ intention to graduate.

The Graduation Intention Survey contains 42-items and is composed of the following TPB subscales: attitudes, perceived norms, PBC, and intention to graduate. Approximately half of the items are phrased positively and half phrased negatively to reduce response bias. Participants selected the number that best described their opinion on each item using a 7-point semantic differential scale. Demographic items also were included. A description of each subscale of the Graduation Intention Survey follows.

**Behavior defined.** Although students’ actual graduation behavior was not assessed in this study, it is important to define it for the purposes of conceptualizing and measuring all other constructs in my model (Fishbein & Ajzen, 2010). As Fishbein and Ajzen (2010) noted, defining a behavior’s parameters can increase the validity of one’s measure (see Ajzen & Fishbein, 1977) and assist in the formation of intention, attitude, perceived norm, and PBC items (Ajzen, 2006).
The target behavior of graduating from college was defined as “earning a bachelor degree from college within four to six years since enrolling as an undergraduate.” This definition follows from Ajzen’s (2006), and Fishbein and Ajzen (2010) recommendation of how to define a behavior of interest. This behavior includes the following performances: earning a bachelor’s degree or equivalent four-year post-secondary degree, completing all of the credit requirements for one’s selected major and/or minor, being enrolled as either a full-time or part-time student, and maintaining an average GPA of 2.0 or higher.

**Intention.** Intention is based on one’s attitude toward the behavior, perceived norms, and PBC, with each predictor weighted for its importance in relation to the behavior and population under assessment (Ajzen, 2010). This subscale consists of six items. Intention is the primary dependent variable in this analysis, as this study is not a longitudinal assessment of students’ actual graduation behavior. Example behavioral intention items include: “I intend to graduate college within a four to six year period since enrolling as a undergraduate student. . . .” (definitely true – definitely false), and “I will make an effort to graduate from college within four to six years since I enrolled as a college freshman. . . .” (strongly agree – strongly disagree).

**Attitudes.** Attitudes are defined as a latent disposition or tendency to respond with some degree of favorableness or unfavorableness to a psychological object (Fishbein & Ajzen, 2010). This subscale contains 8 items. Example attitude items include: “For me to graduate from college within four to six years since enrolling as a freshmen is . . .” (bad – good), and “For me to graduate from college within four to six years since enrolling as a freshmen is. . . .” (productive - unproductive).
**Injunctive norms.** Injunctive norms are described as perceptions of what an individual should or ought to do with respect to performing a given behavior, and are a subscale of the perceived norm scale (Fishbein & Ajzen, 2010). This perceived norm is related to the social pressure from friends, family, or significant others of an individual to perform a behavior. This subscale contains 6 items. Example injunctive norms questions in the pilot include: “Most people who are important to me think I should graduate from college within four to six years since I enrolled as a college freshman . . .” (strongly agree – strongly disagree), and “I feel social pressure to obtain a college degree within four to six years since I enrolled as a college freshman . . .” (definitely true – definitely false). The Graduation Intention Survey has a total of six injunctive norm items.

**Descriptive norms.** Descriptive norms refer to perceptions that others are or are not performing a particular behavior under investigation, and are also a subscale of the perceived norm scale (Fishbein & Ajzen, 2010). The more similar others are performing a given behavior, the more pressure an individual may feel to also perform the same behavior. This subscale contains five items. Example descriptive norm questions include: “Most people like me will graduate from college within four to six years since they enrolled as college freshmen. . . ” (definitely true – definitely false), and “How many people similar to you plan on graduating from college within four to six years since they enrolled as a college freshman. . . ?” (virtually none – almost all).

**Autonomy PBC.** Perceived autonomy refers to an individual’s degree of control over performing a behavior, and is a subscale of the PBC scale (Fishbein & Ajzen, 2010). Often PBC items that load onto this subcomponent include some form of the phrase “up to me” in regard to a specific behavior. This subscale contains seven items. Example
perceived autonomy control items in the current analysis include: “It is mostly up to me whether I graduate from college within four to six years since I enrolled as a college freshman . . .” (strongly agree – strongly disagree), and “Whether or not I graduate from college within four to six years since I enrolled as a college freshman is completely up to me. . .” (strongly agree – strongly disagree).

**Capacity PBC.** Perceived capacity refers to an individual’s belief that he or she can, is able to, or is capable of performing a behavior (Fishbein & Ajzen, 2010). Judgments of the perceived ease or difficulty of performing a behavior often load onto this factor. This subscale contains 10 items. Example capacity control items in the current analysis include: “For me to graduate from college within four to six years since I enrolled as a college freshman would be . . .” (impossible - possible), and “I believe I can graduate from college within four to six years since enrolling as a college freshman. . .” (strongly disagree – strongly agree).

**Reliability and Validity Analyses**

**Reliability.** I analyzed each subscale of the Graduation Intention Survey with the Cronbach’s alpha statistic. In the pilot sample, both the intention subscale (6 items; $\alpha = 0.717$) and attitude subscale are reliable (8 items; $\alpha = 0.874$). However, because the injunctive norm subscale demonstrated low reliability ($\alpha = .475$), whereas the Cronbach’s alpha of the descriptive norm scale was acceptable ($\alpha = .772$), it was decided to combine all perceived norms into one subscale to increase its consistency ($\alpha = .797$). This practice of combining injunctive norms and descriptive norms items into one scale is generally considered typical as these two normative factors often are correlated, and measures that combine both types of items can have high internal consistency (Fishbein & Ajzen,
Within the current analysis, both of these factors were found to be moderately correlated $r(119) = .372$, $p < .001$. Similarly, only one PBC subscale was utilized in the current analysis as the reliability estimate was higher when perceived capacity and perceived autonomy items were combined into a single subscale ($\alpha = .840$) rather than when separated (perceived autonomy $\alpha = .679$, perceived capacity $\alpha = .810$). Again, research has found that because these two control factors are generally correlated, measures that combine both tend to also have high internal consistency (Fishbein & Ajzen, 2010). The current analysis also found both factors to be moderately correlated $r(120) = .535$, $p < .001$.

**Validity.** Regarding the Graduation Intention Survey’s validity, an exploratory factor analysis based on principle axis factoring with promax rotation explored its ability to assess students’ attitudes, injunctive norms, descriptive norms, perceived autonomy, perceived controllability, and intention to graduate. Promax rotation is used when multiple variables are correlated. Results indicated many items did not load as expected or loaded onto more than one factor. This could be due to the limited sample size assessed in the pilot study or to the fact that the instrument does not have the six hypothesized factors noted earlier. Results of this six factor EFA based on principle axis factoring with a promax rotation are located in Appendix B.

Another exploratory factor analysis based on principle axis factoring examined the possibility that the Graduation Intention Survey is composed of four factors with all injunctive norms and descriptive norms being one perceived norms scale, and all perceived controllability and perceived autonomy being one PBC scale. The results of this EFA found more of the items loading onto each of the factors. In addition, these four
factors were found to explain approximately 50% of the variance in the Graduation Intention Survey, with scree plot data indicating that the instrument has four primary factors. Parallel analysis also determined that the Graduation Intention Survey has five significant eigenvalues. This again suggests that the instrument is composed of at least four factors. Appendix B outlines the four factor EFA based on principle axis factoring with a promax rotation.

In short, both the reliability and validity analyses indicated that the four subscales of attitudes, perceived norms, PBC, and intention were present within my instrument. I thus selected a four-factor structure for the Graduation Intention Survey (see Table 1).

Table 1.

_Pilot Graduation Intention Survey Pattern Matrix<sup>a</sup> – Four Factor Solution_

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention</td>
<td>.498</td>
<td>.393</td>
<td>-.092</td>
<td>-.241</td>
</tr>
<tr>
<td>Perceived norms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q 1. I intend to graduate from college within four to six years since I enrolled as a college freshman: definitely true – definitely false.
Q 2. I will try to graduate from college within four to six years since I enrolled as a college freshman: definitely false – definitely true.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.423</td>
<td>.047</td>
<td>-.004</td>
<td>.079</td>
</tr>
</tbody>
</table>

Q 3. I plan to graduate from college within four to six years since I enrolled as a college freshman: definitely true – definitely false.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.596</td>
<td>.014</td>
<td>-.034</td>
<td>-.083</td>
</tr>
</tbody>
</table>

Q 4. I will make an effort to graduate from college within four to six years since I enrolled as a college freshman: strongly agree – strongly disagree.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.254</td>
<td>.206</td>
<td>.019</td>
<td>.195</td>
</tr>
</tbody>
</table>

Q 5. I expect to graduate within four to six years since I enrolled at college as a college freshman: strongly disagree – strongly agree.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.725</td>
<td>-.061</td>
<td>-.063</td>
<td>.152</td>
</tr>
</tbody>
</table>

Q 6. I intend to graduate college within a four to six year period since enrolling as an undergraduate student: definitely true – definitely false.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.546</td>
<td>.192</td>
<td>-.110</td>
<td>-.109</td>
</tr>
<tr>
<td>Question</td>
<td>Rating 1</td>
<td>Rating 2</td>
<td>Rating 3</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Q 7. For me to graduate from college within four to six years since I enrolled as a freshman is: bad – good.</td>
<td>.790</td>
<td>-.159</td>
<td>.162</td>
</tr>
<tr>
<td>Q 8. For me to graduate from college within four to six years since I enrolled as a freshman is: positive – negative.</td>
<td>.577</td>
<td>-.248</td>
<td>.565</td>
</tr>
<tr>
<td>Q 9. For me to graduate from college within four to six years since I enrolled as a freshman is: valuable – worthless.</td>
<td>-.168</td>
<td>.110</td>
<td>.940</td>
</tr>
<tr>
<td>Q 10. For me to graduate from college within four to six years since I enrolled as a freshman is: awful – nice.</td>
<td>.128</td>
<td>-.149</td>
<td>.628</td>
</tr>
<tr>
<td>Q 11. For me to graduate from college within four to six years since I enrolled as a freshman is: wonderful – awful.</td>
<td>-.153</td>
<td>.058</td>
<td>.805</td>
</tr>
<tr>
<td>Q 12. For me to graduate from college within four to six years since I enrolled as a freshman is: unimportant – important.</td>
<td>-.107</td>
<td>.170</td>
<td>.683</td>
</tr>
</tbody>
</table>
Q 13. For me to graduate from college within four to six years since I enrolled as a freshman is: necessary – unnecessary.

