

External Factors Influencing Choice of Academic Major: A Comparison of Agricultural and Non-Agricultural Students

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Abstract

The purpose of this study was to examine the external factors that influence the selection of college major by students entering agricultural and non-agricultural degree programs at Texas Tech University in the fall of 2007. Chapman's (1981) Model of Student College Choice served as the theoretical framework for this study. The target population for this study was identified as first time college students entering into the College of Agricultural Sciences and Natural Resources. In order to achieve the purpose of this study, a nonequivalent control group of non-agricultural students was established. This study's instrument was adapted from a study by Wildman (1997) which evaluated factors of influence upon selection of an agricultural major. Items recorded in this study included demographics and external factors influencing selection of major. For external factors a ten-point Likert-type scale was utilized. Means and standard deviations were used to describe these data. Agricultural and non-agricultural participants in this study were very similar in terms of age, class rank, state residence, and ethnicity. However with home residence and gender, these two groups of students were more dissimilar in nature. Overall 31 of 37 external influence items had higher means scores for agricultural students than for non-agricultural students.

Introduction/Theoretical Framework

Nationally, post-secondary institutions hold an interest to attract the best and brightest students, and colleges of agriculture continually seek new and innovative ways to appeal to audiences such as these (Wildman & Torres, 2001). According to Washburn, Garton, and Vaughn (2002), colleges of agriculture traditionally spend vast amounts of time, energy, and finances in the recruitment of students and the marketing of programs. Yet efforts such as these are not based on empirical research, and consequently research is warranted to identify most effective recruitment strategies. Bobbitt (2006) furthered this idea in stating "Information should be continually gathered to identify current trends and the information students need so that recruitment efforts may continue to be successful" (p. 175). The relevance of this line of inquiry was also noted by Cole and Thompson (1999) who stated the following:

Determining the information students use to make college and major decisions and the importance they attach to that information as well as determining the level of knowledge students possess about various programs within colleges or majors may assist in future recruitment and retention efforts. (p. 15)

Chapman (1981) provided a model looking at influences affecting potential students' selection of which college to attend. This model identified variables related to student

characteristics, student backgrounds, external influences, and student's general expectations of college life. It served as the theoretical framework for this study. Chapman cited external variables associated with student's choice of which college to attend as significant persons, fixed college characteristics, and college efforts to communicate with students. Friends, family, and high school personnel can all be significant external influences in the decision process students utilize to select a specific college. "Location, costs, campus environment, and the availability of desired programs are included in this model as relatively fixed college characteristics" (p. 495). In continuation of Chapman's work associated with external influences upon college choice, he affirmed one of the initial steps a college can take in addressing enrollment issues is to study the ways it identifies and recruits potential students. Chapman also declared, through efforts to communicate with students, this is one of the most easily influenced variables colleges can modify or adjust.

Many agricultural studies have evaluated the impact external influences can have upon students' decisions to enroll in colleges of agriculture with somewhat mixed results. Wildman (1997) defined prior experiences in agriculture to include students working on a farm, ranch, or wildlife reserve along with various summer agricultural jobs, and also working with domestic and wild animals. Other agricultural experiences included were outdoor activities, hunting and fishing, and the 4-H and FFA. Research on these factors showed over half of agricultural students at New Mexico State University believed them to be very influential upon their selection of an agricultural major. An additional influence Wildman associated with prior exposure was relatives involved in agriculture. Participants showed relatives to be moderately influential although 41.4% classified relatives in agriculture as "very influential."

Dyer, Breja, and Wittler (2000), who studied college agriculture students at two Midwestern Land Grant universities, found that students with prior agricultural experiences were more likely to complete degree programs within colleges of agriculture. Their research classified students with prior experiences as students who had completed high school agriculture courses, were former members of 4-H and/or FFA, and lived in a rural setting. They believed these prior agricultural experiences were one of the best predictors of student retention within colleges of agriculture.

Chapman (1981) identified friends, family, and high school personnel as all being significant sources of influence in students' selection of a particular college to enroll. Jackman and Smick-Attisano concluded "Students' choice of college is influenced by some significant individual such as a family member (most likely a parent) or someone associated with the students' high school or potential college choice" (p. 49). Other research studies within colleges of agriculture have also assessed the impact of such people upon a student's decision to enroll in a college of agriculture.

