A Major Decision: Identifying Factors that Influence Agriculture Students' Choice of Academic Major

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Colleges of Agriculture (CoAs) are estimated to supply only slightly more than half of the number of graduates needed to fill job openings through 2015. The purpose of this research study was to describe the factors influencing agriculture students' choice of major. The population for this descriptive research study consisted of full-time CoA freshmen enrolled in AGRI 1001: Introduction to Agriculture at Louisiana State University. A total of 259 students were asked to participate in the electronic survey. All students completed the survey for a 100% response rate. Consistent with the model proposed by Hodges and Karpova (2010), the factors identified in this study included personal characteristics, interpersonal factors, and environmental factors. Moreover, contextual factors unique to agriculture were identified.

Keywords: major selection, undergraduate recruitment, College of Agriculture

Introduction

The rate of development needed to address the challenges in the agricultural industry cannot be sustained without an adequate supply of qualified agricultural and Extension professionals (Doerfert, 2011). Unfortunately, the number of graduates seeking careers in agriculture each year has remained less than the number of job positions to be filled (Baker, Settle, Chiarelli, & Irani, 2013; Goecker, Smith, Smith, & Goetz, 2010). Despite the slight increase in enrollment in some agricultural programs in recent years, Colleges of Agriculture (CoAs) are estimated to supply only slightly more than half of the number of graduates needed to fill the job openings through 2015 (Goeker et al., 2010). As such, the development of a "sufficient scientific and professional workforce that addresses the challenges of the 21st century" (Doerfert, 2011, p. 9) was included as a priority area in the American Association for Agricultural Education (AAAE) National Research Agenda. Therefore, CoAs must examine their current role in developing the future workforce critically and utilize the best strategies of recruiting and retaining future agricultural professionals (Doerfert, 2011; National Research Council, 2009).

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St. John (2000) maintained that "there is, perhaps, no college decision that is more thought-provoking, gut wrenching and rest-of-your life oriented—or disoriented—than the choice of a major" (p. 22). However, it cannot be assumed that all students select an academic major via a rational process of decision making over an extended period of time (Beggs, Bantham, & Taylor, 2008). Beggs et al. (2008) postulated that many undergraduate students employ heuristics and settle into a major more so than deliberately choosing one, and they use strategies of indecision over strategies of cognitive decision making. An example of this might be a student choosing a particular major because he or she does not want to work in a city or does not want a job that involves sitting indoors. Many researchers have examined this decision process in order to explain why students select a particular academic major. According to Hodges and Karpova (2010), the selection of a college major is the reciprocal and mutual action and reaction of multiple factors; thus, understanding the selection process requires a framework that takes into account the factors unique to a particular major (Hodges & Karpova, 2010). Identifying factors that influence agriculture students' choice of major can help direct future recruitment in agriculture programs and increase student enrollment in CoAs (Rocca, 2013; Wildman & Torres, 2001). As such, research that examines this selection process in the context of agricultural education is warranted.

Two general research areas emphasized in prior, relevant literature include (1) identifying factors that influence students' choice of major, with the purpose of contributing to the comprehensive body of knowledge, and (2) examining relationships between academic major and the demographic characteristics of students who selected that major (Beggs et al., 2008). Influential factors that have been frequently identified in prior studies included (a) exposure to agriculture, (b) interpersonal relationships, (c) students' personal interests/career preferences, and (d) characteristics specific to the college or department.

Exposure to agriculture can refer to prior agricultural experiences (e.g., farm background and having a job related to agriculture), other agricultural experience or activities (e.g., FFA or 4-H involvement), high school agriculture courses, or exposure to agriculturally-based media (Barkley & Parrish, 2005; Dyer, Breja, & Andreasen, 1999; Dyer, Breja, & Wittler, 2002; Wildman & Torres, 2001). In the relevant literature, the degree to which prior agriculture exposure influenced students' selection of a college major varied by the form of exposure. Wildman and Torres (2001) found that FFA or 4-H involvement and having relatives in agriculture were significant predictors of students' intention to pursue an agriculture major, while agriculturally-based media and high school agriculture courses were of little influence. In contrast, Barkley and Parrish (2005) reported that high school courses greatly influenced the choice of major among the students in their study.

