



Spring 2017

# Stereotype Threat in Higher Education: The Role of Psychological Capital on Student Satisfaction and Commitment

Lei J. Shirase

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**STEREOTYPE THREAT IN HIGHER EDUCATION: THE ROLE OF  
PSYCHOLOGICAL CAPITAL ON STUDENT SATISFACTION  
AND COMMITMENT**

A Masters Thesis

Presented to

The Graduate College of

Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Psychology

By

Lei Shirase

May 2017

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**ABSTRACT**

Stereotype threat refers to being at risk or confirming, as self-characteristic, a negative group stereotype about one's group. Past research has linked stereotype threat to a multitude of detrimental outcomes including decreased test performance, the drainage of cognitive resources, and increased stress levels. However, many of these findings were confined to laboratory settings and focused only on immediate effects. Research on stereotype threat framed as a macro-level product in a non-laboratory setting is limited at this time. In an attempt to bridge this gap, the present study examined the lingering effects of stereotype threat on minority satisfaction / commitment in a university setting. The present research also introduced a potential moderator of stereotype threat and minority student satisfaction / commitment in the form of a higher order positive construct, psychological capital. Contrary to initial expectations, results indicated that while minority students reported significantly higher levels of perceived stereotype threat compared to non-minority students, they remained committed to and satisfied with their university. Furthermore, levels of psychological capital did not seem to act as a buffer for stereotype threat.

**KEYWORDS:** stereotype threat, discrimination, prejudice, commitment, satisfaction, stress, self-efficacy, psychological capital

This abstract is approved as to form and content

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Carol F. Shoptaugh  
Chairperson, Advisory Committee  
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## INTRODUCTION

In a series of mock courtroom trials that manipulated the race of the defendant in otherwise identical cases, blacks received significantly harsher treatment in terms of punishment compared to the White defendants (Nicholson, Bagby, & Rector, 1993). Why was this the case? Social psychologists suggest that stereotypes; beliefs about social groups in terms of the traits or characteristics that they are believed to share, can explain such differences (Kassin, Fein, & Markus, 2011). Specifically, a stereotype is “a belief or association that links a whole group of people with certain traits or characteristics” (Kassin, Fein, & Markus, p. 6). It refers to the cognitive component of attitudes. This differentiates stereotype from prejudice and discrimination. Prejudice is an unjustified, typically negative attitude toward a group of individuals which involves stereotypes and negative feelings, while discrimination represents the differential actions taken toward members of that group, respectively (Branscombe & Baron, 2012). The content of a stereotype greatly varies - with traits, physical appearance, behaviors, and abilities being common components (Schmader, Forbes, Zhang, & Mendes, 2008).

The systematic consequences of negative stereotypes are especially apparent in educational settings. On one hand, it can certainly be argued that more minorities are seeking higher education than ever before. However, the opportunities for attainment remain widely disparate. A study by Georgetown Workforce Center (Carnevale & Strohl, 2013) found that while freshman college enrollment has more than doubled for minorities between 1995 and 2009, the vast majority of those individuals are not attending selective four-year institutions. For example, more than 66% of blacks went to open-access

colleges (e.g. community college) while Whites represented over 75% of the students at the nation's top 500 colleges. Pew Research Center (Krogstad & Fry, 2012) found that only 9% of Blacks ages 25-29 held a bachelor's degree or higher, while 70% of Whites in the same age bracket held a bachelor's degree or higher. In relation to stereotypes, a longitudinal study conducted by the Diverse Learning Environments (DLE) found that black college students were the only racial group to identify stereotypes about their race as the biggest barriers to their academic success (Johnson-Ahorlu, 2011). It would be foolish to deem it purely coincidental that black students have one of the lowest retention and degree completion rates in the country at a rate of 42% versus the national average of 57% (US DOE, 2009). As a culmination of these past findings, the purpose of this study is to further explore the effects of a threatening university environment on outcomes of minority student success.



## LITERATURE REVIEW

### **Stereotypes**

Aronson (2012) defined stereotypes as “generalized characteristics, motives or behaviors to an entire group of people; the little pictures in our head that shape our impressions of people or groups” (p. 437). Stereotypes can be examined as a function of schemas, which refer to the cognitive frameworks for organizing, interpreting, and recalling information (Fiske & Taylor, 2008). While it can be argued that stereotypes function as useful mental shortcuts in the absence of reliable information, prejudice that stem from stereotypes often put a heavy burden on the group it is targeted towards (e.g. differential treatment in mock trials). Furthermore, past research suggests that such mental shortcuts tend to contain systematic inaccuracies (Quillian & Pager, 2001). In terms of stereotype formation, social psychologists suggest in-group / out-group dynamics as a possible explanation (Bargh, Chen, & Burrows, 1996). This bias results in favoritism toward members of our own group over outgroup members. This then perpetuates an “us versus them” mentality amongst differing groups, which can be expressed in negative evaluations, negative generalizations and stereotypes, and differential allocation of valued resources.

The in-group / out-group dynamics may also help explain the resilient nature of stereotypes. It was not long ago that Herrnstein and Murray (1995) suggested that general mental ability (intelligence) and race were biologically pre-determined, perpetuating the idea that certain races were born genetically inferior in this regard. Fast forward more than 25 years, and it is apparent that such negative stereotypes continue to persist in

today's society. Indeed, as past research suggests, information consistent with a stereotype is more likely to be noticed and retained compared to stereotype-irrelevant information – regardless of the whether or not the information is factually based (Rothbart, Evans, & Fulero, 1979).