According to Bobbitt (2006), the group of people with the most influence on college-choice decision of students entering the College of Agricultural Sciences and Natural Resources at Texas Tech University was a parent or guardian closely followed by a friend in college. At the University of Missouri, Washburn et al. (2002) found parents and guardians, along with other relatives and graduates of an institution or department, to be the three greatest groups of influence for students college-wide. Cole and Thompson (1999) determined that almost half of

Oregon State University students within the College of Agriculture viewed parents to be a source of valued information. This was in contrast to Oregon State Universities' findings in the College of Health and Human Performance, where only 10% of students indicated the value of parents in the college choice process.

To go along with findings from the College of Health and Human Performance at Oregon State, Wildman and Torres (2001) found dissimilar results to the previous agricultural studies. In their findings of New Mexico State students, Wildman and Torres identified parents, friends, and family as "Not Influential" (p. 50). Instead, this research identified professionals in agricultural fields and personal role models as being more influential in the college choice process for students. Yet, participants of the research by Wildman and Torres also classified Extension professionals and high school agriculture teachers, counselors, and other personnel as non-influential.

Just as mixed results were identified regarding the level of influence parents, family, and friends have upon the choice of a student to select an agricultural major; mixed findings have been found regarding high school personnel. As noted, Wildman and Torres (2001) determined agriculture teachers to be a non-influence in the college choice process with similar results being found by Rocca and Washburn in 2005. However, Cole and Thompson (1999) identified high school teachers of agriculture to be valuable in the recruiting process as they appeared to be promoting college programs.

In 2007, a study by Rocca and Washburn supported Cole and Thompson's (1999) findings with agriculture teachers. They determined that agriculture teachers proved especially influential among former FFA members enrolled in college agriculture programs. They highlighted this result with the following: "Agriculture teachers should be made aware that among all high school personnel, they have the greatest potential to influence their students' college choice. Agriculture teachers should also be the targets of recruitment materials and information from colleges of agriculture" (p. 11).

In evaluation of other significant persons influencing students to enroll agricultural programs, Boone, Newcomb, Reisch, and Warmbrod (1989) identified high school guidance counselors as a valuable source of information for Ohio college students. They concluded colleges of agriculture need to be more aware of the guidance counselor's potential role, and should develop activities to educate counselors about the many career opportunities agriculturally related fields can present. Conversely, Rocca and Washburn (2005) found dissimilar results regarding counselors as agriculture students at the University of Florida identified high school counselors as having a low level of influence in the college decision process. Still, Cole and Thompson (1999) determined Extension personnel to have a low level of influence in college selection by students, but recommended in-service for Extension staff on college recruitment information that is available and how it could be used. They believed education toward this group could be beneficial in attracting former 4-H members to colleges of agriculture.

Finally, in educational efforts toward people of influence, Washburn et al. (2002) indicated that direct contact by colleges of agriculture with college alumni could prove beneficial

to students in the college information gathering stage. Rocca and Washburn (2005) indicated that direct contact by colleges and departments with parents and guardians might be beneficial to colleges of agriculture and natural resources. They furthered this idea by stating research should be conducted to determine what college or university features are most important to parents for their children's college choice. Bobbitt (2006) added "Care should be taken to not only recruit students to the university, but also to recruit their parents or guardians" (p. 174).

While previous studies have revealed some of the challenges along with potential audiences that colleges of agriculture should evaluate in order to sustain increased enrollment numbers, many studies have looked directly at most effective recruitment efforts. In reference to Rocca and Washburn (2007), it was found with former FFA members enrolled within a college of agricultural science that 75% of this group had participated in student activity events on campus while in high school. This was in contrast to the college agricultural students with no FFA background of which only 23% had been on the university's campus for student activities in high school. To further these results, Rocca and Washburn showed that other campus recruitment programs were used by nearly 50% of the FFA group compared to fewer than 30% of the students who were not former FFA members. It was concluded from these findings that "In working with College of Agriculture administration, the need for support of FFA events on campus is evidenced by these findings" (Rocca & Washburn, p. 11). Bobbitt (2006) found 79% of entering college students considered a campus visit the most influential recruitment tool in their selection of college.

