Interaction Between Engagement and the Big-Five Personality Characteristics on Academic Success of College Students

Wendy Bracken
San Diego State University

Marilee J. Bresciani Ludvik
San Diego State University

This study utilized hierarchical multiple regression to determine the degree to which student personality characteristics interact with engagement with the college environment to predict GPA. Results indicated a combination of agreeableness, conscientiousness, and engagement with faculty, peers and campus significantly predicted GPA. Institutions are encouraged to employ this methodology to pinpoint students at risk of academic failure and devise strategies to assist students in attaining academic goals based on strategic assessment of personality and environment interactions.

INTRODUCTION

Academic success is dependent on rapid adjustment to the requirements of the college environment (Brinkworth, McCann, Matthews, & Nordstrom, 2009). For new students, college presents a new set of norms, traditions, rituals, and language (Hunter, 2006) that must be mastered. Students often report feeling stress due to the large changes and conflicts associated with this new college experience (Rayle & Chung, 2008). This stress may be due to a disconnect between expectations of college and the actual experience of attending college. Research on students' perceptions of college revealed that neither social nor academic experiences aligned with their expectations (Smith & Wertlieb, 2005), and students whose college expectations were unrealistic were less likely to demonstrate academic persistence (Hawley & Harris, 2006). Given this mismatch between students' expectations and their experiences in college, it becomes less surprising that only 59% of undergraduates in the US completed degree requirements within four years (U.S. Department of Education, National Center for Education Statistics, 2013). This

study posits that it is likely a combination of social factors and personality traits that impact adaptation to the college environment. As such, understanding which combination of personality and environmental factors impact adjustment to college may help institutions identify a potential pathway to academic success for students. The purpose of this study is to provide an initial step in discovering whether lack of fit between students' personalities and demands of academic environments is a source of student failure; specifically, the degree to which student engagement (e.g., the quality and degree of students' connections to faculty, other students, the campus environment and commitment to academic performance) interacted with the big-five personality characteristics (e.g., openness, conscientiousness, extroversion, agreeableness and neuroticism or emotional stability) to predict academic success as measured by GPA.

THEORETICAL FRAMEWORK

This research expands upon the person-environment fit theory, which proposes that personality characteristics influence how an individual interacts with the environment and, in turn, how that environment will impact the individual (Martin & Swartz-Kulstad, 2000; Walsh, Craik, & Price, 2000). Specifically, the theory postulates that congruency between the person and the environment leads to beneficial outcomes (Martin & Swartz-Kulstad, 2000). Essentially, positive outcomes result from greater alignment between factors within an individual's environment and that individual's skills, interests, and personality (Furnham, 2001). Scholars hypothesize that individuals are apt to select activities that are congruent with their personality and avoid those that are in opposition to personal tastes (Walsh et al., 2000). Individuals who achieve optimal fit with their environment will be satisfied and unlikely to leave prematurely, while those who do not fit will strive to alter their environment to match their personal tastes. Those failing to successfully adapt their surroundings to their preferences will likely opt to leave that environment (Furnham, 2001). The purpose of this study is to provide an initial step in discovering whether lack of fit between students' personality traits and demands of academic environments is a source of academic failure.

The Big Five Personality Traits and Academic Success

Personality traits can be organized and assessed via the five-factor personality model (Goldberg, 1993; John, Naumann, & Soto, 2008; McCrae & John, 1992). These traits have been historically denoted as extroversion, agreeableness, conscientiousness, emotional stability and openness (Goldberg, 1990; Goldberg, 1993; John et al., 2008.) Of these five factors, conscientiousness, agreeableness, and emotional stability are most prevalent in impacting student academic success (Bidjerano & Dai, 2007; Gloria & Ho, 2003; Grant-Vallone et al., 2004; Jacobs & Archie, 2008; Lidy & Kahn, 2006; Noftle & Robins, 2007; Ridgell & Lounsbury, 2004; Ullah & Wilson, 2007). For example, students who ranked high in agreeableness, conscientiousness, and emotional stability were less likely to drop out of school (Lounsbury, Saudargas, & Gibson, 2004). Similarly, conscientiousness is consistently positively related to college GPA and academic performance in general, even after controlling for SAT scores (Chamorro-Premuzic & Furnham, 2003; Conard, 2006; Noftle & Robins, 2007). A combination of high conscientiousness and high agreeableness was correlated with higher GPA (Komarraju, Karau, & Schmeck, 2009), as these characteristics predispose individuals to invest more time and effort in their educational pursuits and this high level of effort regulation was found to be a

