

RECRUITMENT OF NON-TRADITIONAL STUDENTS TO AGRICULTURAL
DEGREES

by

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ABSTRACT

The future of agriculture will be determined by the ability of post-secondary institutions recruitment of non-traditional agricultural students to agricultural degrees. Only 1.3% of the U. S. population holds direct on-farm employment. As the population slowly becomes disconnected from traditional agricultural lifestyles, the challenge will be identifying new types of students to pursue agricultural degrees. This study determined influential factors experienced by non-traditional agricultural students during decisions to enroll in the Department of Agricultural Sciences at West Texas A&M University. Participants in this study had no knowledge or experience in agriculture prior to enrollment in a post-secondary agricultural department. Factors contributing to enrollment in an agricultural degree include support from significant persons, friendly faculty and staff, hands-on learning experiences, and career opportunities in agricultural sectors. Participants recommended recruitment efforts target inclusivity of non-traditional students by highlighting potential agricultural careers and resources available to non-traditional students. Implications from this study suggest recruitment materials and messages be revisited to promote diversity and inclusion in agricultural degrees.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

Background and Setting

As of 2021, the U. S. population is approximately 330 million (U. S. Census Bureau, n.d.). Colby and Ortman (2015) predicted the U. S. population to increase to 400 million by 2051. Agricultural or food sectors offer approximately 22.2 million full-time and part-time jobs in the U. S. (Kassel & Martin, 2021). Agricultural jobs offer a wide array of employment opportunities that expand beyond traditional production agriculture (Wildman & Torres, 2001). Approximately 59,400 agricultural employment opportunities will be available for new college graduates; however, only 36,100 students will be graduating with degrees pertaining to agriculture, food, and natural resources (United States Department of Agriculture, 2020). Only 2.6 million people, or 1.3% of U. S. employment, hold direct on-farm employment positions (Kassel & Martin, 2021). The United States Department of Agriculture (USDA) (2020) also reported approximately 31% of job openings in agriculture related to science and engineering and 24,700 open positions will be available in agricultural management and business sectors.

Despite the career opportunities in agriculture, young people are choosing to find work in places other than the family farm. Consequently, “more than 33% of farmers are 65 or older” (Weingarten, 2019, p.1). The average age of a U. S. farmer has increased 1.2 years, making the new median age of a U. S. farmer 57.5 years old (United States Department of Agriculture, 2017). Additionally, as the population grows, America’s valuable farmland is being sold for urban development. The younger generation choosing to go back to the family farm risks losing their agricultural land to urban sprawl. According to American Farmland Trust (2020), 11 million acres of agricultural land were sold from 2001 to 2016. Wildman and Torres (2001) reported over 50% of students in a college of agriculture come from towns or cities with populations greater than 5,000. An increase in urban population and a steady decline in young agriculturists fulfilling the roles of their elders has forced the agricultural industry to begin recruiting non-traditional agriculturists to fill job vacancies.

The pool of graduates that agricultural students are recruited from has become more urbanized (Fraze et al., 2011b). Students without prior agricultural experiences are difficult to recruit to agricultural degrees (Wildman & Torres, 2001). Despite a 30% increase in college-enrollment over the past eight years, the agricultural industry struggles to fill positions within agriculture (STEM Food and Ag Council, 2014). Broaddus et al. (2015) stated, “agricultural work is physically challenging and an unfamiliar activity for most urban adolescents may make retaining participants even more difficult than in other types of programs” (p. 23). However, the urban population accounts for 80.7% of the U. S. population (United States Census Bureau, 2021); meaning non-traditional agricultural students are likely to come from an urban area.

Secondary agricultural education programs are tasked with the challenge of recruiting non-traditional students to agricultural programs to develop future agriculturists (Esters & Bowen, 2004).

Recruiting students to join high school agricultural education programs before enrollment in a post-secondary agricultural degree may assist with future recruitment efforts. Research efforts by Frazee et al. (2011b) focused on urban high school students and their perceptions of agriculture prior to an agricultural recruitment workshop. Previous research determined inner city students have the perception that agricultural workers should have an agricultural background (White et al., 1991). Frazee et al. (2011b) facilitated agricultural recruitment workshops with urban students, and results concluded the participants had a more positive perception of agricultural careers after completing the workshop.

Other recruiting strategies vary from college to college, but research has shown that campus visits are one of the most successful recruiting techniques (Washburn, 2002; Rocca, 2013). Robertson et al. (2017) reported meeting with a faculty member on a campus visit is the most influential recruiting technique for first-year students. Similarly, Rocca (2013) determined personal conversations with faculty to be one of the most useful sources of information. Herren et al. (2001) reported campus visits and meetings with professors had a positive effect in recruiting students. Regardless of the methods used to recruit students to agricultural degrees, the need to fill agricultural job vacancies with non-traditional agricultural students is critical to the future of agriculture.

College recruitment in 2020 presented unforeseen challenges because of the coronavirus disease (COVID-19) pandemic. According to the World Health Organization

(n.d.), “COVID-19 is an infectious disease caused by a newly discovered coronavirus” (p. 1). This was the first global pandemic in over a century, and the impacts of the pandemic were felt in every country on the planet (Ryan, 2020). Academic institutions chose to close doors and offer virtual learning experiences in order to slow the spread of the coronavirus. Students, faculty, and staff felt the stress of the many changes during the early stages of COVID-19 (Brazeau & Romanelli, 2020). Educational systems adopted on-line, virtual learning methods because of strict government requirements attempting to prevent the spread of coronavirus (Karakose, 2020). As a result, recruitment of students to post-secondary education was at a standstill as institutions attempted to slow the spread of COVID-19.

Statement of the Problem

Agriculture, as it is known today, encompasses more than *cows, plows, and sows*, and relies heavily on innovative technology and advanced research (Beyl, et al., 2016). However, the National Research Council (2009) stated, “Public understanding of agriculture is poor, and many people are barely aware of where their food comes from” (p. 25). As reported by Beyl et al. (2016), the biggest challenge when recruiting students to agricultural degrees is changing the way non-traditional agriculture students view agriculturists. Despite the stereotypical perception of agriculture, the assortment of degrees in agriculture like genetics, research, engineering, and economics offer a variety of career opportunities within the industry (Beyl et al., 2016).

Understanding the factors that influence non-traditional agricultural students to select a major within agriculture is an important topic to research. Traditional agriculturists are less common, but the need for agriculturists is greater than ever before.

Feeding the growing population is going to require a “new breed of farmer who is ready to farm in new and technically advanced ways” (STEM Food and Ag Council, 2014, p. 6). Recruiting non-traditional students to agricultural degrees may be the best solution to meet the need.

Recruiting students to agricultural degrees is no longer a one-size-fits-all model (Powell, 2017). Students have more diverse needs, and recruitment efforts should reflect the diverse needs of students. Students today focus on living their life to make a positive difference in the world (Beyl et al., 2016). Many choose to focus on their happiness rather than financial gain (Smith & Aaker, 2013). According to Beyl et al. (2016) “Agriculture and all of its various disciplines offer an excellent opportunity to satisfy those needs” of students that desire to make a difference in the world (p. 51).

Purpose and Objectives

The primary purpose of this study is to determine the factors that influenced non-traditional students to pursue degrees in agriculture without existing connections to production agriculture. As defined by the researchers, non-traditional students never took an agriculture, food, or natural resources class in high school, were not 4-H or FFA members, and were two generations removed from production agriculture. As a means of accomplishing the purpose of this study, the following research objectives guided this study:

1. Establish social or environmental experiences influencing non-traditional students to major in agricultural degrees
2. Determine influential recruitment strategies utilized to recruit non-traditional students to pursue degrees in agriculture

3. Identify recruitment messages from current non-traditional students to assist in the recruitment of future non-traditional agricultural students

Significance of the Study

According to Grandil (2014), “the term non-traditional is one that is used frequently in educational circles as a means to track where we are versus where we have been in serving our ‘core’ student population” (p. 6). Agricultural students are becoming more non-traditional, as generations are being further removed from the farm. American cities are expanding into rural areas, meaning schools will need to adjust their curriculum to meet the need of the changing community (Predmore, 2004). According to Farm Bureau (2019), less than two percent of Americans live on a farm or ranch in rural America. As the population dynamics change and people become detached from production agriculture, our recruitment strategies need to be reevaluated to address the non-traditional agriculture student (Rayfield et al., 2013).

Limitations

This study was confined to the following limitations:

1. Data collection was limited to students enrolled in West Texas A&M University’s Department of Agricultural Sciences during the 2021 spring semester.
2. One-on-one interview participation was completely voluntary.
3. One-on-one interview participants’ responses were limited by what they could remember during the session.
4. Students majoring in animal science with a pre-veterinary medicine specialization were not represented in the study.

Definition of Terms

COVID-19 Pandemic: According to the World Health Organization (n.d.), “Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus” (n.d.). This infectious disease impacted several million people worldwide. Some participants in this study discuss the lasting impacts the pandemic had on their lives.

Department of Agricultural Sciences: Housed in the Paul Engler College of Agriculture and Natural Sciences at West Texas A&M University, comprised of eight-degree options. The Department of Agricultural Sciences had over 1,000 students enrolled during the spring 2021 semester.

FFA: The National FFA Organization is a youth organization dedicated to preparing students for premier leadership, personal growth, and career success through agricultural education (FFA, n.d.).

Formal Agricultural Education Experiences: Enrollment in a secondary agricultural education class or membership in the National FFA Organization or the 4-H Organization.

Little International Livestock Show: The Little International Livestock Show is a livestock show held each fall in conjunction with the Principles of Animal Science (ANSC 1319) class at WTAMU. Students enrolled in ANSC 1319 have the opportunity to show cattle, hogs, sheep, or horses, as well as compete in the quiz bowl competition.

Matriculant: A person enrolled as a student in a college or university (Oxford Languages, n.d.)

Non-Traditional Agricultural Student: Currently enrolled student in the Department of Agricultural Sciences at West Texas A&M University without prior 4-H or FFA membership, and two generations removed from production agriculture.

Production Agriculture: As defined by Law Insider (n.d.):

Production agriculture is the raising of or the propagation of: Livestock, crops for sale for human consumption; crops for livestock consumption; and production seed stock grown for the propagation of feed grains and the husbandry of animals or, for the purpose of providing a food product, including the husbandry of blood stock as a main source of providing a food product. (p. 1)

Prospective Student: An individual planning to attend post-secondary education but has not yet enrolled, typically prospective students are between the ages of 18 to 25.

Recruitment Team: West Texas A&M University's Department of Agricultural Sciences has a recruitment team consisting of a faculty recruiting committee, the Department Head of Agricultural Sciences, and two graduate student recruiters.

STEM: Science, technology, engineering, and mathematics (STEM) academic classes

Traditional Agricultural Student: Currently enrolled student in the Department of Agricultural Sciences at WTAMU with previous formal agricultural education or involvement in the National FFA Organization or 4-H Organization.

West Texas A&M University: A public four-year university located in the Texas Panhandle. WTAMU has six academic colleges with over 10,000 students enrolled in the fall of 2020 (West Texas A&M University, n.d.).

4-H: America's largest youth organization focusing on leadership and under direction from Cooperative Extension (4-H, n.d.).

CHAPTER II

REVIEW OF LITERATURE

Introduction

The framework from this study was established through an extensive review of relevant literature. This chapter will discuss the potential factors influencing non-traditional students to pursue post-secondary degrees in an agricultural field. It was important to identify extrinsic and intrinsic influences, decision-making framework, and post-secondary education characteristics.

Theoretical Framework

Social Cognitive Career Theory

The theoretical framework that guided this study was the Social Cognitive Career Theory (SCCT) established by Lent et al. (1994). The SCCT focuses on the socio-cognitive factors of self-efficacy, expected outcome, and goal attainment. This research intended to determine the ways in which self-efficacy, expected outcome, and goal attainment influence non-traditional agriculture students to pursue degrees in agriculture. The researchers chose SCCT because of the attention to one's self-system when choosing a career. Self-efficacy beliefs, outcome expectations, and goal attainment are three interconnected variables in SCCT, which influence career choices (Lent & Brown, 1996).

Self-Efficacy

Bandura's (1986) research defined self-efficacy as "people's judgements of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 94). The higher the self-efficacy, the more persistent the individual will be in their efforts (Bandura, 1988). Human motivation, affect, and action are proximal determinants subsequently because of one's self-efficacy (Bandura, 1989). Self-efficacy is believed to determine the activities and environments an individual chooses, and the rationale the individual makes when faced with challenges (Lent et al., 1994). Lent and Brown (1996) reported self-efficacy to be a complex belief system, affecting performance in activities and tasks in academic or work settings. Bandura (1991) suggested strong self-efficacy is required for an individual to deploy one's resources effectively. As reported by Lent et al. (1994) social cognitive view determines self-efficacy to be dynamic because of the interactions with others, behaviors, and contextual factors. Lent et al. (1994) also reported "self-efficacy beliefs are largely determined and modified by four informational sources: personal performance accomplishments, vicarious learning, social persuasion, and physiological states and reactions" (p. 102).

Lent and Brown (2008) determined self-efficacy has a direct correlation to one's behaviors to achieve goals and one's successful performance on work related tasks. Earlier research from Lent and Brown (1996) reported successful experiences increase self-efficacy, while failures decrease confidence. Brown and Lent (1996) believe inaccurate self-efficacy can result in eliminating potentially rewarding tasks. In order to counteract faulty self-efficacy, Brown and Lent (1996) reported reprocessing old experiences by targeting low self-efficacy is a method to overcome choice barriers.

SCCT has been used to predict the future behaviors of an individual based on pre-measured self-efficacy (Kaminsky & Behrend, 2015). Problems are likely to arise if one misjudges self-efficacy by doubting abilities or greatly misconstruing efficacy (Lent & Brown, 1996).

Expected Outcome

According to Lent and Brown (2008), “Outcome expectations are the anticipated consequences of pursuing one’s goals or, more generally, of performing one’s work role” (p. 14). Research has reported self-efficacy and outcome expectations appear synonymous (Lent et al, 1994; Bandura, 1989). Lent et al. (1994) reported one’s confidence in the course of action would determine their participation if they lack confidence. Bandura (1986) suggested self-efficacy only influences perceived capabilities, as outcome expectations are the anticipated consequences of performing the task.

Self-efficacy partially determines outcome expectations (Lent & Brown, 2008). Lent and Brown (1996) view self-efficacy and outcome expectations as equally contributing factors in career choice. Lent and Brown (2008) further explain evidence of this relationship as they reported higher self-efficacy beliefs often result in more optimistic expectations about one’s ability to produce valuable work outcomes. People are more likely to choose the option in which self-perceived efficacy is highest (Bandura, 1989). Brown and Lent (1996) reported some persons would not pursue a task, even if the interest were high in the area, because of perceptions of barriers to the career. Practice efforts are linked to success or failure in activities, and affect expected outcome (Lent &

Brown, 1996). Career choice and expected outcome are also determined by the level of effort required for the pay (Lent & Brown, 1996).

Goal Attainment

Goal attainment is the final component of SCCT. Goals operate largely through self-motivation processes, instead of direct action (Bandura, 1989). According to Bandura (1991), people find motivation through proactive and valued goal setting. Goals are an ever-present element in career choice and decision-making theories (Lent et al., 1994). Human behavior is regulated by goal setting, while personal goal setting is influenced by self-appraisal capabilities (Bandura, 1989). Attainment of a goal increases self-satisfaction, which is sought out by people who are discontent or dissatisfied by their efforts when striving to attain a goal (Bandura, 1989). Persons with high self-efficacy tend to set higher goals after a goal has been achieved (Bandura, 1991). Perceived abilities tend to influence goals directly and indirectly through self-efficacy levels and outcome expectations (Lent & Brown, 1996). The SCCT illustrates a feedback loop between performance attainments and subsequent behavior, as mastery in areas increases efficacy and perceived outcomes (Lent & Brown, 1996). Choice actions lead to performance and goal success (Lent et al., 1994). Lent and Brown (2008) determined modeling, encouragement, and performance feedback as positive environmental factors affecting goal pursuit. Performance attainment can affect efficacy and outcome expectations, ultimately affecting choice persistence (Lent et al., 1994).

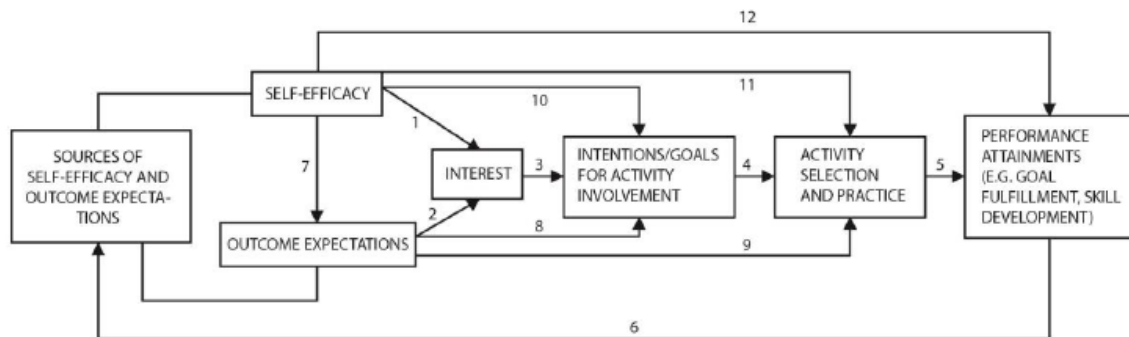
Three Interlocking Models

Self-efficacy, expected outcome, and goal attainment serve as the foundation for the SCCT; however, Lent et al. (1994) expanded these three domains into three more

models to further support SCCT. Lent et al. (1994) developed a conceptual framework of career development into three interlocking models: interest development, choice, and performance. Lent and Brown (2008) described SCCT as a model designed to exhibit the relationship between affective, cognitive, behavioral, and social aspects of job satisfaction. The Model of Interest Development, illustrated in Figure 1, shows the process of career interest development through childhood and adolescence.