In a comparison of high school students and transfer students entering the College of Agricultural and Life Sciences at the University of Florida, Rocca & Washburn (2005) determined that at least one-half of these students reported gathering college choice information from the Internet. Results showed that for high school students entering the college, three of the top five sources they utilized dealt with web-based information. This was even more of a factor for college transfer students whose top three items reported were web based information. Bobbitt (2006) found websites also proved beneficial in the recruitment of agriculture students. In this study it was shown that all entering students in agriculture and natural resources used websites to gather college information. Bobbitt also determined that program information on a college website was the most important source of information for entering minority students and second most important for non-traditional agriculture students from urban areas or who had no prior agricultural experience.

In a look at recruitment materials other than websites, Bobbitt (2006) determined that over 50% of students used printed publications for college choice decision. This was unlike mass media resources of TV, radio, newspaper, or magazine advertisements which proved to be the least utilized sources for students entering a college of agriculture and natural resources. Similar results were identified by Wildman and Torres (2001) who showed that a vast majority of agriculture and natural resource students relied on TV, radio, newspaper, or magazine advertisements very little or not at all when selecting a college major.

In relation to college or departmental people of influence, research also shows that contact by college personnel can be a key influence for students enrolling within colleges of agriculture. Rocca and Washburn's 2005 study of agricultural students rated personal contact

with college representatives as highly useful even though only one third of students indicated such contact had been made. Recommendations were made from this study to make college faculty and staff aware of this finding on the role they can play in student recruitment. Also highlighted was the value in faculty participation in student recruitment activities. Bobbitt's 2006 study supported this recommendation by reporting 77.5% of students considered a personal conversation with a professor a factor in selecting the particular agricultural college. While a variety of factors have been shown to be useful resources in recruiting students into colleges of agriculture, personal contact and individual people may appear more important in selection of a college major.

Purpose and Objectives

The purpose of this study was to examine the external factors that influence the selection of college major by students entering agricultural and non-agricultural degree programs at Texas Tech University in the fall of 2007. In order to guide this study the following research objectives were developed:

1. Describe demographic characteristics of first year students majoring in agricultural and non-agricultural degree programs.
2. Determine if a difference existed between agricultural and non-agricultural students on the identified external influences of prior exposure to major, people of influence, and college or departmental factors.

Population

The target population for this study was identified as first time college students entering into the College of Agricultural Sciences and Natural Resources at Texas Tech University in fall 2007. The accessible population for this study was all entering freshman who attended a New Student Orientation (NSO) session in the summer of 2007 and selected an academic major in the College of Agricultural Sciences and Natural Resources. At Texas Tech University, NSO is a required activity which all freshman students must attend prior to enrolling in fall classes. Accessing freshman agriculture students at the summer NSO sessions allowed for a census of this particular group.

In order to achieve the purpose of this study, a nonequivalent control group was also established from a convenience sample of freshman students enrolled in IS1100: Tech Transition. IS 1100 is a one-hour course designed to introduce freshman students to university life at Texas Tech. This course is open and available to all freshman at Texas Tech University and is offered at variety of times and locations. While this group of students was not selected based upon chance, they were considered appropriate to the study due to two key student characteristics. First, these students were freshman enrolled at Texas Tech University for the first time in fall 2007. Second, this group of students represented a variety of academic majors from multiple colleges at Texas Tech University.

Instrumentation

This study's instrument was adapted from a study by Wildman (1997) which evaluated factors of influence upon selection of an agricultural major by students at New Mexico State University. This instrument was divided into three sections although this paper will only address sections one and three which are related to this paper's objectives as the reported research was simply part of a larger study.

Section one of this study's instrument measured external factors influencing selection of an academic major and was subdivided into the following: prior exposure to college major (11 items), people of influence (13 items), and college or departmental factors (14 items). For each of these three sub-sections, students were asked how influential the following factors were when making decisions of which major to choose upon entering college. A ten-point Likert-type scale was utilized to record students' perceptions of each factor. If a student believed a specific factor was "very influential" he or she marked a number ten or at least a number closer to ten on the Likert-type scale. If a student perceived a factor to be "not influential" they marked a number one or at least a number closer to one on the Likert-type scale.

