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THE IMPACT OF MOTIVATION ON ACADEMIC SUCCESS OF PREDOMINANTLY BLACK COLLEGE STUDENTS IN NORTH CAROLINA PUBLIC UNIVERSITY SYSTEM

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A B S T R A C T

Aim: This study examined the effect of various types of motivations on the academic success of predominantly black college students. The goal of the study was to determine the types of motivation strategies that could be adopted to enhance retention and graduation rates at predominantly black colleges. The aim of this study was to begin a line of inquiry with the hope of generating empirical data that could be relied upon by university administrators and education policymakers to develop evidence-based interventions and academic motivational support programs to improve the retention and graduation rates at predominantly black colleges and universities. **Methods**: Survey data on intrinsic motivation, extrinsic motivation, social motivation, personal motivation, and amotivation were collected from predominantly black students and subjected to structural equation modelling using exploratory factor analysis and confirmatory factor analysis. **Results and Conclusion**: The study found that amotivation had a large significant negative effect on the academic success of the predominantly black college students. Intrinsic motivation had a moderate positive significant effect on academic success. Social motivation had a moderate positive, but insignificant effect on academic motivation. Extrinsic motivation and personal motivation had no meaningful effect on the academic success of the predominantly black college students. We conclude that to enhance retention and graduation rates in predominantly black colleges, more emphasis should be placed on developing and implementing evidence-based intrinsic motivation intervention strategies and strategies to reduce amotivation among this population such as autonomous supportive teaching strategies.

Keywords: Intrinsic motivation, extrinsic motivation, social motivation, personal motivation, and amotivation, exploratory factor analysis, confirmatory factor analysis, academic success, student retention rate, student graduation rate, predominantly black college.

INTRODUCTION

Motivating students to learn and effectively perform assigned school tasks is crucial for academic success. In fact, research has shown that motivation is a key determinant for a host of adaptive outcomes such as school completion, career success, and mental and physical health (Archambault, Janosz, Morizot, & Pagani, 2009; Guay, Ratelle, & Chanal, 2008; Dishon-Berkovits, 2014; Areepattamannil, Freeman, & Klinger, 2011). These outcomes can be achieved by adopting strategies that enhance student retention and graduation rates. In the United States, efforts to enhance student retention and graduation rates have become the main focus of college and university administrators for several years. Considering the importance of a college education and the major collateral positive impact that higher education is likely to have on life outcomes, identifying cognitive and non-cognitive determinants of college retention and graduation, and using this information to adopt appropriate evidence-based teaching strategies are clearly of great importance. Examining recent data on college retention and graduation rates among predominantly black colleges and universities in the United States portrays a dismal picture. For example, in

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2014 the average retention rate for black students attending 4-year colleges in the United State was twice lower (23%) than their white counterparts (64%), and the average national graduation rate for predominantly black colleges was three times lower than the national average of 34% (Kena *et al*., 2016). In the University of North Carolina (UNC) system, the average retention rate for PBCs was 79.6 percent, which was lower than the UNC system average of 84.2 percent. The average graduation rate for PBCs was 18.5 percent, which is approximately two times lower than UNC system's average graduation rate of 39.6 percent. These data suggest a need to enhance non-cognitive dimensions of learning, such as motivation, among students attending predominantly black colleges in the UNC system, and the United States.

There is little agreement among researchers regarding which type of motivation strategy should be used. While some researchers have focused on intrinsic motivation as the most important determinant of academic success among college students (Deci & Ryan, 2000), others emphasized either extrinsic motivation (Wigfield & Eccles, 2000), or a combination of both intrinsic and extrinsic motivation (Elliot & Moller, 2003; Lepper, Corpus, & Iyengar, 2005). Other researchers have attempted to identify and explain the non-cognitive predictors that inhibit academic success among students. The focus of this line of inquiry has focused on personal motivation, social motivation, and amotivation (Pelletier *et al*., 1999; Ntoumanis, 2005; Ryan and Deci, 2000; Green-Demers *et al*., 2008; Legault *et al*., 2006; Wigfield and Eccels, 2000; Pettetier *et al*., 1999; Kasser, 2001; Bandura, 1997). The present investigation examines which types of motivation are most beneficial for academic achievement, over time, in different school contexts and cultures. It also assesses whether there are reciprocal relations among academic achievement and various types of motivation.