### **Stereotype Threat (ST)**

Originally coined by Aronson and Steele (1995), “stereotype threat refers to being at risk of confirming, as self-characteristic, a negative stereotype about one's group” (p. 797). In terms of vulnerability, it is suggested that everyone and anyone who identifies or belongs to one or more groups is susceptible to stereotype threat (Quinn, Steele, & Spencer, 1999). Research on stereotype threat include those from differing backgrounds in terms of socioeconomic status, gender identity, race / ethnicity, and age (Ambady, Shih, Kim, & Pittinsky, 2001; Stone, 2002). Stereotype threat has been linked to a range of outcomes including education performance (Walton & Spencer, 2009), memory retention (Mazerolle et al., 2015), and anxiety (Ben-Zeev et al., 2005).

### **Consequences of ST**

When studying the effects of stereotype threat on Black students taking the Graduate Record Examinations (GRE), Aronson and Steele (1995) found that contextually salient negative group stereotypes hindered test performance. Not only did this suggest the existence of stereotype threat, but it also provided evidence that stereotypes linked with poor performance of a certain group, when made contextually salient, can produce anxiety, self-doubt, lowered performance, and disassociation with an

individual's group. A meta-analysis of 39 stereotype threat experiments that examined historically disadvantaged minority groups found that stereotype threat "significantly affects participants' test performance, such that people experiencing stereotype threat perform significantly worse when stereotype threat is high than when it is low" (Spencer & Walton, 2009). Furthermore, researchers estimate that psychological threat such as stereotype threat may account for up to 29% of the SAT scoring gap between Whites and Blacks (Spencer & Walton, 2009).

Stereotype threat has also been linked to the drainage of cognitive resources, as suggested by Schmader, Johns, and Forbes (2008). Their research suggests that stereotype threat disrupts performance through a physiological stress response that directly impairs prefrontal processing. Individuals who are under the influence of stereotype threat will attempt to manage the effects of the threat at the cost of depleting resources from their executive control. Furthermore, Kang and Inzlicht (2010) found that "managing the stress of negative stereotypes involve resource-demanding coping strategies, such as emotion regulation and thought suppression, and because these resources are finite, coping could result in poorer self-control even after the stereotype stressor is no longer in the air".

### **A Threatening University Environment**

Considering that 80% of American college students are between the ages of 18 and 24 (US Census Bureau, 2015), it would make sense that exposure to negative group stereotypes may have developmental consequences for those who are targeted. Indeed, Chickering and Reisser (1993) highlight the idea that college students rely upon feedback

from various sources to form an accurate depiction of self. This includes grades and test scores, interacting with university faculty / staff, colleagues, significant others, and other variables. Taking into account the various ways in which stereotype threat can be triggered, this provides for a multitude of negative consequences. For example, seemingly harmless contextual cues such as numerical ratio of minority to non-minority individuals have been shown to trigger stereotype threat among women and blacks in various settings (Murphy, Steele, & Gross, 2007).

A particularly concerning consequence for minority college students, is that exposure to negative group stereotypes have been linked to the fostering of negative emotions in the stereotyped domain. Smith, Samsone, and White (2007) and Adams, Garcia, Purdie-Vaughns, and Steele (2006) found that high levels of threat were associated with decreased levels of task interest and heightened levels of negativity toward that particular experience. For a minority college student, this may translate into decreased levels of academic interest. Furthermore, Walton and Cohen (2007) found that stereotype threat undermined an individual's sense of belonging, decreased motivation, and increased subsequent withdrawal behavior from the setting.

Referring back to the idea that college students rely upon feedback from their surroundings to form a self-image, even the subtlest of cues such as a split-second glance of disapproval from a classmate or being the only minority in a classroom may decrease a student's level of commitment to academics. Woodcock, Hernandez, Estrada, and Schultz (2012) maintained that if certain groups are not made to feel a part of their university and are under constant exposure to stereotype threat, those individuals can and will disidentify from their university. Thus, it is postulated that a young minority college

student in the face of threatening situation, through these various sources of interaction, may very well experience lasting, negative consequences in the form of (university) belonging uncertainty and withdrawal from academics.

### **Organizational Commitment (OC) and Satisfaction**

Past research on satisfaction suggests that factors such as the environment in which the individual interacts with and other variables associated with the position itself (e.g. college student) greatly influence levels of satisfaction (Spector, 1997).

Organizational commitment (OC) refers to the degree to which an individual is psychologically attached to an organization. In the realm of our interests, OC will be framed in the form of affective commitment (AC) and calculative commitment (CC). AC refers to the degree to which an individual holds positive emotional feelings towards an organization, and CC refers to a cost-benefit approach in which an individual weighs the pros and cons of staying with or leaving an organization. Furthermore, Zajac and Mathieu (1990) found that organizational commitment and satisfaction were positively correlated with each other and are negatively correlated with absenteeism and turnover. Lastly, taking into consideration that past research has linked high levels of threat with decreased levels of task interest and heightened levels of negativity toward that particular experience (Adams et al., 2006; Smith et al., 2007), it seems plausible that stereotype threat will be associated with commitment and satisfaction levels of a college student.

### **Self-efficacy (SE)**

Self-efficacy refers to an individual's belief about his or her capabilities to produce designated levels of performance that exercise influence over events that affect their lives. These beliefs have the ability to dictate how individuals think, feel, and self-motivate. From the perspective of a college student, self-efficacy can be shaped from prior experiences in educational settings, evaluations within classes, instructor feedback, and social comparisons (Stage et al., 1998). Past research suggests that self-efficacy is also largely influenced by perceived environmental barriers (Whitson, 2008). In relation to stereotype threat, Whitson (2008) found self-efficacy to be largely influenced by perceived environmental barriers such as prejudice and discrimination. Specifically, higher levels of perceived prejudice and discrimination were associated with decreased levels of self-efficacy. Considering the function of stereotype threat (i.e. being at risk of confirming a negative stereotype), heightened levels of stereotype threat may produce similar results.