Part three of the questionnaire sought demographic information, again in a multiple choice and fill in the blank type of manner. Ten total questions were asked which were related to gender, age, class rank, home state, permanent residence, home state, ethnicity, and selected academic major. Age was collected as a precautionary measure as Chapman's (1981) Model of Student College Choice is limited to describing the pattern of influences affecting traditional age (18-21) prospective students.

Wildman (1997) established content and face validity of this instrument by a panel of experts which included New Mexico State University faculty and graduate students along with the College of Agriculture and Home Economics' Survey Review Committee. To establish reliability, Wildman (1997) performed a test-retest on a pilot group of students ($n=25$) over section one on external factors. Following test-retest administration, paired questions were analyzed to produce percent agreement calculations. The acceptable percent agreement was determined *a priori* at a minimum level of 75%. The percent agreements ranged from 75% to 100% for this section of the instrument. Demographics, the third section, was not tested for reliability as this information was assumed to be constant over time.

This survey of incoming students was administered in booklet form to both agricultural and non-agricultural students, and participants recorded their responses directly on the instrument. Students were verbally told the purpose of this study and were asked to participate. Also, the students were notified the study was voluntary. Participant's responses were entered in Microsoft Excel prior to being moved to Statistical Package for Social Sciences (SPSS) Version 14.0.

Results

A total of 393 students participated in this study. Of this 206 students had declared agricultural majors within the College of Agricultural Sciences and Natural Resources, while 187 students had declared non-agricultural majors in eight other colleges at Texas Tech University.

Of agricultural students in this study, 61.2% ($n = 126$) were male and 38.8% ($n = 80$) were female while 49.3% ($n = 82$) of non-agricultural students were male and 56.1% ($n = 105$) were female. From the agricultural group of students, 87.6% ($n = 177$) marked ethnicity as White/Non-Hispanic as did 84.6% ($n = 152$) of the non-agricultural students. Other ethnicities reported by students included Hispanic, Native American, Black/African American, Asian/Pacific Islander and other. The vast majority of students in this study listed state residence as in-state with 92.6% ($n = 188$) of agricultural students, and 93.5% ($n = 174$) of non-agricultural students reporting this.

In terms of permanent or home residence, the largest representation of agricultural students indicated coming from metropolitan areas (37.6%, $n = 76$). Rural-farm had the second highest representation for agricultural students at 30.2% ($n = 61$), and was followed by small city/town at 24.3% ($n = 49$), and rural non-farm at 7.9% ($n = 16$). Non-agricultural students also indicated metropolitan area (68.4%, $n = 128$) as the most represented home residence although by a greater margin. Small city/town (18.2%, $n = 34$) was represented next and was followed by rural-farm at 10.2% ($n = 19$), and rural-non farm at 3.2% ($n = 6$).

For this study all student ages ranged from 18 years up to 20 years. In terms of class rank the mean percentage included students being in the top 23.4% ($n = 393$) of their high school graduating class. Agricultural students came in at an average of being in the top 22.6% ($n = 206$) of their class and non-agricultural students came in the top 24.2% ($n = 187$) of their particular group of graduates.

Objective two of this study looked to determine if a difference existed between agricultural and non-agricultural students on external influences upon selection of academic major. For the purpose of this study external influences were grouped into three main categories which included: prior exposure to major, people of influence, and college or departmental factors. Means and standard deviations were used to describe these data.

Exposure to major was measured on 11 items in section one of this study's instrument. For agricultural students, the five highest rated items under this category were personal work experience ($M = 7.44$, $SD = 6.64$), related hobbies ($M = 7.33$, $SD = 3.18$), high school coursework ($M = 6.78$, $SD = 5.44$), related clubs or organizations ($M = 6.75$, $SD = 3.53$), and relatives in a similar field ($M = 6.54$, $SD = 3.47$). The remaining items under exposure to major for agricultural students were newspaper articles ($M = 4.46$, $SD = 2.68$), internet sources ($M = 4.43$, $SD = 2.76$), technical journals ($M = 4.42$, $SD = 2.80$), television programs ($M = 4.41$, $SD = 2.62$), non-technical magazines ($M = 4.32$, $SD = 2.63$), radio broadcasts ($M = 3.67$, $SD = 2.54$).