Figure 1

Model of Interest Development (Lent et al., 1994).



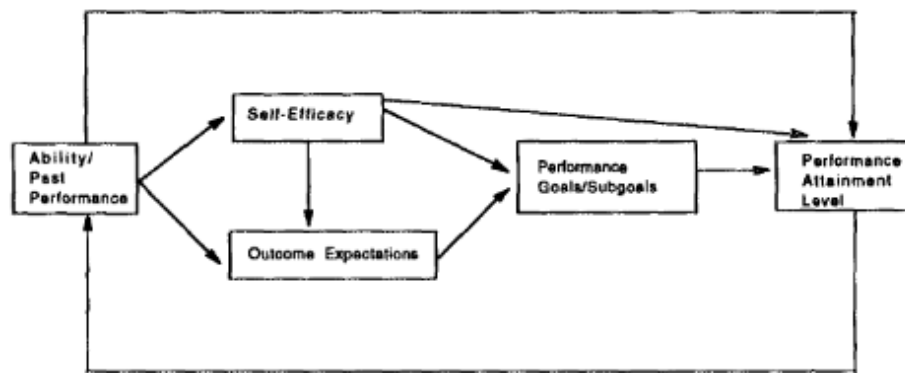
The Model of Interest Development depicts socio-cognitive determinates which promote career involvement and skill development. Individuals develop career interest over time because of exposure to diverse activities, especially if children or adolescents are reinforced for participation in certain activities (Lent et al., 1994). Repeated engagement, modeling, and feedback from an adult impacts performance, self-efficacy, and expectations of a child and adolescent (Lent et al., 1994).

Self-efficacy and outcome possibilities directly correlate to the formation of child or adolescent interest (Lent et al., 1994). Outcome expectations correlate with activity choices (Lent et al., 1994). Efficacy is a determining factor in performance success (Lent et al., 1994).

The Model of Performance is the third link in the extension of Lent et al. (1994) SCCT research. However, Lent et al. (1994) reported interest to be a significant determinant in choice of career or academic activities. Additionally, performance attainment is largely influenced by self-efficacy and outcome expectations, as represented in Figure 3 (Lent et al., 1994).

Figure 3

Model of Performance (Lent et al., 1994).



The SCCT provided important theoretical framework for this research study because of the attention to an individual's personal agency during the college selection process. Self-efficacy, outcome expectations, and goal attainment each serve a distinct purpose during selection of a college. The further expanded interlocking models represent the intricate framework influencing a student's college choice. While the SCCT served as the main theoretical framework for this study, the Model of Student College Choice also served an important role in this research study.

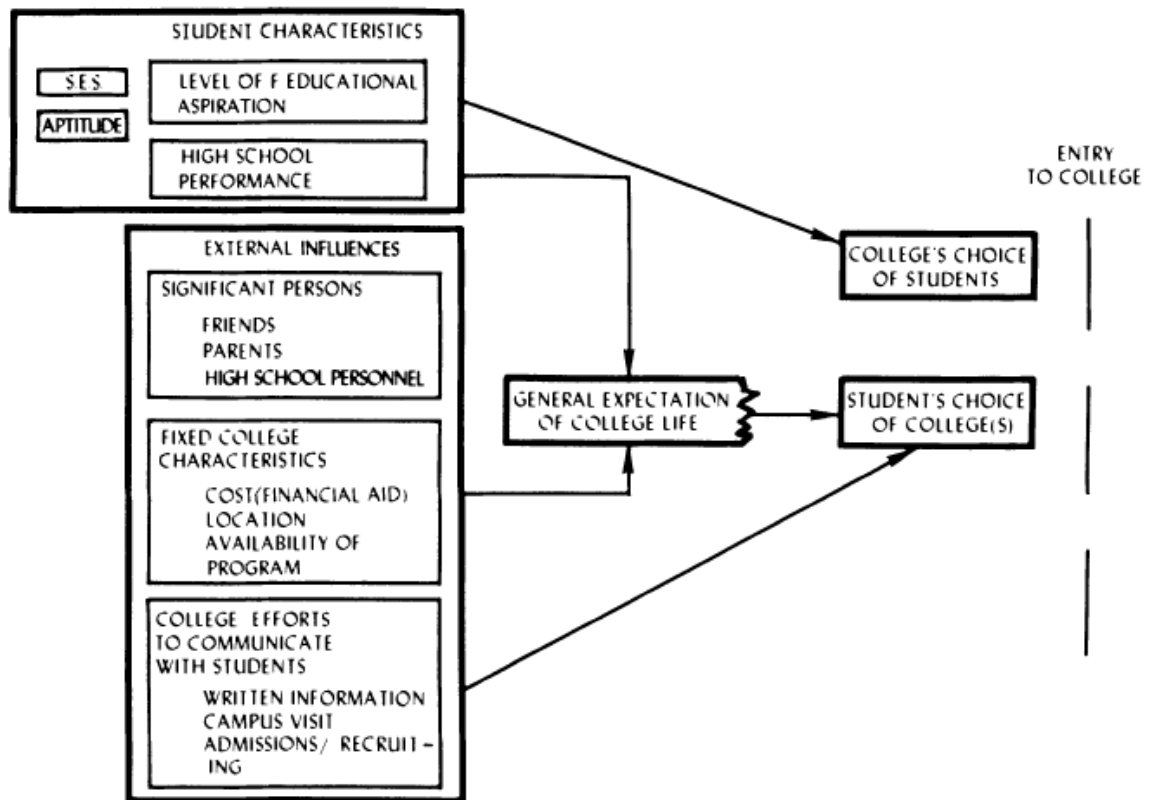
Model of Student College Choice

The recruitment of new students to agricultural degrees is heavily influenced by the factors outlined in Chapman's Model of College Choice (Chapman, 1981). According to Chapman (1981), the Model of Student College Choice considers students'

background, family, and characteristics of the college. The model proposes external characteristics are some of the greatest influencers (Chapman, 1981). These external influencers are: “(1) the influence of significant persons; (2) the fixed characteristics of the institution; and (3) the institution’s own efforts to communicate with prospective students” (Chapman, 1981, p. 492). Figure 4 illustrates the influences on student college choice.

Figure 4

Chapman’s Model of Student College Choice (Chapman, 1981).



Student Characteristics

The student characteristics influencing student college choice are socioeconomic status and aptitude (Chapman, 1981). Students with a higher socioeconomic status are more likely to attend four-year colleges, universities, or private institutions, and lower

income students are more likely to attend community colleges, state colleges, or occasionally, a state university (Chapman, 1981). Aptitude tests are another factor influencing student college choice. Tests like the Scholastic Aptitude Test (SAT) are required by most colleges and often determine the student's acceptance into college (Slack & Porter, 1980). Aptitude tests like the SAT are stressful for many students and result in students judging their aptitude and intelligence on such tests (Slack & Porter, 1980). Ultimately, students tend to select colleges with accepted students who have similar aptitude test scores (Chapman, 1981).

Educational expectations are a student's perception of their future (Chapman, 1981). Educational expectations and aspirations are influential characteristics when selecting a college; however, both can be closely associated with high school performance (Chapman, 1981). Class ranking and Grade Point Averages (GPA) are two characteristics colleges focus on heavily during the admission process. If the level of competition is high at a particular college, meaning a high-class ranking and a high GPA are required for acceptance, the student may base their college decision on this type of competition (Chapman, 1981).

External Influences

Significant Persons

Significant persons are another important factor under the high school performance category. Students can be positively or negatively influenced by the recommendations from family or friends (Chapman, 1981). Significant people may have directly or indirectly affected the student's major choice (Beggs et al., 2008). Significant persons influence a student in three ways:

(1) Their comments shape the students' expectations of what a particular college is like; (2) they may offer direct advice as to where the student should go to college, and (3) in the case of close friends, where the friends themselves go to college will influence the student's decision. (Chapman, 1981, pp. 494-495)

Chapman (1981) stated significant persons directly influence a student's college choice by shaping expectations or providing advice. Previous research shows parents are among the highest of influential persons in a student's college decision (Rayfield et al., 2013; Rocca & Washburn, 2005; Reis & Kahler, 1997, Cole & Thompson, 1999; Frazee et al., 2011a). Parents and friends are the major influencers for African-American students (Burns, 2006) and urban students (Esters & Bowen, 2004).

Among the group of influential persons, friends are an additional factor for students' college decisions (Frazee et al., 2011a; Espey & Boys, 2015; Chapman, 1981, Reis & Kahler, 1997). Boatwright and Ching (1992) reported friends to be more influential than any other factor.

Rayfield et al. (2013) reported the second most influential person in selecting an agricultural degree is a relative in an agricultural career. Agricultural education teachers prove to be an influencing factor in a student's decision to choose an agricultural major (Reis & Kahler, 1997; Cole & Thompson, 1999; Frazee, 2011b). Rocca (2013) reported non-matriculant participants ranked their agriculture teacher similarly to their parents when determining influential people when selecting a college major. Therefore, recommendations from Rocca (2013) encourage recruitment materials be dispersed to agriculture teachers because of their significant impact on students' college choices.

Relatively Fixed College Characteristics

As stated by Chapman (1981), the location, cost, campus environment, and availability of desired programs are significant components of relatively fixed college

characteristics. Rocca (2013) reported the availability of financial aid and cost of the school influence student's decision of which college to attend. The same study reported class size, safety, and admissions standards as influential college choice characteristics (Rocca, 2013). Selecting a major is often a result of the availability of jobs, flexibility in jobs and career paths, and job security (Beggs et al., 2008). The job market, potential income after graduation, and jobs working with people were influencing characteristics identified when students were selecting a college major (Stair et al., 2016).

College Efforts to Communicate with Students

Chapman (1981) reported students seeking post-secondary education are more likely to seek out college information. Web-based information for prospective students was determined to be one of the most useful sources of information (Rocca, 2013). This is supported by findings from Rayfield et al. (2013) which identified Internet sources are the most influential recruiting materials. Students rely heavily on personal sources for information regarding majors, rather than the internet, job shadowing, or career service tools (Beggs et al., 2008). Additionally, recruitment messages are more likely to resonate with students when these messages convey job stability and availability (Baker et al., 2013). According to Beggs et al., (2008), sources of information included the students' personal sources, such as family, friends, or teachers. Shrestha et al. (2011) reported family and friends, university and college website, and printed materials are the three main sources of information used by participants in the study. Findings from Rocca (2013) reported campus visits and faculty meetings with prospective students are characteristics leading to college selection. Herren et al. (2011) reported campus visits to be the most useful source of information. Beyl et al. (2016) reported the use of Ag

Ambassadors to advocate and recruit future students as a beneficial recruitment technique for the University of Tennessee College of Agricultural Sciences and Natural Resources.

Post-Secondary Agricultural Programs

Land Grant Universities

Post-secondary agricultural programs date back to the mid-1830s when Jonathan Baldwin Turner, a professor at Illinois College, began campaigning for “state sponsored universities to serve the ‘industrial classes’” (Martin, 2001, p. 377). Congressmen Justin Morrill and Senator Benjamin Wade co-authored a bill in Congress to allot federal funding for state universities that met the requests of Turner (Martin, 2001). President Lincoln signed the bill into law in 1862 after the revision was made to designate federal land, rather than federal funding (Martin, 2001). A legislative mandate, the Morrill Act of 1862, “gave states public lands provided the lands be sold or used for profit and the proceeds used to establish at least one college – hence, land grant colleges – which would teach agriculture and the mechanical arts” (National Research Council, 1995). A total of 17,430,000 acres of land were dedicated to building land grant universities (McDowell, 2003).

Prior to the Morrill Act of 1862, higher education in America was reserved for the wealthy, and mirrored the English elitist model (Martin, 2001). This act was expected to increase social and economic development in America because higher education would be available to all people in the nation (Martin, 2001). Land grant universities were established as the “people’s universities” (McDowell, 2003, p. 33). Land grant universities focused more on practical education instead of the philosophical and

theological concepts found at other universities, meaning land grant universities were created to reflect an unconventional higher education model (Martin, 2001).

The Morrill Act of 1862 gave the mandate to teach; classroom instruction was only a single component in the complexity of land grant universities though. An important educational opportunity was added to land grant universities in 1887. The Hatch Act of 1887 allowed for research to be conducted at land grant universities with the intent to develop agricultural innovations (National Research Council, 1995). After the addition of the Hatch Act, land grant universities began receiving federal support for research (Martin, 2001). Several additional educational opportunities were added to assist with the public's demands for land grant universities. As a result, the Smith-Lever Act of 1914 established the Cooperative Extension Service (McDowell, 2003). The Smith-Lever Act of 1914 created agricultural outreach programs and received federal government funding (McDowell, 2003). The Second Morrill Act of 1890 allocated appropriations to all states for use at land grant colleges (National Research Council, 1995). Additionally, the Second Morrill Act established land grant universities for African Americans (National Research Council, 1995).

The creation of land grant universities, in cooperation with research and extension entities, positively influenced American agriculture as evidenced by the tremendous growth and productivity within the industry (McDowell, 2003). However, the added growth changed the mission of land grant universities (Martin, 2001). As the education demand shifted, many of the original land grant universities became world-renowned universities, with more educational opportunities than just agriculture (Gilmore et al., 2006). Some modern day land grant universities have little connection to agriculture and

many students rarely come from agricultural backgrounds (National Research Council, 1995). Despite this shift of enrollment demographics at agricultural colleges, Martin (2001) emphasized the importance of keeping land grant universities relevant by adhering to the founding principles of education, research, and outreach.

Agricultural Degrees

Since the creation of land grant universities, agricultural degrees have molded and transformed to fit the needs of the industry. During the 1970s, the U. S. Office of Education transferred power to the USDA, making the USDA the governmental agency in charge of land grant universities (Gilmore et al., 2006). The Higher Education Challenge Grants in 1990 intended to revamp land grant universities by updating curriculum, improving instruction, focusing on student recruitment and retention, developing faculty, and increasing experiential learning opportunities for students (Gilmore et al., 2006). This change resulted in land grant universities offering more experiential learning opportunities, internships, research projects, and study abroad experiences (Gilmore et al., 2006). Undergraduate curriculum and student experiences were revisited to better prepare graduates for the workplace (National Research Council, 2009).

Programs of study have transformed since the beginning of land grant universities. In 2004, 29,802 agricultural and natural sciences degrees were awarded to baccalaureate graduates, as compared to the 18,572 degrees awarded in 1987 (Gilmore et al., 2006). Agricultural colleges house several scopes of study in areas such as food, agriculture, and natural resources disciplines (Gilmore et al., 2006). Agricultural programs encompass “business, technology, applied production, and research” to attract

all types of students (Beyl et al., 2016, p. 53). Gilmore et al. (2006) categorized agriculturally focused careers into four areas: management and business occupations; scientific and engineering occupations; agricultural and forestry production occupations; and education, communication, and governmental services occupations. Artistic and creative students might like landscape design, or those interested in working with people may pursue degrees in public horticulture or agricultural education (Beyl et al., 2016). Significant growth was identified in the natural resources conservation and research, animal science, and agricultural business and management degrees (Gilmore et al., 2006).

Advances in scientific technology have opened new doors for agricultural graduates. Employers seek graduates with highly developed skill sets, in addition to content knowledge (National Research Council, 2009). Therefore, the National Research Council (2009) recommended academic institutions adjust programs to meet the needs of employers.

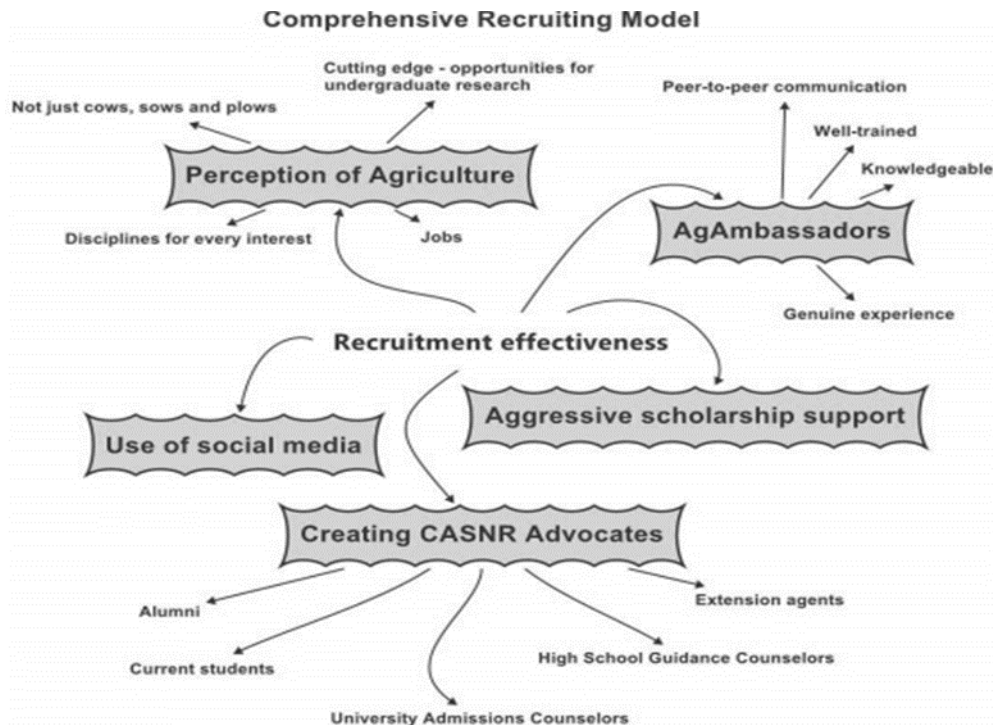
College Recruitment

Agricultural colleges typically house traditional agricultural degrees, in addition to natural resources and other food or fiber components, making it difficult to recruit a uniform group of students (Powell, 2017). Recent decline in enrollment at agricultural colleges (Wildman & Torres, 2001), emphasized the importance of the recruitment of students to all types of agricultural degrees. Powell (2017) recommended futuristic recruiting methods be utilized to target recruit both rural and urban students to agricultural colleges. Wildman and Torres (2001) stated, “Recruitment begins with identifying the various student populations and discovering what has the greatest influence on their decision to select an agricultural major” (p. 46). Beyl et al. (2016)

created a comprehensive recruiting model, illustrated in Figure 5, designed to assist in the recruitment of students to the College of Agricultural Sciences and Natural Resources at The University of Tennessee.