Students' interpersonal relationships have been largely reported in prior studies as a major source of influence in students' choice of college major. However, findings vary regarding who the

influential people are in these relationships. In many studies, parents or guardians have been reported as having the most influence, often followed by high school or college friends (Barkley & Parrish, 2005; Herren, Cartmell, & Robertson, 2011; Jackman & Smick-Attisano, 1992). Nevertheless, discrepancies do exist in the literature. Wildman and Torres (2001) found that the people who influenced students' decisions the most were students' personal role models and agricultural professionals. Students did not perceive parents, relatives, high school friends, or college friends as influential in their selection of a major (Wildman & Torres, 2001). Esters and Bowen (2005) conducted a similar study with students from urban agricultural education programs and found that students' friends had a strong influence on their career choice, while parents had little influence. Differences in students' personal characteristics may explain some of the variation in the findings in the literature, and examining students' characteristics could assist different universities in designing recruitment plans specific to their targeted demographic.

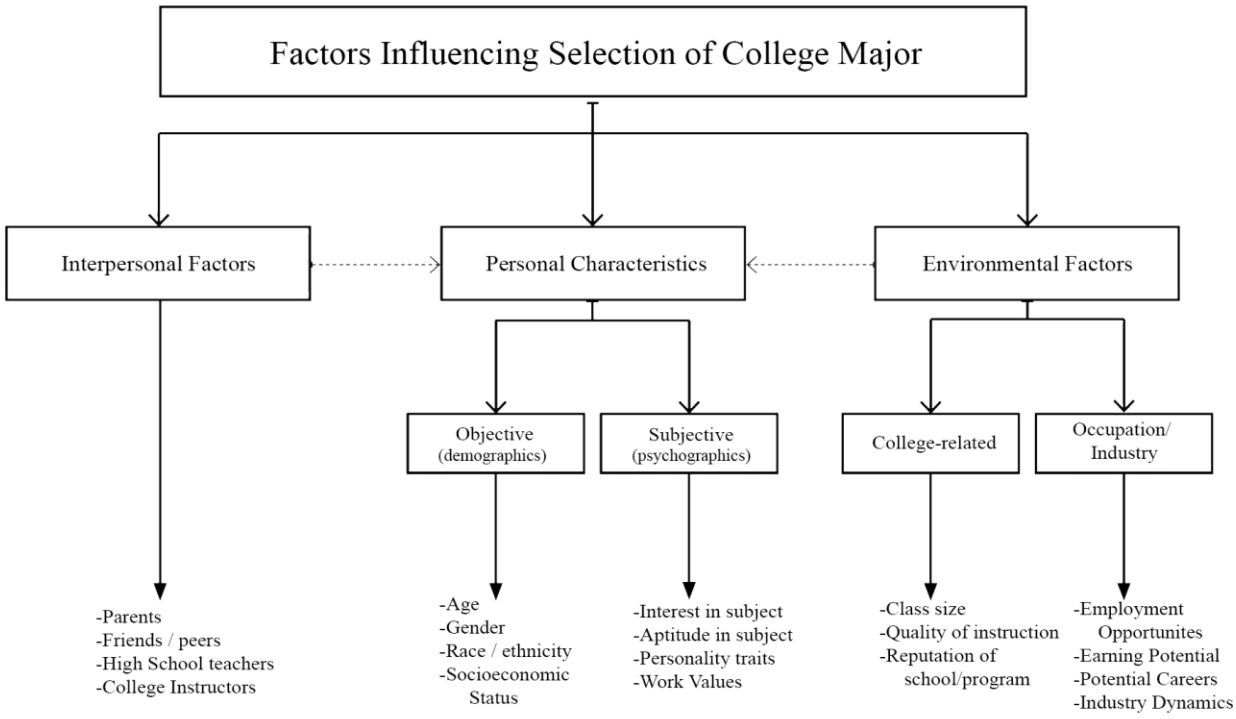
Students' personal interests and career preferences can also influence students' selection of a college major (Beggs et al., 2008). These considerations can both positively and negatively affect the likelihood students will major in agriculture. For example, students may desire a career in agriculture because they are interested in working outdoors (Wildman & Torres, 2001), but they may be less likely to actually choose a major in agriculture if they are not aware of relevant job opportunities (Myers, Breja, & Dyer, 2004).