The five highest rated items for non-agricultural students were high school courses ($M = 6.61$, $SD = 2.90$), related hobbies ($M = 5.90$, $SD = 3.58$), relatives in a similar field ($M = 5.65$, $SD =$

= 3.59), internet sources ($M = 5.50$, $SD = 2.95$), and personal work experience ($M = 5.43$, $SD = 3.66$). The other items with lower mean scores were related clubs or organizations ($M = 4.84$, $SD = 3.52$), television programs ($M = 4.69$, $SD = 2.95$), non-technical magazines ($M = 4.42$, $SD = 2.84$), newspaper articles ($M = 4.11$, $SD = 2.77$), technical journals ($M = 3.71$, $SD = 2.72$), and radio broadcasts ($M = 3.38$, $SD = 2.45$). Table 1 compares mean scores and rank order for exposure to major by agricultural and non-agricultural majors. Agricultural students indicated higher mean scores on 8 of 11 items.

Table 1
Perceived Differences on External Influences

	Agriculture ($n = 206$)			Non-Agriculture ($n = 187$)		
	Rank	M	SD	Rank	M	SD
Prior Exposure to Major						
Personal work experience	1	7.44	6.64	5	5.43	3.66
Related hobbies	2	7.33	3.18	2	5.90	3.58
High School courses	3	6.78	5.44	1	6.61	2.90
Related clubs or organizations	4	6.75	3.53	6	4.84	3.52
Relatives in similar field	5	6.54	3.47	3	5.65	3.59
Newspaper articles	6	4.46	2.68	9	4.11	2.77
Internet sources	7	4.43	2.76	4	5.50	2.95
Technical journals	8	4.42	2.80	10	3.71	2.72
Television programs	9	4.41	2.62	7	4.69	2.95
Non-technical magazines	10	4.32	2.63	8	4.42	2.84
Radio broadcasts	11	3.67	2.54	11	3.38	2.45

The second factor evaluated under external influences was people of influence (13 items). For agricultural students, mean scores greater than five were produced for items of parent or guardian ($M = 6.86$, $SD = 2.8$), professional in a similar field ($M = 6.32$, $SD = 3.47$), personal role model ($M = 6.16$, $SD = 8.02$), high school agri-science teacher ($M = 5.71$, $SD = 3.73$), friend in high school ($M = 5.30$, $SD = 3.13$). Other mean scores produced by agricultural majors ranged from 4.96 ($SD = 3.41$) to 3.26 ($SD = 2.74$). These items included friend in college ($M = 4.96$, $SD = 3.41$), high school science teacher ($M = 4.86$, $SD = 3.17$), extension professional ($M = 4.57$, $SD = 3.5$), sister or brother ($M = 4.41$, $SD = 3.24$), other high school teachers ($M = 3.81$, $SD = 3.22$), high school counselor ($M = 3.52$, $SD = 3.01$), and high school principal ($M = 3.26$, $SD = 2.74$).

With non-agricultural majors, mean scores greater than five were produced for items of parent or guardian ($M = 7.03$, $SD = 2.72$), professional in a similar field ($M = 6.05$, $SD = 3.43$), other relatives ($M = 5.3$, $SD = 3.11$), and personal role model ($M = 5.23$, $SD = 3.71$). The next five highest mean scores ranged from 4.90 ($SD = 2.94$) to 3.94 ($SD = 2.97$). These five items were friend in high school ($M = 4.90$, $SD = 2.94$), other high school teachers ($M = 4.42$, $SD = 4.33$), friend in college ($M = 4.33$, $SD = 3.05$), high school science teacher ($M = 4.08$, $SD = 3.23$), and sister or brother ($M = 3.94$, $SD = 2.97$). Remaining items from this list were high school counselor ($M = 3.37$, $SD = 2.82$), high school principal ($M = 2.68$, $SD = 2.58$), Extension professional ($M = 2.40$, $SD = 2.39$), and high school agri-science teacher ($M = 1.99$, $SD = 2.20$).