predictor of academic achievement (Bidjerano & Dai, 2007). Emotional stability has been found to predict grades, with lower degrees of emotional stability linked with lower overall grades (Chamorro-Premuzic & Furnham, 2003) and final exam grades, due in part to the anxiety and impulsivity sub-facets of this personality trait (Chamorro-Premuzic & Furnham, 2003). In addition to exploring the relationship between personality traits and academic success, this research will also examine the relationship between engagement with the college environment and academic success.

Engagement with the Environment and Academic Success

Various theories have been formulated to address internal and external factors impacting student academic success. Most compelling is the concept of engagement, which consists of two primary elements, 1) how educational institutions foster students' learning and growth; and 2) the effort students put into scholastic activities leading to academic success (Wolf-Wendel, Ward, & Kinzie, 2009). Results in one study indicated that students' characteristics upon entry into community college (e.g., preparedness, ACT/SAT scores, etc.) might have less to do with academic success than does engagement, indicating that institutions may need to focus more attention on how environment can foster successful student outcomes (Schuetz, 2008). Indeed, students with lower academic ability (defined as lower SAT scores upon entry into college) benefited more from engagement than did higher ability students (Carini, Kuh, & Klein, 2006).

Similarly, engagement in activities specific to academic preparation and effort significantly affected grades during the first year of college. Students entering college with higher ACT scores and reporting engagement in academically focused activities had higher GPAs than students with lower ACT scores (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Finally, student engagement in academically focused activities predicted student persistence (Kuh et al., 2008). The concept of engagement provides a direct link between student behaviors and institutional practices, focusing attention on aspects of the educational environment that can be altered to improve student learning (Wolf-Wendel et al., 2009), thus having tremendous practical value to institutions of higher learning.

METHODS

Data was gathered via an anonymous, online survey instrument. The survey contained questions consisting of a mixture of Likert scale, multiple choice, and yes/no response options. The survey was divided into five major sections and included questions pertaining to personality assessment via the big-five, quality of faculty/student interactions, quality of peer relationships, perceived campus support, degree of student academic effort and general demographic questions. Personality trait variables were measured by the 50-item International Personality Item Pool-Five-Factor Model (IPIP) measure (Goldberg, 1999). This shortened version is a common big-five personality measure with excellent reliability, ranging from .77 to .86 and validity, ranging from .85 to .92 (Costa & McCrae, 1997; Goldberg et al., 2006; Socha, Cooper &, McCord, 2010).

The next section of the survey (i.e., questions pertaining to the quality of faculty/student interactions, quality of peer relationships, perceived campus support and degree of student academic effort) was developed by the researcher, as a standardized instrument does not exist that specifically assesses each of the dimensions of engagement under study. Questions within

the section of the survey labeled "Preparing for Class" were designed to assess the degree of student academic effort made by assessing number of hours spent engaged in academic pursuits as well as ability to meet deadlines. Perceptions of campus support were measured by questions within the "Campus Environment/Support" section, and these items pertained to the role of campus leadership in connecting students with other students and the provision of adequate support services. Quality of faculty-student interactions were measured in the "Interaction with Faculty" section, which contained questions addressing students' interactions with faculty outside of the classroom, comfort with interacting with faculty and perceptions of professors' concern regarding student growth. Questions regarding the quality of peer relationships were included in "Relationships with Other Students" portion of the assessment, and these items asked students to report the number of school activities they participated in with other students and whether they had any close friends at their given institution. Engagement survey questions have not been included due to space limitations.

