Factors Influencing Student Selection of Academic Major in the College of Agricultural Sciences and Natural Resources at Texas Tech University

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Abstract

It has been predicted the agricultural job market will have approximately 59,400 jobs available over the next five years (Fernandez et al., 2020). Availability within areas of Management and Business, Science and Engineering, Food and Biomaterials, Education, Communications, and Governmental Services (Fernandez et al., 2020) require college graduates to fill open positions. However, the Food and Agricultural Education Information Systems (FAEIS) (2019) reported that only 21,000 students were enrolled in colleges offering agricultural majors. A multitude of studies show trends of former FAEIS data, with there being more openings than there were qualified individuals to fill them (Cunningham, 2013; Hegerfeld-Baker et al., 2015; Powell, 2019; Rayfield et al., 2013; Rocca, 2013; Williams, 2007). Due to this reported deficit, Powell (2019) noted that the lack of qualified individuals leads to more competition among hiring employers and ultimately higher-paying positions.

Methodology

This quantitative study was a descriptive, cross-sectional survey of incoming students in the fall semester of 2020. The accessible population of the survey was incoming students to [University], including freshman and transfer students. The researchers utilized a survey instrument originally developed by Wildman and Torres (2001) and adapted by Williams (2007). Validity of the instrument was first established by Wildman and Torres (2001) through utilization of a panel of experts. Additionally, the researchers checked reliability of the survey instrument by performing a pilot test among 30 individuals of a similar population. Scale items were evaluated by calculating a Cronbach's alpha analysis and yielded alpha levels ranging from (α = 0.75) to (α = 0.89). According to Fraenkel et al. (2019), alpha levels must be greater than 0.70 to be considered reliable.

Results

Table one shows a breakdown of academic majors chosen by students entering in the fall semester of 2020.

We also examined 15 significant individuals influential in the decision-making process of choosing a major within the College of Agriculture. The Likert-type scale had an overall mean of m = 4.28. The highest ranked significant person was the high school agricultural science teacher (m = 5.72, sd = 3.41), followed by relatives in an agricultural or natural resources field of work, parent or guardian, and personal role model, all with means over 5.00. The least influential person was the high school principal or school administrator (m = 2.77, sd = 2.62).

Conclusion/Implications

Nearly half of the students responding chose Animal Science as their major. Approximately 25% of entering students chose to major in Agricultural Education and Communications. The remaining 25% were spread over four additional academic departments. Additionally, we sought to determine the influence of significant individuals in the decision-making process through a Likert-type scale. It can be concluded that the agricultural science teacher was most influential for participants in this study. Rocca (2013) reported similar findings, but most other studies have found that the students' parents or guardians had the largest influence (Foreman et al., 2018; Herren et al., 2011; Powell, 2019; Rayfield et al., 2013; Wildman and Torres, 2001; and Williams, 2007). It is recommended that agricultural science teachers have readily available recruitment information to provide to their students.

Theoretical Framework

This study was framed using Chapman's Model of College Choice. Chapman (1981) included characteristics such as the students' socioeconomic status, aptitude, level of educational aspiration, and high school performance. Hossler and Bontrager (2014) contribute similar student choice factors utilized in this study, including personal characteristics, social and cultural capital, the high school attended, information sources provided to the student, and peer effects. This study was further rooted in Chapman's (1981) Model of College Choice and Williams's (2007) Model of Agricultural Students' Choice of Major. Chapman (1981) provided the basis for Williams's 2007 study, in which he adapted the model to fit students in agriculture majors.

Academic Major by Department (N=1117)

Department	Frequency	Percent
Animal and Food Sciences	50	42.7
Agricultural Education and Communications	32	27.4
Agricultural and Applied Economics	18	15.4
Natural Resources Management	11	9.4
Plant and soil Sciences	5	4.3
Landscape Architecture	1	0.9
Total	117	100.0

Recommendations

Recommendations for further research include longitudinal studies to follow students from entrance into [University] through exit or graduation. Additionally, research should be conducted with those [College] students that do not have agricultural backgrounds to continue to increase diversity within the college.

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