For agricultural majors, higher mean scores were found on 9 of 13 items. Parent or guardian was the most significant person of influence by both groups of agricultural students and non-agricultural students. Parent or guardian, was one of the two items where non-agricultural students had a higher mean score ($M = 7.03$, $SD = 2.72$) as compared to agricultural students ($M = 6.86$, $SD = 2.80$). Table 2 compares mean scores and rank order for people of influence by agricultural and non-agricultural majors.

Table 2
Perceived Influence of Individual Persons

People of Influence	Agriculture ($n = 206$)			Non-Agriculture ($n = 187$)		
	Rank	M	SD	Rank	M	SD
Parent or guardian	1	6.86	2.8	1	7.03	2.72
Professional in similar field	2	6.32	3.47	2	6.05	3.43
Personal role model	3	6.16	8.02	4	5.23	3.71
High School agri-science teacher	4	5.71	3.73	13	1.99	2.2
Other relatives	5	5.62	3.26	3	5.3	3.11
Friend in high school	6	5.3	3.13	5	4.9	2.94
Friend in college	7	4.96	3.41	7	4.33	3.05
High School science teacher	8	4.86	3.17	8	4.08	3.23
Extension professional	9	4.57	3.5	12	2.4	2.39
Sister or brother	10	4.41	3.24	9	3.94	2.97
Other high school teachers	11	3.81	3.22	6	4.42	3.46
High School counselor	12	3.52	3.01	10	3.37	2.82
High School principal	13	3.26	2.74	11	2.68	2.58

College or departmental factors was the final category under external influences. The five highest rated items for college or departmental factors influencing agricultural majors were friendly college atmosphere ($M = 7.22$, $SD = 2.87$), teaching reputation in college ($M = 7.04$, $SD = 6.45$), faculty's friendliness ($M = 6.96$, $SD = 3.00$), teaching reputation in department ($M = 6.57$, $SD = 3.03$), and departmental clubs or activities ($M = 6.23$, $SD = 3.34$). Personal visit with college representatives ($M = 5.61$, $SD = 3.55$), activities on TTU campus ($M = 5.51$, $SD = 3.27$), and TTU internet sources ($M = 5.36$, $SD = 3.17$) also showed mean scores greater than five. College or departmental factors rounding out the list for agricultural students were departmental scholarships ($M = 4.87$, $SD = 3.39$), informational pamphlets ($M = 4.71$, $SD = 2.84$), college alumni ($M = 4.67$, $SD = 3.47$), high school visits from TTU representatives ($M = 4.56$, $SD = 3.56$), and advertisements about major ($M = 4.44$, $SD = 3.03$).

Friendly college atmosphere ($M = 5.7$, $SD = 3.23$), teaching reputation of department ($M = 5.48$, $SD = 3.4$), teaching reputation of college ($M = 5.33$, $SD = 3.15$), TTU internet sources ($M = 4.91$, $SD = 3.40$), and faculty's friendliness ($M = 4.88$, $SD = 3.08$) were the five highest rated items by non-agricultural participants. Remaining items included informational pamphlets ($M = 4.76$, $SD = 3.26$), personal visit with college representatives ($M = 4.64$, $SD = 3.26$), activities on TTU campus ($M = 4.20$, $SD = 3.06$), advertisements about major ($M = 4.11$, $SD = 3.31$), departmental clubs or activities ($M = 4.02$, $SD = 2.89$), college alumni ($M = 3.36$, $SD = 3.08$),

high school visits from TTU representatives ($M = 3.08$, $SD = 2.91$), and departmental scholarships ($M = 2.96$, $SD = 2.86$).

Table 3 compares mean scores and rank order for college or departmental factors by agricultural and non-agricultural majors. Agricultural students indicated higher mean scores on 12 of 13 items. The range of scores for agricultural students was from 7.22 ($SD = 2.87$) to 4.44 ($SD = 3.03$). Non-agricultural students had a range of scores from 5.70 ($SD = 3.23$) to 3.08 ($SD = 2.86$). The only item which was found to have higher mean scores for non-agricultural students was informational pamphlets ($M = 4.76$, $SD = 3.08$). The mean score found on this item for agricultural students was 4.71 ($SD = 2.84$).