Figure 5

Comprehensive Recruiting Model (Beyl et al., 2016).



Methods of potential student recruitment vary at each institution. Meetings with faculty, attendance at various 4-H or FFA youth events, and distribution of recruiting materials were identified as positive recruiting techniques (Robertson et al., 2017). Students rated personal contact with a professor as a highly influential recruiting tool (Rocca & Washburn, 2005; Herren et al., 2011). Faculty interactions with prospective students are not always a formal conversation or meeting. Robertson et al. (2017) determined initial exposure to the university was through participation of an event held on campus. Rocca and Washburn (2005) suggested capitalizing on opportunities to

encourage interactions between faculty and students because of the positive impact felt by such interactions. Similarly, Baker et al. (2013) recommended high-touch channels as a recruitment method because students are highly influenced by their advisor while in college. Meeting a faculty member is one of the most beneficial ways to encourage a student to enroll (Robertson et al., 2017).

Herren et al. (2011) reported institutional characteristics and communication efforts influence the process of selecting a college. Baker et al. (2013) identified the importance of communication with potential students and recommended communication should entail accuracy and awareness of the institution's majors and programs of study. Rocca and Washburn (2005) recommended the recruitment of transfer students focus intensely on the variety of majors available and the recruitment of high school students emphasize the connections between college majors and corresponding career paths.

Additionally, recruitment materials should include full-color materials with pictures, post-graduation career statistics, and testimonial videos of employees in different career fields (Baker et al., 2013). Web-based recruiting materials should be kept up-to-date with quality and accurate information (Rocca & Washburn, 2005). Materials should also portray positive messages about the industry, specifically positive benefits of careers in the industry (Baker et al., 2013). Herren et al. (2011) reported degree information on a college's website an influential recruitment technique, as well as print publications for the university and the college of agriculture. Promotional items serve as a marketing and university branding strategy (Rayfield et al., 2013). However, Robertson et al. (2017) reported recruitment materials did not influence students to enroll, as these items had the least return of investment per unit (Robertson et al., 2017).

Supplementary recruiting techniques are the use of student ambassadors, attending college fairs, utilizing social media, calling accepted students, visiting two-year schools, and hosting youth events on campus (Espey & Boys, 2015). Additionally, collaboration with offices of admissions or agriculturally focused youth groups like 4-H or FFA can increase recruiting opportunities and success (Espey & Boys, 2015).

Selection of College Major

According to Beggs et al. (2008), college majors should be “capable of helping the student to achieve their educational and post-education goals” (p. 381). Students select their college major because of several factors. Espey and Boys (2015) predicted students selected a college major primarily on passion for the subject matter, followed by career opportunities. Herren et al. (2011) reported post-graduation career opportunities as the most influential factor for selection of an institution. Having prior experiences in agriculture was identified as the most influential source when selecting an agricultural major (Wildman & Torres, 2001). Rayfield et al. (2013) determined post-graduation income, job opportunities, work with animals or people, and working outdoors as reasons for students to pursue an agricultural degree. Additionally, students from less populated areas with past agricultural experiences were more likely to complete their degree in agriculture (Dyer et al., 2002). Rayfield et al. (2013) identified agricultural hobbies and personal work in agriculture as very influential college major characteristics. Wildman and Torres (2001) reported prior experiences in agriculture and involvement in 4-H or FFA directly affect a student’s choice of college major. Dyer et al. (2002) discovered students with prior participation in agricultural courses or membership in 4-H or FFA

were more likely to choose degrees in agriculture compared to a student without those experiences.

Agricultural colleges typically recruit students with an agricultural background (Rayfield et al., 2013). Therefore, recruitment efforts should focus on the recruitment of urban, underrepresented students to agricultural degrees and careers (Fraze et al., 2011a). In a study with urban students, it was determined urban students are more likely to choose an agricultural major if participation in agricultural workshops was a positive experience (Fraze et al., 2011a). Underrepresented minority students viewed agricultural careers more positively after participation in agricultural communications workshops (Fraze et al., 2011a).

Rayfield et al. (2013) determined previous agricultural science courses or participation in agricultural youth organizations did not influence students to enroll in agricultural institutions. However, the same study reported prior employment in an agriculture and life sciences related field proved highly influential in enrollment to an agricultural college (Rayfield et al., 2013).

Employment for Agricultural Graduates

Previous research reported potential job opportunities as an influencing factor in a student's college choice and major (Rayfield et al., 2013; Espey & Boys, 2015; Baker et al., 2013; Rocca & Washburn, 2005). Students are seeking careers with a steady income, a good work-life balance, and opportunities for personal and professional development (National Research Council, 2009). According to the Fernandez et al. (2020), recent graduates will find approximately 59,400 employment opportunities annually in the food, agriculture or renewable natural resource sectors.

Despite opportunities for employment, colleges of agriculture have difficulty meeting the demand to fill jobs in the agricultural industry with qualified graduates (Rocca, 2013). The National Research Council (2009) determined the number of college graduates with an agricultural degree remained relatively stable since 2000, partly because of the types of careers graduates are seeking. Recent graduates view some agricultural jobs as outdated, with low pay and few creative opportunities (National Research Council, 2009). The agricultural industry must find ways to appeal to younger generations. The USDA (n.d.) created pathway programs intended to spark career interest in agriculture, science, technology, math, environmental, management, and business for current students and recent graduates. Fernandez et al. (2020) predicted over the next five years, recent agricultural graduates would primarily fill jobs in management and business. Therefore, academic institutions must prepare students for changing careers in the agricultural industry by offering relevant experiential learning opportunities (National Research Council, 2009).

Summary

This review of literature sought to provide a comprehensive discussion of the theoretical framework influencing student college choice, including extrinsic and intrinsic motivators. The Social Cognitive Career Theory developed by Lent et al. (1994), served as a guide for this research study. The SCCT theory was chosen because of the attention to one's personal agency during the career selection process. Additionally, literature provided a history of post-secondary agricultural programs and the role these institutions serve in modern times. College recruitment techniques were evaluated to identify strengths and weaknesses in these methods to assist in answering this study's research

objectives. Agricultural majors and the selection of college major sought to provide insight for the reasons students choose an agricultural degree. Finally, agricultural employment opportunities were discussed to highlight the critical need to for skilled graduates in the agricultural industry.

CHAPTER III

METHODOLOGY

Overview

The methodology for this study followed a qualitative research design to understand the factors influencing non-traditional students to pursue agricultural degrees, despite having no prior involvement in the agricultural industry. Data was collected from students who met the researcher's qualifications for non-traditional students enrolled in the Department of Agricultural Sciences during the 2021 spring semester.

A literature review sought to establish the need for research regarding non-traditional agricultural students and the internal and external influencing characteristics persuading them to pursue degrees in agriculture. This chapter described the methods and procedures used to identify a sample, conduct one-on-one interviews, and analyze the data. The research design sought to facilitate the best understanding of the topic under review.

Purpose and Objectives

The purpose of this study was to identify the factors contributing to non-traditional agricultural students' enrollment in an agricultural degree program at West Texas A&M University. Findings from this research were presented to the Department of Agricultural Sciences at WTAMU to better serve the non-traditional agricultural student

population. As defined by the researchers, non-traditional students never took an agriculture, food, or natural resources class in high school, were not 4-H or FFA members, and were two generations removed from production agriculture. The following research objectives guided this study:

1. Establish social or environmental experiences influencing non-traditional students to major in agricultural degrees
2. Determine influential recruitment strategies utilized to recruit non-traditional students to pursue degrees in agriculture
3. Identify recruitment messages from current non-traditional students to assist in the recruitment of future non-traditional agricultural students

Research Design

This was a qualitative research study guided by phenomenological research theory. A qualitative research design was chosen because of the opportunity to use open-ended questions to invoke meaningful, rich, and illustrative responses (Farrelly, 2013).

Creswell (2013) defined qualitative research as:

Qualitative research begins with assumptions and the use of interpretive/theoretical frameworks that inform the study of research problems addressing the meaning individuals or groups ascribe to a social or human problem. To study this problem, qualitative researchers use an emerging qualitative approach to inquiry, the collection of data in a natural setting sensitive to the people and places under study, and data analysis that is both inductive and deductive and establishes patterns or themes. The final written report or presentation includes the voices of participants, the reflexivity of the researcher, a complex description and interpretation of the problem, and its contributions to the literature or a call for change. (p. 44)

Qualitative research is the process of researching a social or human issue (Creswell & Poth, 2017). Farrelly (2013) referred to qualitative research as being an

effective way to gain an understanding of a particular population, especially the beliefs, opinions or values of the population.

Additional framework exists for successful qualitative research, such as phenomenological research. Phenomenology is a type of qualitative research, and many of the characteristics of phenomenology correlate to this research study. Van Manen (2017) described phenomenological works as a reflective process because the researcher reflects on the means in which humans live their lives. Phenomenological research explores the curiosity of the researcher and attempts to phrase findings into a single concept or idea (Creswell & Poth, 2017). Phenomenological studies attempt to uncover a shared concept or phenomenon for many participants (Creswell & Poth, 2017). Students who met the requirements of non-traditional agricultural students set forth by the researchers, allowed the researchers to explore the phenomenon of this study with individuals from similar backgrounds. Creswell and Poth (2017) recommend using phenomenological research when attempting to understand several perspectives of a shared experience; the main objective of this study. From this new knowledge, WTAMU recruitment tactics can better address future non-traditional agricultural students.

Creswell and Poth (2017) suggested creating a description of the *what* and the *how* of the research study. The *what* is referred to as the textual description, and contains verbatim examples. The *how* is known as the structural description, in which the setting and context of the phenomenon occurred. Creswell and Poth's (2017) guiding phenomenological research questions were: "What have you experienced in terms of the phenomenon? What contexts or situations have typically influenced or affected your experiences of the phenomenon?" (p. 79). Setterbo et al. (2017) investigated the "who?"

“why?” and “how?” of non-traditional agricultural students. By using the conceptual framework from Setterbo et al. (2017), the following who, what, and how were developed for this study and utilized as follows:

1. Who are the non-traditional agricultural students at WTAMU?
2. Why did these students choose to major in an agricultural degree without any prior knowledge or experience in the agricultural industry?
3. How did these students ultimately decide on pursuing an agricultural degree at WTAMU?

Instrument

Ary et al. (2019) supported the use of humans as research instruments because humans allow researchers to capture complex experiences, while being adaptable and responding to the surrounding environment. According to Morse and Field (1995), qualitative research appreciates the unique perspectives humans are able to bring to the research because variation is expected. Peredaryenko and Krauss (2013) stated:

Only people construct and bring meaning into the world through their qualities of sensitivity, responsiveness and flexibility, making them the most appropriate instrument for inquiries aiming to arrive at understanding, meaning, the promotion of critical awareness, emancipation, and movement toward deconstruction or decolonization. (p. 1)

Humans have unique personal experiences and perspectives as created by their cultural, environmental and contextual influences (Thomas & Magilvy, 2011). In qualitative research, the researcher attempts to learn from the participants, rather than control them (Krefting, 1991).

Data Sources

Numerous data sources were utilized to develop a deeper understanding of post-secondary, non-traditional agricultural students. These sources included participants, one-on-one interviews, and reflective journal.

Participants

The target audience for this study were undergraduate, graduate or doctoral students enrolled in the Department of Agricultural Sciences at WTAMU in the 2021 spring semester. Participants possessed no agricultural knowledge or past experiences in agriculture before their enrollment in a post-secondary institution. The researchers define knowledge and experience as prior membership with agricultural youth organizations such as FFA and/or 4-H, or prior agricultural education courses. Additionally, participants were two generations removed from production agriculture, meaning the parents and grandparents of participants have never been dependent on production agriculture as a source of income. Students were from eight selected majors within the Department of Agricultural Sciences; however, not all of the majors were represented in the study:

- Agribusiness
- Agricultural business and economics
- Agricultural media and communication
- Agriculture (non-certification)
- Agricultural education
- Animal science
- Equine industry and business

- Plant, soil, and environmental sciences

WTAMU offers an animal science degree with a pre-veterinary medicine specialization. The pre-veterinary medicine option is not an additional degree in the Department of Agricultural Sciences; instead, it is a specialization for students with aspirations of becoming a veterinarian. Students majoring in animal science with a pre-veterinary medicine specialization were not included in the selected sample for this survey. The researchers omitted animal science pre-veterinary medicine specialization students because these students did not provide an accurate representation of the type of student the researchers hoped to find. These students have goals of becoming veterinarians. While some will choose to become livestock veterinarians, the researchers felt as though the one-dimensional career focus of these students does not encompass the potential agricultural careers the other degree options offer. Additionally, many of these students choose to become small animal veterinarians, distancing them from the agricultural industry. Students in other agricultural degrees have a wide range of potential careers within the agricultural industry. The researchers chose to focus on the degree options in which participants would most likely pursue a career in the agricultural industry.

In the fall of 2016, 32 students initially started as animal science pre-veterinary majors, and by the fall of 2017, only one student remained an animal science pre-veterinary student (T. Tarpley, personal communication, May 13, 2021). Of the 32 original pre-veterinary students, 14 students left WTAMU after 2016, and 17 students remained at WTAMU but changed academic majors (T. Tarpley, personal communication, May 13, 2021). Those students who switched degrees, switched to

degrees like psychology, athletic training, nursing, education, or biology (T. Tarpley, personal communication, May 13, 2021). Based on these results, researchers determined these students did not have an interest in agriculture like the selected participants.

Additionally, the researchers determined animal science pre-veterinary medicine students were more likely to come from an urban background. L. Baker (personal communication, June 11, 2021) estimated approximately 80% of freshman animal science pre-veterinary medicine did not have a direct connection to agriculture or did not grow up on a farm or ranch. Many students switched majors after their first year of college because of the rigorous coursework in the animal science pre-veterinary medicine degree. The Department of Agricultural Sciences has over 100 animal science pre-veterinary students each fall, but the persistence in this degree is low. In 2021, 20 students from the WTAMU Department of Agricultural Sciences were accepted into veterinary school (L. Baker, personal conversation, June 11, 2021). Low completion rates for animal science pre-veterinary medicine and an already well-represented non-traditional student population, influenced the researchers to omit animal science pre-veterinary medicine students from inclusion in this research study.

According to Leising et al. (1998), nearly 90% of Americans are two to three generations removed from production agriculture. Therefore, the researchers chose to add a qualifying characteristic to this study to ensure participants were at least two generations removed from production agriculture.

The participants for this study were identified using a purposeful sampling method. According to Coyne (1997), sampling in qualitative research is always considered purposeful sampling because participants are selected to fit the needs of the

study. Purposeful sampling in qualitative research aids in the “identification and selection of information-rich cases related to the phenomenon of interest” (Palinkas et al., 2013, p. 533). Participants were chosen based on the recommendation of Creswell and Poth (2017) meaning individuals in the study should be able to illustrate an understanding for the phenomenon at hand. Participants were chosen based on the following criteria:

- Over the age of 18
- Enrolled in an agricultural degree in the WTAMU Department of Agricultural Sciences during the spring 2021 semester
- Participant was never a member of an agriculturally-focused extracurricular activity – FFA and/or 4-H
- Participant had never taken an agricultural, food, or natural resources class prior to post-secondary enrollment
- Participant’s parents are/were not dependent on an income or salary accumulated from production agriculture or natural resources
- Participant’s grandparents are/were not dependent on an income or salary accumulated from production agriculture or natural resources

Researchers recruited participants for this study by visiting various agriculture classes in the Happy State Academic and Research Building at West Texas A&M University during the 2021 spring semester. Recruitment flyers were distributed to students in various agricultural classes (see Appendix A). Additionally, recruitment flyers were displayed on the informational screens and placed in popular seating areas within the Happy State Academic and Research Building. The researcher asked students to participate in the qualifying Qualtrics survey by using their cellular device to scan the QR

Code on the recruitment flyer. The participants agreeing to participate in the Qualtrics survey answered the qualifying questions set forth by the researchers (see Appendix B). The QR Code redirected participants to the Qualtrics survey to determine their eligibility for the study.