<table>
<thead>
<tr>
<th></th>
<th>.351</th>
<th>.097</th>
<th>.533</th>
<th>-.093</th>
</tr>
</thead>
</table>

Q 14. For me to graduate from college within four to six years since I enrolled as a freshman is: productive – unproductive.

<table>
<thead>
<tr>
<th></th>
<th>-.153</th>
<th>-.005</th>
<th>.869</th>
<th>.099</th>
</tr>
</thead>
</table>

Q 15. Most people who are important to me think I should graduate from college within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.

<table>
<thead>
<tr>
<th></th>
<th>.010</th>
<th>.677</th>
<th>.062</th>
<th>-.059</th>
</tr>
</thead>
</table>

Q 16. The people in my life whose opinions I value expect me to graduate from college within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.

<table>
<thead>
<tr>
<th></th>
<th>.200</th>
<th>.312</th>
<th>.047</th>
<th>-.190</th>
</tr>
</thead>
</table>

Q 17. Most people I respect and admire think I should graduate from college within four to six years since I enrolled as an undergraduate: strongly disagree – strongly agree.

<table>
<thead>
<tr>
<th></th>
<th>.033</th>
<th>.217</th>
<th>.019</th>
<th>.223</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
<td>Value 4</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Q 18. I am expected to obtain a college degree within four to six years since I enrolled as a college freshman: definitely true - definitely false.</td>
<td>.378</td>
<td>.463</td>
<td>-.011</td>
<td>-.074</td>
</tr>
<tr>
<td>Q 19. I feel social pressure to obtain a college degree within four to six years since I enrolled as college freshman: definitely true - definitely false.</td>
<td>-.133</td>
<td>.254</td>
<td>-.053</td>
<td>-.182</td>
</tr>
<tr>
<td>Q 20. Most people whom I respect and admire would oppose me obtaining a college degree within four to six since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td>.035</td>
<td>.126</td>
<td>-.174</td>
<td>-.202</td>
</tr>
<tr>
<td>Q 21. Most people who are important to me have graduated from college within four to six years since they enrolled as college freshmen: definitely true - definitely false.</td>
<td>-.100</td>
<td>.534</td>
<td>-.056</td>
<td>.144</td>
</tr>
<tr>
<td>Q 22. How many of the people whom you respect and admire have graduated from college within four to six years since enrolling as a college freshman?: very few - virtually all.</td>
<td>-.083</td>
<td>.309</td>
<td>-.051</td>
<td>-.008</td>
</tr>
<tr>
<td>Question</td>
<td>Response 1</td>
<td>Response 2</td>
<td>Response 3</td>
<td>Response 4</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>Q 23. Most people like me will graduate from college within four to six years since they enrolled as college freshmen: definitely true - definitely false.</td>
<td>-0.002</td>
<td>0.747</td>
<td>0.057</td>
<td>0.087</td>
</tr>
<tr>
<td>Q 24. Most people who I respect and admire have graduated from college within four to six years since they enrolled as college freshmen: strongly agree - strongly disagree.</td>
<td>-0.139</td>
<td>0.465</td>
<td>0.086</td>
<td>0.075</td>
</tr>
<tr>
<td>Q 25. How many people similar to you plan on graduating from college within four to six years since they enrolled as a college freshman?: virtually none - almost all.</td>
<td>-0.020</td>
<td>0.289</td>
<td>0.012</td>
<td>0.049</td>
</tr>
<tr>
<td>Q 26. To what extent do you see yourself as capable of graduating from college within four to six years since you enrolled as a college freshman?: very capable - very incapable.</td>
<td>0.098</td>
<td>0.428</td>
<td>0.035</td>
<td>0.204</td>
</tr>
<tr>
<td>Q 27. For me to graduate from college within four to six years since I enrolled as a college freshman would be: impossible – possible.</td>
<td>0.791</td>
<td>0.049</td>
<td>-0.022</td>
<td>0.127</td>
</tr>
<tr>
<td>Question</td>
<td>Q28</td>
<td>Q29</td>
<td>Q30</td>
<td>Q31</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Q 28. It would very easy for me to graduate from college within four to six years since I enrolled as a college freshman: definitely false – definitely true.</td>
<td>.619</td>
<td>-.025</td>
<td>.005</td>
<td>.301</td>
</tr>
<tr>
<td>Q 29. I believe I can graduate from college within four to six years since enrolling as a college freshman: strongly disagree - strongly agree.</td>
<td>.487</td>
<td>-.170</td>
<td>.221</td>
<td>.080</td>
</tr>
<tr>
<td>Q 30. I am confident that I can graduate within four to six years since enrolling as a college freshman: strongly disagree - strongly agree.</td>
<td>.585</td>
<td>-.063</td>
<td>-.059</td>
<td>.122</td>
</tr>
<tr>
<td>Q 31. If I wanted to, I could graduate from college within four to six years since I enrolled as a college: definitely true - definitely false.</td>
<td>.085</td>
<td>.591</td>
<td>.019</td>
<td>.035</td>
</tr>
<tr>
<td>Q 32. I am confident that I will graduate within a four to six year period since enrolling as a college freshman: strongly disagree - strongly agree.</td>
<td>.517</td>
<td>.332</td>
<td>-.071</td>
<td>-.089</td>
</tr>
<tr>
<td>Question</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------</td>
<td>---------</td>
<td>----------</td>
<td>---------------</td>
</tr>
<tr>
<td>Q 33. Based on my academic abilities, I believe I can graduate from college within four to six years since a college freshman: strongly disagree - strongly agree.</td>
<td>.598</td>
<td>-.109</td>
<td>-.135</td>
<td>.170</td>
</tr>
<tr>
<td>Q 34. It is likely that I will graduate within four to six years since I enrolled as a college freshman: definitely true - definitely false.</td>
<td>.681</td>
<td>.099</td>
<td>-.060</td>
<td>.010</td>
</tr>
<tr>
<td>Q 35. I am certain that I can graduate from college within four to six years since I enrolled as college freshman: completely disagree - completely agree.</td>
<td>.663</td>
<td>-.119</td>
<td>-.062</td>
<td>.259</td>
</tr>
<tr>
<td>Q 36. How much control do you believe you have over graduating from college within four to six years since enrolling as a college freshman: no control - complete control.</td>
<td>.158</td>
<td>.167</td>
<td>.069</td>
<td>.666</td>
</tr>
<tr>
<td>Q 37. The number of events outside my control which could prevent me from graduating from college within four to six years since I enrolled as a college freshman are: numerous - very few.</td>
<td>.088</td>
<td>.146</td>
<td>.043</td>
<td>.525</td>
</tr>
<tr>
<td>Question</td>
<td>Scale</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Correlation</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>----------------</td>
<td>------</td>
<td>--------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Q 38. It is mostly up to me whether I graduate from college within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td></td>
<td></td>
<td></td>
<td>.026</td>
</tr>
<tr>
<td>*Q. I believe I have control to graduate from college within four to six years since I enrolled as a college freshman: definitely true – definitely false.</td>
<td></td>
<td></td>
<td></td>
<td>.022</td>
</tr>
<tr>
<td>Q 39. I believe I have control to graduate from college within four to six years since I enrolled as a college freshman: strongly disagree - strongly agree.</td>
<td></td>
<td></td>
<td></td>
<td>.172</td>
</tr>
<tr>
<td>Q 40. I possess the ability to graduate from college within four to six years since I enrolled as a college freshman: strongly disagree - strongly agree.</td>
<td></td>
<td></td>
<td></td>
<td>.651</td>
</tr>
<tr>
<td>Q. 41. I have complete control over my ability to graduate within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td></td>
<td></td>
<td></td>
<td>.092</td>
</tr>
</tbody>
</table>
Q 42. Whether or not I graduate from college within four to six years since I enrolled as a college freshman is completely up to me: strongly agree - strongly disagree.

<table>
<thead>
<tr>
<th>Item</th>
<th>.036</th>
<th>.492</th>
<th>.064</th>
<th>.111</th>
</tr>
</thead>
</table>

*Item deleted due to low reliability and selected EFA

Of importance, only one item was deleted from the pilot (“For me to graduate within four to six years since I enrolled as a college freshman is not at all under my control.”) (definitely true – definitely false). This item was deleted because it significantly decreased the reliability of the PBC capability subscale (before deletion $\alpha = .463$, after deletion $\alpha = .679$). This item also negatively loaded onto the PBC capability factor in the 6 factor EFA based on principle axis factoring with a promax rotation and did not load onto any specific factor in the four factor EFA based on principle axis factoring with a promax rotation (see Appendix B).

**Current Study**

**Participants**

In the current study, data were collected from a total of 388 students from Ball State University’s educational psychology research pool. Within this sample, 95 were freshmen, 113 sophomore, 108 junior, and 72 seniors. From this sample, a total of 53 students identified as being transfer students. Participants were predominately White/Caucasian (92.8%, $n = 360$), between the ages of 18 – 24, and female (80.9%, $n = 314$). A total of 33 cases were deleted from the original sample of 421 because of partially provided information or because the participant was a nontraditional student (i.e., older
than target 18 – 24 age range). Student participants also came from a wide variety of
academic backgrounds as there were over 50 distinct majors who agreed to be involved in
this study.

Measures

The primary measure utilized in the current study was the Graduation Intention
Survey developed in the pilot study. It is composed of 42-items, and assesses
undergraduate students’ attitudes, perceived norms, PBC, and intention to graduate. A
complete copy of the survey is located in Appendix A. Reliability analyses from the
current study’s sample obtained similar Cronbach’s alpha statistics as the pilot sample
(intention subscale $\alpha = .645$; attitude subscale $\alpha = .910$; perceived norms subscale $\alpha =
.655$; PBC subscale $\alpha = .812$), and many of the items loaded onto one specific factor (see
Table 2).
Table 2.