### **Academic Stress (AS)**

Stress is a topic of great subjectivity, gathering operational definitions of all types across a multitude of disciplines. Yet, it is something that the vast majority have experienced, and will continue to experience until we are no more. Hans Selye (1936) examined stress as “the non-specific response of the body to any demand or change”. Individuals appraise and cope with stress, to reach a goal of adaptation. Although short term stress is generally considered to be relatively harmless, long term stress can cause wear and tear to biological systems of the human body, opening the possibility for negative chronic effects. Considering the mechanisms behind stereotype threat (increased

anxiety, negative cognitions, lowered performance expectations, reduced self-control), it is expected that stereotype threat experience will be linked with academic stress levels. Contrada (2000) reported that stereotype threat was a contributor to stereotype confirmation concern which is recognized as a source of stress for minorities and impacts wellbeing.

### **Coping with Stereotype Threat**

The exploration of the possible coping mechanisms of stereotype threat have been examined individually in past research (e.g., thought suppression). Block et al. (2011) extended this field of research by providing a full model of long-term responses to stereotype threat. By integrating Klinger's (1977) model of goal-blockage and Robert's (2005) model of identity threat responses with current stereotype literature, Block et al. (2011) theorized a model of long-term responses an individual may choose when responding to stereotype threat. According to their model, individuals respond in one of three ways: (a) fending off the stereotype, (b) discouraged by the stereotype, and (c) resilient to the stereotype.

'Fending off the stereotype' is a product of several sub-components: invigoration, internal attributions, identity bifurcation, and assimilation. "Individuals who choose to fend off the stereotype work vigorously to demonstrate that the stereotype does not apply to them. This may result in high levels of productivity, but with a correspondingly high psychological cost. They will engage in counter-stereotypic behaviors and distance themselves from other members of their social identity group" (Block et al., 2011). The researchers argue that members of stigmatized groups prefer to attribute negative

outcomes to their own personal inadequacies rather than discrimination. Following this is the concept of identity bifurcation, i.e., psychologically distancing oneself from negative group stereotypes. Finally, assimilation is the process by which an individual further distances oneself from their negatively stereotyped group by adopting positive characteristics of another group.

‘Discouraged by the stereotype’ refers to disengagement, external attributions, anger, and withdrawal. “Individuals who respond to stereotype threat with discouragement realize that no matter how productive they are, and how much they achieve, they will still be perceived in light of this stereotype – not in every situation, but unpredictably” (Block et al. 2011). Disengagement is the end product of an individual who reacts to a stereotype threat by disengaging their self-esteem from the relevant threat domains. Disengagement in itself is composed of devaluation and discounting. Devaluation is a defense mechanism to protect an individual’s self-evaluation from negative feedback. Discounting occurs when an individual rejects performance feedback. External attributions are implemented to protect an individual’s self-esteem by making external attributions of prejudice for negative events. The outcomes are then considered to be a product of external causes outside of one’s control (Block et al. 2011). Anger and withdrawal (e.g., tardiness, absences, turnover) are also said to be a part of this response mechanism.

Lastly, ‘resilient to the stereotype’ is composed of challenging negative group stereotypes, positive distinctiveness, collective action, and redefining criteria for success. Individuals who respond to stereotype threat with resilience “have the capacity to recover after sustaining a loss and have the ability to bounce back beyond the initial setback.



Individuals who respond in this fashion realize that stereotype threat will be present and will affect how others judge them. Therefore, they redirect their energy toward the goal of changing the context of their work environment” (Block et al. 2011). Individuals may choose to challenge existing negative group stereotypes by educating others, or changing the work context to make it a more inclusive environment. Positive distinctiveness refers to emphasizing positive attributes of one’s own identity group to override perceived negative threats. Collective action refers to the inclusion of others either inside or outside an individual’s identity group to create a movement for positive change. Redefining criteria for success is the process of defining the meaning of success in one’s unique terms, disregarding the standard set by others (Block et al. 2011). This then begs the question of whether or not it is possible for individuals to select how they react to stereotype threat. How would, for example, an individual become resilient rather than discouraged by a stereotype?

### **Individual Moderators of ST**

As research on stereotype threat gained traction over the past years, researchers began exploring potential moderators of stereotype threat to gain further understanding of the phenomenon. For example, individuals who strongly identified with a given threat domain experienced higher levels of negative stereotype threat effects such as lowered performance (Aronson et al., 1995; Osborne & Walker, 2006). Internal locus of control (Cadinu et al., 2006), proactive personalities (Gupta & Bhawe, 2007), and working memory capacity (Schmader, 2008) were also identified as potential moderators of stereotype threat. Specifically, individuals with stronger internal locus of control with

more proactive personalities were found to underperform in several tasks in high threat conditions. On the other hand, individuals with greater working memory capacity were found to be more resistant to the effects of stereotype threat. It should be noted, however, many of these results remain inconclusive in that they have not been tested across varying contexts.

### **Psychological Capital (PsyCap)**

Psychological Capital, otherwise known as PsyCap refers to a positive psychological state of development driven by four key characteristics. These characteristics are as follows: efficacy, optimism, hope, and resiliency. Together, they function as a higher order positive construct that dictates an individual's positive psyche. Luthans (2013) refers to positivity as "an integrated system of antecedents, processes, practices, and outcomes that can be readily identified and agreed upon by diverse observers and stakeholders as uniquely surpassing standards of adequate functioning and adding sustainable value to both the individual and the context". PsyCap was found to have a positive relationship with a multitude of work outcomes such as performance, organizational commitment, organizational citizenship behavior, job satisfaction. Furthermore, PsyCap was found to be negatively correlated with turnover intentions, stress, counterproductive work behavior, and anxiety (Avey, Reichard, Luthans, & Mhatre, 2011).