Interviewing is a primary research technique for qualitative studies but this method can be extremely time consuming; therefore, smaller sample sizes are selected (Farrelly, 2013). This research study identified 10 individuals for participation in one-on-one research interviews. Qualifying participants received an initial email from the researcher (see Appendix C). Included in the initial email was an attached information sheet for this study (see Appendix D). Participants were asked to read the information sheet prior to responding to the initial email and scheduling an interview time. An incentive of \$20 compensation for time and knowledge was presented to the qualifying participants before interviews were scheduled. A follow-up email was sent to participants one week after the initial email to encourage participation in research study (see Appendix E). In this follow-up email, qualifying participants were reminded of the \$20 compensation for participation. Additionally, after reviewing and agreeing to the information listed on the attached information sheet on the initial email, students were asked to sign up for an interview time.

One-on-One Interviews

One-on-one interviews are time consuming because they must be recorded, transcribed, and analyzed; therefore, small sample sizes are common (Farrelly, 2013). Individual interviews allow more scheduling flexibility and can illicit more detailed responses than a focus group approach (Bullock, 2016). Phenomenological interviewing

is an in-depth interview process focusing on human experiences (Marshall & Rossman, 2014). One-on-one interviews attempt to “uncover people’s attitudes, beliefs, opinions, experience, understanding, motives, feelings, or meanings” (Bullock, 2016, p. 330).

Phenomenological interviews are quite labor-intensive too, as the researcher must spend a significant amount of time in a reflexive state in order to fully understand the phenomenon (Marshall & Rossman, 2014). Individual interviews can be conducted in several manners, including face-to-face, or via technology (Creswell & Poth, 2017). For this study, the researchers chose to conduct face-to-face interviews in the Happy State Bank Academic and Research Building during the spring 2021 semester.

After participants read over the information sheet attached in the initial email, participants selected an interview time which worked best with their schedule. Individual interviews were conducted from March 29, 2021 to April 14, 2021. Following successful scheduling of the one-on-one interviews, the researcher prepared for each interview by writing in a reflective journal. When participants arrived, each participant signed a consent form prior to data collection (see Appendix F). Additionally, at the start of the process, each participant received a pseudonym that served as the identifying marker tied to each participant’s data. The researcher read the script for the participants prior to the start of the interview (see Appendix G). Once the script was read, data collection began. The researcher asked a series of questions adapted from an interview guide from a previous research study (Setterbo et al., 2017) (see Appendix H). This interview guide was designed to create a comfortable environment that encouraged open-ended responses from participants. A comfortable atmosphere is of the utmost concern when conducting research interviews (Creswell & Poth, 2017).

All 10 interviews were recorded on a recording device to ensure accuracy of responses. Individual interviews lasted an average of 17 minutes per interview. After the completion of the interview, participants were asked to fill out the one-on-one interview demographic questionnaire (see Appendix I); providing their contact information for researchers to complete member checking. Member checking, or participant validation, is a way for participants to check the accuracy and resonance of their experiences as explained in the researcher's findings (Birt et al., 2016). After completion of the demographic questionnaire, participants were thanked for their time and compensated \$20 for their insight to this phenomenon. All voice recordings from the interviews were immediately saved to a password-protected computer, to ensure confidentiality of the responses from the participants. Results of data analysis were distributed to the participants before the publication of the results to allow participants to complete member checking (see Appendix J). Five of the ten participants from the research study replied to the member checking email. These five participants confirmed the accuracy of their responses.

Reflective Journal

Qualitative research can be potentially controversial because of the disagreement in the acceptable amount of researcher bias allowed in the process (Ortilipp, 2015). Creswell and Poth (2017) believe researchers can increase reliability by taking detailed field notes. Ortilipp (2015) stated:

Keeping and using reflective research journals can make the messiness of the research process visible to the researcher who can then make it visible for those who read the research and thus avoid producing, reproducing, and circulating the discourse of the research as a neat and linear process. (p. 703)

Observations are an essential step in qualitative research, as observations are based on research purpose and questions (Creswell & Poth, 2017). Creswell and Poth (2017) determined observations to include, “physical setting, participants, activities, interactions, conversations, and your own behaviors during the observation” (p. 167).

The reflective journal was used to take notes before data collection began, during individual interviews, and immediately following interviews to add value to this qualitative research study. Researcher’s notes were used during data analysis to gain a deeper understanding of participant’s answers and perspectives.

Data Collection

Data was collected in the 2021 spring semester. The West Texas A&M University Institutional Review Board (IRB) approved the collection of data for this study in IRB proposal #2021.02.005 (see Appendix K). The research approval was sent to the WTAMU IRB for review on February 9, 2021 and received approval on March 11, 2021. Individual research interviews were conducted in March and April of 2021 in a conference room in the Happy State Bank Academic and Research Building.

When the participant arrived to the conference room at their scheduled time, they were welcomed, offered a bottle of water, and asked to pick a seat in the room. Participants were immediately given a consent form to sign before any data collection began. All participants were asked to sign the consent form prior to answering any research questions. The researcher then provided an overview and purpose of the study before reading the interview script to the participant. This overview included selecting a pseudonym for each participant for confidentiality in the study. After selecting a pseudonym, the interview script was read and data collection began. Creswell and Poth

(2017) recommend five to seven open-ended questions; however, this study had 14 open-ended questions. The researcher asked 14 open-ended questions to attempt to gain a complete understanding of the phenomenon being studied. If the researcher found it necessary to ask the participant follow-up questions to clarify answers, the researcher did so to gain a complete understanding of the participant's perspectives.

After interviews were completed, the participants completed a demographic questionnaire. Demographic questionnaires were a critical aspect of this study because the researchers were able to examine the questionnaires to determine if there was correlation between demographic characteristics and their identification as a non-traditional agricultural student. After the interviewing session was complete, each participant received \$20 compensation for their time.

Interviews were recorded on an audio recording device for transcription and data analysis. Research notes were taken simultaneously during the interview in the researcher's reflective journal. All voice recordings, notes, and transcriptions remained confidential and were stored on password-protected computers or in a locked filing cabinet. The consent forms and demographic questionnaires of each participant were also stored in a locked cabinet until the completion of data analysis, and then these items were destroyed. Audio recordings and interview transcriptions were also destroyed after data analysis.

Data Analysis

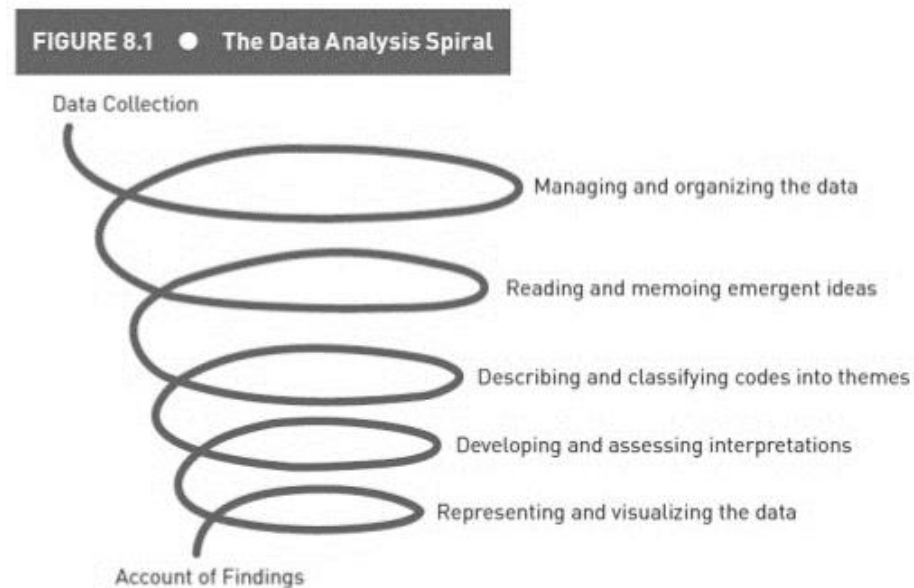
Phenomenology has one of the most detailed data analysis procedures in qualitative research (Creswell & Poth, 2017). Researchers can choose to hand-code or use

a computer during data analysis (Creswell & Poth, 2017). This study utilized computer programming for many aspects of data analysis.

Interview responses were transcribed verbatim from audio-recordings recorded during the one-on-one interviews using the transcription service provider, Rev®. After transcriptions were received, data analysis began. Researchers followed the Data Analysis Spiral model illustrated in Figure 6 (Creswell & Poth, 2017).

Figure 6

Data Analysis Spiral (Creswell & Poth, 2017).



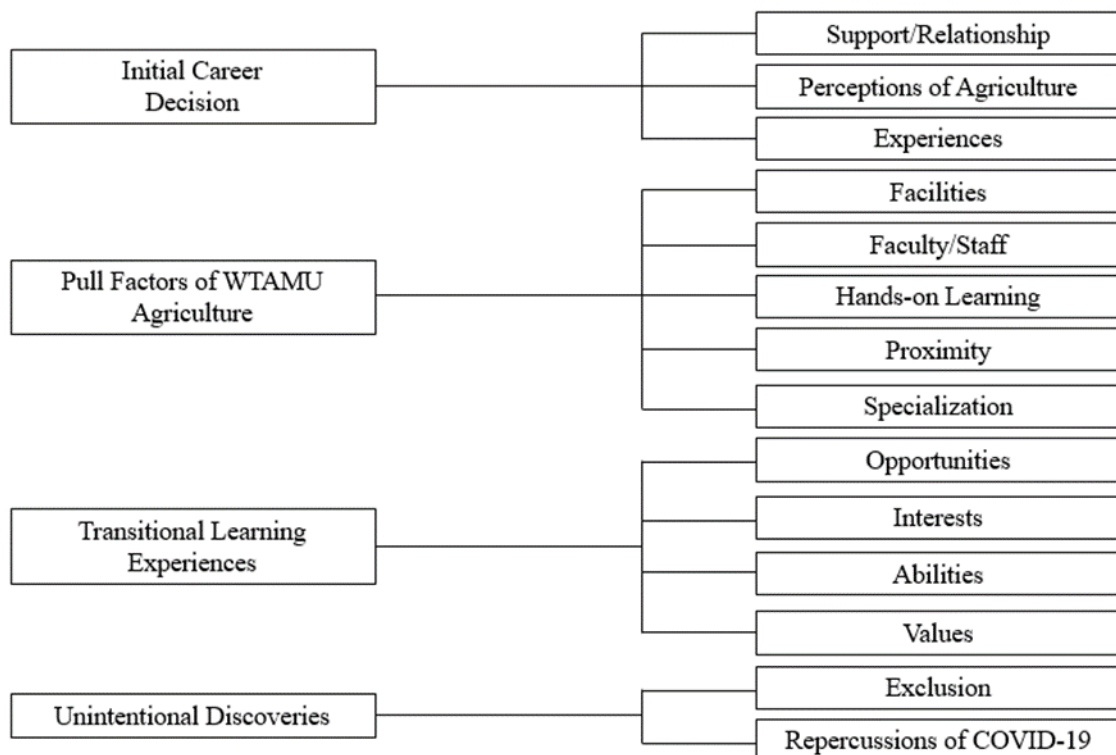
The Data Analysis Spiral suggests qualitative researchers will not follow a linear data analyzing process, rather a spiral-like methodology, circling back around during each step before moving onto the next step of the process (Creswell & Poth, 2017).

Transcriptions were read several times; once to confirm accuracy, once to prepare for coding, and several times during the coding process. During the second reading, researchers took notes of possible emergent themes in the transcriptions. Researchers also recorded field notes and reflected during this phase of data analysis (Creswell & Poth,

2017). Following another reading of the transcriptions, initial codes were named. Codes were then categorized into common themes. Qualitative research attempts to understand participants' viewpoints by identifying reoccurring themes or patterns in participants' responses (Ary et al., 2010). The researchers identified four general themes and 14 subthemes. Once these themes and subthemes had been finalized, a codebook was created in Microsoft Word® (see Appendix L). A codebook contains the list of codes and code definitions the researcher will use to identify relevant information from transcriptions (Mihas, 2019). An additional category added into a codebook are examples of codes from the data (Creswell & Poth, 2017). Code definitions, or descriptions, provide direction on the correct application of the created code (Mihas, 2019). Figure 7 illustrates the four general themes and 14 subthemes identified in this research study.

Figure 7

Themes and Subthemes Identified During Data Collection in One-on-one Interviews.



Qualitative data is analyzed the same, regardless of hand coding or computerized coding (Creswell & Poth, 2017). For this study, the researchers chose to use a computerized programing system. The researchers assigned codes to the interview transcripts through utilization of ATLAS.ti® (version 9.0.24), a computer-coding program. ATLAS.ti® (version 9.0.24) was the chosen computer-coding program because the researchers coded transcripts separately and collaborated at the end to discuss findings (Creswell & Poth, 2017). Audio recordings, interview transcripts, and the codebook were uploaded to ATLAS.ti® (version 9.0.24) to finish the coding process. Researchers listened to interviews while reading transcriptions to assign codes to the research.

Trustworthiness

Qualitative and quantitative research differ greatly; therefore, comparing the two types of research based on the same criteria of worthiness and merit is unfair (Krefting, 1991). Despite the differences in qualitative and quantitative research, both require guiding models to confirm qualitative rigor, or quantitative reliability (Thomas & Magilvy, 2011). Reliability for this research study was established through intercoder agreement. Intercoder agreement refers to the use of multiple coders when analyzing transcripts (Creswell & Poth, 2017). During this process, coders establish a common platform for coding and develop a preliminary code list, share the codebook among coders, apply codebook to transcripts and compare with multiple coders, assess and report the intercoder agreement, and revise and finalize the codebook for coding (Creswell & Poth, 2017). For this research study, two researchers completed an intercoder agreement before data analysis began. The researchers coded the same

transcript once and compared results before coding the entirety of the transcripts. After a consensus was reached, the researchers divided and coded the transcripts.

Additionally, qualitative studies are designed to develop a theory instead of generalizing results (Bullock, 2016). In qualitative research, the models used to confirm rigor are compiled of different terms to determine validity (Creswell & Poth, 2017). Lincoln and Guba (1985) came up with the terms credibility (truth-value), transferability (applicability), dependability (consistency), and confirmability (neutrality) as means of evaluating rigor. The researchers acknowledged each of these components to ensure that qualitative research study is a trustworthy research source.

Credibility

Credibility is determined after thorough evaluation of all forms of data, specifically individual transcripts (Thomas & Magilvy, 2011). The researchers utilized triangulation, a strategy to enhance research credibility (Krefting, 1991). Triangulation of data is a technique used to establish trustworthiness and credibility, as it is the combination of evidence from different sources to reach consensus (Creswell & Poth, 2017). The same authors state, “qualitative researchers locate evidence to document a code or theme in different source of data, they are triangulating information and providing validity to their findings” (Creswell & Poth, 2017, p. 260). Tobin and Begley (2004) believe researchers are not using triangulation to confirm research, but a way to illustrate a deeper, more complete study.

This research study used triangulation, memoing, and a reflective journal to increase credibility. During the triangulation process, the researchers utilized several data sources to determine credibility. One-on-one interview transcripts, the researcher’s

reflective journal, and an extensive literature review were the three sources used during the triangulation process.

Credibility provides an opportunity for others to recognize participants' experiences as detailed in the study (Thomas & Magilvy, 2011). Memoing while reading transcripts increases credibility according to Creswell and Poth (2017), as it tracks the development of ideas occurring to the researcher. Memoing allowed the researcher to track ideas and thoughts while reading interview transcripts. Additionally, length of time spent with participants, interview strategies, and transcription of participants responses utilized in the final study are means to establish credibility of qualitative studies (Thomas & Magilvy, 2011).

Transferability

Thomas and Magilvy (2011) describe transferability as “the ability to transfer research findings or methods from one group to another” (p. 153). Creswell and Poth (2017) established transferability to include thick description, meaning researchers provide details when referencing the case or the themes of the research study. Detailed descriptions about the research population, including demographic information and geographic boundaries of the study, are ways to better contextualize transferability (Thomas & Magilvy, 2011). Although findings from qualitative research are not generalizable, results should be transferable, as it is the responsibility of the researcher to provide detailed descriptions of the sample and setting (Farrelly, 2013). Transferable results are not replicable results because qualitative research is not considered repeatable research (Kopala & Suzuki, 1999).

To determine transferability for this research study, the researcher provided detailed descriptions of the entire research process. The researcher described the reasoning and qualifications for participant selection. Additionally, the steps before, during, and after research interviews are discussed at length to provide details for future research. While qualitative studies are not intended to be repeatable, the detailed descriptions from this study increase transferability.

Dependability

Qualitative research terminology differs from quantitative research, as qualitative researchers use the term dependability and quantitative researchers use the term reliability (Tobin & Begley, 2004). Dependability refers to the ability of others researchers being able to identify the decisions the researchers made during the study (Thomas & Magilvy, 2011). Peer reviewed and audited studies ensure dependable research results (Clonts, 1992). Auditing is a method to increase dependability. Thomas and Magilvy (2011) outline specific criteria for auditing research, intended to increase dependability:

(a) describing the specific purpose of the study; (b) discussing how and why the participants were selected for the study; (c) describing how the data were collected and how long the data collection lasted; (d) explaining how the data were reduced or transformed for analysis; (e) discussing the interpretation and presentation of the research findings; and (f) communicating the specific techniques used to determine the credibility of the data. (p. 153)

In order to increase dependability of this research study, the researchers provided thorough descriptions during each stage of the process. Detailed descriptions provided a way for readers to gain an understanding of the reasons why the researchers made the decisions they did during the study. Dependability can be detected in this study through

the use of detail for the purpose of the study, selection of participants, data collection, data analysis, and conclusions.