*Finalized Graduation Intention Survey Pattern Matrix*\(^a\) – *Four Factor Solution*

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Attitudes</td>
<td>Intention</td>
<td>PBC</td>
<td>Perceived Norms</td>
</tr>
<tr>
<td>Q 1. I intend to graduate from college within four to six years since I enrolled as a college freshman: definitely true - definitely false.</td>
<td>-.057</td>
<td>.618</td>
<td>.013</td>
<td>-.078</td>
</tr>
<tr>
<td>Q 2. I will try to graduate from college within four to six years since I enrolled as a college freshman: definitely false - definitely true.</td>
<td>.103</td>
<td>.030</td>
<td>.356</td>
<td>-.073</td>
</tr>
<tr>
<td>Q 3. I plan to graduate from college within four to six years since I enrolled as a college freshman: definitely true - definitely false.</td>
<td>-.091</td>
<td>.697</td>
<td>-.075</td>
<td>-.018</td>
</tr>
<tr>
<td>Q 4. I will make an effort to graduate from college within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td>.054</td>
<td>.432</td>
<td>-.106</td>
<td>.072</td>
</tr>
<tr>
<td>Question</td>
<td>Rating</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
</tr>
<tr>
<td>----------</td>
<td>--------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Q 5. I expect to graduate within four to six years since I enrolled at college as a college freshman: strongly disagree - strongly agree.</td>
<td></td>
<td>-.059</td>
<td>-.060</td>
<td>.728</td>
</tr>
<tr>
<td>Q 6. I intend to graduate college within a four to six year period since enrolling as an undergraduate student: definitely true - definitely false.</td>
<td></td>
<td>.009</td>
<td>.489</td>
<td>-.044</td>
</tr>
<tr>
<td>Q 7. For me to graduate from college within four to six years since I enrolled as a freshman is: bad – good.</td>
<td></td>
<td>.790</td>
<td>-.069</td>
<td>.154</td>
</tr>
<tr>
<td>Q 8. For me to graduate from college within four to six years since I enrolled as a freshman is: positive – negative.</td>
<td></td>
<td>.697</td>
<td>-.075</td>
<td>.073</td>
</tr>
<tr>
<td>Q 9. For me to graduate from college within four to six years since I enrolled as a freshman is: valuable – worthless.</td>
<td></td>
<td>.779</td>
<td>.020</td>
<td>-.050</td>
</tr>
<tr>
<td>Q 10. For me to graduate from college within four to six years since I enrolled as a freshman is: awful – nice.</td>
<td></td>
<td>.769</td>
<td>-.015</td>
<td>.011</td>
</tr>
<tr>
<td>Question</td>
<td>Rating</td>
<td>Mean</td>
<td>SD</td>
<td>CI 95%</td>
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<tr>
<td>----------</td>
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<td>----</td>
<td>--------</td>
</tr>
<tr>
<td>Q 11. For me to graduate from college within four to six years since I enrolled as a freshman is: wonderful – awful.</td>
<td>.764</td>
<td>-.003</td>
<td>.037</td>
<td>-.025</td>
</tr>
<tr>
<td>Q 12. For me to graduate from college within four to six years since I enrolled as a freshman is: unimportant – important.</td>
<td>.836</td>
<td>.014</td>
<td>-.086</td>
<td>-.094</td>
</tr>
<tr>
<td>Q 13. For me to graduate from college within four to six years since I enrolled as a freshman is: necessary – unnecessary.</td>
<td>.615</td>
<td>.131</td>
<td>-.152</td>
<td>-.029</td>
</tr>
<tr>
<td>Q 14. For me to graduate from college within four to six years since I enrolled as a freshman is: productive – unproductive.</td>
<td>.793</td>
<td>.009</td>
<td>-.016</td>
<td>.005</td>
</tr>
<tr>
<td>Q 15. Most people who are important to me think I should graduate from college within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td>.183</td>
<td>.347</td>
<td>-.120</td>
<td>.179</td>
</tr>
<tr>
<td>Q 16. The people in my life whose opinions I value expect me to graduate from college within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td>.198</td>
<td>.148</td>
<td>.104</td>
<td>.114</td>
</tr>
<tr>
<td>Question</td>
<td>Response Options</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Q 17. Most people I respect and admire think I should graduate from college within four to six years since I enrolled as an undergraduate: strongly disagree - strongly agree.</td>
<td>.156</td>
<td>-.057</td>
<td>.447</td>
<td>.042</td>
</tr>
<tr>
<td>Q 18. I am expected to obtain a college degree within four to six years since I enrolled as a college freshman: definitely true - definitely false.</td>
<td>.063</td>
<td>.352</td>
<td>.026</td>
<td>.023</td>
</tr>
<tr>
<td>Q 19. I feel social pressure to obtain a college degree within four to six years since I enrolled as a college freshman: definitely true - definitely false.</td>
<td>.052</td>
<td>.002</td>
<td>-.063</td>
<td>.138</td>
</tr>
<tr>
<td>Q 20. Most people whom I respect and admire would oppose me obtaining a college degree within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td>-.070</td>
<td>-.031</td>
<td>-.053</td>
<td>.070</td>
</tr>
<tr>
<td>Q 21. Most people who are important to me have graduated from college within four to six years since they enrolled as college freshmen: definitely true - definitely false.</td>
<td>-.026</td>
<td>.097</td>
<td>-.081</td>
<td>.824</td>
</tr>
<tr>
<td>Q 22. How many of the people whom you respect and admire have graduated from college within four to six years since enrolling as a college freshman?: very few - virtually all.</td>
<td>-.069</td>
<td>-.101</td>
<td>.122</td>
<td>.806</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Q 23. Most people like me will graduate from college within four to six years since they enrolled as college freshmen: definitely true - definitely false.</td>
<td>.034</td>
<td>.229</td>
<td>.203</td>
<td>.103</td>
</tr>
<tr>
<td>Q 24. Most people who I respect and admire have graduated from college within four to six years since they enrolled as college freshmen: strongly agree - strongly disagree.</td>
<td>-.023</td>
<td>.074</td>
<td>-.037</td>
<td>.867</td>
</tr>
<tr>
<td>Q 25. How many people similar to you plan on graduating from college within four to six years since they enrolled as a college freshman?: virtually none - almost all.</td>
<td>.142</td>
<td>-.115</td>
<td>.431</td>
<td>.217</td>
</tr>
<tr>
<td>Q 26. To what extent do you see yourself as capable of graduating from college within four to six years since you enrolled as a college freshman?: very capable - very incapable.</td>
<td>.026</td>
<td>.352</td>
<td>.206</td>
<td>-.014</td>
</tr>
<tr>
<td>Question</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
<td>Value 4</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Q 27. For me to graduate from college within four to six years since I enrolled as a college freshman would be: impossible – possible.</td>
<td>.042</td>
<td>.424</td>
<td>.271</td>
<td>-.097</td>
</tr>
<tr>
<td>Q 28. It would be very easy for me to graduate from college within four to six years since I enrolled as a college freshman: definitely false - definitely true.</td>
<td>.016</td>
<td>.245</td>
<td>.360</td>
<td>.058</td>
</tr>
<tr>
<td>Q 29. I believe I have control to graduate from college within four to six years since I enrolled as a college freshman: strongly disagree - strongly agree.</td>
<td>-.033</td>
<td>.076</td>
<td>.480</td>
<td>.015</td>
</tr>
<tr>
<td>Q 30. I am confident that I will graduate within a four to six year period since enrolling as a college freshman: strongly disagree - strongly agree.</td>
<td>.039</td>
<td>-.625</td>
<td>-.101</td>
<td>.046</td>
</tr>
<tr>
<td>Q 31. If I wanted to, I could graduate from college within four to six years since I enrolled as a college freshman: definitely true - definitely false.</td>
<td>-.087</td>
<td>.636</td>
<td>.056</td>
<td>-.055</td>
</tr>
<tr>
<td>Q 32. I am confident that I can graduate within four to six years since enrolling as a college freshman: strongly disagree - strongly agree.</td>
<td>-.051</td>
<td>.072</td>
<td>.636</td>
<td>-.103</td>
</tr>
<tr>
<td>Question</td>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td>Definitely True</td>
<td>Definitely False</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Q 33. Based on my academic abilities, I believe I can graduate from college within four to six years since enrolling as a college freshman: strongly disagree - strongly agree.</td>
<td>-.040</td>
<td>.000</td>
<td>.561</td>
<td>-.029</td>
</tr>
<tr>
<td>Q 34. It is likely that I will graduate within four to six years since I enrolled as a college freshman: definitely true - definitely false.</td>
<td>.019</td>
<td>.619</td>
<td>.075</td>
<td>-.077</td>
</tr>
<tr>
<td>Q 35. I am certain that I can graduate from college within four to six years since I enrolled as a college freshman: completely disagree - completely agree.</td>
<td>-.076</td>
<td>.142</td>
<td>.456</td>
<td>.013</td>
</tr>
<tr>
<td>Q 36. How much control do you believe you have over graduating from college within four to six years since enrolling as a college freshman?: no control - complete control</td>
<td>.078</td>
<td>.472</td>
<td>.129</td>
<td>-.006</td>
</tr>
<tr>
<td>Q 37. The number of events outside my control which could prevent me from graduating from college within four to six years since I enrolled as a college freshman are: numerous - very few.</td>
<td>.032</td>
<td>.354</td>
<td>.135</td>
<td>.069</td>
</tr>
<tr>
<td>Question</td>
<td>Mean</td>
<td>Std. Dev.</td>
<td>Median</td>
<td>Mode</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>------------</td>
<td>-----------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>Q 38. It is mostly up to me whether I graduate from college within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td>-0.036</td>
<td>0.506</td>
<td>-0.024</td>
<td>0.103</td>
</tr>
<tr>
<td>Q 39. I believe I can graduate from college within four to six years since enrolling as a college freshman: strongly disagree - strongly agree.</td>
<td>-0.029</td>
<td>-0.104</td>
<td>0.679</td>
<td>0.012</td>
</tr>
<tr>
<td>Q 40. I possess the ability to graduate from college within four to six years since I enrolled as a college freshman: strongly disagree - strongly agree.</td>
<td>-0.029</td>
<td>0.037</td>
<td>0.448</td>
<td>-0.036</td>
</tr>
<tr>
<td>Q 41. I have complete control over my ability to graduate within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td>0.080</td>
<td>0.590</td>
<td>-0.054</td>
<td>0.026</td>
</tr>
<tr>
<td>Q 42. Whether or not I graduate from college within four to six years since I enrolled as a college freshman is completely up to me: strongly agree - strongly disagree.</td>
<td>0.025</td>
<td>0.513</td>
<td>-0.082</td>
<td>0.037</td>
</tr>
</tbody>
</table>
Procedure

The pilot survey was posted on Qualtrics.com with a link to the survey provided on the department of educational psychology’s research opportunity webpage. All participants from the educational psychology research pool had the opportunity to complete it online for department course credit. Participants electronically signed an informed consent and were provided a brief description of the study, along with examples of how to respond to the questionnaire. Participants were asked to answer the questions as truthfully as possible, and were informed there are no right or wrong answers. To receive departmental research credit for their efforts, participants needed to submit a print screen of the final question along with their name and professor who required participation. This information was sent separately from completed surveys so that no personally identifiable information was collected. All professors were notified of students’ efforts.