It is important to note that the core capacities of PsyCap operate in a synergistic manner, suggesting that the whole is greater than the sum of its parts. Specifically, the four factors (hope, optimism, resiliency, efficacy) work both additively and

synergistically to effect overall levels of PsyCap. For example, “hopeful individuals who possess the agency and pathways to achieve their goals will be more motivated to and capable of overcoming adversities, and thus be more resilient. Efficacious people will be able to transfer and apply their hope, optimism, and resilience to the specific tasks within specific domains of their life. Resilient individuals will be adept in utilizing the adaptational mechanisms necessary for realistic and flexible optimism (Luthans, 2015).

## **Hypotheses**

The purpose of the current study is to determine the relationships among stereotype threat, psychological capital and outcomes important in student success. While the effects of manipulated stereotype threat on performance in laboratory settings are well documented in literature, research on stereotype threat framed as a macro-level product of a given academic climate / culture is limited at this time. The present research examines minority student satisfaction and commitment in relation to past experiences with stereotype threat. We suggest that stereotype threat experiences (both long-term and short-term) may have a significant relationship with levels of student satisfaction / commitment and ultimately the decision to stay or dropout of a university. We posit that (at least partially) through the mechanism of stereotype threat, minority college students will experience decreased levels of university satisfaction, university commitment, college self-efficacy, and increased levels of stress. Lastly, the present research introduces a potential moderator of stereotype threat and minority student satisfaction / commitment in the form of a higher order positive construct, psychological capital (PsyCap).

Hypothesis 1. Stereotype threat will be negatively associated with university commitment / satisfaction.

Hypothesis 2. Self-efficacy will be positively associated with university commitment and university satisfaction / commitment.

Hypothesis 3. Psychological capital will be positively associated with university satisfaction / commitment.

Hypothesis 4. Psychological capital will moderate the relationship between stereotype threat and university satisfaction / commitment, such that the university satisfaction/commitment in individuals high in PsyCap will be relatively unaffected by stereotype threat; however, individuals low in PsyCap experiencing high levels of stereotype threat will have significantly lower levels of satisfaction / commitment than all other groups.

## **METHOD**

### **Research Design**

This study was reviewed and approved by the Missouri State University Institutional Review Board (Nov 14, 2016; approval # IRB-FY2017-170). The design was correlational, and all data were collected through an online Qualtrics survey system. A total of 437 respondents answered questions relating to various dependent and independent measures. The survey itself took an average of 12 minutes to complete. Due to the nature of the questions in the survey, the content was counterbalanced to help prevent influence that may otherwise compromise the accuracy of the answers. Furthermore, every participant, regardless of racial / ethnic background, was provided with the full questionnaire. Confidentiality was assured and preserved during the entire duration of this study.

### **Participants**

The participants in this study were composed of non-minority (i.e. White) and historically disadvantaged minority students (male and female) across various departments at Missouri State University. For reference, the latest (2015) demographic information for Missouri State University is as follows: 1% American Indian / Alaskan Native, 1% Asian, 4% Black, 3% Hispanic, 81% White, 3% Multi-racial, 5% International. To allow for a more accurate comparison between the non-minority and minority subsets, a sample reduction of the White student subset was implemented. The sample in the final analyses consisted of 70 White students (randomly selected from an

initial subset of  $n = 376$ ), 21 Black students, 18 Asian students, 9 Hispanic students, 9 Multi-racial students, 3 American Indian / Native Alaskan students, and 1 Native Hawaiian / Pacific Islander student. This resulted in a total of 131 participants across all groups. Of the 131 participants, 63 were male (48%) and 68 were female (51%) White initial analyses were examined across all racial / ethnic groups, emphasis was placed upon the black students in comparison to the White students. This was due to the small sample size of Hispanic, Multi-Racial, American Indian / Native Alaskan, and Native Hawaiian / Pacific Islander students ( $n < 10$  per group). Similarly, Individuals with disabilities and minorities in terms of gender identity were also recruited, but with a sample size of  $n < 5$ , were removed from subsequent analyses.

## **Procedure**

Qualtrics (an internet-based survey system) was used to administer the questionnaire to participants. The Qualtrics survey was linked to the Missouri State University SONA system. The SONA system was designed primarily for introductory to psychology undergraduate students to sign-up for studies in exchange for class credit. While the primary pool of participants came from such students, the survey was also open to all Missouri State University students. and recruitment through social media (facebook). Other recruitment efforts were used to access participants that were not enrolled in Introductory Psychology and students at universities other than Missouri State. These included word of mouth and participant referrals. Students who were expected to experience greater stereotype threat (persons of color, individuals with disabilities, individuals who self-identified as having a sexual orientation or gender

identity different than their biological sex, and racial identity) were target recruited by making appeals to minority, disability services, and LGBT organizations on campus. No monetary rewards were given in exchange for the completion of this study. The online survey was completed in one sitting.

### **Instrumentation**

**Stereotype Threat.** Four items used by previous researchers (Marx & Goff, 2005) were modified to fit the specific threat an individual might experience (race, sexual orientation/gender identity, disability) of the present research (test performance → overall academic success). The items are as follows: “I worry that my ability to perform well in school is affected by my race”; “I worry that people’s evaluations of me will be affected by my race”; “I worry that, because I know the racial stereotype about Blacks and scholastic achievement, my anxiety about confirming the stereotype will negatively influence how I perform academically”; “I worry that If I perform poorly in school, people will attribute my poor performance to my race”. All items are rated on a 7-point scale ranging from (1) *strongly disagree* to (7) *strongly agree*. The participants’ academic success was examined via self-report GPA. Two additional items were added to extract additional information in terms of perceived exam / grade performance. The items are as follows: “I believe my performance on essay exams is impacted by my race”; “I believe my final grade is negatively influenced by my race”.