Various theories have been advanced to explain the influence of motivation on academic success. These theories include self-determination theory (SDT); flow theory (FT); achievement goal theory (AGT); and expectancy-value theory (EVT). SDT adopts a multidimensional approach to motivation by classifying motivation as an intentional action in a continuum from autonomous to a controlled (DeCharm, 1968; Deci & Ryan, 2002; Guay *et al*., 2008). Autonomous actions are initiated by a sense of choice and personal volition. Autonomous action motivated individuals have an internal locus of causality suggesting that they are personally motivated to engage in an activity. The controlled action is regulated by external or internal pressures. An individual with controlled action motivation is considered to possess an external locus of causality. Based on this intentional action continuum, SDT distinguishes three major types of motivations: intrinsic, extrinsic, and amotivation. Intrinsic motivation is intentional action in which individuals freely engage in activities simply for the enjoyment and excitement it brings, rather than to get a reward or to satisfy a constraint (Deci and Ryan, 1985, 2000; Lepper, Greene, and Nisbett, 1973). Intrinsically motivated individuals see themselves as causal agents of their own behavior (DeCharm, 1985). Extrinsic motivation refers to an intentional action characterized by engaging in an activity because of the instrumentality it is thought to possess (Wrzesniewski *et al*., 2014).

There are three types of extrinsic motivation based on the degree of regulated autonomy: external regulation; introjected regulation, and identified regulation. External regulation is behavior that is initiated by an external contingency, such as being offered a reward for performing an activity. Introjected regulation is behavior that is initiated by feelings of internal coercion or pressure to avoid feeling unworthy, guilty or ashamed, or to prove one's worth (Assor, Vansteenkiste, and Kaplan, 2009). This type of behavior has been commonly referred to as social motivation. Identified regulation is an instrumental behavior initiated from a sense of personal meaning and volition (Deci and Bryan, 2000; Koestner and Losier, 2002). This type of behavior is also referred to as personal motivation. The third type of motivation espoused by SDT is amotivation which refers to the absence of motivation exhibited by the absence of intentionality experience or sense of personal causation.

Numerous studies using SDT to examine the link between motivation and academic success have yielded inconsistent results. However, a few correlation and causal comparison studies have examined the effect of different types of motivation on academic success. For example, Burton and colleagues (2005) studied the predictive influence of intrinsic motivation and identified regulation on exam performance of students in a single psychology course, and found that identified regulation significantly and positively predicted final exam grade, whereas intrinsic motivation did not predict final total

grade point average (GPA) among university students. However, they found a strong positive correlation between intrinsic motivation and academic success. More recently Deci and colleagues (2014) in an attempt to generalize results of SDT studies, conducted a meta-analysis of the relationship between specific types of motivation and academic success. The meta-analysis showed that intrinsic motivation has a significant positive predictive effect on academic success, and amotivation has a significant negative association with academic success. Collectively, these studies which relied essentially on Self-Determination Theory (SDT) showed that intrinsic motivation has a strong positive predictive effect on academic success, amotivation has a strong negative influence on academic success, and the effect of extrinsic motivation on academic success is inconclusive (Vernsdakis *et al*., 2014; Wigfield *et al*., 2009).

The next theoretical perspective used to explain the link between motivation and academic success is the Achievement Goal Theory (AGT). AGT states that achievement goal, or in our case academic success, is considered to be a future-focused cognitive representation of internal purpose or striving that guides an individual's behavior to an end state (Hullerman, Schrager, Bodmann, & Harackiewicz, 2010). AGT distinguishes two types of achievement goals: mastery goal, and performance goal. Mastery goal is analogous to SDT's intrinsic motivation in that it involves engaging in an activity with the goal of learning for its own sake or for the pleasure derived from increasing one's ability or knowledge (Dweck, 2006). Mastery goal is premised on an incremental theory of intelligence which states the intelligence and performance, and thus academic success can be improved through augmented effort. Students that displayed mastery goal exhibit a growth mindset. Meanwhile, performance achievement goal is analogous SDT social motivation in that it involves engaging in an activity to gain favorable judgment from others, perform better than others, or avoid negative judgment from others (Dweck, 1989; Hullemann *et al*., 2010). Students who displayed performance achievement goal behavior exhibit a fixed mindset.

Contemporaries of Dweck extended the AGT by proposing a threefold achievement goal framework: mastery achievement goal, performance-approach achievement goal, and performance-avoidance achievement goal (Elliot, 1999; Elliot and Church, 1997; Elliot and Covington, 2001). Mastery achievement goal involves engaging in an activity to gain mastery or develop competence. Performance-approach achievement goal involves engaging in an activity to attain normative competences. Performance-avoidance refers to engagement in an activity to evade normative incompetence (Vandewalle, 1997; Vandewalles *et al*., 2001). So far research on this extended version of AGT theory has produced a mixed result.