Confirmability

Confirmability is established after credibility, transferability, and dependability have been determined (Thomas & Magilvy, 2011). Confirmability is largely dependent on the researcher's self-awareness and reflexivity during the study (Thomas & Magilvy, 2011). Researcher's preconceptions about the study were recorded in a reflective journal before interviews started, while conducting interviews, and immediately after each research interview. Special attention was given to any feelings of bias during the interview process. If the researcher felt any feelings of bias, these feelings were noted in the reflective journal. Additionally, a summary of the researcher's bias is included to illustrate self-awareness and reflexivity during the study.

Member checking is another crucial component in determining confirmability. Member checking incorporates the participants once more by asking them to confirm the accuracy of their accounts (Creswell & Poth, 2017). Member checking at the end of the process confirmed the results and findings from this research study were consistent with the participant's experiences.

Researcher Bias

Phenomenological research focuses on participants' perspectives, but also takes into account investigator's firsthand experiences (Ary et al., 2010). For this study, the research played the role of "observer as participant" (Ary et al., 2010, p. 421) meaning, "researchers [interact] with subjects to establish rapport but do not become involved in the behaviors or activities of the group" (p. 421). The observer as participant is easily

identifiable as the researcher by the participants in the study (Ary et al., 2019). This section in the methodology acknowledges the experiences of the researcher that may have influenced the researcher's perspectives. Peredaryenko and Krauss (2013) stated, "Nevertheless, the researcher, consciously or unconsciously, brings to the research setting his or her own predispositions, assumptions and beliefs, which may align or diverge from those of his or her study participants" (p. 1). Observer bias can influence a study because of the researcher's personal feelings or values may interfere with the observation or the interpretation of the observation. In order for the researchers and readers to understand the bias of this study, the researcher summarized past experiences potentially influencing researcher's perspectives:

I spent the first twelve years of my life in a growing small town southeast of Denver, Colorado. I have always had some sort of tie to agriculture. When I was really young, my dad and grandpa had a small dairy operation. After selling all of their dairy cows in 2001, they started raising Lowline Angus cattle. Our family always owned horses too. I developed a love for horses and rodeo at a very young age and followed my mom's example, becoming a barrel racer.

In 2009, my parents, brother, and I moved to a small, rural town on the I-70 corridor in Colorado. My dad got a job as a ranch hand on a large farm and ranch. I got to work alongside my dad, gathering and working cattle, cutting hay, or riding in the combine. The years we spent on this large agricultural operation would confirm my passion for agriculture. During this time, I also joined the National FFA Organization as a high school freshman. My family and I moved again after my freshman year to a rural community in Northeastern Colorado. Since my dad was no longer a ranch hand, my

main tie to agriculture was rodeo. Despite all the change I had experienced in my childhood, rodeo remained my consistent tie to agriculture.

After our second move, I became extremely involved in FFA, competing on several teams, holding chapter offices, and volunteering at every FFA function possible. In addition to my FFA activities, I continued to barrel race, play basketball and volleyball, show steers in 4-H and work part-time at the local grocery store. During my senior year of high school, my agricultural education teacher encouraged me to run for a Colorado FFA State Officer position. Unsure of my path after high school, I willingly agreed to her request. I was elected as an officer and during my year of service, I discovered I had a passion for agricultural education. I genuinely loved developing relationships with students and advocating for the agricultural industry. I particularly enjoyed working with the out-of-place students; the students who were quiet and reserved, and desperately needed someone to see them. The non-traditional agricultural student is the type of student I found myself encouraging and mentoring.

I stumbled upon West Texas A&M University during my time as a state FFA officer. After enrolling at WTAMU, I took advantage of many agricultural education opportunities by joining Collegiate FFA, volunteering for various service-learning projects, and immersing myself in the culture at WT. I thoroughly enjoyed my classes and all the experiences that were preparing me to become an agricultural education teacher.

I never felt out of place in my classes or in the Department of Agricultural Sciences, as my agricultural background proved to be helpful in classes and relationship building. Although I am more of a traditional agricultural student than the participants in

this study are, I have a desire to learn why students without ties to agriculture would take a leap of faith and choose a major despite having no prior experiences or involvement in the industry. Non-traditional agricultural students are the types of students I developed friendships with while I was a state FFA officer. I love agriculture, mainly because I was raised around it and I am familiar with the people, the culture, and the traditions. The thought of pursuing a career in a field I had no connection to is terrifying to me. Therefore, understanding why students with no connections to agriculture choose to become agriculturists is a phenomenon I find intriguing.

During my time in graduate school, I have served as the Department of Agricultural Sciences' Recruitment Coordinator. It is my job to research and implement the best recruitment strategies possible for recruitment of all types of students. The WTAMU Department of Agricultural Sciences is still a very traditional agricultural department. A large majority of our students have some connection to agriculture. Identifying the non-traditional agricultural students at WTAMU was a challenge, but the recruitment strategies utilized on these students will impact future recruitment efforts. As our world population continues to grow and generations become further removed from agricultural ties, recruitment strategies will need to change in order to attract the non-traditional agricultural student. I want to see the agricultural industry meet the demands of the future, so by determining recruitment strategies for non-traditional students now, the agricultural industry can stay one-step ahead of the next problem.

Summary

A qualitative phenomenology approach served as a guide for this research study. The phenomenon studied included the external and internal influences persuading non-

traditional agricultural students to pursue post-secondary degrees in agriculture. Participants for this study were purposely selected to meet the pre-determined qualifications for a non-traditional agricultural student. The researcher conducted one-on-one interviews with 10 qualifying participants. Interviews were audio recorded on a recording device, and later transcribed using the transcription service, Rev®. Transcriptions were analyzed by-hand and through the computerized coding system, ATLAS.ti® (version 9.0.24). Codes were identified and common themes were reported during the data analysis portion of this study. Results are summarized in Chapter IV of this thesis.

CHAPTER IV

FINDINGS

Purpose and Objectives

The purpose of this study was to identify factors contributing to non-traditional agricultural students' enrollment in an agricultural degree at West Texas A&M University. With findings from this research, the recruitment efforts in the Department of Agricultural Sciences at WTAMU can be revisited to better serve the non-traditional agricultural student population. As defined by the researchers, non-traditional students never took an agriculture, food, or natural resources class in high school, were not 4-H or FFA members, and were two generations removed from production agriculture. The following research objectives guided this study:

1. Establish social or environmental experiences influencing non-traditional students to major in agricultural degrees
2. Determine influential recruitment strategies utilized to recruit non-traditional students to pursue degrees in agriculture
3. Identify recruitment messages from current non-traditional students to assist in the recruitment of future non-traditional agricultural students

Participants

This study identified 10 qualifying participants for this study during the spring 2021 semester. One-on-one interviews were conducted in March and April of 2021. Participants represented five academic majors at WTAMU. Students majoring in animal science with a pre-veterinary medicine specialization were disqualified from this study, as the researchers felt they did not represent the intentions of the study. Each participant had their own unique background and experiences, yet shared common non-traditional agricultural student characteristics. Individuals met the pre-determined qualifications set forth by the researchers. Efforts were made by the researchers to keep participants anonymous, specifically by using pseudonyms to protect participants' identities; however, participants' descriptions may be identifying factors.

A brief description of each participant is included below:

Octavia

Octavia is a white female in her late teens. Octavia is from an urban Texas community. She classified as a freshman, which made the spring of 2021 her second semester of college. Octavia started at WTAMU in the Department of Agricultural Sciences as an equine industry and business major. Her interest in agriculture started when she was in the sixth grade because of her desire to take horseback riding lessons. She initially wanted to become a geologist or chiropractor, but quickly decided on an equine degree after discovering WTAMU. Octavia felt disconnected and out of place because of her non-traditional agricultural background.

Suzy

Suzy is a white, out-of-state student in her late teens. She classified as a senior agribusiness major. Suzy started at WTAMU as a Pre-Medicine major, intending to become a dentist. Suzy switched majors the summer after her first year. Suzy's exposure to a ranch in the Texas Panhandle is the reason she became interested in agriculture. She enjoyed helping him on his ranch and had a desire to stay involved in agriculture after college. Her goal is to work for an agricultural credit and lending entity, as well as advocate for agriculture in her urban hometown.

Amanda

Amanda is an urban, white female from Texas in her early 20s. Her major is agricultural business and economics at WTAMU. Amanda was in band and participated in drill team activities. Her interest in agriculture stemmed from the summers she spent horseback riding and volunteering at an equine rehabilitation center. While applying for colleges, Amanda selected WTAMU because it was a sister school to Texas A&M University, and WTAMU had an equine industry and business degree. WTAMU is far from her hometown, so she chose to attend WTAMU with intentions of transferring to Texas A&M after her first year. Ultimately, Amanda chose to stay at WTAMU because she loved the university and the agricultural opportunities in the Texas Panhandle. Her goal is to become an equine ophthalmologist.

Casey

Casey is a white female in her early 20s from a rural out-of-state community. She started her post-secondary education at a community college on the east coast studying photography. Casey's parents inspired her love for horses, as they were excellent

equestrians. She decided to pursue an equine industry and business degree a year and a half after graduating from high school. Casey discovered WTAMU because the university sent her a postcard as she was researching equine degree options. In addition to this occurrence, Casey wanted to attend a university offering an equine degree and an equestrian team. While in college, Casey worked in the dietary section in a hospital.

Anna

Anna is from an urban out-of-state community. She is a white female in her early 20s and her major is plant, soil, and environmental Sciences at WTAMU. Anna started at WTAMU as an undecided major, but quickly changed to plant, soil, and environmental Sciences after taking a horticulture class her first year. Prior to WTAMU, Anna wanted to become an ecologist because of her love for the outdoors. Her entire career path changed after her horticulture class because Anna now has a goal to become a horticulturist at a botanical garden or for the Disney Flower Festival. She chose to stay at WTAMU because of the facilities and a professor. Before she was involved in agriculture, Anna was unaware of the employment opportunities within the agricultural industry.

Matthew

Matthew is a white male in his late teens from an urban Texas community. He is a sophomore agribusiness major at WTAMU. Matthew grew up playing sports and staying active outside. Matthew's love for the outdoors and working with his hands inspired him to pursue a degree in agriculture. Matthew started college at different university in Texas, but transferred to WTAMU after his first semester of college. During the COVID-19 pandemic, many universities had strictly online classes; however, in the Department of Agricultural Sciences at WTAMU many classes were offered in-person. Matthew

transferred to WTAMU to attend in-person classes. He also loved the agricultural facilities at WTAMU. Matthew said they looked like a place where he could get his hands dirty when learning. His long-term goal is to own his own cattle operation.

Rosa

Rosa is a Hispanic female in her early 20s from an urban Texas community. Many of Rosa's family members have careers in the medical field, but Rosa wanted to pursue a degree in agricultural business and economics. Rosa took a horticulture class at her community college, which aided in her decision to pursue an agricultural degree. Rosa transferred to WTAMU because it is close to home and her family. She shared a deep connection with her family and wanted to stay close to them. While at WTAMU, Rosa developed an appreciation for the faculty in the Department of Agricultural Sciences because they were helpful. Rosa was unaware of the opportunities in agriculture. Her goal is to work for the Texas Cattle Feeders Association.

Ruth

Ruth is a native Texan in her early 40s. She is a white female from an urban community. Ruth developed a love for horses and horseback riding at an early age. She started her post-secondary education after having children. Ruth started at WTAMU in fall 2019 as a math education major. However, she switched to equine industry and business during the COVID-19 pandemic because the Department of Agricultural Sciences' adaptability and the people. Her long-term goal is to make a living working with horses, helping others, and developing the next generation of horse enthusiasts.

Katie

Katie is a white female in her early 20s from an urban out-of-state town. Katie's interest in agriculture was a result of her love for horses. She whole-heartedly pursued her love for the equine industry after going on a trail ride with her parents. She had plans of becoming a dentist before her interest in horses. Katie spent many hours volunteering at different barns or calling horse trainers to hear about their experiences. Her support from her family was helpful during her decision to attend WTAMU. Katie chose to attend WTAMU because of the opportunity to pursue equine industry and business degree and join the equestrian team. Katie loved the hands-on learning opportunities at WTAMU, as well as the professors.

Sally

Sally is a white female in her late 20s from an urban Texas community. Sally started at WTAMU as a history major intending to become a history teacher, and is now in the Ph. D. of Agriculture program at WTAMU. She earned a Bachelor of Science degree in equine industry and business at WTAMU. She joined the equestrian team her first year of college. Sally switched majors to equine industry and business after her first year of college because she already had many friends in the Department of Agricultural Sciences at WTAMU. Sally's long-term goal is to become a professor of equine science.

Research Objective One

Research objective one sought to determine the social or environmental factors influencing non-traditional agricultural students to pursue an agricultural degree. The analysis of data for this objective determined the transformative factors resulting in participants' seeking an agricultural degree.

Initial Career Decision

This first theme described the distinct characteristics each non-traditional agricultural student possessed that led them to an agricultural degree. The identified subthemes of initial career decision are support/relationship, perceptions of agriculture, and experience.

Support/Relationship

Some participants identified supportive family and friends as an influential factor when pursuing an agricultural degree. Researchers coded support/relationship 17 times in the 10 interview transcripts. For some, parents were more supportive than friends. Others felt as though friends were more encouraging than their parents.

For example, Katie's parents were supportive of her decision to pursue an agricultural degree. She said, "My family very much was, they are my number one supporter. They were like, 'Do whatever will make you happy and successful.' And they're 100% behind me" (Interview 9, p. 4). Sally had supportive parents too; she recalled a conversation she had with her mother:

I remember calling my mom and describing to her all the opportunities that I could do if I went into the [agricultural] department, and she was like, "You know what, go for it. If that's what you want to do, absolutely go do it." And so, I just switched my major to equine and agricultural business, and the rest is history. (Interview 10, p. 4)

Others, like Amanda, had supportive friends, "My friends are always supportive, and so is my family. They definitely like bragging about it and things like that, just because it is unique, like I said, where we're from" (Interview 3, p. 4).

Perceptions of Agriculture

Participating students for this research study possessed little knowledge about the agricultural industry prior to enrollment in an agricultural degree. Researchers identified

participants' preconceived perceptions of the agricultural industry 10 times during coding. Anna said she viewed agriculture in a way that is "very stereotypical of what everyone thinks it is, in like, fields and people who work with cattle. They either manage plants or they work with an animal" (Interview 5, p. 1).

Several of the participants shared similar views of agriculture. Rosa remembered her preconceived notions about agriculture before switching majors, "Before I got involved, I felt it was just the cattle industry and just horses and taking care of animals. Yeah. I didn't know about the whole crop and the process of production, the logistics behind of it, for sure. So it's two different views now" (Interview 7, p. 2).

Experience

The researchers identified 21 instances of past experiences that influenced participant's enrollment in an agricultural degree. Many of these past experiences dealt with the equine industry.

In Interview 4, Casey stated, "I was involved in horseback riding. I started when I was like eight and then that was just something I continued my entire life" (Interview 4, p. 1). An experience Katie had with horses proved to be a significant life-altering event, "So I remember specifically that my first trail ride with horses was where I really found my love for agriculture, specifically riding horses" (Interview 9, p. 1).

Other students had prior experiences in fields other than the equine industry. Rosa spent some time in a greenhouse at her community college before transferring to WTAMU. Rosa said:

We weren't necessarily the ones that planted the seeds and stuff like that, but we were more like, helped them with the upkeep of the plants. It wasn't our own projects. It wasn't stuff like that. We didn't get to be hands-on. (Interview 7, p. 2)

Research Objective Two

Research objective two sought to uncover the influential recruitment strategies non-traditional agricultural students experienced before choosing an agricultural degree at WTAMU.

Pull Factors of WTAMU Agriculture

Ten participants were identified as non-traditional agricultural students during the 2021 spring semester at WTAMU. Participants selected WTAMU Department of Agricultural Sciences because of a variety of recruitment strategies. These commonalities were grouped into a common theme – pull factors of WTAMU agriculture. Subthemes were also detected during data analysis. These subthemes include facilities, faculty/staff, hands-on learning, proximity, and specialization.

Facilities

The Department of Agricultural Sciences at WTAMU built a brand new, \$50 million agricultural complex in 2018. This state-of-the-art facility has a 14,000 square foot beef processing facility on the first floor of the complex. Additional facilities include a 10,000 square foot pavilion used as a banquet hall or classroom, two completely washable classrooms designed to exhibit livestock or livestock carcasses, a large educational arena, teaching laboratories and research labs, a fresh meat retail store, and numerous classrooms. Many of the participants were drawn to WTAMU because of the facility.

Anna's Introduction to Plant Science class was held in the Piehl-Schaeffer Pavilion, "Last semester I got put in the pavilion for plant science and it was like, 'never imagined I'd be taking a class in a barn'" (Interview 5, p. 3).

Matthew transferred to WTAMU after his one semester at a different Texas university. He remembered seeing our facilities and thinking:

If you looked at [their] facilities and you looked at ours, ours definitely looked like the country kid's college, in that I was going to be getting my hands dirty (...) and seeing just the rodeo arena and the corrals out back kind of really showed me that I was going to get my hands dirty. (Interview 6, p. 5)

Matthew later added, "Yeah, it definitely looks like an [agriculture] building. There's really no other way to describe this place" (Interview 6, p. 5). The meat lab was a deciding factor for Rosa, "I saw the meat lab and I fell in love with it. So, that's when I knew I wanted to come to WTAMU" (Interview 7, p. 5).