Specific college or departmental factors have also influenced students' choice of academic major. Friendliness of the departmental faculty and the overall atmosphere in the CoA are two factors that have been shown to increase the likelihood that students will choose a major in agriculture (Barkley & Parrish, 2005; Wildman & Torres, 2001). Conversely, poor communication from the CoA and academic departments within the CoA resulted in students eliminating agriculture majors as an option (Baker, Irani, Abrams, & Telg, 2010). Further, a lack of awareness regarding a potential field of study and its associated careers act as a barrier for student enrollment (Baker et al., 2010). In fact, in several studies, students reported that their choice of major was significantly affected by receiving informational pamphlets from the college or department (Robinson, Garton & Washburn, 2007; Shrestha, Suvedi, & Foster, 2011; Wildman & Torres, 2001). Baker et al. (2013) conducted a study to determine how to effectively reach and attract students to agriculture majors and careers. The authors found that messages with particular meaning and that displayed the most appeal to participants were job stability and availability, positive contextual messages, online channels, and campus publication. Additionally, students preferred academic programs that were highly visible and acknowledged by most people (Baker et al., 2010), and they were more likely to consider a major if they could witness the success of other students who had previously graduated in that particular major (Baker et al., 2013).

Theoretical Framework

The theoretical framework for this study is based on the factors influencing selection of college major model developed by Hodges and Karpova (2010; see Figure 1). Brown (2002) argued that most models related to students' chosen major should be left vague due to the complex interconnection of multiple variables. Hodges and Karpova (2010) described three main foundational components to students' choice of major. This model, while initially designed for fashion, carries implications for agriculture, especially with the addition of industry dynamics and media that may heavily impact students' decisions to choose one area of agriculture over another.

Figure 1. Factors Influencing Selection of College Major (Hodges & Karpova, 2010)



Purpose and Objectives

The purpose of this research study was to describe the factors influencing agriculture students' choice of academic major. The following six research objectives guided this study:

1. Describe students enrolled in AGRI 1001 in terms of the following personal and educational characteristics: (a) gender, (b) age, (c) ethnicity, (d) hometown community, (e) current academic major, (f) credits carried over from high school, and (g) enrollment in agricultural education in high school;

2. Describe the level of influence of high school factors on agriculture students' choice of major;
3. Describe the level of influence of family and friends on agriculture students' choice of major;
4. Describe the level of influence of agricultural and educational professionals on agriculture students' choice of major;
5. Describe the level of influence of college/university factors on agriculture students' choice of major; and
6. Describe the level of influence of future job considerations on students' decisions to major in agriculture.

Methods

Data Collection

The population for this descriptive research study consisted of full-time CoA freshmen enrolled in AGRI 1001: Introduction to Agriculture at Louisiana State University (LSU). Because all CoA freshmen are required participate in AGRI 1001, this course was determined to be the best platform to better understand what factors influence students to choose a particular major in agriculture. This course is divided into two sections, including one general section for most students enrolled in the CoA (n = 176) and a separate section for first-year students who are also enrolled in the Agriculture Residential College program (n = 83). A total of 259 students were contacted via the class learning management system and asked to participate in the electronic survey. All students were asked to complete the first page of the questionnaire as part of a larger assignment credit. The first page included the student's name and if he/she was willing to participate in the survey. Completion of the actual survey instrument was optional. All students completed the questionnaire for a 100% response rate. The first page of the survey was not included in data analysis to ensure participant anonymity. This study was a census of first-year CoA students. Because this study was a census, results cannot be generalized beyond the scope of this study. However, trends from this study are applicable to better understanding the influence of recruitment on students in the CoA at Louisiana State University.