**Psychological Capital.** Levels of individual Psychological Capital (PsyCap) were measured using the Psychological Capital Questionnaire (PCQ-24), developed by Luthans et al. (2007). The PCQ-24 is a 24 item scale composed of the four PsyCap

components with each component being represented by six items. All items are rated on a 6-point scale ranging from (1) *strongly disagree* to (6) *strongly agree*. Specifically, the items were incorporated from widely recognized standardized measures of hope (Snyder et al., 1996), efficacy (Parker, 1998), resiliency (Wagnild & Young, 1993), and optimism (Scheier & Carver, 1987). Reported internal reliabilities for the subscales are as follows: hope (.82 - .95), efficacy (.96), resiliency (.91), and optimism (.76).

**Self-efficacy.** Levels of student self-efficacy were measured using the College Self-Efficacy Instrument (CSEI). The CSEI, developed by Solberg, O'Brien, Villareal, Kennel, & David (1993), is a 20-item inventory targeted specifically at the self-efficacy of college students. The items tap into several subdomains of a typical college student such as course load, roommate interactions, social situation efficacy, and social integration. All items are expressed on a 9-point Likert scale with 0 suggesting complete lack of confidence and 9 suggesting total confidence. A higher score on the CSEI suggests a greater sense of self-efficacy as a college student. In terms of internal reliability, the inventory yielded an alpha of .93 (Solberg et al., 1993). Later validation studies further supported the usability of this scale with external validity evidence (Barry and Finney, 2007).

**Satisfaction / Commitment.** Levels of student satisfaction and commitment to the university was measured using the Missouri State University Satisfaction and Commitment Inventory (Kane, 2015). The inventory consists of 37-items targeting satisfaction, affective commitment, and calculative commitment to Missouri State University, as well as intentions to leave and search for alternative universities. All items are measured on a 7-point Likert scale ranging from “strongly disagree” to “strongly



agree”. Example items include “I feel a strong sense of belonging to Missouri State University” and “I am certain that I’d like to stay at Missouri State University”.

**Academic Stress.** Levels of academic stress were measured using The Perceived Stress Scale (Cohen, 1988). The PSS is a 10-item inventory that assesses nonspecific perceived stress across a wide variety of populations. Example items include “In the past month, how often have you felt that you were on top of things?” and “In the past month, how often have you been able to control irritations in your life?” The PSS has been validated by subsequent studies, with reliability estimates ranging from .82 to .85 in both university and non-university settings (Roberti, 2006; Taylor, 2015).

## RESULTS

All data procedures and analyses were performed using Statistical Package for Social Science (SPSS) version 24. A total of 376 participants completed the survey. After randomly extracting a smaller subset of White participants to reduce spurious effects due to sample size, the total participant count was then reduced to 131. To ensure the quality of the data for further analysis, the dataset ( $n = 131$ ) was screened for multivariate assumptions (normality, linearity, homogeneity, and homoscedasticity). Results suggested that all multivariate assumptions were met for this dataset. The dataset was also examined for outliers via Mahalanobis distance with  $p < .001$ . No outliers were identified.

### Descriptive and Correlational Results

Descriptive statistics (see Table 1) and correlations (see Table 2) were computed on all study variables. Next, based on these results, a series of independent samples t-test were assessed to identify any significant differences between the Black student subset and the White student subset in terms of their self-reported data.

**Stereotype Threat.** An independent samples t-test was conducted to compare levels of perceived stereotype threat in the Black student subset and the White student subset. There was a significant difference in the level of perceived stereotype threat for the Black students ( $M=3.6$ ,  $SD=1.6$ ) and the White students ( $M=1.7$ ,  $SD=.85$ );  $t(89) = -7.1$ ,  $p = .000$ . These results suggest that the Black students reported, on average, higher levels of perceived stereotype threat when compared to the White students.

Table 1. Descriptive Statistics for Black and White Students

	Minimum		Maximum		Mean		SD	
	B	W	B	W	B	W	B	W
High School GPA	3.0	3.0	4.0	5.0	3.43	3.56	.36	.45
College GPA	1.0	2.0	4.0	4.0	2.71	3.28	.72	.51
ACT	17	19	29	32	21.8	24.4	3.0	3.5
University Satisfaction	2.0	2.0	7.0	7.0	5.5	5.5	1.1	.83
University Commitment	2.0	2.0	7.0	7.0	4.7	5.3	1.4	1.0
College Self-Efficacy	3.0	3.0	5.0	5.0	4.1	3.9	.50	.55
Stress	2.0	2.0	5.0	5.0	3.9	3.9	.59	.59
Stereotype Threat	1.0	1.0	6.0	4.0	3.6	1.7	1.6	.85
Psychological Capital	3.0	3.0	6.0	6.0	4.5	4.3	.66	.51

B = Black Students

W = White Students

Table 2(a). Correlation Coefficients of Final Constructs for Black Students

	1	2	3	4	5	6	7	8	9	10
1. Stereotype Threat	-									
2. Psychological Capital	-.32	-								
3. PsyCap Hope	-.05	.82**	-							
4. PsyCap Efficacy	-.35	.85**	.59**	-						
5. PsyCap Resiliency	-.26	.86**	.60**	.65**	-					
6. PsyCap Optimism	-.43	.87**	.59**	.65**	.74**	-				
7. College SE	-.41	.63**	.41	.60**	.58**	.57**	-			
8. U-Satisfaction	-.46*	.23	.12	.13	.18	.38	.35	-		
9. U-Commitment	-.08	-.07	-.24	.00	-.09	.08	.12	.64**	-	
10. Stress	.43	-.37	-.32	-.09	-.52*	-.36	-.29	-.16	.30	-