Faculty/Staff

Researchers identified positive interactions with faculty and staff 15 times when analyzing transcripts. Ruth switched from math education at WTAMU to equine industry and business at WTAMU, partly because of the faculty, "It feels like definitely more of a comradery, more of a support system than the math department" (Interview 8, p. 6). Katie appreciated faculty too; she said, "I felt like the faculty was very dedicated to my success and my learning, and that they were going to help in any way to make sure I accomplish that" (Interview 9, p. 7). Suzy was amazed with the passion her professors had for their chosen career:

I've never seen professors that are so passionate about what they teach until I got into the agricultural building. I've never seen it before. Usually teachers are just doing their job. But here you can actually tell our professors are so passionate about what they preach. And I love that. (Interview 2, p. 5)

Hands-on Learning

Agriculture is typically a hands-on career choice. Several of our participants identified hands-on learning opportunities as an influencing factor when deciding to

pursue an agricultural degree. Matthew's reasoning for pursuing agriculture was primarily a drive for hands-on learning:

I told my parents I would be horrified stuck behind a desk the rest of my life. And so, I really loved the dress, the hard work, the long hours, being outside. That was just a big deal to me and I didn't have to be stuck behind a desk the rest of my life. (Interview 6, p. 1)

Hands-on learning is a large component of WTAMU Department of Agricultural Sciences. Students enrolled in the fall Introduction to Animal Science class, have the opportunity to compete in WTAMU's annual Little International Livestock Show. Katie fondly remembered her experience with the Little International Livestock Show:

Oh, we have this Little [International] competition where you could go learn how to show cows. I was like, "Oh my gosh, this is amazing." And so just not... I wanted to learn yes, horses, but having hands-on experience in all aspects of agriculture was really cool to me. And that really make me like WTAMU, and it seemed like no other school really offered that. And so I really liked that part of WTAMU. (Interview 9, p. 7)

Proximity

Four of the research study participants were enrolled in a different degree plan at WTAMU before switching to an agricultural degree. These four individuals changed their major to an agricultural degree at WTAMU because of their proximity to the university. Many of the participants did not want to transfer schools for an agricultural degree; thus, they chose to stay at WTAMU. Anna said:

I was already attending WTAMU when I decided to be an agricultural major, and I didn't want to transfer. As well as I already really liked WTAMU itself, so I figured, 'It's an agricultural school. What can possibly be bad about the [agricultural program?]' (Interview 5, p. 4)

Others reasoning was as simple as, "I was already a student here" (Interview 2, p.

4).

Specialization

Some of our participants chose to attend WTAMU because the Department of Agricultural Sciences is one of few universities offering specific degree plans or competitive teams. Katie chose WTAMU because of the equine industry and business degree and the equestrian team:

I knew I wanted a degree in equine, either science or business or something equine related, but not the pre-veterinary route. And so that very much limited the amount of schools that I could go to just with the degree. And I also knew I wanted to be a part of an equestrian team. So that narrowed down my choices even more with universities that had the degree and had the equestrian team. I think there were only four colleges in the whole country that offered both of those. (Interview 9, p. 6)

Casey's situation was similar to Katie's because she chose WTAMU for the equine industry and business degree and the equestrian team. Casey said, "It was the program. It was the equine program. I would've gone to whatever department the equine program was in" (Interview 4, p. 6).

Research Objective Three

The third research objective sought to determine future recruitment strategies to recommend to the Department of Agricultural Sciences at WTAMU. These recommendations are based on participants' transitional learning experiences, an identified theme during data analysis.

Transitional Learning Experiences

The transitional learning experiences theme addressed research objective three. Subthemes identified during data analysis are opportunities, interests, abilities, and values. The researchers felt as though these subthemes were best suited for future recruitment recommendations.

Opportunities

A number of participants were unaware of the employment opportunities in agriculture. This subtheme was identified 13 times in the transcripts. Anna said:

I guess someone should have told me that there's more to it than just plants or an animal or showing them. There's so many branches to it, especially with being a plant, soil, and environmental scientist, you can do so many things with one degree. (Interview 5, p. 4)

Matthew was amazed agricultural degrees can be used in industries seemingly unrelated to agriculture. Prior to starting an agricultural degree, Matthew wished he would have known:

The amount of things I can do with an agricultural degree. The other day we went to the golf course and I didn't realize I could work on a golf course with an agricultural degree just because it's still dirt and grass and trees. I didn't realize I could do that. So the amount of things you can do with a degree from this college especially, is insane. (Interview 6, p. 6)

Interests

An interest in an agricultural degree was selected as a subtheme 18 times. This subtheme was detected when students showing interest in agriculture during past experiences encouraged the pursuit of an agricultural degree. Ruth recalled fond childhood memories at the county fair:

I always loved going to the fair when I was little and watching him milk the cows, that was like my favorite things. And then, going and looking at all the 4-H animals. I could do that, rather than ride the rides. (Interview 8, p. 2)

Many participants had an interest in horses before choosing an agricultural degree. Katie expressed this during her interview by saying:

I think from a very early age I was always interested in horses. And so my parents finally caved and we went on a trail ride, I think on a vacation. I was just [thinking], "Their mistake because now I'm hooked." And so that was my defining moment where I was like, "All right, this is what I want to do. Forget being a dentist, I want to ride horses." (Interview 9, p. 2)

At an early age, Octavia wanted to get involved in the equine industry, “I wanted to ride a horse. And so my parents found someone nearby about 20 minutes away and got me horse lessons” (Interview 1, p. 1).

Abilities

Any preexisting abilities that made the transition to an agricultural degree easier for a non-traditional agricultural student were categorized in this subtheme. This section was the least frequented subtheme; however, the researchers identified three instances in which participants possessed unique abilities. Ruth felt her academic strengths made her more capable in the transition to agriculture. Ruth stated, “I’ve always had a passion for science and math. I think that helps in [agriculture] because it’s science-based” (Interview 8, p. 4). Katie had a different experience in which she was able to identify past skills:

I would say that I’m a very determined and ambitious person. And so, like I said, I just started calling people and talking to trainers and being like, “How can I make this happen?” I don’t know. I’ve never worked with horses before. I’ve never been in the industry. I don’t know what it’s like. And so my dedication and persistence in finding that information and finding a route and trying to figure out where I’m going and how to make this happen, just helped me overcome that challenge. (Interview 9, p. 5)

Values

Participants in this study identified values and morals as having an impact on their decision to select an agricultural degree; the researchers recorded seven instances of this phenomenon. In the research interview with Suzy she said, “I thought it was a really honest career path; everyone that I knew before I was an [agriculture] major, that was an [agricultural] major, was always super nice” (Interview 2, p. 1). She later added she wished someone had told her, “[Agriculture] is probably the most honest career path that

anyone could ever have” (Interview 2, p. 5). Amanda appreciated the values in agriculture for a different reason:

I was raised religious, so obviously Sunday’s are for church, but here it’s a much bigger thing since it’s the Bible belt, and I know especially in agriculture a lot of things are based by going to church on Sundays. (Interview 3, p. 5)

Supplementary Findings

During data analysis, researchers coded two additional subthemes. While these two subthemes did not fit in the other major themes, the researchers felt as though their significance was too influential to be omitted from this study. The two additional subthemes supplement the determining factors contributing to participants’ decisions to pursue agricultural degrees. Feelings of exclusion and repercussions of COVID-19 were the two significant subthemes.

Unintentional Discoveries

The researchers identified an overarching theme for the two additional subthemes discovered during data analysis. While these subthemes proved to be influential factors, they were unintended discoveries. Thus, the theme for feelings of exclusion and repercussions of COVID-19 were categorized in the theme unintentional discoveries.

Exclusion

Many of the participants felt excluded, particularly in classroom settings and among peers. Feelings of exclusion coded 23 times throughout the 10 interview transcripts. Amanda felt excluded in both the classroom and in social settings, “I’d say that was probably my biggest challenge, me thinking, ‘They’re all used to this, they’ve grown up on this, there’s even slang jargon and I don’t know it, so am I going to fall behind?’” (Interview 3, p. 4).

Casey felt particularly excluded from agriculturally focused peer groups in high school, “And it wasn’t something that I related to anyone too because all the people in those clubs and stuff were all farmers in the area, and I wasn’t a farmer” (Interview 4, p. 2-3). Matthew used his feelings of exclusion to motivate him:

I was probably going to end up taking the hard way around because when you’re a city slicker, you don’t really know anything. Definitely taught me to stand up for myself and that I’ve run into a bunch of people that claim I can’t do it because I haven’t inherited the ranch or the farm or whatever. And so that’s definitely taught me to ignore those people. But just kind of taught me that I might not get my dreams until further in life than other people just because I’m going to have to work three times as hard. But that’s just what I’ve learned. (Interview 6, p. 2)

Sally’s classroom experiences solidified her feelings of exclusion as a non-traditional agricultural student:

Because a lot of my friends either grew up on ranches, or they rode horses their entire lives, so they were surrounded by agriculture. And so, I think that Introduction to Animal Science class was probably the hardest class that I took that I really needed to study for, because I didn’t know any of it. (Interview 10, p. 7)

Repercussion of COVID-19

Students in this research study expressed discontent with the switch to online learning experiences during the COVID-19 pandemic. Matthew particularly disliked online learning, “I mean, COVID hit. I went through a whole semester at [a Texas academic institution] with no friends, no motivation, completely online classes and found out that’s not where I needed to be” (Interview 6, p. 4). His academic experience during the COVID-19 pandemic played an important role when transferring to WTAMU in the spring of 2021.

Ruth was already attending WTAMU when the pandemic started, but her experience in her previously selected major encouraged her to switch to an agricultural

degree. She said, “During COVID, like I said, with the transition of going to online and all that and not getting the help that I felt was needed and having really bad professors in other areas. Yeah, [agriculture] just seemed more adaptable” (Interview 8, p. 2).

Summary

Individual research interviews were conducted with 10 qualifying participants during the spring 2021 semester. Interviews were recorded, transcribed, and analyzed. The Data Analysis Spiral (Creswell & Poth, 2017) served as a guide during data analysis. This procedure allowed the researchers to identify four common themes in the transcripts. These four major themes were broken down into 14 subthemes.

The first theme, initial career decision, encompassed three subthemes that directly correlated to participants’ decisions to pursue agricultural degrees. Supportive family and friends, perceptions of agriculture, and past experiences were categorized in the first theme.

Pull factors of WTAMU Agriculture was the second identified theme. This theme included subthemes the researchers concluded were reasons participants chose WTAMU Department of Agricultural Sciences. Agricultural facilities, faculty and staff, hands-on learning opportunities, proximity, and specialization were subthemes for this category.

The third theme the researchers identified was transitional learning experiences. This theme targeted research objective three; recommendations of future recruitment activities for the Department of Agricultural Sciences at WTAMU. Opportunities in agriculture, interests, abilities, and values were common characteristics within the third theme.

An additional theme, unintended discoveries, had two subthemes, feelings of exclusion and repercussions of COVID-19, identified by the researchers during data analysis. Non-traditional agricultural backgrounds led to feeling of exclusion from many of the study's participants. Some of the participants expressed a variety of ways the COVID-19 pandemic affected their post-secondary education during the time of this study.

CHAPTER V

CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

Overview

This qualitative study was designed to identify common factors influencing non-traditional agricultural students to pursue post-secondary degrees in agriculture.

Conclusions of this study were drawn by comparing findings for each research objective to supported literature from the literature review. Recommendations were presented to help WTAMU Department of Agricultural Sciences revisit recruitment strategies to better attract non-traditional agricultural students to agricultural degrees at WTAMU. As younger generations continue to lose significant ties to agriculture, post-secondary institutions must determine new ways to recruit non-traditional agricultural students.

Purpose and Objectives

The purpose of this study was to identify the factors contributing to non-traditional agricultural students enrolling in an agricultural degree at West Texas A&M University. With the findings from this research, the recruitment efforts at WTAMU can be revisited to better serve the non-traditional agricultural student population. As defined by the researchers, non-traditional students never took an agriculture, food, or natural resources class in high school, were not 4-H or FFA members, and were two generations

removed from production agriculture. The following research objectives guided this study:

1. Establish social or environmental experiences influencing non-traditional students to major in agricultural degrees
2. Determine influential recruitment strategies utilized to recruit non-traditional students to pursue degrees in agriculture
3. Identify recruitment messages from current non-traditional students to assist in the recruitment of future non-traditional agricultural students

Conclusions and Discussion for Research Objective One

Research objective one sought to determine the social or environmental factors influencing non-traditional agricultural students to pursue an agricultural degree. Participants selected for this study met the pre-determined requirements of non-traditional agricultural students. Themes and subthemes were named for research objective one. The subthemes for this objective attempt to address extrinsic and intrinsic motivators during the selection of a college major.

Initial Career Decision

The identified subthemes for initial career decision were support/relationship, perceptions of agriculture, and experience. These shared characteristics influenced participants to pursue a post-secondary agricultural degree.

Prior research has reported parents are among the most influential persons in a student's college choice (Rayfield et al., 2013; Rocca & Washburn, 2005; Reis & Kahler, 1997, Cole & Thompson, 1999; Frazee et al., 2011a). Results from this research study indicated supportive parents or friends were influential in participants' decision to pursue

agricultural degrees. Octavia explained her supportive relationships by saying, “They [grandparents] were supportive of me and they want the best for me. They just want me to be happy in the career I choose” (Interview 1, p. 3). Casey felt supported by her parents. She said, “My parents were always like, ‘Do whatever you want, as long as you try your hardest, we will support you’” (Interview 4, p. 4). These findings indicate significant persons should be included during the recruitment of non-traditional students to agricultural degrees. These significant persons can serve as extrinsic motivators for students pursuing an agricultural degree.

While many participants felt supported by friends or family, most lacked agricultural knowledge. Several participants had preexisting ideas about agriculture.

Amanda’s perception of agriculture was:

I knew nothing about it. I knew they were everyday people, but I had no interactions so it was, it’s so dumb, but it really is like old western movies. That’s basically how it shows to me as someone that’s grown up in the city. (Interview 3, p. 2)

This evidence is supported by findings from Beyl et al. (2016) which reported non-agricultural students are difficult to recruit to agricultural degrees because of an outdated view of the agricultural industry. The University of Tennessee’s Comprehensive Recruiting Model has a component concentrating primarily on changing the perception of agriculture by focusing on employment opportunities (Beyl et al., 2016). While some non-traditional students may view agriculture as *cows, plows, and sows*, Matthew’s view of agriculture is not outdated, instead idolized. He said, “This might sound goofy, but what really got me into agriculture was reading western novels. And so I might have a little bit of a glorified sense of agriculture” (Interview 6, p. 1). Changing non-traditional

agricultural students' perceptions of agriculture is the first challenge the industry must overcome in order to recruit students to agricultural degrees.

Recruiting non-traditional students to post-secondary agriculture degrees is increasingly difficult when previous research has indicated students typically enroll in a post-secondary agricultural degree because of prior experiences in the agricultural industry (Wildman & Torres, 2001; Dyer et al., 2002; Rayfield et al., 2013). However, participants in this research study did not have prior experiences with agriculture. The researcher created pre-determined qualifications for the participants in this study in order to gain an understanding as to why students without a background in agriculture pursue agricultural degrees.

The researchers determined the participants experienced extrinsic and intrinsic motivation, which influenced their decisions to pursue an agricultural degree. Humans develop goals because of interests and intrinsic or extrinsic motivation (Lent et al., 1994). Researchers reported many of the participants' motivation for pursuing an agricultural degree was because of experiences with horses. This finding is concurrent with results from Esters and Bowen (2004) who reported an interest in animals influenced enrollment into an agricultural education program. Participants in the study choosing an agricultural degree indicated this was because of their horseback riding experience. Casey said:

When I was finishing up, I just decided that I could always continue with art, but if I didn't learn how to make horses a part of my life, I never would. So I decided to go to school for equine industry and business. (Interview 4, p. 1)

Recruitment workshops, like the one from Frazee et al. (2011b), present opportunities to change urban students' perceptions of agriculture, while offering experiential learning opportunities. Targeting significant persons during the recruiting

process, changing non-traditional students' perception of agriculture, and creating agricultural experiences for non-traditional may be the solution to recruiting non-traditional students to post-secondary agricultural degrees.

Conclusions and Discussion for Research Objective Two

Research objective two intended to uncover the influential recruitment strategies non-traditional agricultural students experienced before choosing an agricultural degree at WTAMU. An overarching theme was identified with several subthemes related to research objective two. The pull factors of WTAMU Department of Agricultural Sciences include facilities, faculty/staff, hands-on learning, proximity, and specialization. Conclusions from this objective were presented to the WTAMU recruitment team as recommendations for future recruitment methods.

Pull Factors of WTAMU Agriculture

Herren et al. (2011) reported the quality of the facilities as an influential characteristic when choosing a college. The Department of Agricultural Sciences' facilities proved to be a persuasive factor when students were selecting their university of choice. After visiting a different university, Katie toured WTAMU. During Katie's interview she said, "I came to WTAMU and I was like, 'Oh yeah, this feels right.' And I just, I saw that the [agricultural sciences] department had just been redone and rebuilt" (Interview 9, p. 7). Recruitment strategies at WTAMU should continue to invite people to the facilities, as this has been a beneficial recruitment technique (Herren et al., 2011).