Instrumentation

The instrument for this study was employed in a similar study conducted at New Mexico State University by Wildman and Torres (2001). The instrument consisted of two sections. The first section examined factors that contribute to students' choice of major. Using a five-point summated scale, (1 = *Not Influential,* 2 = *Slightly Influential,* 3 = *Somewhat Influential*, 4 = *Moderately Influential*, 5 = *Very Influential*), students were asked to rate the influence of 41 items in four subdivisions of factors that contributed to their choice of major, including (a) high

school factors, (b) family and friends, (c) agricultural and educational professionals, and (d) college and university factors. Students were also asked to rate ten items regarding future job considerations involved in their choice of major using a five-point summated scale (1 = *No Consideration*, 2 = *Slight Consideration*, 3 = *Some Consideration*, 4 = *Moderate Consideration*, 5 = *High Consideration*). The second section assessed personal and academic characteristics of students, including (a) gender, (b) age, (c) ethnicity, (d) number of credits earned before entering college, and (e) size and location of their community of origin and graduating high school.

Wildman and Torres (2001) employed the test-retest approach to establish reliability of the original instrument. Due to the rigorous nature of the establishment of reliability in the original instrument, a pilot test was not conducted. Cronbach's alpha was calculated post hoc for each factor subdivision. The calculation yielded (a) high school factors (α = .86), (b) family and friend factors (α = .83), (c) agricultural and educational professionals (α = .86), (d) college and university factors (α = .95), and (e) future job considerations (α = .74). To establish face and content validity, a panel of experts consisting of three university faculty from two different departments analyzed the instrument. The panel of experts deemed the instrument to be valid.

Data Analysis

Data were analyzed using Statistical Package for the Social Sciences (SPSS) Version 22 for Macintosh. Descriptive statistics, including frequency, percentage, mean, and standard deviation were calculated to meet the objectives of the study.

Findings

Research question one sought to describe the personal and educational characteristics of freshman students (N = 259) enrolled in the Introduction to Agriculture course at LSU during the fall semester of 2014 (see Table 1). In all, 200 (77.2%) of the students were female, and 58 (22.4%) were male. Regarding age, the most frequent response was 18 years (68.3%), followed by 19 years (29.0%). Most students (83.4%) indicated White (Non-Hispanic) as their ethnicity. Twenty (7.7%) students were African-American, and 12 (4.6%) were of more than one ethnicity. The most common (40.9%) academic major was Animal, Dairy, and Poultry Science. There were 52 (20.1%) students majoring in Natural Resource Ecology and Management; 40 (15.4%) in Nutrition and Food Science; 35 (13.5%) in Textiles, Apparel and Merchandising; and 12 (4.6%) in Agricultural Business. Agricultural Education, Plant and Soil Systems, and Environmental Management Systems each had fewer than ten students. When asked about their community of origin, 119 (45.9%) of the students were from a small city or suburban area, 80 (30.9%) from an urban area, and 32 (12.4%) from a small town. The remaining students (10.4%) were from a rural, non-farm area or from a small farm/ranch. The majority (84.9%) of freshmen in the course indicated they had not enrolled in agricultural education while in high school.

Table 1. Selected Personal and Educational Characteristics of Louisiana State University College of Agriculture Freshman Students (N = 259)

Variable	*f*	%
Gender		
Male	58	22.4
Female	200	77.2
Age		
17	4	1.5
18	177	68.3
19	74	29.0
20	2	0.8
Ethnicity		
American Indian/Alaskan Native	3	1.2
African American	20	7.7
Hispanic	5	1.9
Asian or Pacific Islander	2	0.8
White (Non-Hispanic)	216	83.4
More than One Ethnic Background	12	4.6
Community of Origin		
Small Farm/Ranch	12	4.6
Rural Area, non-farm	15	5.8
Small Town; < 5,000	32	12.4
Small City or Suburban 5,000 to 50,000	119	45.9
Urban Area; > 50,000	80	30.9
Current Academic Major		
Animal, Dairy, and Poultry Science	106	40.9
Natural Resource Ecology and Management	52	20.1
Nutrition and Food Science	40	15.4
Textiles, Apparel and Merchandising	35	13.5
Agricultural Business	12	4.6
Agricultural Education	6	2.3
Plant and Soil Systems	5	1.9
Environmental Management Systems	2	0.8
Entered LSU with Credits Earned in High School		
Yes	152	58.7
No	106	40.9
Enrolled in Agricultural Education in High School		
Yes	38	14.7
No	220	84.9