\* =  $p < 0.05$       \*\* =  $p < 0.01$



Table 2(b). Correlation coefficients of Final Constructs for White Students

	1	2	3	4	5	6	7	8	9	10
1. Stereotype Threat	-									
2. Psychological Capital	-.27*	-								
3. PsyCap Hope	-.19	.77**	-							
4. PsyCap Efficacy	-.31*	.78**	.50**	-						
5. PsyCap Resiliency	-.22	.75**	.50**	.32**	-					
6. PsyCap Optimism	-.18	.87**	.54**	.54**	.64**	-				
7. College SE	-.34**	.72**	.55**	.66**	.49**	.57**	-			
8. U-Satisfaction	-.33**	.72**	.60**	.60**	.49**	.58**	.69**	-		
9. U-Commitment	-.07	.38**	.44**	.39**	.10	.26*	.48**	.55**	-	
10. Stress	.49	-.38**	-.20	-.28*	-.31**	-.39**	-.32**	-.22	.80	-

\* =  $p < 0.05$ \*\* =  $p < 0.01$

**University Satisfaction and Commitment.** An independent samples t-test was conducted to compare levels of university satisfaction and commitment in the Black student subset and the White student subset. There was not a significant difference in the level of university satisfaction and commitment for the Black students ( $M=4.4$ ,  $SD=.57$ ) and the White students ( $M=4.3$ ,  $SD=.37$ );  $t(89) = -1.1$ ,  $p = .070$ .

**Psychological Capital.** An independent samples t-test was conducted to compare levels of psychological capital in the Black student subset and the White student subset. There was not a significant difference in the level of psychological capital for the Black students ( $M=4.5$ ,  $SD=.63$ ) and the White students ( $M=4.3$ ,  $SD=.51$ );  $t(89) = -.85$ ,  $p = .398$ .

**Stress.** An independent samples t-test was conducted to compare levels of stress in the Black student subset and the White student subset. There was not a significant difference in the level of stress for the Black students ( $M=3.4$ ,  $SD=.59$ ) and the White students ( $M=3.3$ ,  $SD=.39$ );  $t(89) = -1.4$ ,  $p = .080$ .

**College Self-Efficacy (CSE).** An independent samples t-test was conducted to compare levels of college self-efficacy in the Black student subset and the White student subset. There was not a significant difference in the level of college self-efficacy for the Black students ( $M=4.1$ ,  $SD=.50$ ) and the White students ( $M=3.9$ ,  $SD=.55$ );  $t(89) = -.13$ ,  $p = .231$ .

**ACT.** An independent samples t-test was conducted to compare ACT scores in the Black student subset and the White student subset. There was not a significant difference in the ACT scores for the Black students ( $M=21.8$ ,  $SD=.3.0$ ) and the White students ( $M=24.4$ ,  $SD=.3.5$ );  $t(89) = 3.2$ ,  $p = .119$ .

## Hypothesis Testing

**Hypothesis 1.** Hypothesis one predicted that stereotype threat would be negatively associated with university commitment and satisfaction for historically disadvantaged minority students (i.e. black students). A Pearson Product Moment correlation analysis was performed between perceived levels of stereotype threat, affective commitment, and university satisfaction. There was partial support for hypothesis one (see Appendix A). Specifically, perceived level of stereotype threat was significantly negatively associated with university satisfaction,  $r(19) = -.46, p < .05$ . However, perceived level of stereotype threat and affective commitment were not significantly related,  $r(19) = -.08, p = .734$ . The White subset yielded similar results, with perceived level of stereotype threat being significantly negatively associated with university satisfaction,  $r(68) = -.33, p = .005$ . Perceived level of stereotype threat and affective commitment were not significantly related,  $r(68) = -.07, p = .543$ .

**Hypothesis 2.** Hypothesis two predicted that college self-efficacy would be positively associated with commitment and satisfaction for historically disadvantaged minority students. A correlational analysis was performed between college self-efficacy, affective commitment, and university satisfaction. Results suggested no support for hypothesis two (see Appendix A). Specifically, self-efficacy levels were not significantly associated with affective commitment ( $r(19) = .12, p = .618$ ) or university satisfaction ( $r(19) = .35, p = .118$ ). In contrast, the White subset yielded significant results between all variables (self-efficacy, affective commitment, and university satisfaction). Specifically, self-efficacy was found to be significantly positively associated with both



affective commitment ( $r(68) = .48, p < .001$ ) and university satisfaction ( $r(68) = .69, p < .001$ ).

**Hypothesis 3.** Hypothesis three predicted that psychological capital would be positively associated with commitment and satisfaction for historically disadvantaged minority students. To test hypothesis three, a correlation analysis was performed between psychological capital, affective commitment, and university satisfaction. Results suggested no support for hypothesis three (See Appendix A). Specifically, psychological capital was not significantly associated with affective commitment ( $r(19) = -.07, p = .754$ ) or university satisfaction ( $r(19) = .23, p = .307$ ). In contrast, the White subset yielded significant results between all variables (psychological capital, affective commitment, and university satisfaction). Specifically, psychological capital was found to be significantly positively associated with both affective commitment ( $r(68) = .38, p = .001$ ) and university satisfaction ( $r(68) = .72, p < .001$ ).

**Hypothesis 4.** Hypothesis four predicted that psychological capital would moderate the relationship between stereotype threat and university satisfaction / commitment for historically disadvantaged minority students. Results suggested no support for hypothesis four. Specifically, there was no moderating relationship of psychological capital between stereotype threat and university satisfaction ( $F(3,17) = 1.46, p = .262, R^2 = .24$ ) / university commitment ( $F(3,17) = .535, p = .664, R^2 = .04$ ) for the Black student subset.