Expectancy-Value Theory (EVT) explains the link between motivation and academic success by providing insight into the source, activity choice, and activity persistence of students espoused by the other theoretical frameworks discussed above (Ortueb and Marinak, 2013). According to EVT, a person's choice, persistence, and performance hinges upon a belief about how well he or she will perform the activity and the extent to which he or she values the activity (Wigfield and Accles, 2000). In a sense, a student's choice and persistence in performing school-work are contingent upon his or her expectation of success, and personal value to be derived from the work. EVT proposes two key constructs that are believed to have direct and immediate influence of persistence, choice of activity, and motivation of students: expectancies for academic success, and subjective task value. Expectancies for academic success refers to a student's belief about his or her ability to perform the task at hand and the perceived degree of difficulty of the task (Matusovich *et al*., 2008). Subjective task value is the various values of different qualities of specific tasks that are placed upon a particular activity, which can influence the student's drive or motivation to perform the task (Wigflied and Cambia, 2010; Wigfield *et al*., 2009). Eccles *et al*. (1983) identified four distinct subcomponents of subjective task value: attainment value or importance; intrinsic value or interest; utility value or usefulness; and cost. Attainment value refers to the importance of doing well on an academic task which a student considers as central to his or her sense of self (Wigfield, 2010). His definition is similar to that of personal motivation espoused by SDT. Intrinsic value is perceived interest and enjoyment to be derived from performing an academic activity (Wigfield *et al*., 2009). Utility value refers to how an academic activity fits into a student's future career plans (Wigfield, 2010). Cost is external burden or constraint that a student perceives to accompany an activity such as potential negative

responses or reaction from peers (Anderson and Ward, 2013). In a sense, EVT cost is analogous to SDT social motivation.

Research testing EVT relationship between these two constructs found subjective task value to be a stronger predictor of motivation than expectancies for success among students (Xiang, Mcbride, Guan & Solmon, 2003). Research using EVT has found a significant positive predictive impact of intrinsic value, utility value, and cost attainment (social motivation) on academic success among students (Wigfield and Cambia, 2010; Wigfield and Eccles, 2000, 2009; Wigfield, Tonks, and Klauda, 2009; Peter and Daly, 2013; L. Anderson and Ward, 2013), while cost have exhibited negative predictive effect on motivation and academic success among college students (Vernadakis *et al*., 2014; Wigfield *et al*., 2009).

Collectively, these theoretical frameworks and studies have provided valuable insight into the effect of various types of motivation on academic success. However, the persistent decline in retention and graduation rates, which in essence, are key determinants of academic success among predominantly black college students suggest a need for evidence-based interventions or programs to resolve the problem. A review of the literature revealed that no study that we know of has examined the effect of non-cognitive factors such as various types of motivations on academic success among students attending predominantly black colleges and universities in the United States, much less in predominantly black college students in University of North Carolina system. The purpose of this study was to begin this line of inquiry with the hope of generating empirical data that can be relied upon by university administrators and education policymakers to develop evidence-based interventions and academic motivation support programs to improve the retention and graduation rates at predominantly black colleges and universities. This study is necessary especially given that most predominantly black college students come from challenging socio-economic backgrounds and communities that may interfere with their motivation to learn and succeed in college.

Previous studies on the influence of various types of motivation on academic success have examined college students as a whole. Using the findings from these studies to design motivation support programs to improve retention and graduation rates in PBCs may seriously mask efforts to effectively resolve the low retention and graduation problem. Moreover, using the findings from these studies to draw conclusions about the nature of the problem and develop intervention strategies to improve retention and graduation rates in predominantly black colleges and universities is equivalent to committing ecological fallacy (Nachmias and Nachmias, 2010), which may lead to adopting interventions that may be ineffective in resolving the problem given the population being served. The present study was aimed at resolving this problem by using PBC students as the units of analysis. Specifically, this study sought to provide empirically-grounded answers to the following research questions:

a. What is the underlying structure of perceived intrinsic motivation, extrinsic motivation, social motivation, personal motivation, and amotivation among PBC students?
b. What is the effect of intrinsic motivation on academic success among Predominantly Black College students?
c. What is the effect of extrinsic motivation on academic success among Predominantly Black College students?
d. What is the effect of social motivation on academic success among Predominantly Black College students?
e. What is the effect of personal motivation on academic success among Predominantly Black College students?
f. What is the effect of amotivation on academic success among Predominantly Black College students?