Note. Percentages based on the total (N = 259) students enrolled in the course

Research objective two was concerned with high school factors that influenced the students' decisions when selecting a major. Per the mean scores, none of the items were viewed as *Very Influential* by the students (see Table 2). Three items, *Science Courses* (*M* = 3.35; *SD* = 1.55), *Prior Experiences in Agriculture* (*M* = 2.81; *SD* = 1.65), and *Relatives in the Agriculture Field* (*M* = 2.52; *SD* = 1.63), were viewed as *Somewhat Influential*. The remaining items, *Agriculture Courses* (*M* = 2.29; *SD* = 1.63), *Family & Consumer Science Courses* (*M* = 2.19; *SD* = 1.44), *FFA Involvement* (*M* = 1.91; *SD* = 1.44), and *4-H Involvement* (*M* = 1.84; *SD* = 1.33), had mean scores within the real limits of *Slightly Influential*.

Table 2. Prior Experiences Louisiana State University College of Agriculture Freshmen Identified as Influence in Selecting a Major (N = 259)

	Level of Influence (%)							
Variable	**N**	**S**	**So**	**Mo**	**V**	**N/A[a]**	***M***	***SD***
Science Courses	21.3	9.9	15.4	19.4	34.0	1.5	3.35	1.55
Prior Experience in Agriculture	36.7	10.7	13.3	13.8	25.5	23.2	2.81	1.65
Relatives in the Agriculture Field	45.7	11.3	8.1	15.6	19.4	27.4	2.52	1.63
Agriculture Courses	55.8	6.4	9.0	10.3	18.6	38.2	2.29	1.63
Family & Consumer Science Courses	51.8	10.6	15.9	10.6	11.2	33.2	2.19	1.44
FFA Involvement	68.1	5.8	5.8	8.0	12.3	45.9	1.91	1.47
4-H Involvement	64.4	11.0	9.6	6.2	8.9	42.9	1.84	1.33

Note: Valid percentages based reported where N (*Not Influential*) = 1; S (*Slightly Influential*) = 2; So (*Somewhat Influential*) = 3; Mo (*Moderately Influential*) = 4; V (*Very Influential*) = 5; Real Limits: 1.00–1.49 = N; 1.50–2.49 = S; 2.50–3.49 = So; 3.50–4.49 = Mo; 4.50–5.00 = V.

[a]N/A = Values represent the percent of the total (*N* = 259) for whom the item was not applicable

Research objective three sought to determine the impact of family and friends on the students' choice of major. The mean score for *Parents/Guardians* (*M* = 3.51; *SD* = 1.47) fell within the real limits of *Moderately Influential* (see Table 3). All remaining items' mean scores were within the real limits of *Somewhat Influential*.

Table 3. Family and Friend Factors Louisiana State University College of Agriculture Freshmen Identified as Influence in Selecting a Major (N = 259)

	Level of Influence (%)							
Variable	**N**	**S**	**So**	**Mo**	**V**	**N/A[a]**	***M***	***SD***
Parents/Guardians	14.7	13.2	16.3	18.2	37.6	-	3.51	1.47
Personal Role Model	52.2	1.4	2.9	8.7	34.8	22.4	2.72	1.88
Other Relatives	37.4	15.7	15.4	19.3	12.2	1.2	2.53	1.46
High School Friends	35.7	18.0	19.6	16.5	10.2	0.8	2.47	1.38
Siblings	43.5	13.8	15.4	13.4	13.8	4.7	2.40	1.49
College Friends	47.2	14.9	12.9	14.9	10.1	3.9	2.26	1.43

Note: Percentages based on the total (*N* = 259) where N (*Not Influential*) = 1; S (*Slightly Influential*) = 2; So (*Somewhat Influential*) = 3; Mo (*Moderately Influential*) = 4; V (*Very Influential*) = 5; Real Limits: 1.00–1.49 = N; 1.50–2.49 = S; 2.50–3.49 = So; 3.50–4.49 = Mo; 4.50–5.00 = V.