Cronbach's alpha was calculated for all four engagement scales (i.e., engagement with faculty, engagement with peers, engagement with the campus, engagement with academics). For Cronbach's alpha, a score of .7 is typically considered acceptable if using a small sample size and/or the scale contains few items (Hinton, Brownlow, McMurray & Cozens, 2004). As each of the engagement subscales consist of 5 to 8 items, a score of .7 or above was determined to be acceptable for the engagement subscales. The peer and campus engagement subscales maintained a score of .7 or above (peer engagement =.70 and campus engagement subscale =.85). However, the engagement with faculty (.62) and engagement with academics (.64) subscales did not meet the minimum criteria; as such, findings for engagement with faculty and academics should be interpreted with caution. The demographic section of the survey contained items used to describe the sample of respondents. In addition, students reported cumulative GPA to assess fit and intentions to enroll in classes the following semester.

Sample

The survey was sent to a randomly drawn sample of community college and university students within the Southern California region. In this case, undergraduates (both lower and upper division) were invited to participate in the research and reflect upon their most recently completed semester of college. The final sample consisted of 129 participants. Participants ranged in age from 17 to 61 with an average age of 24.94. Thirty nine percent of respondent were male and 61% were female; 48.8 % of respondents were of Hispanic heritage, 3.3% were African American, 2.4% were Native Hawaiian/other Pacific Islander, 7.3% were Asian, 30.9% were Caucasian/European, .8% reported that they were of American Indian/Alaskan Native heritage and 6.5% responded "Other." Six individuals did not provide a response regarding ethnicity. 68.2% of respondents were full time students with 12 units being the most commonly reported number of units being taken during the current semester and 12 units taken the previous semester; 39.7% reported that they were freshmen, 32.5% were sophomores, 15.1% were juniors and 12.7% were seniors. A majority of participants, 84.5%, reported that they were currently attending a community college and 15.5% reported that they were currently attending a four year institution All respondents reported intentions to enroll in classes the following semester.

Analyses

Hierarchical multiple regression was used to determine the degree to which personality characteristics interact with level of engagement with the college environment to predict cumulative GPA; it was assumed that good fit between personality factors and engagement with the college environment would result in higher cumulative GPAs. The sequential model was selected as it is best employed when it is expected that a given independent variable may be a more influential outcome predictor than other independent variables included in the analyses (Mertler & Vannatta, 2010).

Measures

The dependent variable was cumulative GPA, as self-reported by participants. Some concern surrounds the reliability of self-reported GPA; however, given the frequency with which self-reported GPA is obtained for research purposes, several studies have investigated the reliability of self-reported GPA and have concluded that GPA is accurately reported within survey research (Cassady, 2001; Gray & Watson, 2002). The independent variables consisted of the five IPIP subscales (i.e., agreeableness, conscientiousness, neuroticism - henceforth referred to as emotional stability - extroversion and openness), as well as each of the four engagement domains (i.e., engagement with academics, engagement with faculty, engagement with peers, and engagement with the campus). Demographic variables were treated as controls in the model.

Independent variables were entered into the model in grouped fashion based on the expected influence of each group on the dependent variables; from those expected to have the least influence to those likely to have the greatest influence on the outcome variables. Demographic variables were entered into the model first (e.g., age, gender, ethnicity), followed by the personality characteristics that have been shown to have little impact on academic success, specifically openness and extroversion, then the grouped personality variables of conscientiousness, agreeableness and emotional stability, and finally the grouped engagement variables (e.g., engagement with academics, faculty, peers, and campus) were entered into the model. In general, the researcher postulated that students high in conscientiousness, agreeableness, and emotional stability who also have high levels of engagement with academics, peers, faculty, and the campus would be more likely to be academically successful than students low in these personality traits who have low levels of engagement. It was also expected that there would be no difference in academic success for students high in openness and extroversion versus students low in openness and extroversion, regardless of levels of engagement with academics, peers, faculty, and the campus.