Research Hypothesis: Based on the various theories and previous studies discussed above, the research hypotheses were:

a. Intrinsic motivation has a positive influence on academic success among Predominantly Black College students.
b. Extrinsic motivation a positive effect on academic success among Predominantly Black College students.
c. Social motivation on has a positive impact on academic success among Predominantly Black College students.
d. Personal motivation has a positive effect on academic success among Predominantly Black College students.

e. Amotivation has a negative impact on academic success among Predominantly Black College students.

MATERIALS AND METHODS

Research Design: This study employed a cross-sectional pre-experimental One-shot Case Study design (Leedy & Omrod, 2016). A schematic representation of the design is displayed in Figure 1.

Treatment	Post-test
X	O_2

Figure 1. Pre-experimental one-shot case study design.

Where; *X* is a PBC student's types and level of motivation (i.e., intrinsic motivation, extrinsic motivation, social motivation, personal motivation, and amotivation). O_2 is the level of a PBC student's academic success. This design is useful in exploring researchable problems or developing ideas or devices for action research such as the influence of motivation on academic success. It is simply not a basis from which we can reach defensible conclusions in research because of four major limitations. First, there is a complete absence of control and no internal validity. The "quick and easy" nature of this approach, often used as a basis for change or innovation, is entirely misleading. Second, no provision for comparison (the basics of science) exists except implicitly, intuitively, and impressionistically. Third, this design usually involved the "error of misplaced precision" in which, a great deal of care is given to the collection of data about which our conclusions can only be impressionistic and imprecise. Fourth, the attempt to use the standardized test in lieu of a control group is misguided, since rival sources of observed influence on academic success other than the treatment, motivation, are so numerous as to render the standardization group useless as a "control" group (Isaac and Michael. 2010).

Participants and Procedure: The Predominantly Black College selected for this study has a population of students enrolled who come from various states within the United States and various foreign countries. A breakdown of the population by race/ethnicity shows that approximately 70% is African American, 17% is Caucasian, 4% is Hispanic, 1% is Native American and 4% is other racial/ethnic groups. The age distribution of the student population consists of 55% in the age range of 17-25 years old, 31% aged 26-40 years, and 14% is over 40 years. Most of the students (68%) are females, while 32% is males. The distribution of the population by academic class shows that 19% is a freshman, 15% is sophomore, 18% is junior, 32% is senior, and 11% is graduate. Most of the students (66%) attending the university are enrolled as full-time students, while one-third are part-time students.

Participants in the study included a purposive convenient sample of students aged 18 years or older. After receiving Institutional Review Board's (IRB) approval, various professors were contacted and asked for permission to conduct the survey during a portion of their class time. A convenient sample professors at the university were contacted by email requesting permission to administer the survey to their students. Once their permission was granted, we met with the students during the class period and explained the purpose of the study to them. They were also informed that their participation would be strictly voluntary and that they may either opt not to participate in the study and leave or not provide a response to any of statements. In addition, the students were informed that no incentive would be provided for their participation in the study. The students who agreed to participate in the survey were provided with a consent form to read, sign and date. The consent form explained to the students that their participation was voluntary and would not affect their grade and that their identity would be kept strictly confidential, and their names would not appear in any report. We adhered to all American Psychological Association research guidelines. The survey was anonymous in that no identifying information was connected to individuals, or included in the data-set. Participants completed the survey during class time and returned them before leaving the class. Non-participants were asked to remain quiet or dismissed from the class early. The survey took less than 10 minutes to complete. A total of 499 students participated in the survey.

Measures: All measures for all of the variables were obtained from previous research (Dishon-Berkovits, 2014; Vallerand *et al*., 1992; Barkoukis, Tsorbatzoudis, Grouios, & Sideridis, 2008; Fairchild, Horst, Finney, & Barron, 2005; Cokley *et al*., 2001) on academic motivation outlined in the introduction section of this article, and validated using exploratory and confirmatory factor analytic procedures. The survey instrument included items measuring intrinsic motivation, extrinsic motivation, social motivation,

personal motivation, amotivation, and academic success, as well as general demographic information of the respondents. Overall, the structural model of the study consisted of five exogenous latent constructs and one endogenous latent construct.