[a]N/A = Values represent the percent of the total (*N* = 259) for whom the item was not applicable

Research objective four was concerned with determining the influence of agricultural and educational professionals when selecting a major. Two categories of individuals, *Agricultural Professional* (*M* = 2.96; *SD* = 1.72) and *Science Teacher* (*M* = 2.67; *SD* = 1.56), had mean scores that fell within the real limits of *Somewhat Influential* (see Table 4). All remaining items had mean scores that fell within the real limits of *Slightly Influential.*

Table 4. Agricultural and Educational Professionals Louisiana State University College of Agriculture Freshmen Identified as Influence in Selecting a Major (N = 259)

	Level of Influence (%)							
Variable	**N**	**S**	**So**	**Mo**	**V**	**N/A[a]**	***M***	***SD***
Agricultural Professional	37.6	4.6	13.2	13.2	31.5	23.6	2.96	1.72
Science Teacher	37.4	11.8	16.3	15.9	18.7	4.6	2.67	1.56
Other High School Teacher	59.8	6.1	5.5	15.2	13.4	17.0	2.16	1.57
High School Counselor	55.4	10.8	15.4	10.8	7.5	6.6	2.04	1.35
Agriculture Teacher	64.6	6.2	9.9	8.7	10.6	37.1	1.94	1.43
Extension Professional	68.8	6.9	10.0	6.9	7.5	37.5	1.78	1.30
Family & Consumer Science Teacher	66.9	9.3	8.1	10.5	5.2	32.8	1.78	1.27
High School Principal	75.2	6.4	7.7	6.0	4.7	8.9	1.59	1.15

Note: Percentages based on the total (*N* = 259) where N (*Not Influential*) = 1; S (*Slightly Influential*) = 2; So (*Somewhat Influential*) = 3; Mo (*Moderately Influential*) = 4; V (*Very Influential*) = 5; Real Limits: 1.00–1.49 = N; 1.50–2.49 = S; 2.50–3.49 = So; 3.50–4.49 = Mo; 4.50–5.00 = V.

[a]N/A = Values represent the percent of the total (*N* = 259) for whom the item was not applicable

The fifth research objective asked about university factors that influenced students' decisions regarding major decision. In all, 11 items' mean scores fell within the real limits of *Somewhat Influential*, with *Friendly Atmosphere of the CoA* (*M* = 3.19; *SD* = 1.55) being the highest rated item, followed by *Information Pamphlets about the Major* (*M* = 2.98; *SD* = 1.51) and *CoA Research Reputation* (*M* = 2.94; *SD* = 1.53) (see Table 5). The remaining four items had mean scores within the real limits of *Slightly Influential*, with *Other Financial Incentives* (*M* = 1.71; *SD* = 1.39) being ranked lowest.

Table 5. College/University Factors that Louisiana State University College of Agriculture Freshmen Identified as Influence in Selecting a Major (N = 259)

	Level of Influence (%)							
Variable	**N**	**S**	**So**	**Mo**	**V**	**N/A[a]**	***M***	***SD***
Friendly Atmosphere of CoA	24.9	9.0	16.7	20.8	28.6	5.0	3.19	1.55
Information Pamphlets about Major	27.5	10.0	18.2	22.0	21.2	6.3	2.98	1.51
CoA Research Reputation	29.7	10.2	16.9	22.9	20.3	8.9	2.94	1.53
Teaching Reputation of CoA Faculty	34.2	8.2	17.3	16.9	23.4	10.4	2.87	1.60
Teaching Reputation of Major Department Faculty	32.9	9.0	17.5	20.1	20.5	9.3	2.86	1.56
Research Reputation of Major Department Faculty	35.7	10.2	15.3	19.1	19.6	9.3	2.77	1.57
Agriculturally Related Organizations	38.1	9.3	13.6	17.4	21.6	8.5	2.75	1.61
CoA Recruitment Activities	40.4	10.9	13.5	19.6	15.7	11.2	2.59	1.55
LSU Recruitment Activities	40.5	11.2	16.8	16.4	15.1	10.0	2.54	1.52
Personal Visits from LSU Representative	44.4	11.2	9.3	18.0	17.1	16.3	2.52	1.60
Information Pamphlets about the CoA	36.6	16.4	16.8	18.9	11.3	8.2	2.52	1.43
Other LSU Clubs/Organizations	46.1	10.0	11.3	17.8	14.8	11.2	2.45	1.56
Departmental Scholarships	45.5	12.3	12.3	16.4	13.6	14.3	2.40	1.52
CoA Alumni	62.6	7.8	11.9	8.7	9.1	14.3	1.94	1.39
Other Financial Incentives	75.5	4.2	4.9	4.2	11.2	32.6	1.71	1.39

Note: Percentages based the total (*N* = 259) responses where N (*Not Influential*) = 1; S (*Slightly Influential*) = 2; So (*Somewhat Influential*) = 3; Mo (*Moderately Influential*) = 4; V (*Very Influential*) = 5; Real Limits: 1.00–1.49 = N; 1.50–2.49 = S; 2.50–3.49 = So; 3.50–4.49 = Mo; 4.50–5.00 = V.