For the current study, participants were again assessed online via Qualtrics.com with the reliability and validity revised Graduation Intention Survey. The same instructions from the pilot study were provided; however, to receive research credit, participants needed to print a statement of completion that came at the end of the survey and submit it to their professor. This placed more responsibility on students to obtain research credit and helped ensure that all participants received credit for their efforts. Contact information of the principal investigator and his dissertation chair were provided on the informed consent form for participants who had further questions or concerns.
Analyses

The current analyses investigated three questions. Each question is outlined below along with its emphasized statistics.

1. Do undergraduates’ attitudes, perceived norms, and PBC predict their intention to graduate?

The independent variables investigated in this question were students’ attitudes towards graduating, perceived norms to graduate, and PBC of whether they can achieve this goal. The dependent variable was students’ intention to graduate. This analysis assessed how well the TPB variables predicted undergraduates’ intention to graduate from college. I utilized a multiple regression to determine the overall significance of the TPB in predicting undergraduates’ intention to graduate. Other statistics reported were correlations among independent variables, R-square, and beta weights for each predictor.

2. How do undergraduates’ attitudes, perceived norms, PBC, and intention to graduate differ by year in college?

This question was assessed with a MANOVA to examine the differences in each construct by year in college. The dependent variables were students’ attitudes, perceived norms, PBC, and intention, with college enrollment year as the independent variable. Statistics reported were significance of enrollment year by students’ attitudes, perceived norms, PBC, and intention (p-values), and follow-up comparisons between enrollment year by overall means of students’ attitudes, perceived norms, PBC, and intention to graduate. Significant results were discussed in relation to possible intervention programs college officials could utilize to improve their retention rates.
3. Do transfer students’ attitudes, perceived norms, and PBC influence their intention to graduate?

This research question only focused on transfer students’ intention to graduate. I selected the cases where students indicated they were transfer students, and investigated how their attitudes, perceived norms, and PBC affected their intention to graduate. This multiple regression assessed the efficiency of the TPB to predict these students’ intention to graduate. Statistics reported were overall significance (p-value), correlations among independent variables, R-square, and beta weights for each predictor. Significant results were discussed in relation to possible intervention programs college officials could utilize to improve their retention rates.
Chapter 4

Results

Overall Predictability of the TPB

The first standard multiple regression assessed the overall predictability of the TPB to explain students’ intention to graduate based on their attitudes, perceived norms, and PBC. These variables significantly predicted intention to graduate, $F(3, 387) = 79.288, p < .001, R^2 = .383$. This model accounted for 38% of the variance in students’ graduation intention.

Inspection of the coefficients (see Table 3) revealed that students’ attitude ($b = .119, t(387) = 2.693, p = .007$), perceived norms ($\beta = .161, t(387) = 3.520, p < .001$) and PBC ($\beta = .474, t(387) = 10.351, p < .001$) were all significant predictors in the model. For this sample, PBC was the most important determinant of graduation intention as it had the largest standardized coefficient beta. This model indicated that positive attitudes, perceived social pressure, and perceived abilities to graduate all positively predicted students’ intention to obtain a four-year degree.
Table 3.

*Multiple Regression of Undergraduates’ Attitudes, Perceived Norms, and PBC on Intention to Graduate*

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p</th>
<th>Tol.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes</td>
<td>.160</td>
<td>.059</td>
<td>.119</td>
<td>2.693</td>
<td>.007</td>
</tr>
<tr>
<td>Perceived Norms</td>
<td>.146</td>
<td>.041</td>
<td>.161</td>
<td>3.520</td>
<td>.000</td>
</tr>
<tr>
<td>PBC</td>
<td>.545</td>
<td>.053</td>
<td>.474</td>
<td>10.351</td>
<td>.000</td>
</tr>
</tbody>
</table>

Most of the assumptions necessary for conducting a regression were met in this analysis. All of the variables were measured on an interval scale, which meets the scale of measurement assumption; however, the dependent variable had limited variability (see Figure 2). The independent and dependent variables in this analysis most likely contained some measurement error; however, little could be done to counteract this problem. Linearity appeared to be met, as there was a linear relation on the matrix scatter plot between the dependent variable and independent variables (see Figure 3). Concerning the assumption of multivariate normality, normality appeared to be met as the histogram of residuals had a normal bell curve (see Figure 4), and the sample was large enough that it conformed to the central limit theorem. In addition, homoscedasticity was met as there was equal variance in errors at every point along the X-axis on the residual scatter plot (see Figure 6). Independence was also met, as the participants assessed were a convenience sample based on the college student population. Lastly, the correlations between the predictors were low to moderate (see Table 4), and the tolerance values were greater than
the recommend .1 value (Attitude = .829, Perceived Norms = .773, PBC = .768; Laerd Statistics, 2013; see Table 3). Thus, it appeared that multicollinearity was not an issue for this analysis.
Figure 2. Undergraduates - Histogram of Intention to Graduate

Figure 3. Undergraduates - Matrix Scatter Plot of Attitudes, Perceived Norms, PBC, and Intention Variables
Figure 4. Undergraduates - Histogram of Dependent Variable Residuals

Figure 5. Undergraduates - Scatter Plot of Residuals
Table 4.

*Correlation Between Students’ Attitudes, Perceived Norms, PBC and Intention to Graduate*

<table>
<thead>
<tr>
<th></th>
<th>Intention</th>
<th>Attitude</th>
<th>Perceived Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>.341*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Norms</td>
<td>.405*</td>
<td>.345*</td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td>.585*</td>
<td>.353*</td>
<td>.430*</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed)

**Predictability of the TPB by Enrollment Year**

The second analysis assessed differences in students’ attitudes, perceived norms, PBC, and intention by their enrollment year. A MANOVA indicated there was not a statistically significant difference among students’ enrollment year on their attitudes, perceived norms, PBC, and intention to graduate, $F(12, 1149) = 1.595, p = .087$; Wilks’ $\Lambda = .951$; partial $\eta^2 = .016$. Thus, students’ attitudes towards graduation, perceived norms to earn a degree, PBC of whether they graduate within four to six years, and intention to graduate did not differ significantly across year in school. Output for this analysis is displayed in Table 5.
Table 5.

*Multivariate Analysis for Enrollment Year by Students’ Attitudes, Perceived Norms, PBC, and Intention (Wilks’ Lambda)*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Enrollment Year</th>
<th>Df</th>
<th>Df error</th>
<th>Mean</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>Freshmen</td>
<td>3</td>
<td>384</td>
<td>6.828</td>
<td>1.707</td>
<td>.165</td>
</tr>
<tr>
<td></td>
<td>Sophomore</td>
<td></td>
<td></td>
<td>6.743</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Junior</td>
<td></td>
<td></td>
<td>6.737</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Senior</td>
<td></td>
<td></td>
<td>6.649</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Norms</td>
<td>Freshmen</td>
<td>3</td>
<td>384</td>
<td>5.546</td>
<td>.808</td>
<td>.490</td>
</tr>
<tr>
<td></td>
<td>Sophomore</td>
<td></td>
<td></td>
<td>5.512</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Junior</td>
<td></td>
<td></td>
<td>5.664</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Senior</td>
<td></td>
<td></td>
<td>5.569</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td>Freshmen</td>
<td>3</td>
<td>384</td>
<td>5.786</td>
<td>2.958</td>
<td>.032</td>
</tr>
<tr>
<td></td>
<td>Sophomore</td>
<td></td>
<td></td>
<td>5.630</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Junior</td>
<td></td>
<td></td>
<td>5.685</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Senior</td>
<td></td>
<td></td>
<td>5.520</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention</td>
<td>Freshmen</td>
<td>3</td>
<td>384</td>
<td>6.707</td>
<td>1.103</td>
<td>.348</td>
</tr>
<tr>
<td></td>
<td>Sophomore</td>
<td></td>
<td></td>
<td>6.546</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Junior</td>
<td></td>
<td></td>
<td>6.660</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Senior</td>
<td></td>
<td></td>
<td>6.595</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Predictability of the TPB by Transfer Status**

The third and final analysis assessed transfer students’ intention to graduate based on their attitudes, perceived norms, and PBC. The goal of this model was to assess the TPB’s ability to predict transfer students’ gradation intention. Thus, only approximately 53 cases or 14% of the sample was assessed who identified as transfer students (i.e., transferred from another institution to Ball State). Results indicated that this model significantly predicted transfers’ intention to graduate, $F(3, 52) = 20.053$, $p < .001$, $R^2 = .551$. This model accounted for 55% of the variance in transfer students’ graduation intention.

Examination of the coefficients (see Table 6) indicated only transfer students’ attitudes ($\beta = .224$, $t(52) = 2.016$, $p = .049$) and PBC ($\beta = .578$, $t(52) = 4.636$, $p < .001$) were found to be significant, with PBC being the most important determinant in this sample, based upon the standardized regression coefficients. Transfer students’ perceived norms were not a significant predictor in this model ($\beta = .187$, $t(52) = 1.611$, $p = .114$). This indicated that positive attitudes towards graduation, and the belief that an individual can graduate predicts transfer students’ intention to obtain a four-year degree.
Table 6.