Intrinsic Motivation: This latent variable was measured using a battery of nine items regarding the reasons why the student goes to college such as, "because I experience pleasure and satisfaction while learning new things". The items were scored on a 5-point Likert scale ranging from 1 = does not correspond at all to 5 = Correspond exactly. *Extrinsic motivation* was measured by nine items such as, "in order to have a better salary". The items were scored on a 5-point Likert scale ranging from 1 = does not correspond at all to 5 = Correspond exactly. *Personal motivation* was measured by a battery of nine items, "such as to show myself that I am an intelligent person". The items were scored on a 5-point Likert scale ranging from 1 = does not correspond at all to 5 = Correspond exactly. *Social motivation* was measured by thirteen items such as, "because all my close friends are in college". The items was scored on a 5-point Likert scale ranging from 1 = does not correspond at all to 5 = Correspond exactly. *Amotivation* was measured by six variables such as honestly, "I don't know, I really feel that I am wasting my time in school". The items were scored on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. *Academic success* was measured by grade point average (GPA) score on a 6-point Likert scale ranging from 0 - 1.49 = 1 to 3.50–4.00 = 6.

Statistical Analysis: Latent variable structural equation modeling analysis was performed to assess the influence of intrinsic motivation, extrinsic motivation, personal motivation, social motivation, and amotivation on academic success using AMOS 21.0 (Arbuckle, 2007). Specifically, in response to research question 1 above, exploratory factor analysis (EFA) was performed to determine the factorability of the each of the latent constructs. Internal consistency of the constructs was assessed by Cronbach's Alpha test with alpha of 0.07 considered to be adequate internal consistency. The goal of these analyses and test is dimension reduction of the latent constructs of interest (Hahs-Vaughn, 2017). In essence, the interest was in placing substantive meaning on the factors extracted. Once the factorability was determined, confirmatory factor analysis (CFA) was performed to assess the fit of model to the data, and to estimate the magnitude and significance of the effect of each of the exogenous constructs on the endogenous latent construct, academic success. To make full use of the available data, full maximum information likelihood (FIML) estimation procedure was used. A number of indices was used to evaluate the goodness of fit of the five-factor orthogonal motivation-related academic success structural model. The model absolute fit was assessed using chi-square statistics, $\chi 2$, with low $\chi 2$ considered good fit (Hair, Black, Babin, Anderson, & Tatham, 2006). Incremental fit was evaluated using the Root Mean Square Errors of Approximation (RMSEAs) with a value less than 0.06 indicating a relatively good fit, along with Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) with values of 0.95 or greater considered desirable (Hair, Black, Babin, Anderson, & Tatham, 2006; Hu and Bentler, 1999; Blunch, 2010; Brown, 2006). The likelihood that the model's parameter estimates from the original sample was cross-validated across in future samples will be assessed by examining Akaike's (1978) Information Criterion (AIC) and Bozdogen's (1987) consistent version of the AIC (CAIC) with lower values of the hypothesized model compared to the independent and saturated models considered to be appropriate fit. The likelihood that the model cross-validates across similar-sized samples from the same population was determined by examining the Expected Cross-Validation Index (ECVI) with an ECVI value for the hypothesized model lower compared to both the independent and saturated models considered to represent the best fit to the data. Finally, Hoelter's (1983) Critical N (CN) was examined to determine if the study's sample size was sufficient to yield an adequate model fit for a $\chi 2$ test (Hu and Bentler, 1995) with a value in excess of 200 for both 0.05 and 0.01 CN indicative of the structural model's adequacy in representing the sample data (Bynes, 2016).

Normality of the distribution of the model's variables was assessed by Mardia's (1970, 1974) normalized estimate of multivariate kurtosis with a value of 5 or less reflexive of the normal distribution. Multivariate outliers were detected by computation of the squared Mahalanobis distance (D2) for each case with D2 values standings distinctively apart from all the other D2 values as indicative of an outlier (Mertler & Vannatta, 2013). The magnitude of effect of intrinsic motivation, extrinsic motivation, social motivation, personal motivation, and amotivation latent constructs on academic success was

determined by estimating the standardized regression coefficients (Beta coefficients (β) or factor loadings), with β's below 0.05 too small to be considered meaningful influences on academic success, even when they are statistically significant; those between 0.10 to 0.25 were considered moderate influences on academic success; and those above 0.25 were considered large effects on academic success (Keith, 2014).