[a]N/A = Values represent the percent of the total (*N* = 259) for whom the item was not applicable

The final research objective was concerned with determining future job considerations that influenced the students' decision of academic major. In all, seven of the nine factors were rated as being given *Moderate Consideration* based on mean scores (see Table 6). The highest rated item was *Future Job Market* (*M* = 4.12; *SD* = 1.00), followed by *Income After College* (*M* = 4.06; *SD* = 1.02) and *Working with People* (*M* = 3.92; *SD* = 1.12). Based on the real limits, *Working Outdoors* (*M* = 3.40; *SD* = 1.54) was given *Some Consideration* when choosing a major, and *Working with Plants* (*M* = 2.25; *SD* = 1.39) was given *Slight Consideration*.

Table 6. Factors Louisiana State University College of Agriculture Freshmen Considered When Deciding Future Career (N = 259)

	Level of Consideration (%)						
Variable	**N**	**S**	**So**	**Mo**	**H**	***M***	***SD***
Future Job Market	3.1	3.9	14.7	34.7	43.6	4.12	1.00
Income After College	1.5	7.7	15.8	32.4	42.2	4.06	1.02
Working with People	3.5	9.3	18.5	29.3	39.4	3.92	1.12
Location of Career	4.6	9.3	19.7	31.7	34.4	3.82	1.14
Field Work (Out of Office)	8.5	8.9	16.6	28.2	36.7	3.77	1.27
Prestige of Career	6.2	9.3	24.7	31.3	28.2	3.66	1.16
Working with Animals	22.4	6.2	8.1	10.8	52.5	3.65	1.66
Working Outdoors	21.2	7.3	16.2	20.8	34.4	3.40	1.54
Working with Plants	44.4	18.5	15.1	12.0	10.0	2.25	1.39

Note: Percentages based on the total (*N* = 259) where N (*No Consideration*) = 1; S (*Slight Consideration*) = 2; So (*Some Consideration*) = 3; Mo (*Moderate Consideration*) = 4; H (*High Consideration*) = 5; Real Limits: 1.00–1.49 = N; 1.50–2.49 = S; 2.50–3.49 = So; 3.50–4.49 = Mo; 4.50–5.00 = H.

Conclusions & Recommendations

The factors identified as influential in CoA freshman students' decisions to major in agriculture at Louisiana State University were consistent with the classification model proposed by Hodges and Karpova (2010) and included personal characteristics, interpersonal factors, and environmental factors. Moreover, contextual factors unique to agriculture majors were identified. These findings provide support for using the classification schema developed by Hodges and Karpova (2010) to summarize and systematize the various factors influencing students' decisions to major in agriculture. When considered alongside the prior literature, the findings in this study offer some key conclusions and implications for departments in the CoA at Louisiana State University, as well as provide direction for future research and practice.

As per the model developed by Hodges and Karpova (2010), students' personal characteristics are influential in their decisions to choose an agricultural major over another major. As such, it seems that a critical first step for the CoA in improving recruitment strategies is to examine the demographics and psychographics of currently enrolled and targeted populations of students (Hodges & Karpova, 2010). While the findings from this study cannot be generalized to outside populations, similarities and discrepancies between the findings of this study and similar studies may hold some implications for the CoA at Louisiana State University.

The typical agriculture student in this study was a White female from a small city or suburban hometown, who had not taken an agriculture course in high school. Considering that three-fourths of the students in this study were female, it could be beneficial to conduct a follow-up study to examine differences in the influence of factors on students' choice of major by gender.