Limitations

Despite care taken to develop a sound research study, several limitations remain; specifically limitations in the instrument used and the sampling methodology employed. A potential limitation within the study was the measure of engagement used; some of the engagement subscales (i.e., engagement with faculty and academics) were lower in internal consistency than other subscales (i.e., engagement with peers and the campus). In addition, data collection was limited to a sample of Southern California students, comprised primarily of those attending community colleges. Thus, results may lack generalizability to students beyond the

region as well as to those are attending universities. Similarly, certain groups of students were underrepresented within the data (e.g., certain ethnic groups, students with lower GPAs). Again, results may lack generalizability to these underrepresented groups.

RESULTS

Results of the regression analysis provided partial confirmation for the research hypothesis that students with higher scores for conscientiousness, agreeableness, emotional stability, and engagement will be more likely to be academically successful than students low in these personality traits and engagement. Specifically, the best fitting model for predicting cumulative GPA (Table 1 and Table 2) was a linear combination of agreeableness (M = 38.36, SD = 5.70), conscientiousness (M = 36.33, SD = 6.15), emotional stability (M = 29.92, SD = 7.28) and engagement with faculty (M = 4.31, SD = 1.54), peers (M = 12.11, SD = 3.87), campus (M = 18.71, SD = 4.76) and academics (M = 11.73, SD = 2.28)($F_{(5,108)}$ = 4.29, $p < .001$). This model accounted for a sizeable proportion of the variance in cumulative GPA, ($R = .57$, R^2 = .32. As expected, the addition of the extroversion and openness variables did not significantly improve prediction (R^2 change = .03, $F = 2.24$, $p = .11$). Tests for multicollinearity indicated that a low level of multicollinearity was present (tolerance = .78 for extroversion, .59 for openness, .67 for agreeableness, .71 for conscientiousness, .86 for emotional stability, .62 for engagement with faculty, .71 for engagement with peers, .73 for engagement with the campus and .74 for engagement with academics). All tolerance statistics exceeded .1 indicating that all of the independent variables were tolerated in the model.

Table 1
Descriptives

	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Faculty Engage.	7.33	2.00	9.33	4.3050	1.54186	2.377
Peer Engage.	16.42	3.00	19.42	12.1125	3.87491	15.015
Campus Engage.	20.00	9.00	29.00	18.7123	4.76054	22.663
Academic Engage.	9.00	7.00	16.00	11.7287	2.27676	5.184
Extroversion	38.00	11.00	49.00	31.8605	7.65746	58.637
Agreeableness	24.00	25.00	49.00	38.3566	5.70471	32.544
Conscientiousness	29.00	21.00	50.00	36.3333	6.15215	37.849
Emotional Stability	34.00	12.00	46.00	29.9225	7.28399	53.056
Openness	28.00	22.00	50.00	35.4961	5.67770	32.236
GPA	4.00	1.00	5.00	3.7519	1.03101	1.063

Table 2
ANOVA of Blocks of GPA Predictor Variables in the Model

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.26	3	4.42	4.49	.005
	Residual	115.30	117	.99		
	Total	128.56	120			
2	Regression	17.59	5	3.52	3.65	.004
	Residual	110.98	115	.965		
	Total	128.56	120			
3	Regression	25.84	8	3.23	3.52	.001
	Residual	102.72	112	.92		
	Total	128.56	120			
4	Regression	41.50	12	3.46	4.29	.000
	Residual	87.06	108	.81		
	Total	128.56	120			

Model 1 includes the predictors Ethnicity, Gender, and Age. Model 2 includes the predictors Ethnicity, Gender, Age, Extroversion and Openness. Model 3 includes the predictors Ethnicity, Gender, Age, Extroversion, Openness, Emotional Stability, Conscientiousness and Agreeableness. Model 4 includes predictors Ethnicity, Gender, Age, Extroversion, Openness, Emotional Stability, Conscientiousness, Agreeableness, and Engagement.