RESULTS

Analysis of the data shows that the sample for the study was approximately representative of the population. For example, the frequency distribution of the sample by race show that a majority of the students (73%) was African Americans, 14% was whites, 6% was biracial, 5% was Hispanics, and 2% was other races. For age group, 77% was 18-24 years old, 14% was 26-44 years old, 5% was 35-44 years old, and 4% was above 4 years old. Gender distribution shows that majority of the respondents were female (63%) compared to 37% male. The breakdown by academic class shows that majority of the respondents (42%) were freshmen, 25% were sophomores, 19% were juniors, and 12% were seniors. These results suggest that the study sample distribution was similar to the population distribution described above, and therefore can be considered representative of the PBC student population of this study.

The result of the effect of the various types of motivation on academic success is displayed in Table 1 and figure 2. The table and figure 2 show the standardized parameter coefficients with factor loadings of latent construct onto the measured variables and the direct effects within the structural portion of the tested structural model. Table 1 shows that the standardized regression weights or factor loadings range from 0.53 to 0.91. These standardized weights represent the factor loading of items or observed variables on their individual latent constructs in the measurement model. Hence, convergence validity of the motivation measurement model as a whole is confirmed. Also, the fit of the overall academic motivation model of this complexity is good (χ^2 (105, N=499) = 326.525, p <.01; CFI=0.96; TLI=0.94; RMSEA = 0.06). The result of the likelihood that the model cross-validates across similar-sized samples from the same population showed an Expected Cross-Validation Index (ECVI) value for the hypothesized model higher compared to both the independent and saturated models (Default Model = 0.917; Saturated Model = 0.683; Independent model = 11.928).

Table 1. Standardized estimate for Type of Motivation Measure Items.

Motivation Measurement item	Estimate
INTRINSIC MOTIVATION (α=.80)	
I go to college because I experience pleasure and satisfaction while learning new things.	0.76
I go to college for the pleasure I experience when I discover new things never seen before	0.87
I go to college for the pleasure I experience in broadening my knowledge about the subjects appeal to me	0.82
EXTRINSIC MOTIVATION (α=.95)	
I go to college to obtain a more prestigious job later on	0.81
I go to college in order to have a better salary later on	0.92
I go to college because I want to have "the good life" later on	0.80
I go to college in order to have a better salary later on	0.90
SOCIAL MOTIVATION (α=.61)	
I go to college because I like to be one of the most recognized students in the classroom	0.63
I feel that the smarter I am, the more I will be accepted by other students	0.72
I feel that I should be recognized when I demonstrate my abilities in the classroom	0.78
PERSONAL MOTIVATION (α=.92)	
I go to college to show myself that I am an intelligent person	0.90
I go to college to show myself that I can succeed in my studies	0.83
I go to college because of the fact that when I succeed in college I feel important	0.81
AMOTIVATION (α=.94)	
I can't see why I go to college and frankly, I couldn't care less	0.89
I once had good reasons for going to college, however, now I wonder whether I should continue	0.85
Honestly, I really feel that I am wasting my time in school	0.93

Table 2. Structural Equation Unstandardized and Standardized Regression Weights of Motivation on Academic Success among Predominantly Black College Students.

Exogenous Construct	b	SE	β	t	p
Intrinsic Motivation	0.40	0.122	0.23	3.265	0.001
Extrinsic Motivation	0.01	0.108	0.01	0.076	0.939
Social Motivation	0.09	0.095	0.06	0.934	0.350
Personal Motivation	-0.09	0.108	-0.06	-0.801	0.423
Amotivation	-0.51	0.105	-0.34	-4.836	0.001

Endogenous Construct: Academic Success; N=499; Square Multivariate Correlation = 23.6%