In prior studies, gender has been found to be a source of variation in the level of influence for select factors (Barkley & Parrish, 2005; Kim, 2009). Greenstein (2009) found that women were highly influenced by what they believed was expected of them by others, and their occupational choice depended upon the favorable or unfavorable attitude of significant others toward that occupation. Summer and Brown (1996) found that students in male-dominated majors tended to expect higher salaries than did students in female-dominated majors. Useful insight may be gained by conducting research to identify relationships between the objective and subjective characteristics of CoA students (Hodges & Karpova, 2010).

The number of students majoring in Animal, Dairy, and Poultry Sciences was greater than all other agriculture majors, which might explain differences in the influence of factors perceived by students in this study compared to students in prior studies. Donnermeyer and Kreps (1994) found that students in social science-based agriculture majors were influenced most by friends, agriculture teachers, 4-H experience, and prior agriculture experience, including taking agriculture courses in high school. As for the students in natural science-based agriculture majors, the strongest influences were a desire to work with animals, relatives, veterinarians, and agricultural news stories (Donnermeyer & Kreps, 1994). The majority of the students being enrolled in science-based majors (i.e., Animal, Dairy, Poultry, or Pre-Vet) may explain why the students in this study were not strongly influenced by friends and prior agricultural experiences. Research to examine the interests of students in specific agricultural majors may assist the CoA in designing effective information pamphlets and other recruitment messages that showcase the benefits of the various majors.

In regard to job considerations, students considered the job market, potential income after graduating, and working with people as the most critical factors to their choice of major. These findings suggest that an honest look at a desired major is important for helping students understand the requirements of their major and find the right "fit." While recruitment messages that showcase the benefits of majors are appealing to students (Baker et al., 2013), failure to share both parts of this message may result in students who more frequently change majors and take longer to complete a degree.

Regarding the influence of others on their choice of major, students perceived parents/guardians, agriculture professionals, and personal role models as the most influential people. College friends had the lowest level of influence. While the strong influence of parents is consistent with much of the prior literature, the low influence of college friends is not (Barkley & Parrish, 2005; Herren et al., 2011; Jackman & Smick-Attisano, 1992). The low influence of college friends reported in this study may be explained by the freshman status of this study's population; because these students were all in the first semester of their first year in college, the influence of college friends may not have been applicable. As such, it would be beneficial to replicate this study with upperclassmen. Considering the strong influence of parents/guardians reported in this

study and in prior studies, future research should be conducted to examine parents' perceptions of the CoA at Louisiana State University and the programs of study offered. Additionally, the vague nature of the terms *agriculture professionals* and *personal role models* warrants further examination. It could be beneficial to conduct a qualitative follow-up study with these students to gain a better understanding of who these influential agriculture professionals and personal role models are.

Consistent with prior studies, the college or departmental factors that influenced students the most were the friendliness and overall atmosphere of the CoA (Barkley & Parrish, 2005; Wildman & Torres, 2001) and receiving information pamphlets about agriculture majors (Robinson et al., 2007; Shrestha et al., 2011; Wildman & Torres, 2001). In addition to distributing informational pamphlets about CoA majors and associated career options, the CoA at Louisiana State University might host on-campus events for high school students. Considering the strong influence of parents/guardians, the CoA could include activities at these events that are specifically designed for parents. Lastly, a follow-up study should be conducted with students who participated in these events in order to examine their perceptions of the friendliness and overall atmosphere of the CoA.

Lastly, the CoA at Louisiana State University should consider methods of reaching underrepresented populations of students. The majority of the CoA freshmen in this study had not taken an agriculture course in high school. As such, the CoA at Louisiana State University should seek to examine why students who take agriculture courses in high school are not pursuing careers in agriculture. Additionally, the CoA should focus recruitment strategies on students enrolled in high school agriculture courses. Fraze, Wingenbach, Rutherford, and Wolfskill (2011) suggested holding summer agriculture workshops for high school students. The authors found that students' attitudes toward agriculture careers were significantly more positive after they participated in this type of workshop. Other recruitment attempts of this nature could include (a) sending CoA representatives to guest-speak in high school agriculture classes, (b) contacting high school agriculture teachers to set up a class field trip to the university, and (c) passing out informational pamphlets about the majors offered through the CoA at FFA or 4-H activities and competitions hosted at Louisiana State University.

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