

**Should I Stay or Should I Go?: Analyzing Predictors of Retention Among
College of Agriculture Freshman**

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Introduction

In recent years, improved recruitment efforts by colleges of agriculture across the U.S. have increased enrollment by 30% for AFNR majors (STEM Food and Ag. council, 2014). Over the same period of time, however, retention and graduation rates have remained stagnant (DeBerard, Spielmans, & Julka, 2004; U.S. DOE, 2019). This is a point of concern as the demand for agricultural professionals is expected to increase over the next ten years (Bureau of Labor Statistics, 2019). To fill this demand, it is critical that colleges of agriculture successfully retain students. In order to increase graduation rates, an understanding of which factors impact retention could allow colleges to develop programs to increase graduates entering the agricultural workforce. Previous research has identified benchmarks of college readiness to primarily be intelligence-based. For example, standard measures of college readiness often include high school GPA, class rank, ACT scores, and post-secondary GPA (Bazelais, Lemay, & Doleck, 2016; Koon, Frick, & Igo, 2009). Other evidence suggests that non-academic factors can play a critical role in student success. For example, participation in agriculture-related organizations has been shown to have a positive impact on the retention of freshmen in agricultural majors (Dyer, Breja, & Wittler, 2002). In the broader realm of post-secondary education, non-cognitive factors such as academic self-efficacy, time management, self-discipline, and academic grit have been shown to have a positive association with retention (Bowman, Miller, Woosley, Maxwell, & Kolze, 2019). With such a large variety of factors serving as impacts on student success, a need exists to better understand the predictors of retention among freshmen in colleges of agriculture.

Conceptual Framework

The conceptual framework for this study is Chapman's (1981) model of student success (MSS). Chapman's (1981) MSS analyzes student characteristics and external influences as factors for student's general expectations of college life and can also, therefore, determine a student's selection of a college. Similarly, a student's choice to leave that college is often a result of the perception that those external influences and characteristics no longer fit their chosen institution (Chapman, 1981). In this study, student characteristics and external influences were examined as predictors of retention.

Purpose and Objectives

The purpose of this study was to determine which factors accurately predict the retention of freshmen in the College of Agriculture at Louisiana State University. The objectives of this study were to: (a) determine what factors serve as statistically significant predictors of retention of freshmen College of Agriculture students, and (b) determine if a model exists that is statistically significant in the correct classification of college of agriculture freshmen based on whether they would be retained to their second fall semester.

Methodology

Data for this study were collected from College of Agriculture freshmen enrolled in the AGRI 1001 course at Louisiana State University during the Fall 2018 semester (N = 170). An instrument was developed that included the Short Grit Scale, known as Grit-S (Duckworth & Quinn, 2009), eleven Likert-type items related to the efficacy of respondents, one item about their long-term research goals after undergraduate degree completion, and a series of items that provided demographic and personal background information of the respondents. The instrument was delivered electronically using Qualtrics at the end of the Fall 2018 semester. Following the

delivery of the instrument, data from Fall 2018, Spring 2019, as well as cumulative GPA and enrollment status for each student in the study were collected from the Louisiana State University Registrar. Using SPSS version 25, discriminant analysis was used to determine if a model existed that significantly predicted students' retention to their second fall semester. Of the 170 students that participated in the study, 148 provided data that was valid for analysis for an overall response rate of 87%.

Results

The first objective of the study was to determine which factors were significant in the retention of students in the sample. Of the data analyzed, four variables were found to be statistically significant ($p \leq 0.05$), Fall 2018 GPA ($p = 0.00$), Spring 2019 GPA ($p = 0.00$), Cumulative GPA for the freshman year ($p = 0.00$), and the highest level of education of the father or paternal guardian ($p = 0.05$). The second objective was to determine if a model existed that significantly increased the likelihood of correct retention classification of College of Agriculture freshmen retained to their second fall semester. Of the four significant variables, only one, Spring 2019 GPA, entered into a significant discriminant model. This single variable had a canonical correlation of 0.367, producing a canonical correlation coefficient of 0.135 and a Wilk's Lambda score of 0.865. Therefore, 13.5% of the variance in retention can be attributed to the students' Spring 2019 GPA. This model was able to classify 94.1% of the cases correctly. According to Barrick and Warmbrod (1988), to be substantively significant, the model yielded from the discriminant analysis must correctly classify cases at least 62.5% of the time. Using this guideline, the model in this study is substantively significant.

Conclusions & Recommendations

The variable that had the most statistically significant impact on retention was the GPA for the students' second semester at the university. This finding is in alignment with related literature in which GPA has been determined to be a significant factor in predicting student success (Bazelais, Lemay, & Doleck, 2016; DeBerard, Spielmans, & Julka, 2004; Koon, Frick, & Igo, 2009). It is recommended that further research should further explore GPA as a predictor of retention and its role in increasing retention among College of Agriculture students. Future research should also examine whether the difference in second semester GPA influences student attrition after their first year or if it was a symptom of a more significant set of problems for those that were not retained. Based on the results of this study, if second semester GPA is the best predictor of retention, a reactionary approach to the problem will have little effect as the student will likely have already decided whether or not to return by the time their GPA for the spring can be collected and analyzed. An alternative opportunity for countering this problem is through the use of intrusive advising (Varney, 2007). Intrusive advising involves intentional advisory contact with students with their academic goals and achievement in mind. This approach is based on building a caring, academically beneficial relationship between the student and the advisor before academic, social, or personal problems for the student can affect their academic performance (Varney, 2007). Further research should investigate the effect that intrusive advising could have on the second semester GPA of students in colleges of agriculture. If a positive relationship can be established, this method may play a crucial role in meeting the demand for educated professionals in agriculture, food, and natural resource-based careers.

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