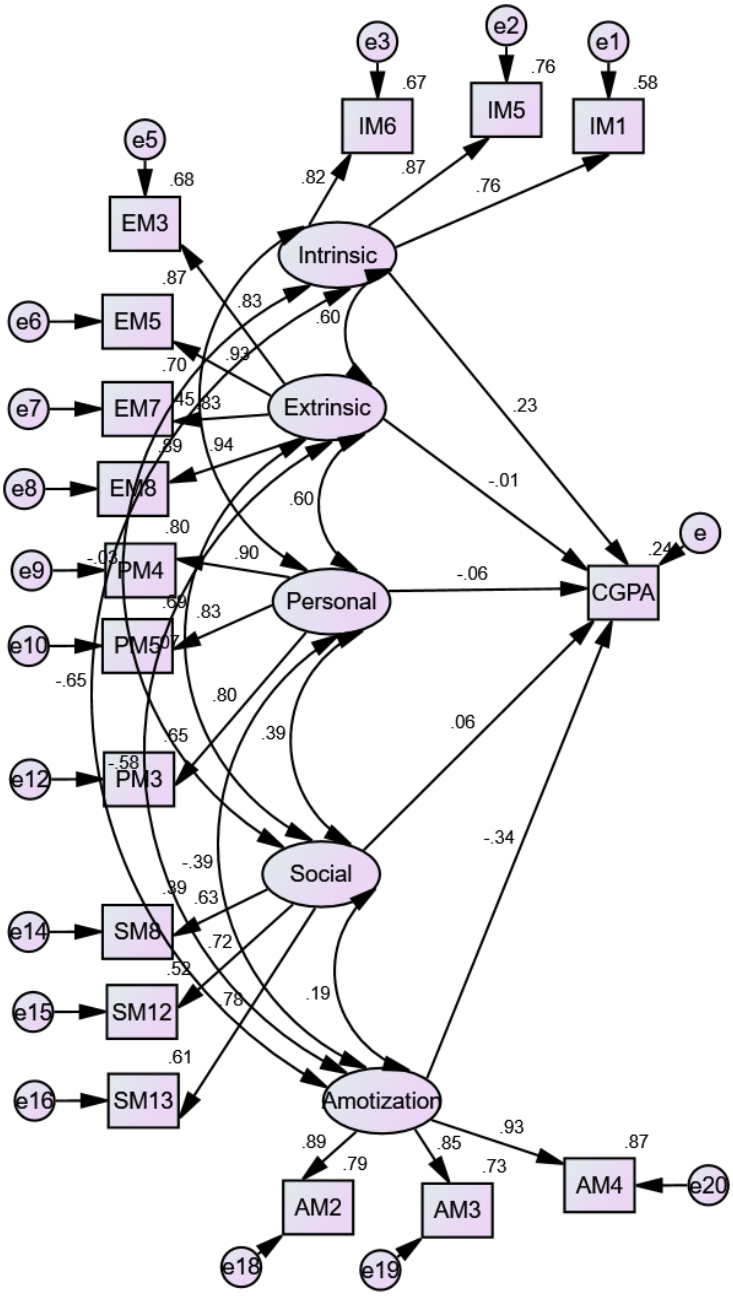

Figure 2. Academic Success Structural Equation Model for Predominantly Black College Students.

This finding suggests that the model did not represent the best fit to the data. However, Hoelter's (1983) Critical N (CN) show that the study's sample size was sufficient to yield an adequate structural model fit representing the sample data for a $\chi 2$ test (CN for 0.05 = 199 and 0.01 = 216). The result showed the sample did not cross-validate across in future samples (AIC for hypothesized model = 456.525; Saturate model = 340.000, Independent model = 5940.448).

The model explains 23.7% of the variance in academic success among the sample of PBC students. Mardia's normalized estimate of multivariate kurtosis (C.R. value) is -2.64 which is reflexive of a normal distribution. The square Mahanalobis distance (D^2) values showed minimal evidence of multivariate outliers.

Table 2 displays the estimate standardized coefficients (β) associated with each of the exogenous motivation latent constructs in the structural equation causal model. Amotivation had a large negative and statistically significant effect on the academic success of PBS students (β = -0.34, t = -4.879, p =0.001). An independent-sample t-test comparing the mean scores of male and female students found a significant difference between the means of the two groups (t (499, 491) = 2.660, p <.05). The mean of male students was significantly higher M= 10.86, *sd* = 4.666) than the mean of female students (F = 9.79, *sd* = 4.094). No significant difference was found in the racial, academic class, enrollment status, and age group of the students. Amotivation had a negative large and statistically significant effect on academic motivation (β = -0.34, t = -0.4.836, p =0.001). Intrinsic motivation had a positive moderate and statistically significant effect on academic success of PBC students (β = 0.24, t = 0.2.717, p =0.001). Extrinsic motivation, social motivation, and personal motivation had no meaningful and insignificant influence on academic success (β = 0.01, t = -0.076, p =0.939; β = -0.06, t = -0.801, p =0.350; β = -0.06, t = -0.934, p =0.350, respectively).