Examination of standardized beta weights revealed that only agreeableness, conscientiousness, engagement with faculty, engagement with peers, and engagement with the campus significantly contributed to the model. Beta coefficients (Table 3) for the nine predictors were extroversion, $\beta = .06$, $t = .65$, $p = .52$; openness, $\beta = -.03$, $t = -.33$, $p = .74$; agreeableness, $\beta = .20$, $t = 1.99$, $p < .05$; conscientiousness, $\beta = .20$, $t = 2.09$, $p < .05$; emotional stability, $\beta = .11$, $t = 1.26$, $p = .21$; engagement with faculty, $\beta = -.27$, $t = 2.71$, $p < .01$; engagement with peers, $\beta = .22$, $t = 2.39$, $p < .05$; engagement with the campus, $\beta = -.19$, $t = 1.99$, $p < .05$; and engagement with academics, $\beta = -.05$, $t = -.54$, $p = .59$. It is important to note that as beta weights for engagement with faculty and engagement with the campus are both negative, a negative relationship between these variables and conscientiousness and agreeableness is noted. In this case, it was not expected that emotional stability and engagement would fail to emerge as significant predictors of GPA. Moreover, the negative relationship between engagement with faculty and the campus with conscientiousness and agreeableness was not expected. One benefit to standardized betas is that they can provide insight into the most critical predictors in a given model, with large betas (based on absolute values) indicating stronger relationships. In this case, faculty engagement was found to have the strongest effect on the outcome while campus engagement had the weakest effect, with both variables exhibiting a negative relationship with the outcome.

For each block of variables, R Square indicated the percentage of variability accounted for in the model (Table 4). Age, gender and ethnicity accounted for 10% of the variability. The next block of factors, extroversion and openness, accounted for 14% of the variability. This was not a significant R square change. Adding emotional stability, conscientiousness and agreeableness into the model increased the amount of variability accounted for by 20% (a significant R square change). Finally, adding the engagement variables into the model increased the variability accounted for by 32%, or more simply, the model put forth within this research accounted for 32% of the variance in cumulative GPA. The final model indicated a significant R square change from the previous model.

Table 3
Beta Weights of Predictor Variables in the Model

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Age	.02	.01	.20	2.07	.04
Gender	-.47	.18	-.22	-2.57	.01
Ethnicity	.05	.04	.12	1.47	.14
Extroversion	.01	.01	.06	.65	.52
Openness	-.01	.02	-.03	-.33	.74
Agreeableness	.04	.02	.20	1.99	.05
Conscientiousness	.03	.02	.20	2.09	.04
Emotional Stability	.02	.01	.11	1.26	.21
Faculty Engagement	-.18	.07	-.27	-2.71	.01
Peer Engagement	.06	.03	.22	2.39	.02
Campus Engagement	-.04	.02	-.19	-1.99	.05
Academic Engagement	-.02	.04	-.05	-.54	.59

Table 4
Model Summary – R Square Change for Independent Variables

Model	R	R Square	Adjusted R Square	Change Statistics				
				R Square Change	F Change	Df1	df2	Sig. F Change
1	.32	.10	.08	.10	4.49	3	117	.005
2	.37	.14	.10	.03	2.24	2	115	.111
3	.45	.20	.14	.06	3.00	3	112	.034
4	.57	.32	.25	.12	4.86	4	108	.001

Note. Model 1 includes the predictors Ethnicity, Gender, and Age. Model 2 includes the predictors Ethnicity, Gender, Age, Extroversion and Openness. Model 3 includes the predictors Ethnicity, Gender, Age, Extroversion, Openness, Emotional Stability, Conscientiousness and Agreeableness. Model 4 includes predictors Ethnicity, Gender, Age, Extroversion, Openness, Emotional Stability, Conscientiousness, Agreeableness, and Engagement.