## DISCUSSION

### Key Findings

Past research has heavily linked exposure to stereotype threat with decreased performance in academic settings (Good, Aronson, & Harder, 2008; Steele & Aronson, 1995). Furthermore, Black students have historically underperformed in academics compared to their White counterpart (Vanneman, Hamilton, Anderson, & Rahman, 2009). While the primary purpose of the present study was to investigate the effects of stereotype threat on academic outcomes outside of the immediate scope of performance (satisfaction and commitment) and the role of psychological capital in the process, it was expected that the Black student subset would yield similar patterns in terms of academic performance to past research. Consistent with previous research, Black students reported significantly higher levels of perceived stereotype threat (Roberson, Brief, & Block, 2003; Steele & Aronson, 1995). However, contrary to past findings (Vanneman et al., 2009), there were no significant differences in mean ACT or GPA scores between the Black student participants and the White student participants. Furthermore, descriptive results suggested non-significant differences across the board in terms of stress level, psychological capital, and college self-efficacy.

This provided for a set of perplexing findings that were challenging to interpret. Perhaps the admission criteria for Missouri State University provided for systematic differences in the present sample. Using a moderately selective admission standard, automatic admission to Missouri State University requires an individual to be in the top 25% of their class and have a cumulative high school GPA of 3.5 on a 4.0 scale. If one

does not meet this standard, a combination of GPA, class rank, and ACT composite are examined to make an admission decision. It is possible that the lack of differences found between groups in terms of academic performance were a function of the moderately selective entrance requirements of the university; resulting in greater similarities in cognitive ability. Furthermore, having proven a certain capacity to be successful and compete (e.g. GPA, ACT, class rank), exhibiting higher levels of self-efficacy and psychological capital while maintaining lower levels of stress may be the norm. Students also self-selected to participate in this study, and this may have provided for a sample that is systematically different sample.

Past findings in stereotype threat literature suggest that higher levels of threat are associated with higher levels of disengagement (Smith, Sansone, & White, 2007). In hypothesis one, while stereotype threat and university satisfaction were negatively associated for Black students, stereotype threat did not correlate with university commitment. This was contrary to initial expectations that Black student participants would report higher levels of disengagement (lower levels of commitment) due to higher levels of stereotype threat. While this may have been explained by the high levels of self-efficacy reported by the Black students (See Table 1), the lack of association between college self-efficacy and university commitment / satisfaction in hypothesis two seemingly eliminated the proposed explanation. Again, this lack of association was not consistent with past research in the area of self-efficacy. Specifically, past researchers found that a college student's self-efficacy is dependent on his or her past experiences (King, 2008). Taking into account the higher levels of perceived stereotype threat (negative past experiences), we expected Black students to report lower levels of self-

efficacy and in turn, yield a significant association between self-efficacy and university satisfaction / commitment.

Taken together, the present results of hypothesis one and two suggest that while exposed to higher levels of threat, the Black students were able to maintain high levels of university satisfaction / commitment. Furthermore, while this relationship was seemingly explained by high levels of college self-efficacy, the lack of association between college self-efficacy and university satisfaction / commitment suggests that a separate driving force may be at least partially responsible for this phenomenon. These findings were further reinforced by the lack of association found between psychological capital (hope, efficacy, resilience, and optimism) and university commitment / satisfaction for the Black students in hypothesis three (See Appendix A). Specifically, psychological capital examined as a whole or as four individual factors did not seem to act as a buffer for stereotype threat in Black students on these measures of academic success. On the other hand, the White student subset showed significantly positive associations between psychological capital and university satisfaction / commitment (See Appendix A). These differences between the two groups raise the question of whether there are factors that influence outcomes of student success that are unique to certain racial or ethnic groups.

### **Suggestions for Future Research**

The present results for the Black student subset may also be attributed to a combination of the content of the stereotype threat questions that were used and the phenomenon of individuals distancing themselves from negative group stereotypes (Block et al., 2011). The majority of the stereotype threat questions (Marx & Goff, 2005)

specifically targeted stereotype threat in relation to academic performance (e.g. “I worry that my ability to perform well in school is affected by my race”). It is possible that the Black students, being fully aware of the existing negative group stereotype that Blacks underperform in academics, intentionally distanced themselves from the stereotype. This process usually involves detaching self from a given group (Block et al., 2011), so the insertion of an identity strength measure may be worthwhile for future studies.

Past research on minorities in academic settings found that social support from peers played a significant role in predicting ability to adjust to new environments, GPA, and engagement (Dennis, Phinney, & Chuateco, 2005; Wang & Eccles, 2012). Furthermore, Black students were found to be most strongly influenced by social support in terms of positive academic trajectories (Elias & Haynes, 2008). Social support has also been examined alongside self-efficacy levels of Black students (Gushue & Whitson, 2006). It was found that levels of peer and parental support were positively related to self-efficacy and career outcome expectations. This may help explain why the Black student subset in the present study displayed high levels of self-efficacy in the face of stereotype threat. These seemingly overlapping results point toward the possibility of social support playing a key role for Black students in their navigation process of an academic setting. A follow-up study with the addition of a social support measure may provide further insight into how it may or may not effect different groups in different ways.

## **Limitations**

It is certainly possible that these unexpected findings are a product of the various limitations of this current study. First and foremost, the limited sample size that was acquired for the minority participants provide for warranted hesitation when interpreting the results. Next, restriction of range, while found in both the minority and non-minority subsets, is nonetheless an issue that may have suppressed some otherwise significant findings. These issues and limitations may be somewhat alleviated with the use of an adequate sample size from a more diverse pool of subjects (e.g. outside of the psychology department). For example, through aggressive recruiting from a wide variety of higher education institutions (including open/community colleges) may provide for a more readily interpretable set of results.