*Multiple Regression of Transfer Students’ Attitudes, Perceived Norms, and PBC on Intention to Graduate*

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td></td>
<td>t</td>
<td>p</td>
</tr>
<tr>
<td>Attitudes</td>
<td>.290</td>
<td>.144</td>
<td></td>
<td>2.016</td>
<td>.049</td>
</tr>
<tr>
<td>Perceived Norms</td>
<td>.215</td>
<td>.134</td>
<td></td>
<td>1.611</td>
<td>.114</td>
</tr>
<tr>
<td>PBC</td>
<td>.578</td>
<td>.125</td>
<td></td>
<td>4.636</td>
<td>.000</td>
</tr>
</tbody>
</table>

Similar to the first analysis, many of the assumptions necessary for a standard multiple regression were met. Again, all the variables were measured on an interval scale that most likely contain some measurement error. In addition, the dependent variable presented with limited variability (see Figure 6). Linearity appeared to be met, as there was a linear relation on the matrix scatter plot between the dependent variable and independent variables (see Figure 7). Normality was met as the histogram of residuals had a normal bell curve (Figure 8) and the residuals in the P-P plot fell along the 45 degree line (Figure 9). Homosecdasity appeared to be met as there was equal variance in errors at every point along the X-axis on the scatter plot of residuals (Figure 10). Independence was also met as the sample assessed is a convenience sample based on the college student population. Lastly, multicollinearity was not a problem as the tolerance values for the predictors were above the .1 value (attitude = .741, perceived norms = .682, PBC = .767; see Table 6), and the correlations between the predictors were moderate (see Table 7).
Figure 6. Transfer Students - Histogram of Intention to Graduate

Figure 7. Transfer Students – Matrix Scatter Plot of Attitudes, Perceived Norms, PBC and Intention Variables
Figure 8. Transfer Students - Histogram of Dependent Variable Residuals

Figure 9. Transfer Students - Intention Variable PP-Plot
Figure 10. Transfer Students - Scatter Plot of Residuals

Table 7.

Correlation between Transfer Students’ Attitudes, Perceived Norms, and PBC on Intention to Graduate

<table>
<thead>
<tr>
<th></th>
<th>Intention</th>
<th>Attitude</th>
<th>Perceived Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>.500*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Norms</td>
<td>.523*</td>
<td>.480*</td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td>.674*</td>
<td>.368*</td>
<td>.451*</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed)
Chapter 5

Discussion

The current study examined undergraduate students’ intention to graduate based on their attitudes, perceived norms, and PBC. Participants completed the Graduation Intention Survey online through Qualtrics.com and also indicated their year of enrollment and whether they were transfer students. Three research questions were examined: (1) Can the TPB predict undergraduate students’ intention to graduate? (2) Is there significant variation in students’ attitudes, perceived norms, PBC, and intention to graduate based on their year of enrollment? (3) Can the TPB predict transfer students’ intention to graduate based on their attitudes, perceived norms, and PBC? Students’ attitudes, perceived norms, and PBC were all expected to influence their intention to graduate. In addition, students’ year of enrollment and transfer status were expected to influence graduation intention. The results from this study found the TPB indeed predicts undergraduate graduation intention, students’ attitudes, perceived norms, PBC, and intention to graduate do not vary across year of enrollment, and that intervention programs can be created from the model to improve retention rates.

Overall Predictability of the TPB

Overall, the TPB predicted undergraduate students’ intention to graduate. This indicated that students’ attitudes, perceived norms, and PBC all contribute to their goal of obtaining a four-year degree. Moreover, this finding conforms with college retention research. Students need to value the benefits of a college degree (Braxton et al., 1995; Graunke & Woosley; 2005; Kinnick & Kempner, 1988), perceive some type of expectation from others to graduate (Campbell & Fugua, 2009; Mohr et al., 1998;
Neumann & Finaly-Neumann, 1989; Vartanian et al. 2007), and feel as if they have the ability to reach this goal (Bowen et al., 2009; Calcagno et al. 2007; Donhardt, 2013; Hunt et al., 2012; Soria & Stebelton, 2012).

Although the current analysis found students’ attitudes, perceived norms, and PBC accounted for a considerable portion of variance in their intention to graduate, there is still variance left unexplained as to why students persist in college. This indicates the possibility that other factors besides the TPB variables predict undergraduate graduation intention. For example, one other possible factor that predicts college graduation is students’ emotional intelligence. Emotional intelligence concerns one’s ability to handle transitional adjustments and can be measured by constructs such as empathy, social responsibility, flexibility, and impulse control. Sparkman, Maulding, and Roberts (2012) found that students who graduate typically score higher on these constructs than those who do not. Others have found that need for achievement predicts academic performance after controlling for students’ demographics, SAT scores, and high school GPA (Friedman & Mandel, 2012). Students who are motivated to achieve positive results and improve upon their past performance generally do better academically than their less motivated peers. Lastly, there is mostly likely some level of error present in the Graduation Intention Survey that may be limiting the amount of variance explained in students’ graduation intention. This indicates the possibility that students’ attitudes, perceived norms, and PBC may have a more significant role in students’ graduation intention than what was noted in the current analysis.
TPB Predictability by Enrollment Year

The study also found freshmen, sophomores, juniors, and seniors possess similar attitudes, perceived norms, PBC, and intention to graduate. Although this finding contradicts my predictions, it seems reasonable based on retention literature. Many of the factors that influence students to pursue a four-year degree are not exclusive to one specific enrollment year. Raikes, Berling, and Davis (2012) investigated the factors that predict four-year graduation rates across 80 colleges and universities. Their analysis found the most significant contributor to a timely graduation was the net cost of attending the college and the amount of institutional aid provided. Institutions that provided the most institutional aid had four-year graduation rates that were higher than their peer institutions. Thus, perhaps finances are related to students’ perceived ability to graduate and are a continuing challenge on their intention to graduate throughout their academic career. In addition, Wintre and Bowers (2007) found parental support and school commitment predicts persistence throughout college, whereas Neumann and Finaly-Neumann (1989) found student-faculty contact, student involvement in their academic programs, and the quality of course content and instructional activities predicts persistence/withdrawal decisions among juniors and seniors. In short, many predictors of college graduation are not exclusive to one enrollment year.

Retention Intervention Programs

Because the current analysis did not find any evidence suggesting that students are less likely to intend to graduate during one enrollment year relative to another, it seems unnecessary for retention experts to design intervention programs targeted to increase graduation rates for one specific year of enrollment. However, because Fishbein
and Ajzen (2010) note that intervention programs designed to change behavior should be based on any TPB variable that correlates highly with intention and carries a significant regression weight, it seems possible that colleges and universities can increase their gradation rates by focusing on students’ PBC to earn a four-year degree. As noted earlier, students’ PBC had the largest beta weight in their intention to graduate and had a moderate to high correlation with graduation intention. In addition, because PBC and intention can be combined to predict behavior (Fishbein & Ajzen, 2010), it seems possible that intervention programs focused on increasing students’ confidence to graduate could increase an institution’s overall graduation. Thus, college officials should focus on students’ PBC to earn a four-year degree to better understand what helps some students persists towards graduation relative to others.

One way retention officials could increase their retention rates based on students’ PBC to graduate could be by directly asking them what they believe helps them graduate or question what other situational factors helps or hinders their academic pursuits. If students share what factors greatly assist them in earning a degree (e.g., tutoring, scholarships, etc.) experts may be able to increase graduation rates by making these factors more accessible to other enrolled students. This may then allow students to perceive more confidence in their ability to earn a four-year degree if more opportunities for academic continuation are readily available.

College officials could also create pamphlets to assist students with their graduation intention. Pamphlets are often used to impart important information on how to perform a particular behavior and are often directed at individuals who find it difficult to carry out their intentions (Fishbein & Ajzen, 2010). Information included in the pamphlet
could include how to locate tutors, apply for scholarships, contact study groups, or discuss other factors that assists in their intention to graduate. In short, this strategy could also change students’ PBC to graduate and, to some extent, help increase their actual control over their ability to earn a four-year degree.

Another way for retention experts to help students close the gap between their intention to graduate and receiving their diploma is to prompt students to form an implementation intention. Implementations intentions require people to state when, where, and how they will carry out their intentions to perform a behavior, and can greatly increase the likelihood of behavior performance (Fishbein & Ajzen, 2010). If students are struggling with a specific aspect of their academic career (e.g., low GPA) and are assessed at the end of year school year about their graduating process, the possibility exists these students will be less likely to leave their institution if they have a stated plan on how they intend to fix their hindering circumstances. Research also notes there is considerable evidence that making a commitment can greatly increase the chances a behavior will be performed (Fishbein & Ajzen, 2010; Kiesler, 1971). In addition, because many students plan on obtaining a four-year degree within a reasonable amount of time, but approximately half are able to accomplish this goal, this is another reason why an implementation program could be useful to increase graduation rates. Thus, assessing students throughout their academic year on their graduation process and having them state their plan on graduation intention could also increase graduation rates.

Conversely, although all three of the TPB variables were able to predict students’ intention to graduate, it seems that a ceiling effect may have occurred (see Figure 2). When situations like this occur there is little researchers can do to change a behavior as
most people already believe in its importance (Fishbein & Ajzen, 2010). This indicates
the possibility that retention intervention programs designed to increase graduation rates
may obtain small effect sizes if most participants already believe in the importance of a
college education. College officials will need to determine the relative costs and benefits
of retention intervention programs before implementation.

**TPB Predictability by Transfer Status**

Lastly, the TPB was also able to predict transfer students’ intention to graduate
based on their attitudes and PBC. These findings conform to previous research. Dennis,
Calvillo and Gonzalez (2008) found that personal and career development motivation and
self-efficacy are related to academic performance for some transfer students. Within the
TPB, these characteristics are related to students’ attitudes and PBC, respectively. Others
note that many transfer students continue their education to earn more money or to get a
better job (Shearon, Brownlee, & Johnson, 1990). This too suggests that a having a
positive attitude towards the gains of a four-year degree may help predict graduation
intention. Additionally, researchers have found that academic self-efficacy can influence
degree obtainment for transfer students (Duggan & Pickering, 2008). Self-efficacy is
closely related to PBC within the TPB.