DISCUSSION

Partial support was found for hypotheses; in this case, only the personality variables of conscientiousness and agreeableness and the engagement variables were predictive of cumulative GPA. Again, faculty and peer engagement were negatively predictive of GPA. It was expected that agreeableness, conscientiousness, and engagement with faculty, peers and the campus would significantly predict cumulative GPA given the wealth of research that indicates these factors all play a major role in academic success (Chamorro-Premuzic & Furnham, 2003; Gloria & Ho, 2003; Jacobs & Archie, 2008; Ullah & Wilson, 2007). The failure of emotional stability to predict GPA despite expectations that this factor would emerge as significant, while unexpected, was none the less not a surprise, as some prior research has shown mixed results in linkages between emotional stability and cumulative GPA. For example, Chamorro-Premuzic and Furnham (2003) found that emotional stability predicted academic success but only in combination with other factors such as intelligence, indicating that emotional stability may be less valuable as a predictor of academic success on its own. In addition, emotional stability has been found to play a larger role in persistence than academic success (Lounsbury et al., 2004).

Had our sample included students who did not intend to persist in college, differences in emotional stability may have emerged.

Similarly, the failure of engagement with academics to predict cumulative GPA was also unexpected as prior research has found that academic success is correlated with academic engagement (Kuh, 2009; Tinto & Russo, 1994; Ullah & Wilson, 2007). A potential source of this failure may be in the academic subscale of the engagement measure. As previously stated, this particular subscale lacked adequate internal consistency ($\alpha = .64$). Items in this subscale may have only assessed surface level learning; asking for the number of hours spent studying does not address the quality of the studying done. Moreover, asking whether assignments were turned in on time may not probe into whether those assignments were demonstrative of deep learning and concentrated effort. Ullah and Wilson (2007) found that these deeper efforts are often associated with academic success.

Most surprising was the finding that engagement with faculty and the campus were negatively associated with conscientiousness and agreeableness, while engagement with peers was positively associated with conscientiousness and agreeableness. Prior research suggests that higher GPAs are associated with positive interactions with faculty (Carini et al., 2006; Ullah & Wilson, 2007); positive experiences with the campus environment (Carini et al., 2006; Brown, Morning, & Watkins, 2005); and greater involvement in campus activities (Fischer, 2007). Our research indicated the opposite of these previous findings, as conscientiousness and agreeableness were positively predictive of GPA while engagement with faculty and the campus community was negatively predictive of the outcomes. This suggests that, for the students in this sample, the benefits of these aspects of engagement on their GPA were not beneficial. This notion highlights a contribution of this research to extant literature on student success by illustrating the importance of personality traits on student outcomes. These results paint a picture of the successful college student as someone who is high in conscientiousness and agreeableness and has high levels of engagement with college peers but lower levels of engagement with the campus and faculty. It may be that students who are high in conscientiousness and agreeableness who have adequate peer support do not need to be as deeply engaged with the campus or faculty in order to be academically successful. More often than not, the primary role of campus and faculty is to set standards, develop deadlines for which various tasks must be completed and move students towards attaining academic goals. These tasks may be the very same tasks that a student, high in conscientiousness and agreeableness, may inherently engage in on his/her own. Indeed, Komarraju et al. (2009) found that high conscientiousness in particular was associated with motivation, suggesting that these students are more motivated to engage in academically advantageous behaviors.

However, the role of peers may still be critical to attaining academic success for these highly conscientiousness and agreeable students; peers are the primary providers of emotional support; they likely have no other agenda than simply being supportive. Wilcox, Winn, and Fyvie-Gauld (2005), noted the unique role of college peer support in their research, indicating that compatible friends "provide direct emotional support, equivalent to family relationships" (Wilcox et al., 2005, p.707). This may be why peer support is so crucial, not only for students high in conscientiousness and agreeableness, but for all students; it provides the unconditional emotional support that is necessary for students to face academic challenges.

Ultimately, findings from this research were contrary to previous research results that have found a positive relationship between academic success and engagement with faculty and the campus environment (Astin, 1993; Carini et al., 2006; Skahill, 2003). Whereas prior

research indicated that faculty and campus connections are typically important in academic success for students, our model indicated that only certain types of students may truly need to be engaged with the faculty and campus life in order to be successful. This difference may be due to the unique model proposed. Where other research has focused on the role of engagement or personality in predicting success, this research was novel in assessing the relationship between engagement and personality in predicting success.