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## APPENDICES

### Appendix A : Additional Correlational Statistics Between Black and White Students

A-1. Correlation Coefficients for Psychological Capital Dimensions – Black and White students

	1	2	3	4
	B/W	<u>B/W</u>	<u>B/W</u>	<u>B/W</u>
1. Self-Efficacy	1			
2. Hope	.59**/.50**	1		
3. Resilience	.65**/.32**	.60**/.51**	1	
4. Optimism	.65**/.54**	.59**/.54**	.74**/.64**	1

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

B = Black students

W = White students

A-2. Correlation Coefficients for Stereotype Threat (ST), University Satisfaction (US), and University Commitment (UC) – Black and White students

	1	2	3
	B/W	<u>B/W</u>	<u>B/W</u>
1. Stereotype Threat	1		
2. U-Satisfaction	-.46*/-.33**	1	
3. U-Commitment	-.08/-.07	.64**/.55**	1

\*Correlation is significant at the 0.05 level (2-tailed)

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

B = Black students

W = White students

A-3. Correlation Coefficients for College Self-Efficacy (CSEI), University Satisfaction (US), and University Commitment (UC) – Black and White students

	1	2	3
	B/W	<u>B/W</u>	<u>B/W</u>
1. College-SE	1		
2. U-Satisfaction	.35/.69**	1	
3. U-Commitment	.12/.48**	.64**/.55**	1

\* Correlation is significant at the 0.05 level (2-tailed).

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

B = Black students

W = White students



## **Appendix B: Scales Used**

### **B-1. Stereotype Threat Scale (Marx & Goff, 2005)**

1. I worry that my ability to perform well in school is affected by my race.
2. I worry that people's evaluations of me will be affected by my race.
3. I worry that, because I know the racial stereotype about Blacks and scholastic achievement, my anxiety about confirming the stereotype will negatively influence how I perform academically.
4. I worry that if I perform poorly in school, people will attribute my poor performance to my race.

### **B-2. Perceived Stress Scale (Cohen, 1988)**

1. In the past month, how often have you been upset because of something that happened unexpectedly?
  2. In the past month, how often have you felt unable to control the important things in your life?
  3. In the past month, how often have you felt nervous or stressed?
  4. In the past month, how often have you felt confident about your ability to handle personal problems?
  5. In the past month, how often have you felt that things were going your way?
  6. In the past month, how often have you found that you could not cope with all the things you had to do?
  7. In the past month, how often have you been able to control irritations in your life?
  8. In the past month, how often have you felt that you were on top of things?
  9. In the past month, how often have you been angry because of things that happened that were outside of your control?
- In the past month, how often have you felt that difficulties were piling up so high that you could not overcome them?

B-3. Missouri State University Satisfaction and Commitment (Kane, 2015)

1. I feel "emotionally attached" to Missouri State University.
2. Being part of Missouri State University has a great deal of personal meaning for me.
3. I enjoy talking about Missouri State University with the people outside of the University.
4. I feel a strong sense of belonging to Missouri State University.
5. I am proud to be a student at Missouri State University.
6. I feel like "part of the Missouri State University "family".
7. I feel that I have many options if I were to consider leaving Missouri State.
8. It would be difficult for me to find another university, considering my academic qualifications.
9. It would be hard for me to leave Missouri State even if I wanted to.
10. Right now, staying at Missouri State is a matter of necessity as much as desire.
11. One of the few negative consequences of leaving Missouri State would be the scarcity of available alternatives.
12. One reason I am at Missouri State is that attending other desirable universities is likely too costly.
13. I am certain that I'd like to stay at Missouri State University.
14. I often think about whether coming to Missouri State was a good idea.
15. Quitting Missouri State within the next two semesters is a possibility for me.
16. I often think about transferring from Missouri State University to go to another university or to work.
17. I could realistically transfer to another university if I wanted to.
18. Leaving Missouri State to go to work would be too costly in the long-run.
19. I often question the value of staying at Missouri State versus leaving.
20. I can think of other universities that would be better for me than Missouri State.
21. I have begun looking for other universities to attend.
22. I will likely Google other universities to see what kind of programs they offer.
23. I will actively search for other universities that can potentially meet my needs within the next month or so.
24. I am unlikely to ever look for another university for my undergraduate education.
25. I may leave Missouri State University because of circumstances outside of my control.
26. Poor academic performance may force my withdrawal from Missouri State University.
27. While I'd like to graduate from Missouri State University, circumstances may force me to leave.
28. I like being a college student.
29. I like my academic work.
30. I enjoy learning a lot.
31. I like going to classes.
32. I am satisfied with the quality of my education here at Missouri State.
33. Overall, I am satisfied being a student at Missouri State University.
34. I am enjoying my social life at Missouri State University.
35. I like what Missouri State University has to offer students outside the classroom.
36. My current living situation is satisfactory to me.
37. There are plenty of things to do here at Missouri State University beyond academics.

B-4. College Self-Efficacy Inventory (Solberg, O'Brien, Villareal, Kennel, & David, 1993)

1. Make new friends at college.
2. Divide chores with others you live with.
3. Talk to university staff.
4. Manage time effectively.
5. Ask a question in class.
6. Participate in class discussions.
7. Get a date when you want one.
8. Research a term paper.
9. Do well on your exams.
10. Join a student organization.
11. Talk to your professors.
12. Join an intramural sports team.
13. Ask a professor a question.
14. Take good class notes.
15. Get along with others you live with.
16. Divide space in your resident.
17. Understand your textbooks.
18. Keep up to date with your schoolwork.
19. Write course papers.
20. Socialize with others you live with.

Note: The Psychological Capital questionnaire is copyrighted. Sample items from this scale have been included in the method section.