



# Examining associations among achievement motivation, locus of control, academic stress, and life satisfaction: A comparison of U.S. and international undergraduate students



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## ABSTRACT

This study compared measures of achievement motivation, life satisfaction, academic stress, and locus of control across 307 U.S. and international undergraduate students. Descriptive statistics and MANOVA were used to analyze the variables. A hierarchical multiple regression was employed to determine the extent to which locus of control, academic stress, and life satisfaction predicted achievement motivation. The results indicated a statistically significant difference between U.S. and international students as related to achievement motivation. Further analysis revealed significant relationships among predictor and criterion variables. Locus of control, academic stress, and life satisfaction significantly explained 18% of the variance in achievement motivation. However, a comparison of model fit between U.S. and international students revealed no statistically significant differences.

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## 1. Introduction

The world has become a more globalized environment as a result of cutting-edge technology, mass media, social movements, economic trade, and more expedient forms of transportation. These innovations have had a profound effect on the internationalization of education, making it easier for students to apply to different universities and move across states and countries for their education, thus establishing a new life for themselves during and after their educational careers. Consequently, this process has resulted in the highest number of students – almost 4.5 million – enrolling in postsecondary institutions outside their country of citizenship worldwide (Organization for Economic Co-operation and Development, 2013).

International students in higher education are one of the fastest growing populations in the United States (Institute of International Education [IIE], 2015). Moving to another country is more than studying for international students. Adapting to a new environment and culture is stressful, and can seriously affect a student's life satisfaction and motivation to achieve. Martinez (2001) found that high levels of motivation to achieve and satisfaction with life increase student retention rates. However, the majority of literature focusing on the acculturation process (Chavajay & Skowronek, 2008; Desa, Yusooff, & Abd Kadir,

2012; Smith & Khawaja, 2011) neglects how these students motivate themselves to achieve and how their satisfaction of life, academic stress, and sense of control of their environment affects their level of achievement motivation.

Achievement motivation was theorized by McClelland (1961) as identifying three distinct needs: (1) a need for achievement, (2) a need for affiliation, and (3) a need for power. These distinct needs are learned, acquired over time, and shaped by one's own life experiences. Educational researchers have demonstrated achievement motivation to be a strong predictor of success, perceived accomplishment, and academic ability (Liao, Ferdenzi, & Edlin, 2012; Story, Hart, Stasson, & Mahoney, 2009). In addition, researchers have found achievement motivation to be significantly correlated with occupational choice, subjective well-being, college satisfaction, neuroticism, life goals, locus of control, and learning strategies (Ahmad & Rana, 2012; Bakhtiarvand, Ahmadian, Delrooz, & Farahani, 2011; Rosa & Bernardo, 2013; Guns, Richardson, & Watt, 2012; Li, Lan, & Ju, 2015). In this respect, knowing the predictors and factors of achievement motivation holds value since achievement motivation is directly related to student retention and success (Martinez, 2001).

There are different factors affecting both international and U.S. college students' achievement, academic stress, and life satisfaction. For example, Chen (1999) stated that international college students studying in North America endure substantial psychological stress in their daily lives. He described academic stress as one of the common stressors experienced among international students. There are many factors

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associated with academic stress experienced within this population, including different educational systems, limited language proficiency, an unfamiliar culture, test-taking anxiety, academic skills, and performance expectations (Abel, 2002; Kosheleva, Amarnor, & Chernobilsky, 2015; Misra & Castillo, 2004).

Understanding how international and U.S. students correspond or differentiate in terms of satisfaction of life, academic stress, locus of control, and achievement motivation is important for college and university administrators and student support personnel. Moreover, university services (e.g. admission procedures, counseling services, and student accommodations) and academics (e.g. quality of education, university ranking, and variety of curricula offered) have been the top two factors negatively affecting the satisfaction of students. Perhaps more coherent education programs and university services can be developed to increase student achievement, well-being, and retention of international students. The purpose of this study was to compare locus of control, academic stress, life satisfaction, and achievement motivation across international and U.S. undergraduate students. Specifically, this study aimed to examine the degree to which locus of control, academic stress, and life satisfaction predicts achievement motivation and how this hypothesized prediction model varies for international and U.S. undergraduate students.