Why did transfer students’ perceived norms not predict their graduation intention?
One explanation may be inadequate socialization opportunities. Many students who
transfer to a new institution are faced with having to find and make new friends in a place
where most students’ friendships have already been formed (Townsend, 2008). Others
transfer students report it is hard to form friendships due to feeling overwhelmed at their
new institution (Davies & Kratky, 2000; Townsend & Wilson, 2006). Regardless of their
specific reason, this could explain why perceived norms did not predict transfer students’ graduation intention. If transfer students form very few friendships at their new institution and perceive very little, if any, social expectation from others their age to graduate, this would explain their lack of social pressure to obtain a degree. Further research will need to investigate the relation between transfer students’ socialization opportunities and its effect on their intent to graduate.

Another explanation for why perceived norms do not predict graduation intention for transfer students could be the lack of support they receive from their parents. Rendon and Valadez (1993) found older students from poor Hispanic families are often expected to get a job and support their family than transfer to a four-year institution after community college. This sacrifice helps younger children within their family to afford an education. In addition, Rendon and Valadez found many Hispanic students are urged to pursue a career with immediate economic possibilities (e.g., business, law enforcement, or other vocational areas) than those that have potential for employment (mathematics, science, etc.). This could be another reason why their perceived norms did not influence transfer students’ graduation intention. Very few of the transfer students assessed in the current analysis indicated they were pursuing vocational majors. If transfer students’ parents do not value the degree they are pursuing, transfers may have perceived little, if any, social pressure to graduate. Future research will need to investigate this issue with more diverse transfer student samples.

A final explanation why transfer students’ perceived norms did not predict their graduation intention could be due to the sample size assessed. There were only 53 students in the current study identified as transfer students. Consequently, this limited
number of participants may have reduced the statistical power of this analysis to identify perceived norms as an influence that affect transfer students’ intention to graduate.

**Transfer Student Retention Intervention Programs**

Because transfer students’ PBC was found to play the largest role in their intention to graduate, the discussion on intervention programs noted above applies here as well. College officials interested in increasing graduate rates for transfer students can create intervention programs to increase students perceived ability to graduate based on focus group discussion, pamphlets describing available campus resources, or require students to write out their commitment to obtain a four-year degree. However, because a ceiling effect seems to have occurred among transfer students’ intention to graduate (see Figure 7), it is possible that any implemented retention effort may have little effect to increase graduation rates. Again, college officials will have to carefully weigh the risks and benefits of an intervention program for their institution’s transfer students for implementation.

**Limitations**

A few limitations of the current study must be noted. First, it is important to discuss the demographics of the sample assessed. Participants were primarily White female traditional students. Had the sample been more diverse, the possibility exists that the results would have differed. Indeed, Gosman, Danridge, Nettles, and Thoeny (1982) noted that Black students are more likely than White students to withdraw from college and are also more likely to engage in proportionately more part-time and interrupted schooling. Often this results in significantly lower four-year completion rates for Black students. In addition, others have examined gender difference in relation to retention
patterns and found females are less likely to persist than males (Alarcon & Edwards, 2013). Both of these findings question the generalizability of the current study to more diverse institutions.

Another limitation of this study concerns the institution assessed. According to Times Higher Education (2014), Harvard University, MIT, and Stanford University are the most globally well-regarded universities, whereas some of the worse ranked schools include Allen University, Martin University, and Southern University at New Orleans (Mathews, 2010). Moreover, there is a significant difference in graduation rates between these types of colleges. The former schools generally have an overall graduation rate of \( \geq 93\% \), whereas the latter have graduation rates that are 21\% or less (National Center for Educational Statistics, 2014). It is because of this that the results of this study are limited to some institutions. If students are strongly dedicated to obtaining a four-year degree at a prestigious university or struggle to accomplish this goal due at an institution that is less prestigious, this could influence their intention to graduate. Those interested in undergraduate retention and how the current study’s results relate to their institution should assess the similarity of their school to the one investigated.

Finally, another limitation of the current study is the fact that only intentions to graduate were assessed. This was because of the limited resources of the study and its needed timeframe of completion. Although Fishbein and Ajzen (2010) state that intentions can predict behavior with a considerable degree of accuracy, this is often dependent on the behavior being assessed. For example, whereas research has found a high correlation between intentions and behaviors in regard to an individual’s voting choice \( (r = .84) \), the same cannot be said for students’ intention to get an A in a course at
the end of a semester \(r = .39\)(Ajzen, 1991). Thus, it seems possible that although students in the current analysis indicated a strong intention to graduate within 4 to 6 years since enrolling as college freshmen, the finding that approximately 60% earn a four-year degree (National Center for Educational Statistics, 2014) limits the interpretation of this study’s results.

**Future Research**

Besides the issues already noted, it is suggested that future researchers interested in assessing retention using the TPB to examine more diverse student populations. As noted earlier, this can include student samples that are more ethnically diverse or a sample composed of an approximately equal number of male and female students.

In addition, another group of students worth assessing includes nontraditional students. Nontraditional students are typically adult students who are over the age of 25 and attend campus part time or commute (Christensen, 1994). Often they are more concerned with what they can do with the knowledge they obtain from class, whereas traditional students generally care about getting high grades or being ready for their next required class (Jinkens, 2009). Further, Jinkens notes that nontraditional students are typically more serious, more motivated to earn a degree for specific reasons (e.g., financially supporting their families), and they may need to earn their degree within a limited amount of time and/or money. In contrast, traditional students do not have as many mandatory outside, extracurricular activities. Traditional students are also often less motivated than nontraditional, and frequently need more encouragement (Jinkens, 2009). In short, the possibility exists that intention to graduate could differ between traditional and nontraditional students.
Another potential subject of investigating concerns students’ selected major in relation to their intention to graduate. Researchers note that compared to other nations, students in the U.S. are not as commonly pursuing careers in science, technology, engineering, and mathematics (Thompson & Bolin, 2011). One speculated reason for this is because of the inherent difficulty of these majors. Students tend to view courses that have a strong mathematical or technical basis to be the more difficult than courses whose content is more closely associated with the arts, humanities, and consumer sciences (Whalen & Shelley, 2010). This finding is also complimented by the consistently low graduation rate of these majors in the last 10 years (see Thompson & Bolin, 2011). Thus, future researchers could use students’ major as an interaction variable with students’ PBC to further understand its affect on graduation intention. The possibility exists that some students may perceive graduation as more obtainable than other students.

Lastly, another topic of investigation concerns students’ intention to graduate with other predictors of graduation behavior. As noted earlier, students’ intention to graduate may not be the best predictor of their actual graduation behavior. However, because students’ high school GPA and SAT scores are commonly cited as predictors of college graduation (Burton & Ramist, 2001; Hoffman & Lowitzki, 2005; Noble & Sawyer, 2004; Rohr, 2013; Sparkman et al., 2012) perhaps researchers could correlate these values with graduation intention. If students’ graduation intention is highly correlated with their GPA or SAT scores, this could help validate intention as an accurate measure of graduation behavior.
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Appendix A

Graduation Intention Survey

Please answer each of the following questions by selecting the interval that best describes your opinions towards **earning a bachelor degree within the four to six years since you enrolled at college**. This includes the following:

- Earning a bachelor’s degree or equivalent four-year post-secondary degree
- Completing all of the credit requirements for your selected major and/or minor
- Being enrolled as either a full-time or part-time student
- Maintaining an average GPA of 2.0 or higher

There are no right or wrong answers; I am merely interested in your personal opinions. In addition, some of the questions will appear to be similar, but they do address different issues. Please answer all items to the best of your ability by clicking within the interval that best describes your opinion. For example, if you were asked to rate “Eating pizza” on such a scale, the seven places should be interpreted as follows:

Eating pizza is:

- **good**: 1, 2, 3, 4, 5, 6, 7
- **extremely good**: 1
- **quite good**: 2
- **slightly good**: 3
- **neither good nor bad**: 4
- **slightly bad**: 5
- **quite bad**: 6
- **extremely bad**: 7

If you think that eating pizza is **extremely good**, then you would click within the number 1.

Eating pizza is:

- **good**: 1, 2, 3, 4, 5, 6, 7
- **extremely good**: 1
- **very good**: 2
- **less good**: 3
- **neither good nor bad**: 4
- **less bad**: 5
- **very bad**: 6
- **extremely bad**: 7

If you think that eating pizza is **very good**, then you would click within the number 2.

Eating pizza is:

- **good**: 1, 2, 3, 4, 5, 6, 7
- **extremely good**: 1
- **very good**: 2
- **less good**: 3
- **neither good nor bad**: 4
- **less bad**: 5
- **very bad**: 6
- **extremely bad**: 7

If you think that eating pizza is **less good**, then you would click within the number 3.

Eating pizza is:

- **good**: 1, 2, 3, 4, 5, 6, 7
- **extremely good**: 1
- **very good**: 2
- **less good**: 3
- **neither good nor bad**: 4
- **less bad**: 5
- **very bad**: 6
- **extremely bad**: 7

If you think that eating pizza is **neither good nor bad**, then you would click within the number 4.

Eating pizza is:

- **good**: 1, 2, 3, 4, 5, 6, 7
- **extremely good**: 1
- **very good**: 2
- **less good**: 3
- **neither good nor bad**: 4
- **less bad**: 5
- **very bad**: 6
- **extremely bad**: 7

If you think that eating pizza is **less bad**, then you would click within the number 5.

Eating pizza is:

- **good**: 1, 2, 3, 4, 5, 6, 7
- **extremely good**: 1
- **very good**: 2
- **less good**: 3
- **neither good nor bad**: 4
- **less bad**: 5
- **very bad**: 6
- **extremely bad**: 7

If you think that eating pizza is **very bad**, then you would click within the number 6.

Eating pizza is:

- **good**: 1, 2, 3, 4, 5, 6, 7
- **extremely good**: 1
- **very good**: 2
- **less good**: 3
- **neither good nor bad**: 4
- **less bad**: 5
- **very bad**: 6
- **extremely bad**: 7

If you think that eating pizza is **extremely bad**, then you would click within the number 7.
NOTE: labels in brackets [ ] will not appear on the questionnaire presented to participants.