It is important to note that nearly 85% of survey respondents were from the community college system; given that the sample was comprised primarily of community college students, it may be that peer support is more critical for the academic success of community college students than for university students. Given the sample size and number of variables already employed in the model, differences between these populations were not examined. Had a larger sample of university students been included in the study, differences in GPA, degree of peer engagement and institution type could have been explored.

As expected, no difference in academic success was associated with openness and extroversion scores, regardless of levels of engagement with academics, peers, faculty, and the campus. Likewise, prior findings note that openness and extroversion have failed to predict academic success. For example, Noftle and Robins (2007) provided a review of 20 current studies that assessed the relationship between course grade or GPA and the big-five personality characteristics. No significant relationship between course grade or GPA and openness was found for 15 of the 20 studies reviewed and no significant relationship between course grade or GPA and extroversion was found for 16 of the 20 studies (Noftle & Robins, 2007). Similarly, a recent meta-analysis of 58 studies on college academic success and the big-five personality characteristics found that the openness and extroversion factors consistently failed to emerge as predictors of academic success across studies (Trapmann, Hell, Hirn, & Schuler, 2007).

Implications for Practice

This research put forth a model of student success focusing on the relationship of personality characteristics and engagement levels with academic success. Findings of this study point to the development of a viable survey framework to pinpoint students who are more likely to be academically successful (and may need less guidance and supervision) versus those students who are more likely to struggle to adjust to college. For example, in order to promote academic success administrators can develop special programs connecting students low in conscientiousness and agreeableness with faculty mentors. Further, students who are high in conscientiousness and agreeableness may need assistance in connecting with peers who are vital to their academic success.

Institutions or individual departments can use the survey developed in this study during a students' first year of college to help direct focus to those in greatest need of assistance[1]. As in the aforementioned example, programs can be developed that serve to connect students who score low in conscientiousness and agreeableness with faculty mentors. Annual use of the survey could also allow for a comparison of students' needs at all grade levels (e.g., freshmen, sophomore, junior, senior) or even through the comparison of individual students over time. Evaluating the changing needs of students across time may be particularly useful in ensuring that their needs are met throughout the duration of their academic careers.

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[1] Feel free to contact the authors for access to the instrument.

Further, administrators may use survey results to indicate where on campus opportunities for engagement are lacking. For example, are students reporting that they are having difficulty adjusting to the college environment and are struggling academically? Or are students struggling to connect with pro-social peers? Institutions can use the model of person-environment fit proposed within this research to gain a broader understanding of how academic success is impacted by the unique personality characteristics of the student body, and how these factors interact with the unique college environment. In doing so, we hope that institutions will be better able to revise institutional practices to provide more adequate academic support for students, to assist students in developing meaningful connections with other individuals, or to devise any number of strategies to assist students in attaining their academic goals.

Institutions may also benefit from using this model as a basis for developing and refining a survey that more accurately assesses engagement with and adjustment to the college environment. Such a survey should take into account the quality and success of both student directed and institution directed efforts to create engagement opportunities with the college environment. Finally, we recommend that institutions take a qualitative research approach in unraveling the complex relationships found between conscientiousness, agreeableness and engagement with peers, faculty and the campus. Successful students reporting fewer connections with faculty and campus life may need faculty and campus support just as much as other students, but perhaps adapt to this lack of support by developing other pathways to success. These students may rely more heavily on family support in order to be academically successful, for example, a factor that was not evaluated within this research. A series of interviews with students of various personality profiles may help to clarify which types of engagement are needed and used by students in order to be successful.

While this study is only an initial step into understanding determinants of academic success, institutions that apply this model of person-environment fit may expose different pathways to success than found within this research. Results from this study speak primarily to the pattern of success for a sample of Southern California community college students. We encourage institutions to use our person-environment fit model in future research to uncover other patterns of success that may be influenced by institution type, size or location. This research provides a new direction institutions can take when striving to understand student success.

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Correspondence regarding this article should be addressed to Wendy Bracken, adjunct faculty member and doctoral program coordinator, San Diego State University. Email: wsbracken@gmail.com.