## 2. Method

### 2.1. Procedures and participants

An a priori power analysis using G\*Power 3.0.10 (Faul, Erdfelder, Buchner, & Lang, 2009) was used to calculate the minimum sample size needed to evaluate the research questions of this study. Using a minimum level of power of 0.80, considered an adequate level of power (Cohen, 1992), a medium effect size as  $f^2 = 0.15$ , and a 0.05 alpha level, the target sample size for this study was reported to be 154. The sample of the study included 307 students. Two hundred and forty-one (78%) of the participants were U.S. (137 male and 104 female) and 66 (22%) were international students (39 male and 27 female). The mean age of the U.S. participants was 21.27 years ( $SD = 5.35$ ; range: 17–49 years), with two participants failing to respond to the demographic query. The U.S. students reported the following demographics on ethnicity: White or Caucasian 45.6% ( $n = 110$ ), African American 3.6% ( $n = 9$ ), Asian American 3.6% ( $n = 9$ ), Hispanic or Latino 37% ( $n = 90$ ), and Mixed 9.4% ( $n = 22$ ). One participant failed to respond to this demographic query. The mean age of the international participants was 21.51 years ( $SD = 2.92$ ; range: 17–34 years) with one participant failing to respond to this demographic query. International students were from different countries (China, Saudi Arabia, Turkey, Vietnam, Taiwan, Mexico, South Korea, India, etc.).

### 2.2. Measures

#### 2.2.1. Achievement motivation

The Smith Achievement Motivation Scale (SAMS; Smith, Karaman, Balkin, & Arora, 2016) was used to measure achievement motivation. The instrument is a self-report measure estimating level of achievement motivation in 14 items across two factors based on achievement behaviors and thoughts in the context of McClelland's (1961) high achieving individual. The SAMS uses a 5-point Likert-type response format with values ranging from 0 (Never) to 4 (Always). The 14-item scale includes items such as "I feel that my present work is meaningful" and "I try and follow the rule: Business before pleasure." Smith et al. (2016) reported a moderate Cronbach alpha coefficient of 0.82 for the SAMS.

#### 2.2.2. Locus of control

We used the Rotter Internal-External Locus of Control scale (I-E Scale; 1966), which measures behaviors from life areas such as love, dominance, and social-political events. The instrument is a forced-

choice 29-item questionnaire including six filler items. Participants are asked to select one statement from a pair of statements they believe to be true in their lives. Each item on the scale consists two statements represent internal and external locus of control. Twenty-three items are scored giving one point for each external response. Scores ranges between zero and 23. The I-E scale includes items such as "a) many of the unhappy things in people's lives are partly due to bad luck," or "b) people's misfortunes result from the mistakes they make." In this example "a" represents an external response and "b" an internal response. Rotter (1966) reported test-retest reliabilities for several samples varying between 0.49 and 0.83 over one to two-month time intervals.

#### 2.2.3. Academic stress

The Student Life Stress Inventory-Revised (SSI-R; Gadzella & Masten, 2005) was used to measure academic stress. The SSI-R is a self-report measure that estimates academic stress of college level students with 53 items organized into nine factors. The SSI-R uses a 5-point Likert-type response format with values ranging from 1 (Never) to 5 (Most of the Time). The SSI-R includes items such as "I have experienced frustrations due to delays in reaching my goal" and "I have experienced both positive and negative alternatives." Authors reported strong Cronbach's alpha values. The total reliability of instrument was 0.92. The correlations (test-retest) between each category ranged from 0.46 to 0.76. The reliability of subscales ranged from 0.61 on the self-imposed subscale to 0.86 on the changes subscale.

#### 2.2.4. Life satisfaction

We used the 5-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), which assesses how satisfied an individual is with his/her life in terms of well-being. The scale is a self-report questionnaire that estimates perceived level of life satisfaction across five items using a 7-point Likert-type response format with values ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Results of the five items are summed to produce an overall score with high scores indicating high satisfaction with life and low scores indicating low satisfaction with life. The 5-item scale includes items such as "In most ways my life is close to my ideal" and "I am satisfied with life." The SWLS has been translated into 32 different languages and is well-suited for use with individuals from different cultural backgrounds (Satisfaction with Life Scale, 2014). The internal consistency for this scale was found to be 0.84 (Diener et al., 1985).

## 3. Results

### 3.1. Preliminary analyses

First, descriptive statistics and alpha coefficients were computed for each instrument used in the study (see Table 1). Next, the assumptions of MANOVA and multiple linear regression models were tested. To assess the assumption of normality, box plots were inspected and a Shapiro-Wilk goodness-of-fit test was computed and its results interpreted. Box plot analyses and the Shapiro-Wilk test of normality ( $W > 0.01$ ) indicated the data to be normally distributed for all measures

**Table 1**

Means, standard deviations, reliability coefficients, VIF, and bivariate correlations for scores among scales used as predictor and criterion variables ( $N = 307$ ).

Variable	1	2	3	4	VIF
1. Achievement motivation	*	−0.31*	0.03	0.32*	–
2. Locus of control		*	0.29*	−0.26*	1.13
3. Academic stress			*	−0.24*	1.14
4. Life satisfaction				*	1.09
M	39.36	10.68	151.00	24.17	–
SD	6.45	3.70	27.33	6.27	–
$\alpha$	0.82	0.68	0.93	0.84	–

\*  $p < 0.001$ .

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