Table 3
Perceived Influence of College or Departmental Factors

College or Departmental Factors	Agriculture ($n = 206$)			Non-Agriculture ($n = 187$)		
	Rank	M	SD	Rank	M	SD
Friendly college atmosphere	1	7.22	2.87	1	5.7	3.23
Teaching reputation college	2	7.04	6.45	3	5.33	3.4
Faculty's friendliness	3	6.96	3	5	4.88	3.15
Teaching reputation department	4	6.57	3.03	2	5.48	3.4
Departmental clubs/activities	5	6.23	3.34	10	4.02	3.08
Personal visit with college reps.	6	5.61	3.55	7	4.64	3.26
Activities on TTU campus	7	5.51	3.27	9	4.11	3.26
TTU Internet resources	8	5.36	3.17	4	4.91	3.31
Departmental scholarship	9	4.87	3.39	13	2.96	2.89
Informational pamphlets	10	4.71	2.84	6	4.76	3.08
College alumni	11	4.67	3.47	11	3.36	2.91
HS visits from TTU reps.	12	4.56	3.56	12	3.08	2.86
Advertisements about major	13	4.44	3.03	8	4.2	3.06

Conclusions

Agricultural and non-agricultural participants in this study were very similar in terms of age, class rank, state residence, and ethnicity. However with home residence and gender, these two groups of students were more dissimilar in nature. While metropolitan area represented home for the greatest percentage of students, almost twice as many non-agricultural students (68%) came from this environment as did agricultural students (38%). Disparity was also found for students from rural-farms as three times as many agricultural students (30%) indicated this as home as did non-agricultural students (10%).

The agricultural students in this study were predominantly male (61%) as compared to non-agricultural participants who were predominantly female (56%). With ethnicity, the majority of both agricultural and non-agricultural participants were classified as White/Non-Hispanic. However, the non-agricultural students showed slightly more ethnic diversity at 15.6% minority enrollments as compared to 12.4% for agricultural participants. In relation to

state residence agricultural and non-agricultural students were virtually identical to one another. With agricultural respondents in this study, 93% were in-state students. Of non-agricultural respondents, 94% were also from in-state.

With the external influence of exposure to major, agricultural students rated five of the items significantly higher than all other items. These top five items were personal work experience, related hobbies, high school course work, related clubs or organizations, and relatives in a similar field. The lower rated items included newspaper articles, internet sources, technical journals, television programs, non-technical magazines, and radio broadcasts. For non-agricultural students, the five items with the highest means for exposure to major were high school courses, related hobbies, relatives in a similar field, internet sources, and personal work experience. Personal work experience was ranked fifth for non-agricultural students as opposed to first for the agricultural group.

Parent or guardian was the most significant person of influence among agricultural and non-agricultural students and was one of only two groups of people rated higher by non-agricultural students as compared to agricultural students. This finding was consistent with findings from Bobbitt (2006), Washburn et al. (2002), and Thompson and Cole (1999). Other groupings of people agricultural students rated to have means scores over five other than parents were professionals in a similar field, personal role model, high school agri-science teacher, other relatives, and friend in high school. Other than agri-science teacher these groupings were in the top five most influential people for non-agricultural students.

Agricultural students had higher mean scores on 12 of 13 items under college or departmental factors and at a fairly significant rate. Although friendly college atmosphere had the highest mean for both groups, the mean for agricultural students on this item was 7.22 ($SD = 2.97$) as compared to 5.7 ($SD = 3.23$) for non-agricultural majors. Also, most items were similar in terms of rank with the exception of departmental clubs or activities which was ranked fifth for agricultural participants and tenth for non-agricultural participants. From these results, a stronger college or departmental connection may exist for agricultural majors than for non-agricultural majors.

Overall 31 of 37 external influence items had higher means scores for agricultural students than for non-agricultural students. With agricultural participants, 19 items had a mean score of 5.0 or more. Twelve items were found to have a mean score greater than 5.0 for non-agricultural students.

Discussion

Agricultural students in this study came from a variety of settings with representations of students from both urban and rural environments. From this it appears that the College of Agricultural Sciences and Natural Resources at Texas Tech University has been effective in attracting both students from small towns and rural farms along with students from metropolitan areas. However with indications of rural populations declining in numbers in many areas, the College of Agricultural Sciences and Natural Resources will need to continue to grow numbers of metropolitan students in the program without sacrificing recruitment of students from rural

settings. With this in mind, the College of Agricultural Sciences and Natural Resources will need to continue to focus recruitment efforts toward multiple communities along with multiple audiences of students which will represent multiple ethnicities along with both males and females.