[Behavioral Intention Items]

Q 1. I intend to graduate from college within four to six years since I enrolled as a college freshman.

definitely true :____: _____:____: _____:____: _____:____: definitely false

Q 2. I will try to graduate from college within four to six years since I enrolled as a college freshman.

definitely false :_____: _____:_____: _____:_____: _____:_____: definitely true

Q 3. I plan to graduate from college within four to six years since I enrolled as a college freshman.

definitely true :_____: _____:_____: _____:_____: _____:_____: definitely false

Q 4. I will make an effort to graduate from college within four to six years since I enrolled as a college freshman.

strongly agree :____: _____:_____: _____:_____: _____:_____: strongly disagree

Q 5. I expect to graduate within four to six years since I enrolled at college as a college freshman.

strongly disagree :_____: _____:_____: _____:_____: _____:_____: strongly agree

Q 6. I intend to graduate college within a four to six year period since enrolling as an undergraduate student.

definitely true :_____: _____:_____: _____:_____: _____:_____: definitely false
[Attitude Toward the Behavior Items]

For me to graduate from college within four to six years since I enrolled as a freshman is:

Q 7. bad :____:____:____:____:____:____:____: good
Q 8. positive :____:____:____:____:____:____:____: negative
Q 9. valuable :____:____:____:____:____:____:____: worthless
Q 10. awful :____:____:____:____:____:____:____: nice
Q 11. wonderful :____:____:____:____:____:____:____: awful
Q 12. unimportant :____:____:____:____:____:____:____: important
Q 13. necessary :____:____:____:____:____:____:____: unnecessary
Q 14. productive :____:____:____:____:____:____:____: unproductive

[Perceived Norm Items]

[injunctive]

Q 15. Most people who are important to me think I should graduate from college within four to six years since I enrolled as a college freshman.

strongly agree :____:____:____:____:____:____:____: strongly disagree

Q 16. The people in my life whose opinions I value expect me to graduate from college within four to six years since I enrolled as a college freshman.

strongly agree :____:____:____:____:____:____:____: strongly disagree

Q 17. Most people I respect and admire think I should graduate from college within four to six years since I enrolled as an undergraduate.

strongly disagree :____:____:____:____:____:____:____: strongly agree
Q 18. I am expected to obtain a college degree within four to six years since I enrolled as a college freshman.

definitely true :____:____:____:____:____:____:____: definitely false

Q 19. I feel social pressure to obtain a college degree within four to six years since I enrolled as college freshman.

definitely true :____:____:____:____:____:____:____: definitely false

Q 20. Most people whom I respect and admire would oppose me obtaining a college degree within four to six years since I enrolled as a college freshman.

strongly agree :____:____:____:____:____:____:____: strongly disagree

[descriptive]

Q 21. Most people who are important to me have graduated from college within four to six years since they enrolled as college freshmen.

definitely true :____:____:____:____:____:____:____: definitely false

Q 22. How many of the people whom you respect and admire have graduated from college within four to six years since enrolling as a college freshman?

very few :____:____:____:____:____:____:____: virtually all

Q 23. Most people like me will graduate from college within four to six years since they enrolled as college freshmen.

definitely true :____:____:____:____:____:____:____: definitely false

Q 24. Most people who I respect and admire have graduated from college within four to six years since they enrolled as college freshmen.

strongly agree :____:____:____:____:____:____:____: strongly disagree
Q 25. How many people similar to you plan on graduating from college within four to six years since they enrolled as a college freshman?

virtually none :____:____:____:____:____:____:____: almost all

[Perceived Behavioral Control]

[Capacity]

Q 26. To what extent do you see yourself as capable of graduating from college within four to six years since you enrolled as a college freshman?

very capable :____:____:____:____:____:____:____: very incapable

Q 27. For me to graduate from college within four to six years since I enrolled as a college freshman would be:

impossible :____:____:____:____:____:____:____: possible

Q 28. It would be very easy for me to graduate from college within four to six years since I enrolled as a college freshman.

definitely false :____:____:____:____:____:____:____: definitely true

Q 29. I believe I can graduate from college within four to six years since enrolling as a college freshman.

strongly disagree :____:____:____:____:____:____:____: strongly agree

Q 30. I am confident that I can graduate within four to six years since enrolling as a college freshman.

strongly disagree :____:____:____:____:____:____:____: strongly agree

Q 31. If I wanted to, I could graduate from college within four to six years since I enrolled as a college freshman.

definitely true :____:____:____:____:____:____:____: definitely false
Q 32. I am confident that I will graduate within a four to six year period since enrolling as a college freshman.

strongly disagree :____:____:____:____:____:____: strongly agree

Q 33. Based on my academic abilities, I believe I can graduate from college within four to six years since enrolling as a college freshman.

strongly disagree :____:____:____:____:____:____: strongly agree

Q 34. It is likely that I will graduate within four to six years since I enrolled as a college freshman.

definitely true :____:____:____:____:____:____: definitely false

Q 35. I am certain that I can graduate from college within four to six years since I enrolled as a college freshman.

completely disagree :____:____:____:____:____:____: completely agree

[Autonomy]

Q 36. How much control do you believe you have over graduating from college within four to six years since enrolling as a college freshman?

no control :____:____:____:____:____:____: complete control

Q 37. The number of events outside my control which could prevent me from graduating from college within four to six years since I enrolled as a college freshman are

numerous :____:____:____:____:____:____: very few

Q 38. It is mostly up to me whether I graduate from college within four to six years since I enrolled as a college freshman.

strongly agree :____:____:____:____:____:____: strongly disagree
Q 39. I believe I have control to graduate from college within four to six years since I enrolled as a college freshman.

strongly disagree :_____:_____:_____:_____:_____:_____:_____:

strongly agree :_____:_____:_____:_____:_____:_____:

Q 40. I possess the ability to graduate from college within four to six years since I enrolled as a college freshman.

strongly disagree :_____:_____:_____:_____:_____:_____:

strongly agree :_____:_____:_____:_____:_____:

Q 41. I have complete control over my ability to graduate within four to six years since I enrolled as a college freshman:

strongly agree :_____:_____:_____:_____:_____:

strongly disagree :_____:

Q 42. Whether or not I graduate from college within four to six years since I enrolled as a college freshman is completely up to me.

strongly agree :_____:_____:_____:_____:_____:

strongly disagree :_____:_____:_____:_____:

Please provide the following information about yourself.

Please circle your gender: Male   Female

How old are you? ______________

What year are you in college? Select one:

Freshman   Sophomore   Junior   Senior

What is your ethnicity? (select all that apply)

Black/African-American   Asian   Latino/Hispanic

White/ Caucasian   Other (explain) _____________________
I am a transfer student (i.e., transferred from another institution to Ball State University):
Yes     No

Major _______________________ (please indicate)

STATEMENT OF COMPLETION

Thank you for participating in my study, Predicting college students’ intentions to graduate: A test of the theory of planned behavior.

To receive department course credit, please print this page and submit it to your professor.

If you have any additional questions, feel free to email me at nsutter@bsu.edu.
Appendix B