DISCUSSION

The purpose of this study was to determine the types of motivations that contributed to academic success among predominantly black college students. The goal was to use the findings of this study to generate a line of inquiry towards developing a structural model for assessing the motivational factors that contribute to retention and graduation rates among predominantly black college students. The findings of this study, for the most part, deviate from the findings of previous studies. For example, unlike previous studies that found a positive effect of extrinsic and social motivations on academic success of college students (Deci and Ryan, 2002; Wigfield and Cambia, 2010; Wigfield and Eccles, 2000, 2009; Wigfield, Tonks, and Klauda, 2009; Peter and Daly, 2013; L. Anderson and Ward, 2013), this study found no meaningful effect of these types of motivation on academic success of PBS students. The findings of previous studies on the effect of intrinsic motivation on the academic success of college students have been a mix. For example, Burton and colleagues (2005) found a predictive positive influence of intrinsic motivation. But, Black and Deci (2000) and Deci and colleagues (2014) found no significant predictive effect of intrinsic motivation on the academic success of students.

Our finding of the negative effect of amotivation on academic success was consistent with findings of previous studies (Ntoummanis, 2015; Vernsdakis et al., 2014; Wigfield et al., 2009; Deci et al., 2014). Also, some previous studies found a significant positive influence of intrinsic motivation and social motivation on academic success among college students (Burton et al., 2005), while other studies found no significant effect on academic success (Black and Deci, 2000). However, this study found just a moderately significant effect of these types of motivation on PBS students.

While this study provides valuable insight into the types of motivations that contribute to academic success among PBC students, the study has some limitations that must be acknowledged. First, the study was limited to students at one predominantly black college hence limiting the external validity of the study's findings. Hence, the study should be replicated at other PBC campuses. Second, the study did not examine the effect of the motivations on academic success by demographics, such as age, race, and academic class. Third, the study did not examine the structural model developed in this study over time. It is recommended that longitudinal studies should be conducted using the structural model developed in this study.

CONCLUSION

The majority of students attending predominantly black colleges come from disadvantaged socio-economic background and communities that may have influenced their attitude toward learning and succeeding in college. The findings of this study suggest that PBC students are relatively lacking in non-cognitive dimensions of

learning, which predisposes them to inability to succeed in college. This study found amotivation to be a major impediment to academic success among these students, especially among male students. Hence, we could infer that among these students, the level of resiliency and persistence required to keep up with the heavy academic workload in college for academic success may pose extra challenges. Based on the prevalence of this behavioral mindset condition among the students, we can safely conclude that to enhance retention and graduation rates in predominantly black colleges, more emphasis should be placed on developing and implementing evidence-based motivation intervention support programs or strategies to reduce amotivation among these students.

These findings suggest that to resolve the amotivation among PBC students, university administrators and policymakers should consider adopting and implementing an autonomy support teaching strategy to enhance retention and graduation rates in these institutions of higher learning, especially among male PBC students. Also, future research should assess the impact of this strategy on student success at predominantly black colleges. In particular, issues related to the amotivation problem can be resolved by adopting teaching and learning strategies proposed by Cognitive Evaluation Theory (CET) and research (Deci and Ryan, 2002; Shen et al., 2009; Ntoumanis, 2005; Zhang et al., 2012; Shen et al., 2010b). CET states that social and environmental factors that satisfy basic needs such as autonomy, competence, and relatedness facilitate motivation of students (Deci et al., 2002; Ntoumanis, 2005; Black and Deci, 2000; Shen et al., 2009; Pelletier et al., 1999). In contrast, social and environmental factors that inhibit the expression of those needs jeopardize satisfaction and lead to amotivation. Educational research on the influence of environmental and social factors of autonomy support content that autonomous-supportive teaching strategy provides students with an internal locus of causality and freedom to act out of free choice and use the information to solve problems in their own way (Pelletier et al., 1999). In principle, autonomy-supportive teaching strategy involves providing moderate structure and guidance, while emphasizing the benefits of giving the students freedom, volition, and responsibility for themselves (Shen, 2015). In fact, research shows that autonomy supportive teaching strategy has a large negative and significant effect on amotivation (Cox and Williams 2008; Liukkonen et al., 2010). Specifically, the research showed that high autonomy support nurtures students' task values, ability and effort beliefs, and encourage enjoyment of learning tasks, and interestingness in class activities (Zhang et al., 2012), while inadequate teacher autonomy support damages task value and interest in class activities which leads to amotivation (Shen et al., 2010b). Finally, intrinsic motivation support programs should be reinforced to alleviate the desire and joy of learning of the students. In summation, enhancing non-cognitive dimensions of learning, such as adoption of intrinsic motivation and autonomous supportive teaching strategies may help reduce the low retention and graduation rates of predominantly black colleges.

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