From findings relative to external influences and selection of major, it appears a stronger connection exists between the items measured in this study and agricultural students as opposed to the non-agricultural participants overall. Particularly, these agricultural students may have had more exposure to their major, people who work in a similar type field, and the college of agriculture specifically. From this it appears that this college of agriculture is attracting students who have strong agricultural backgrounds. Furthermore, it appears this college of agriculture is doing an affective job in communicating with students.

Recommendations

1. This study looked at external factors associated to how students selected their initial major upon entering college for the first time in fall 2007. Continual research should be conducted to see how this audience may vary in terms of academics, retention, and persistence through their selected academic majors.
2. Agricultural respondents in this study were predominantly White/Non-Hispanic males who were traditionally aged college students from in-state. Opportunities should be explored which might increase numbers of students who are female, from ethnic minorities, non-traditional age groups, and who are from out-of-state. Why more of these students are not entering this particular college of agriculture should be evaluated.
3. Exposure to major was a factor upon how students initially selected their academic major. For colleges of agriculture to grow, ways to expose more students to agricultural majors and careers should be developed. This may include expansion and promotion of already established youth organizations associated to agriculture to new audiences of students or development of new programs aimed at all age groups of students. Also, agricultural work experience appeared to be highly related to selection of an agricultural major, possible internships for high school students in various agricultural areas should also be developed.
4. Parent or guardian, was identified as the most influential person for how students selected their academic major. This group should be made aware of educational opportunities in agriculture and at this particular institution. Also this type of contact should be made with agricultural professionals, agri-science teachers, alumni, Extension agents, and high school counselors. Although Extension professionals and high school counselors were rated low in this study for level of influence, education towards these two groups might increase their impact upon agricultural students.
5. Agricultural participants rated college or departmental factors higher on all but one item as compared to non-agricultural students. Perhaps, a stronger connection exists between agricultural students and their college than in other colleges. Agricultural student's high

perceptions of a friendly college atmosphere, the college's teaching reputation, and of departmental clubs or organizations should be promoted to potential students.

References

- Bobbitt, R. (2006). *Factors influencing recruitment, retention, and placement in the college of agricultural sciences and natural resources*. Unpublished master's thesis, Texas Tech University, Lubbock.
- Boone, H. N., Newcomb, L. H., Reisch, K. W., & Warmbrod, J. R. (1989). The influence of recruitment strategies designed to attract high-ability non-traditional students to the college of agriculture. *NACTA Journal*, 33(1), 7-10.
- Chapman, D.W. (1981). A model of student college choice. *The Journal of Higher Education*, 52(5), 490-505.
- Cole, L., & Thompson, G.W. (1999). Survey of current students: Implications for recruitment and retention. *NACTA Journal* 43(3), 15-20.
- Dyer, J.E., Breja, L.M. & Wittler, P.S.H. (2000). Predictors of student retention in colleges of agriculture. *Proceedings of the 27th Annual National Agricultural Education Research Conference*, 490-501.
- Rocca, S.J., & Washburn, S.G., (2007). Comparison of factors influencing the college choice of FFA and Non-FFA members into a college of agriculture. *Proceedings of the 26th annual Western Region Agricultural Education Research Conference*, Cody, WY.
- Rocca, S.J., & Washburn, S.G. (2005). Factors influencing the college choices of high school and transfer matriculates into a college of agriculture. *NACTA Journal*, 49(1), 32-38.
- Washburn, S.G., Garton, B.L., & Vaughn, P.R. (2002). *Factors influencing college choice of agriculture students college-wide compared with students majoring in agricultural education*. Paper presented at the 29th meeting of the American Association of Agricultural Educators, Las Vegas, NV.
- Wildman, M., & Torres, R.M. (2001). Factors identified when selecting a major in agriculture. *The Journal of Agricultural Education*, 42(2), 46-55.
- Wildman, M. (1997). Factors in high school that influence choice of major by NMSU agriculture students. Unpublished master's thesis, New Mexico State University, Las Cruces.