Graduation Intention Survey Pattern Matrix—a Six Factor Solution

<table>
<thead>
<tr>
<th></th>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Intention</td>
<td>PN–Injunctive</td>
<td>Attitude</td>
<td>PBC–Autonomy</td>
<td>PBC–Capability</td>
<td>PN–Descriptive</td>
</tr>
<tr>
<td>Q 1.</td>
<td>I intend to graduate from college within four to six years since I enrolled as a college freshman: definitely true – definitely false.</td>
<td>.367</td>
<td>-.074</td>
<td>.568</td>
<td>.003</td>
<td>-.176</td>
<td>-.142</td>
</tr>
<tr>
<td>Q 2.</td>
<td>I will try to graduate from college within four to six years since I enrolled as a college freshman: definitely false – definitely true.</td>
<td>.449</td>
<td>-.014</td>
<td>-.078</td>
<td>.105</td>
<td>.029</td>
<td>.175</td>
</tr>
<tr>
<td>Q 3.</td>
<td>I plan to graduate from college within four to six years since I enrolled as a college freshman: definitely true – definitely false.</td>
<td>.538</td>
<td>-.030</td>
<td>.172</td>
<td>-.132</td>
<td>-.071</td>
<td>-.019</td>
</tr>
<tr>
<td>Q 4.</td>
<td>I will make an effort to graduate from college within four to six years since I enrolled as a college freshman: strongly agree – strongly disagree.</td>
<td>.243</td>
<td>.025</td>
<td>.216</td>
<td>.047</td>
<td>.224</td>
<td>-.022</td>
</tr>
<tr>
<td>Question</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strong</td>
<td>Very Dis</td>
<td>Strongly Agree</td>
<td>Very Strong</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>Q 5. I expect to graduate within four to six years since I enrolled at college as a college freshman: strongly disagree – strongly agree.</td>
<td>.723</td>
<td>-.070</td>
<td>.022</td>
<td>-.130</td>
<td>.121</td>
<td>.119</td>
<td></td>
</tr>
<tr>
<td>Q 6. I intend to graduate college within a four to six year period since enrolling as an undergraduate student: definitely true – definitely false.</td>
<td>.481</td>
<td>-.093</td>
<td>.275</td>
<td>.116</td>
<td>-.046</td>
<td>-.199</td>
<td></td>
</tr>
<tr>
<td>Q 7. For me to graduate from college within four to six years since I enrolled as a freshman is: bad - good.</td>
<td>.758</td>
<td>.167</td>
<td>-.105</td>
<td>.000</td>
<td>-.263</td>
<td>-.016</td>
<td></td>
</tr>
<tr>
<td>Q 8. For me to graduate from college within four to six years since I enrolled as a freshman is: positive – negative.</td>
<td>.569</td>
<td>.570</td>
<td>-.201</td>
<td>-.022</td>
<td>-.208</td>
<td>-.045</td>
<td></td>
</tr>
<tr>
<td>Q 9. For me to graduate from college within four to six years since I enrolled as a freshman is: valuable – worthless.</td>
<td>-.172</td>
<td>.940</td>
<td>.118</td>
<td>-.075</td>
<td>.097</td>
<td>.057</td>
<td></td>
</tr>
<tr>
<td>Q 10. For me to graduate from college within four to six years since I enrolled as a freshman is: awful – nice.</td>
<td>.138</td>
<td>.638</td>
<td>-.155</td>
<td>.057</td>
<td>-.068</td>
<td>-.113</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Scale</td>
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<td>Code 2</td>
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<td></td>
</tr>
<tr>
<td>Q 11. For me to graduate from college within four to six years since I enrolled as a freshman is: wonderful – awful.</td>
<td></td>
<td>-.155</td>
<td>.817</td>
<td>.081</td>
<td>.011</td>
<td>.129</td>
<td>-.112</td>
</tr>
<tr>
<td>Q 12. For me to graduate from college within four to six years since I enrolled as a freshman is: unimportant – important.</td>
<td></td>
<td>-.071</td>
<td>.677</td>
<td>.028</td>
<td>.070</td>
<td>.187</td>
<td>.165</td>
</tr>
<tr>
<td>Q 13. For me to graduate from college within four to six years since I enrolled as a freshman is: necessary – unnecessary.</td>
<td></td>
<td>.336</td>
<td>.535</td>
<td>.022</td>
<td>.095</td>
<td>-.113</td>
<td>.088</td>
</tr>
<tr>
<td>Q 14. For me to graduate from college within four to six years since I enrolled as a freshman is: productive – unproductive.</td>
<td></td>
<td>-.138</td>
<td>.866</td>
<td>.002</td>
<td>-.054</td>
<td>.104</td>
<td>.004</td>
</tr>
<tr>
<td>Q 15. Most people who are important to me think I should graduate from college within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td></td>
<td>-.125</td>
<td>.053</td>
<td>.745</td>
<td>-.150</td>
<td>-.103</td>
<td>.387</td>
</tr>
<tr>
<td>Question</td>
<td>Q16</td>
<td>Q17</td>
<td>Q18</td>
<td>Q19</td>
<td>Q20</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>The people in my life whose opinions I value expect me to graduate from college within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td>.179</td>
<td>.031</td>
<td>.088</td>
<td>.162</td>
<td>-.291</td>
<td>.387</td>
<td></td>
</tr>
<tr>
<td>Most people I respect and admire think I should graduate from college within four to six years since I enrolled as an undergraduate: strongly disagree – strongly agree.</td>
<td>.080</td>
<td>-.010</td>
<td>-.017</td>
<td>.032</td>
<td>.124</td>
<td>.508</td>
<td></td>
</tr>
<tr>
<td>I am expected to obtain a college degree within four to six years since I enrolled as a college freshman: definitely true - definitely false.</td>
<td>.339</td>
<td>-.034</td>
<td>.286</td>
<td>.085</td>
<td>-.180</td>
<td>.488</td>
<td></td>
</tr>
<tr>
<td>I feel social pressure to obtain a college degree within four to six years since I enrolled as college freshman: definitely true - definitely false.</td>
<td>-.152</td>
<td>-.063</td>
<td>.078</td>
<td>.128</td>
<td>-.237</td>
<td>.249</td>
<td></td>
</tr>
<tr>
<td>Most people whom I respect and admire would oppose me obtaining a college degree within four to six since I enrolled as a college freshman: strongly agree - strongly disagree.</td>
<td>.014</td>
<td>-.169</td>
<td>.023</td>
<td>.178</td>
<td>-.201</td>
<td>.006</td>
<td></td>
</tr>
</tbody>
</table>
Q 21. Most people who are important to me have graduated from college within four to six years since they enrolled as college freshmen: definitely true - definitely false.

<table>
<thead>
<tr>
<th></th>
<th>-0.066</th>
<th>-0.060</th>
<th>0.024</th>
<th>0.773</th>
<th>0.131</th>
<th>0.151</th>
</tr>
</thead>
</table>

Q 22. How many of the people whom you respect and admire have graduated from college within four to six years since enrolling as a college freshman?: very few - virtually all.

<table>
<thead>
<tr>
<th></th>
<th>-0.030</th>
<th>-0.053</th>
<th>-0.233</th>
<th>0.863</th>
<th>-0.048</th>
<th>0.040</th>
</tr>
</thead>
</table>

Q 23. Most people like me will graduate from college within four to six years since they enrolled as college freshmen: definitely true - definitely false.

<table>
<thead>
<tr>
<th></th>
<th>-0.049</th>
<th>0.068</th>
<th>0.530</th>
<th>0.352</th>
<th>0.120</th>
<th>0.095</th>
</tr>
</thead>
</table>

Q 24. Most people who I respect and admire have graduated from college within four to six years since they enrolled as college freshman: strongly agree - strongly disagree.

<table>
<thead>
<tr>
<th></th>
<th>-0.121</th>
<th>0.106</th>
<th>0.026</th>
<th>0.729</th>
<th>0.087</th>
<th>0.008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
<td>Value 4</td>
<td>Value 5</td>
<td>Value 6</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Q 25. How many people similar to you plan on graduating from college within four to six years since they enrolled as a college freshman?: virtually none - almost all.</td>
<td>-0.12</td>
<td>0.05</td>
<td>0.107</td>
<td>0.156</td>
<td>0.017</td>
<td>0.202</td>
</tr>
<tr>
<td>Q 26. To what extent do you see yourself as capable of graduating from college within four to six years since you enrolled as a college freshman?: very capable - very incapable.</td>
<td>0.067</td>
<td>0.026</td>
<td>0.392</td>
<td>-0.046</td>
<td>0.182</td>
<td>0.269</td>
</tr>
<tr>
<td>Q 27. For me to graduate from college within four to six years since I enrolled as a college freshman would be: impossible – possible.</td>
<td>0.781</td>
<td>-0.014</td>
<td>0.082</td>
<td>0.076</td>
<td>0.148</td>
<td>-0.064</td>
</tr>
<tr>
<td>Q 28. It would be very easy for me to graduate from college within four to six years since I enrolled as a college freshman: definitely false – definitely true.</td>
<td>0.656</td>
<td>0.008</td>
<td>-0.046</td>
<td>0.117</td>
<td>0.309</td>
<td>-0.063</td>
</tr>
<tr>
<td>Q 29. I believe I can graduate from college within four to six years since enrolling as a college freshman: strongly disagree – strongly agree.</td>
<td>0.509</td>
<td>0.213</td>
<td>-0.140</td>
<td>-0.092</td>
<td>0.044</td>
<td>0.091</td>
</tr>
<tr>
<td>Q 30. I am confident that I can graduate within four to six years since enrolling as a college freshman: strongly disagree - strongly agree.</td>
<td>.591</td>
<td>-0.059</td>
<td>-0.027</td>
<td>-0.014</td>
<td>0.115</td>
<td>0.012</td>
</tr>
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</tr>
<tr>
<td>Q 31. If I wanted to, I could graduate from college within four to six years since I enrolled as a college: definitely true - definitely false.</td>
<td>-0.023</td>
<td>0.028</td>
<td>0.689</td>
<td>-0.039</td>
<td>0.085</td>
<td>0.054</td>
</tr>
<tr>
<td>Q 32. I am confident that I will graduate within a four to six year period since enrolling as a college freshman: strongly disagree - strongly agree.</td>
<td>0.402</td>
<td>-0.057</td>
<td>0.565</td>
<td>-0.079</td>
<td>-0.021</td>
<td>-0.155</td>
</tr>
<tr>
<td>Q 33. Based on my academic abilities, I believe I can graduate from college within four to six years since a college freshman: strongly disagree – strongly agree.</td>
<td>0.615</td>
<td>-0.139</td>
<td>-0.068</td>
<td>-0.050</td>
<td>0.144</td>
<td>0.050</td>
</tr>
<tr>
<td>Q 34. It is likely that I will graduate within four to six years since I enrolled as a college freshman: definitely true - definitely false.</td>
<td>0.632</td>
<td>-0.049</td>
<td>0.213</td>
<td>-0.014</td>
<td>0.045</td>
<td>-0.084</td>
</tr>
</tbody>
</table>
Q 35. I am certain that I can graduate from college within four to six years since I enrolled as college freshman: completely disagree - completely agree.  

|   | .697 | -.074 | -.084 | -.108 | .216 | .145 |

Q 36. How much control do you believe you have over graduating from college within four to six years since enrolling as a college freshman: no control – complete control.  

|   | .227 | .063 | .106 | .064 | .664 | .050 |

Q 37. The number of events outside my control which could prevent me from graduating from college within four to six years since I enrolled as a college freshman are: numerous - very few.  

|   | .152 | .041 | .054 | .134 | .534 | .001 |

Q 38. It is mostly up to me whether I graduate from college within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.  

|   | -.101 | -.033 | .744 | -.024 | .142 | -.114 |

*Q. I believe I have control to graduate from college within four to six years since I enrolled as a college freshman: definitely true – definitely false.  

|   | .005 | -.304 | -.079 | .092 | -.344 | .133 |
Q 39. I believe I have control to graduate from college within four to six years since I enrolled as a college freshman: strongly disagree – strongly agree.

<table>
<thead>
<tr>
<th></th>
<th>.246</th>
<th>-.045</th>
<th>-.003</th>
<th>-.045</th>
<th>.498</th>
<th>.251</th>
</tr>
</thead>
</table>

Q 40. I possess the ability to graduate from college within four to six years since I enrolled as a college freshman: strongly disagree - strongly agree.

<table>
<thead>
<tr>
<th></th>
<th>.713</th>
<th>-.128</th>
<th>-.239</th>
<th>-.068</th>
<th>.230</th>
<th>.145</th>
</tr>
</thead>
</table>

Q 41. I have complete control over my ability to graduate within four to six years since I enrolled as a college freshman: strongly agree - strongly disagree.

<table>
<thead>
<tr>
<th></th>
<th>.112</th>
<th>.135</th>
<th>.161</th>
<th>.091</th>
<th>.452</th>
<th>-.175</th>
</tr>
</thead>
</table>

Q 42. Whether or not I graduate from college within four to six years since I enrolled as a college freshmen is completely up to me: strongly agree - strongly disagree.

<table>
<thead>
<tr>
<th></th>
<th>-.109</th>
<th>.059</th>
<th>.540</th>
<th>-.111</th>
<th>.106</th>
<th>.224</th>
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</table>

*Item deleted due to low reliability*