Influential recruiting methods also included conversations with faculty or staff. Dyer et al. (2002) identified students most liked characteristics about their respective college of agriculture were the faculty and a friendly atmosphere. Rosa conveyed her

appreciation for WTAMU staff by saying, “The staff, I love the staff. They’re willing to help even if they don’t know who you are or your name” (Interview 7, p. 4). Findings from Setterbo et al., (2017) reported conversations with faculty were helpful in identifying opportunities for involvement within the college of agriculture. Wildman and Torres (2001) the friendliness of faculty encouraged students to select a career in agriculture. Baker et al. (2013) determined students preferred personal, high-touch channels with advisors because they are willing to take career advice from their advisors. Similarly, faculty members are an influential factor for selection of a college degree (Herren et al., 2011). Sally chose WTAMU for her Ph. D. because of the opportunity to work with the same influential faculty members from her undergraduate career. When asked why she chose WTAMU Department of Agricultural Sciences she said:

The faculty. I’m sure everybody says that, but I think even thinking to coming back for my Ph. D. is, it was the faculty. There was nothing else that made me want to come back other than the fact that I got to work with my peers. And so, they are such huge influences, and I don’t even know, as an undergrad, if anyone can really grasp as an undergrad how big of influences they are. (Interview 10, p. 9)

WTAMU Department of Agricultural Sciences should continue to offer opportunities for faculty-student interaction. During campus visits, prospective students are given the opportunity to meet with a faculty member in their respective area of interest. This meeting is a beneficial recruitment tactic at WTAMU. Other off-campus recruiting events create environments for prospective students to interact with a faculty member from the Department of Agricultural Sciences. These off-campus events include FFA State Conventions, 4-H Round-Up, community college and junior college recruitment visits, and high school recruitment visits. However, in the past these recruitment efforts typically target students with a background or experiences in

agriculture. In order to recruit non-traditional students to agricultural degrees, the Department of Agricultural Science should expand recruitment efforts to reach the non-traditional agricultural student population.

Researchers identified hands-on learning as a significant factor for non-traditional agricultural students selecting an agricultural degree. Matthew said, “I think because I have a really big imagination and that just being outside all day, working with your hands, not having to deal with a ton of facts and math and that sounds really good to me” (Interview 6, p. 2). Wildman and Torres (2001) reported working outdoors was an influential factor when selecting a college major, supporting Matthew’s decision to become an agricultural major. Rayfield et al. (2013) discovered working outdoors or working outside of an office were high considerations when choosing an agricultural major. Katie’s love for hands-on learning was expressed when she said, “But more so, our classes are very hands-on. You’re going to learn how to do injections; you’re going to learn how to do stuff. And I’m like, that’s what I wanted. I really wanted a hands-on experience” (Interview 9, p. 7). Several agricultural jobs include hands-on work experiences. These types of careers in agriculture should be highlighted when recruiting non-traditional agricultural students. Findings from this research study indicated hands-on learning is a significant factor in the decision to enroll in a post-secondary agricultural degree for non-traditional agricultural students.

Proximity to WTAMU was another influential factor for students when selecting a Department of Agricultural Sciences in which to enroll. Suzy started at WTAMU as a pre-medicine major but changed her major to agribusiness and remained at WTAMU, “The building and the faculty is amazing here, so there’s no point in me transferring

somewhere else when everything that I would need is where I was at” (Interview 2, p. 4). She remained at WTAMU because she was already here. There is potential for the Department of Agricultural Sciences to increase enrollment through already enrolled WTAMU students wishing to switch to an agricultural degree. Rocca (2013) reported non-matriculant students were largely influenced by location of campus. Students already attending WTAMU may find it easier to switch to an agricultural major if they have been previously enrolled at WTAMU.

Other students chose WTAMU because it was close to their hometown or family. Rosa said, “First and foremost, [WTAMU] is really near to my home. I feel I would be lost without my family if I did move far away” (Interview 7, p. 5). The number of colleges in proximity to the student influences enrollment numbers (Turley, 2009). Proximity to WTAMU was identified as an influential factor in the decision-making process. Therefore, recruitment efforts should focus on students living in Amarillo or living in the surrounding communities with close proximity to WTAMU.

Previous research reported the academic reputation of institutions was an influential characteristic during selecting an academic college (Herren et al., 2011; Washburn, 2002). In this study, four participants chose to attend WTAMU and enroll in the Department of Agricultural Sciences because it was one of the only universities with a certain specialization. Octavia discovered WTAMU and chose to enroll after discovering the Department of Agricultural Sciences offered an equine industry and business degree. She said, “Once I found this school and looked through all of the majors that they had, I saw equine industry and business, and I was like, ‘Oh that might be really interesting. I’m going to try that out’” (Interview 1, p. 2).

Based on results from this study, the focus during recruitment of non-traditional agricultural students should be on facilities, faculty and staff, hands-on learning, proximity, and specialization.

Conclusions and Discussion for Research Objective Three

The third research objective sought to determine future recruitment strategies to recommend to the Department of Agricultural Sciences at WTAMU. These recommendations are based on participants' transitional learning experiences, an identified theme during data analysis. Subthemes of transitional learning experiences, which was an include opportunities, interest, abilities, and values.

Transitional Learning Experiences

Rocca (2013) reported the availability of career opportunities after graduation influences career choice. Herren et al. (2011) findings indicated career opportunities were the most influential degree characteristic. According to Baker et al. (2013), job stability and job availability are effective recruitment messages when attempting to attract potential students. Testimonial videos of individuals working in agricultural careers can serve as potential recruitment messages, as these messages are more likely to resonate with prospective students (Baker et al., 2013). Many of the students in this research study were unaware of the career opportunities in agriculture. Katie voiced her misconceptions about agricultural careers by stating:

There's a wide variety of concepts that go into agriculture. I was somewhat a part of the stereotype that they were just farmers and cattle ranchers. No one really told me, and my parents were clueless, no one really told me that there's so much more to it than just those two areas. (Interview 9, p. 8)

Setterbo et al. (2017) reported many non-traditional students held employment opportunities in such high regards that they would have transitioned to an agricultural

degree sooner if potential careers had been communicated earlier. Opportunities for employment are so diverse in agriculture (Beyl et al., 2016). Rosa said, “And that’s one of the things I love about the ag field, that there’s just so many ways you can do so many [things]” (Interview 7, p. 6). These findings support the recommendation to place specific attention on the potential career opportunities in agriculture.

Choosing a major that interests the student is the highest-ranking characteristic in selecting a major (Beggs et al., 2008). Baker et al. (2013) emphasized students must be aware and understand their own interests and career options when choosing a career. This research supports evidence that students are selecting their major based on their interests and abilities (Beggs et al., 2008). Lent et al. (1994) SCCT reported interests and skills developed during childhood ideally influence career decisions. Casey’s interest in horses influenced her decision to enroll in the equine industry and business degree at WTAMU, “I was involved in horseback riding. I started when I was like eight and then that was just something I continued my entire life” (Interview 4, p. 1).

Research from Baker et al. (2013) reported students are interested in careers in which they have “a chance to make a difference” (p. 58). Ruth said a successful career in agricultural for her is, “Being able to pursue passions and being able to make a living, working with horses and helping people, and developing the next generation of horse kids” (Interview 8, p. 5). Findings from Rayfield et al. (2013) reported working with people as the number one professional characteristic when choosing an agricultural major, which support findings from this research study. This study determined students majoring in agricultural degrees might not have prior agricultural experiences but choose to pursue agriculture for careers working with people.

Researchers identified the pre-existing abilities the participants possessed which helped make their transition to an agricultural degree easier. Rayfield et al. (2013) recommended target-recruiting students with interests in math or science to fill related jobs in agricultural sectors. Ruth started college as a math education major, but changed majors after her first year. She communicated she was able to use her abilities in math and science after she became an agricultural major, “I’ve always had a passion for science and math. I think that helps in agriculture because it’s science-based” (Interview 8, p. 4). Suzy also excelled in science during high school, but she also believes her communication abilities have helped her in agriculture. She stated, “I did really well in those sciences. I do really good in communications classes. I love communications classes.” (Interview 2, p. 1). Participants in this study with pre-existing abilities most likely had higher self-efficacy. Self-efficacy determines choices and goals according to Lent et al. (1994).

Participants in this study also identified the values and morals associated with agriculture. Previous research reported agricultural education teachers believed values are taught through participation in classrooms or laboratories (Lockaby & Vaughn, 1999). While students in this research study did not participate in any agricultural education opportunities during high school, many of the participants still recognized the values tied to agriculture. Ruth believed the Department of Agricultural Sciences is “family-centered” (Interview 8, p. 1). In addition, Ruth further explained it’s “just a very helping community is the way it’s always appeared. And they don’t really not include anyone intentionally. It’s always very welcoming and very open to anyone who wants to try it”

(Interview 8, p. 1). Lockaby and Vaughn (1999) reported responsibility, honesty, courtesy, and respect as values taught through participation in agricultural education.

Supplementary Findings

Unintentional Discoveries

Feelings of exclusion potentially influence self-efficacy levels and outcome expectations. Bandura (1986) determined self-efficacy levels are shaped by one's perception of their capabilities. Self-efficacy will determine persistence and effort expenditure on tasks (Lent et al., 1994). Many of the participants felt excluded because of their non-traditional backgrounds. This is concurrent with research from Setterbo et al. (2017) who reported non-traditional students shared a fear of feeling excluded because of their background. Suzy felt excluded in class, "But you go to class with people who've grown up in this background and you feel like you're the odd one out" (Interview 2, p. 3).

Katie stated:

I come from a non-agriculture family. My parents were like, "Great, you want to ride horses, but we've never ridden horses. We've never owned a horse. We're not even from the country". My dad works in marketing and my mom's a receptionist. So they were like, "We haven't even touched any part of farm land before". (Interview 9, p. 5)

To prevent feelings of exclusion, specific attention should be spent on non-traditional students during the recruitment process, as non-traditional agricultural students offer unique and valuable perspectives (Setterbo et al., 2017).

During the 2020-2021 academic school year, many students experienced new challenges during the COVID-19 pandemic. Smith et al. (2021) stated, "In the spring of 2020, higher education changed abruptly in the face of the global health crisis created by the COVID-19 pandemic, resulting in an abrupt shift to remote instruction; a form of

academic triage” (p. 1). Patterson et al. (2021) reported students felt uncertain about their academic future during the attempts to minimize the spread of COVID-19. Findings from this research study indicated agricultural students did not like the change to online learning environments. Matthew pursued an agricultural degree because of the opportunities for hands-on learning, so the switch to online classes was extremely challenging for him. He stated, “So, just the going to class was a big deal to me. I hate online classes” (Interview 6, p. 4). Ruth changed her major because she felt as though the Department of Agricultural Sciences was doing the right things during the pandemic. She said:

Then COVID hit and completely flipped everything on its head. And I was like, “You know what? [The Department of Agricultural Sciences] is going to be my home.” Just because of how everybody was handling it and how the [Department of Agricultural Sciences] handled everything with grace and not condescending or anything like that. So, that was really the whole reason why I changed. (Interview 8, p. 1)

The coronavirus pandemic affected students all across the world. As the world begins to make the transition back to normalcy, recruitment efforts should highlight the potential for in-person learning, as results indicated participants did not enjoy virtual learning.

Recommendations

Future Research

Although this study does provide recommendations for future recruitment, recommendations should be drawn with caution, as this research did not attempt to generalize results. Therefore, future research should replicate this study to examine the validity of results at other departments or colleges of agriculture to increase generalizability.

While traditional recruitment materials still serve a purpose when recruiting traditional agricultural students, specific attention should be made to create recruiting materials for non-traditional students. Materials should highlight agricultural degree options, potential career opportunities, and current non-traditional students. Baker et al. (2013) recommended highlighting individuals in agricultural careers as a method of prospective student recruitment. Findings indicated many non-traditional students were unaware of career opportunities in the agricultural industry. However, the addition of recruitment materials highlighting potential career opportunities in agriculture for non-traditional agricultural students can serve as a positive recruitment technique. Therefore, future research should identify the careers non-traditional students pursue post-graduation. Identifying careers pursued by non-traditional agricultural graduates can benefit recruitment efforts by presenting career opportunities for non-traditional students.

Additional recruitment efforts should target significant persons, such as parents or friends. Feeling supported by significant persons encouraged participants in this study to pursue a degree in which they had no background knowledge. Incorporating parents and friends during the recruitment process can help generate diversity within agricultural degrees.

To decrease feelings of exclusion, it is recommended a non-traditional agricultural student group be formed at WTAMU to promote networking opportunities for students with similar backgrounds. A group of this nature would allow students to network with other students with similar backgrounds or experiences. This non-traditional student group should also include traditional agricultural students, as these students would serve as the bridge between non-traditional students and traditional

agricultural students. The traditional students would serve as mentors for the non-traditional agricultural students, helping the non-traditional students meet friends in the Department of Agricultural Sciences. In addition, traditional students could tutor non-traditional agricultural students in classes that are heavily influenced by a pre-existing background in agriculture. Findings indicated some students felt as though the introductory level courses were some of the most challenging because these classes were taught as though each student had some sort of background in the agricultural industry. Connecting non-traditional agricultural students to their traditional agricultural peers can potentially decrease feelings of exclusion.

Lent et al. (1994) created the Model of Performance to illustrate achievement relative to goals. This model delineates the role ability plays in a student's self-efficacy and outcome expectations. Self-efficacy will influence performance and goals. Feelings of exclusion in agricultural may decrease self-efficacy in non-traditional students. It is recommended future research be conducted to examine retention rates of non-traditional students. Specific focus should be on non-traditional students' self-efficacy, outcome expectations, and performance in pursuit of an agricultural degree. Identifying the retention rates of non-traditional agricultural students would allow the Department of Agricultural Sciences to identify potential areas of improvement.

Practice

The Department of Agricultural Sciences recruitment team at WTAMU is dedicated to developing, implementing, and revising programs to recruit and retain students within the Department of Agricultural Sciences. The recruitment team prioritizes potential students by individualizing recruits and creating opportunities for faculty

interaction and facility tours. In addition to on-campus recruitment, attention is given to a variety of off-campus recruiting events. Each year, the recruitment team travels throughout Texas and the surrounding states to recruit prospective students to the Department of Agricultural Sciences. State FFA and 4-H conventions and camps, high schools, junior and community colleges, livestock shows, other agriculturally focused youth programs, and college fairs are some of the major recruiting events attended annually.

These findings suggest current recruitment strategies lack inclusivity of non-traditional students. Previous recruitment efforts focused on students with strong backgrounds in agriculture. The recruitment team targets prospective students with successful FFA or 4-H experiences, knowledge of livestock, or interests in agricultural programs. The Department of Agricultural Sciences at WTAMU has many students enrolled with agricultural backgrounds. Finding a non-traditional agricultural student at WTAMU is a challenge. Therefore, it is recommended the recruitment team in the Department of Agricultural Sciences begin recruiting non-traditional agricultural students from science, technology, engineering, and mathematics (STEM) events, community colleges with business or science degree options, and other large youth gatherings. Findings indicated students pursued agricultural degrees because of the close connection between science and agriculture. Therefore, STEM events create opportunities for recruiters to identify and recruit non-traditional agricultural students to post-secondary agricultural degrees. Additionally, many of the participants were pursuing agricultural business degree options. Other potential recruitment areas could be community or junior colleges with business degrees. The hands-on learning aspect of the agricultural industry

was an influential factor in a non-traditional student's decision to pursue an agricultural degree. By highlighting the hands-on learning of an agricultural business degree, more non-traditional agricultural students may choose an agricultural business degree because of the hands-on learning opportunities.

Results from this research study indicate several participants felt excluded because their peers were traditional agricultural students. Therefore, not only should recruitment efforts be made to identify and recruit non-traditional agricultural students to agricultural degrees, recruitment materials should be added to attract non-traditional students. As previously stated, these recruitment materials should highlight potential career opportunities in agriculture. Printed materials and web-based materials are effective during the recruitment process and should be utilized when recruiting non-traditional students (Rocca, 2013; Rayfield et al., 2013; Rocca & Washburn, 2005). Hands-on learning opportunities, supportive faculty and staff, and degree options are other influential characteristics and should be included on recruitment materials.

Findings also indicate recruitment should go beyond initial persuasion and focus on retention. Self-efficacy in any area will determine persistence and goal attainment. If non-traditional students lack efficacy in their selected degree, odds of completion of an agricultural degree will decrease. Retention of non-traditional students is critical in the recruitment of future non-traditional students. Identifying non-traditional students during the first few weeks of class is a way to focus on the retention of non-traditional agricultural students. Faculty are able to provide extra resources to these students to decrease feelings of exclusion in the classroom. Several faculty members in the Department of Agricultural Sciences teach a professional development class every

semester. This class is typically taken during a student's first semester in the Department of Agricultural Sciences. This leadership class is intended to provide opportunities for students to meet their peers and their faculty. The professional development class would be a great place for faculty to identify non-traditional agricultural students and help these types of students access resources to assist in their post-secondary academic career. Faculty and staff were identified as an influential factor in a non-traditional student's decision to pursue an agricultural degree. The Department of Agricultural Sciences has faculty and staff that can help with retention rates by helping non-traditional agricultural students feel welcome.

Summary

The future of agriculture is determined by the ability of post-secondary institutions to recruit non-traditional agricultural students to agricultural degrees. A rapidly increasing global population is changing the dynamic of future recruits. As students become further removed from traditional agricultural lifestyles, the challenge becomes identifying students to pursue agricultural degrees. An ever-changing agricultural system is going to require a new type of agriculturist. This study explored the factors influencing students to pursue agricultural degrees despite prior agricultural knowledge. Identification of these influential characteristics can aid in development of recruitment strategies made by the Department of Agricultural Sciences to recruit non-traditional agricultural students. Findings from this study were presented to the WTAMU Department of Agricultural Sciences recruitment team for recommendation of future recruitment efforts. Additionally, these recommendations should be used to equip similar recruitment teams with the resources needed to recruit non-traditional students to

agricultural degrees. The challenge of producing qualified and capable agricultural graduates rests in the hands of post-secondary institutions and the ability to recruit a non-traditional agriculturists.

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Do you need \$20?
**ARE YOU A NON-
TRADITIONAL
AG STUDENT?**

Scan this QR code to take
the survey & see if you
qualify!

IF YOU HAVE QUESTIONS CONTACT
wamountl@buffs.wtamu.edu
ttarpley@wtamu.edu



Appendix B Qualtrics Survey

Survey can be accessed at this link:

https://wtamuwv.az1.qualtrics.com/jfe/form/SV_5mOCL8c0BovExeK

Recruitment of Non-Traditional Students to Agricultural Degrees

Start of Block: Default Question Block

Q1 What is your major?

- ☐ Agribusiness (1)
- ☐ Agricultural Business and Economics (2)
- ☐ Agricultural Media and Communication (3)
- ☐ Agriculture (General Ag) (5)
- ☐ Agricultural Education (6)
- ☐ Animal Science (7)
- ☐ Equine Industry and Business (8)
- ☐ Plant, Soil, and Environmental Sciences (9)
- ☐ Pre-Vet (10)

Skip To: End of Survey If What is your major? = Pre-Vet

Q2 Have you ever been a member of 4-H or FFA?

- ☐ Yes (1)
- ☐ No (2)

Skip To: End of Survey If Have you ever been a member of 4-H or FFA? = Yes

Q3 I have taken an agriculture education class in high school prior to enrollment at West Texas A&M University.

☐ True (1)

☐ False (2)

Skip To: End of Survey If I have taken an agriculture education class in high school prior to enrollment at West Texas A&M... = True

Q4 My parents are/were dependent on an income or salary accumulated from production agriculture or natural resources.

☐ True (1)

☐ False (2)

☐ Not Sure (3)

Skip To: End of Survey If My parents are/were dependent on an income or salary accumulated from production agriculture or n... = True

Q5 My grandparents are/were dependent on an income or salary accumulated from production agriculture or natural resources.

☐ True (1)

☐ False (2)

☐ Not Sure (3)

Skip To: End of Survey If My grandparents are/were dependent on an income or salary accumulated from production agriculture... = True

Q6 Congratulations! You qualify to participate in this study and earn \$20! Please enter your email address and you will hear from Whitney soon!

Appendix C Initial Email to One-on-One Interview Participants

Dear _____,

I received your email address following your successful completion of my Qualtrics survey. I am currently looking for students who fit the following criteria to participate in a quick, 20-minute interview:

You are over the age of 18.

You have never been involved in 4-H or FFA.

You have never taken an agriculture education class prior to enrollment at West Texas A&M University.

Your parents are/were not dependent on an income or salary accumulated from production agriculture.

Your grandparents are/were not dependent on an income or salary accumulated from production agriculture.

If the above statements describe you, I am very interested in hearing your input regarding the Department of Agricultural Sciences' recruitment efforts for non-traditional students like you. The purpose of this research is to understand why students without an agriculture background decide to pursue a degree in agriculture.

If you are interested in participating, interviews will be conducted March 29th - April 2nd. Please click on the link below to select your interview time.

https://doodle.com/poll/3mdxrdp7y4zyrtdf?utm_source=poll&utm_medium=link

With your participation, you will receive \$20 compensation for your time and knowledge. Participation is completely voluntary.

Attached is an information sheet. Please read over the information sheet before responding. If you have questions about this study, please email me at wamount1@buffs.wtamu.edu, or call (806) 651-2550.

Sincerely,

Whitney Mount
Graduate Research Assistant
Department of Agricultural Sciences
West Texas A&M University
Phone: (806) 651-2550
Email: wamount1@buffs.wtamu.edu

Appendix D Information Sheet

What is this project studying?

This study is called, "Recruitment of Non-Traditional Students to Agricultural Degrees." This study will help us understand how participants decided to major in agricultural degrees to help recruit future non-traditional students.

What would I do if I participate?

In this study you will be asked a series of questions regarding your choices to major in Agribusiness, Agricultural Business and Economics, Agricultural Media and Communication, General Agriculture, Agricultural Education, Animal Science, Equine Industry and Business, or Plant, Soil, and Environmental Sciences at West Texas A&M University.

How will I benefit from participating?

You will be providing invaluable knowledge for Universities across the nation so they are better equipped to recruit non-traditional students.

How much will I be compensated for my time? When will I be compensated?

You will receive \$20 for participation in this study at the conclusion of the interview session.

Why would I not want to participate?

You may not want to participate if you are not a current student at West Texas A&M University in the Department of Agricultural Sciences. If you do not want your input on recruitment techniques to be used in future recruitment endeavors. If you do not want to engage in a one-on-one interview.

Can I quit if I become uncomfortable?

Yes, absolutely. Your participation is completely voluntary. Dr. Tarpley and the Institution Review Board have reviewed the questions and think you can answer them comfortably. You may stop if you do not feel comfortable answering. You are free to leave at any time you wish. You can keep all the benefits of participating even if you stop. Participation is your choice.

How long will participation take?

We are asking for 20 minutes of your time for the participation in this study.

How many people are participating?

There are 10 participants for this study.

How are you protecting privacy?

Your name will not be linked to any documentation and any use of this material in reports, publications, or presentations will never be associated with participants in the study without permission. No one other than the researchers associated with this project

will have access to the raw data. All related documentation will be stored either in a locked file cabinet in the researcher's office or on a password protected computer.

I have some questions about this study. Who can I ask?

The study is being run by Dr. Troy Tarpley from the Department of Agricultural Sciences at West Texas A&M University. If you have questions, you can call him at (806) 651-2584. WTAMU also has a Board that protects the rights of people who participate in research. You can contact them at AR-EHS@wtamu.edu.

I have some questions about this study. Who can I ask?

This study is being run by Dr. Troy Tarpley from the Department of Agricultural Sciences at West Texas A&M University. If you have questions, you can reach out to the Dean of Graduate School, Dr. Angela Spaulding at (806) 651-2731.

Appendix E Follow-Up Email to One-on-One Interview Participants

Good Morning _____,

This is a friendly reminder that you qualify for my research study regarding the experiences of non-traditional agricultural students.

You will receive \$20 compensation should you choose to participate in the interview portion of my research. Participation is completely voluntary. If you wish to participate in the interview portion of this study, please sign up for a time by following the link below.

https://doodle.com/poll/3mdxrdp7y4zyrtdf?utm_source=poll&utm_medium=link

If you no longer wish to receive emails from me regarding this study, please let me know by email as soon as possible.

If you have any questions about this study, please email me at wamount1@buffs.wtamu.edu.

Thank you for your time.

Sincerely,

Whitney Mount
Graduate Research Assistant
Department of Agricultural Sciences
West Texas A&M University
Phone: (806) 651-2550
Email: wamount1@buffs.wtamu.edu

Appendix F Consent Form

What is this project studying?

This study is called, "Recruitment of Non-Traditional Students to Agricultural Degrees." This study will help us understand how participants decided to major in agricultural degrees to help recruit future non-traditional students.

What would I do if I participate?

In this study, you will be asked a series of questions regarding your choices to major in Agribusiness, Agricultural Business and Economics, Agricultural Media and Communication, General Agriculture, Agricultural Education, Animal Science, Equine Industry and Business, or Plant, Soil, and Environmental Sciences at West Texas A&M University.

How will I benefit from participating?

You will be providing invaluable knowledge for Universities across the nation so they are better equipped to recruit non-traditional students.

How much will I be compensated for my time? When will I be compensated?

You will receive \$20 for participation in this study at the conclusion of the interview session.

Why would I not want to participate?

You may not want to participate if you are not a current student at West Texas A&M University in the Department of Agricultural Sciences. If you do not want your input on recruitment techniques to be used in future recruitment endeavors. If you do not want to engage in a one-on-one interview.

Can I quit if I become uncomfortable?

Yes, absolutely. Your participation is completely voluntary. Dr. Tarpley and the Institution Review Board have reviewed the questions and think you can answer them comfortably. You may stop if you do not feel comfortable answering. You are free to leave at any time you wish. You can keep all the benefits of participating even if you stop. Participation is your choice.

How long will participation take?

We are asking for 20 minutes of your time for the participation in this study.

How many people are participating?

There are 10 participants for this study.

How are you protecting privacy?

Your name will not be linked to any documentation and any use of this material in reports, publications, or presentations will never be associated with participants in the study without permission. No one other than the researchers associated with this project

will have access to the raw data. All related documentation will be stored either in a locked file cabinet in the researcher's office or on a password protected computer.

I have some questions about this study. Whom can I ask?

The study is being run by Dr. Troy Tarpley from the Department of Agricultural Sciences at West Texas A&M University. If you have questions, you can call him at (806) 651-2584. WTAMU also has a Board that protects the rights of people who participate in research. You can contact them at AR-EHS@wtamu.edu.

I have some questions about this study. Whom can I ask?

This study is being run by Dr. Troy Tarpley from the Department of Agricultural Sciences at West Texas A&M University. If you have questions, you can reach out to the Dean of Graduate School, Dr. Angela Spaulding at (806) 651-2731.

Signature

Date

Appendix G Script

Hello, thank you for helping us out with our study. Have you signed a consent form?

Before data collection begins, I just wanted to have a brief conversation about the study. I'm going to ask you a series of questions. If there is a problem or you are uncomfortable, please let me know immediately. Your participation is completely voluntary. Dr. Tarpley and the Institution Review Board have reviewed the questions and think you can answer them comfortably. You may stop if you do not feel comfortable answering. You are free to leave at any time you wish. You can keep all the benefits of participating even if you stop. Participation is your choice. However, we do appreciate any help you are able to provide. After the last question has been asked, you will be asked to fill out a demographic questionnaire. After completion of the questionnaire, you will receive \$20 compensation and your time is up. Please walk out of the conference room and you are free to leave the study.

As a reminder, your name or association with this study will not be included in the published results of this study. Your data and personal information will be kept safe on a password protected computer that only the researcher can access. If you have any questions, please feel free to contact Dr. Tarpley at ttarpley@wtamu.edu or at 806-651-2584.

Let's get started.

Appendix H One-on-one Interview Guide

The following questions will be related to your experiences leading up to your enrollment in West Texas A&M University's Department of Agricultural Sciences.

Think back to before you were interested in agriculture:

1. What activities were you involved in and what were your strengths in those activities?
2. What subjects did you excel in academically?
3. What were your personal, academic and professional goals?
4. Describe your perception of agriculture (people, careers, industry, etc.)?

Now think about the time where agriculture started to become relevant to your life:

5. When did you first develop an interest in agriculture?
 - Was there a person or event that helped you develop an interest in agriculture?
6. What affect did this interaction have on your personal, academic and professional goals?
7. When did you decide to pursue a degree in agriculture?
8. Were your friends and family supportive of your decision to pursue a degree in agriculture?
9. Describe the challenges you anticipated when studying agriculture and how you planned to overcome them.
 - What previous experience or skills did you possess that would help you overcome the challenges studying agriculture presented?
10. When did you first develop an interest in WTAMU Department of Agricultural Sciences?
 - Was there a person or event that helped you develop an interest in WTAMU Department of Agricultural Sciences?
11. Why did you choose WTAMU Department of Agricultural Sciences instead of another college of agriculture?
 - Was there anything that attracted you specifically to WTAMU Department of Agricultural Sciences?
12. What does success or satisfaction look like to you as a result of pursuing an agriculture degree?

- Could be intrinsic or extrinsic

13. What do you wish someone would have told you about agriculture before you were interested in the subject?

14. Are there any additional questions or comments you would like to add to this interview?

You are now finished this study. Please accept \$20 as compensation for your time and insight. If you have any questions, please feel free to email me.

That concludes the interview, thank you very much for your time.

Appendix I One-on-one Interview Demographic Questionnaire

1. Pseudonym: _____
2. Do you identify as a male or female? (circle one)
3. What year were you born? _____
4. Are you from an urban or rural community? (circle one)
5. What state are you from? _____
6. What is your race? (Check one or as many that apply)
____ White
____ Black or African American
____ Spanish, Hispanic, or Latino
____ Asian or Pacific Islander
____ Native American
____ Other, please specify _____
7. What is your classification? (according to credit hours)
____ Freshman (30 hours)
____ Sophomore (60 hours)
____ Junior (90 hours)
____ Senior (120 + hours)
8. Are you a transfer student? If yes, where did you transfer from?

9. How many semesters have you been at West Texas A&M University?

10. Did you start at West Texas A&M University under a different major? If yes, what was your major? _____
11. Current major: _____
12. How many semesters have you been in the Department of Agricultural Sciences?

13. Do you give permission to be contacted in the future to follow up on this one-on-one interview?
____ Yes ____ No
Phone number and email where you are most likely to be reached:
Phone number: _____
Email: _____

Appendix J Member Checking Email

Good Morning _____,

I am emailing you today regarding the research study you participated in during the Spring 2021 semester. A final component of the research is called member checking. Member checking allows the participants to review the findings to determine the accuracy of their experiences. I have attached the findings in a PDF document. I kindly ask you to review the findings and confirm the accuracy of your experiences.

As you read the findings, please note the pseudonym chosen for you is: ____

After you have reviewed the attached document, respond with 'YES' if this document is an accurate representation of your experiences; or 'NO' and a brief description of why these findings are not accurate.

Let me know if you have questions or concerns.

Again, I really appreciate your time and willingness to participate in this study.

Have a great day!

Whitney Mount
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West Texas A&M University
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Appendix K IRB Approval Letter



INSTITUTIONAL REVIEW BOARD FOR HUMAN SUBJECTS Letter of Approval

March 11, 2021

Dr. Tarpley:

The West Texas A & M University Institutional Review Board is pleased to inform you that upon review, proposal #2021.02.005 for your study titled, "Recruitment of Non-Traditional Students to Agricultural Communications and Agricultural Education," meets the requirements of the WTAMU Standard Operating Procedure (SOP) No. 15.99.05.W1.01AR, Institutional Review Board (Human Subject Research). Approval is granted for one calendar year. This approval expires on March 10, 2022.

Principal investigators assume the following responsibilities:

1. **Continuing Review:** The protocol must be renewed on or before the expiration date if the research project requires more than one year for completion. A [Continuing Review form](#) along with required documents must be submitted on or before the stated deadline. Failure to do so will result in study termination and/or loss of funding.
2. **Completion Report:** At the conclusion of the research project (including data analysis and final written papers), a [Close out form](#) must be submitted to AR-EHS.
3. **Unanticipated Problems and Adverse Events:** Pursuant to [SOP No. 15.99.05.W1.13AR](#), unanticipated problems and serious adverse events must be reported to AR-EHS.
4. **Reports of Potential Non-Compliance:** Pursuant to [SOP No. 15.99.05.W1.05AR](#), potential non-compliance, including deviations from the protocol and violations, must be reported to the IRB office immediately.
5. **Amendments:** Changes to the protocol must be requested by submitting an [Amendment form](#) to AR-EHS for review by the IRB. The Amendment must be approved by the IRB before being implemented. Amendments do not extend time granted on the initial approval.
6. **Consent Forms:** When using a consent form, only the IRB approved form is allowed.
7. **Audit:** Any proposal may be subject to audit by the IRB Administrator during the life of the study. Investigators are responsible for maintaining complete and accurate records for five years and making them available for inspection upon request.
8. **Recruitment:** All recruitment materials must be approved by the IRB. Recruitment materials distributed to potential participants must use the approved text and include the study's IRB number, approval date, and expiration dates in the following format: WTAMU IRB##-##-## Approved: ####/####/#### Expiration Date: ####/####/####.
9. **FERPA and PPRA:** Investigators conducting research with students must have appropriate approvals from the Family Education Rights and Privacy Act (FERPA)

administrator at the institution where the research will be conducted in accordance with the Family Education Rights and Privacy Act (FERPA) if applicable to the research being proposed. The Protection of Pupil Rights Amendment (PPRA) protects the rights of parents in students ensuring that written parental consent is required for participation in surveys, analysis, or evaluation that ask questions falling into categories of protected information.

Sixty days prior to the expiration of this proposal, you will receive a notification of the approaching expiration date at which time you will need to submit an [Amendment/Continuation/Close out](#) form.

Thank you for your cooperation with the IRB and we wish you well with your research project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gary Bigham'.

Dr. Gary Bigham
Chair, WTAMU IRB

A handwritten signature in black ink, appearing to read 'Angela Spaulding'.

Dr. Angela Spaulding
Vice President of Research and Compliance

Appendix L Code Book

Theme #1	Code Name	Definition	When to use	When not to use	Example of a segment of text from study
Initial Career Decision	Support/Relationship	Any evidence referring to support from family or friends	Use when positive interaction with family or friends led to student success	When referring to an outcome negatively impacted by family or friends	"My family very much was, they are my number one supporter. They were like, 'Do whatever will make you happy and successful'. And they're 100% behind me." (Interview 9, p. 4).
	Perceptions of Agriculture	Any evidence recognizing preconceived notions about agriculture	Use when student discusses their perception of agriculture before getting involved in the industry	When referring to students with a clear understanding of agriculture because of past involvement in the industry	"This is going to sound very stereotypical of what everyone thinks it is. I'm like, fields and people who work with cattle. They either manage plants or they work with an animal" (Interview 5, p. 1).
	Experience	Any evidence recognizing previous skills or interactions resulting in choice to select an agricultural major	Use when student has prior experiences leading to a degree in agriculture	When referring to skills or abilities unrelated to agricultural majors	"I was involved in horseback riding. I started when I was like eight and then that was just something I continued my entire life." (Interview 4, p. 1). "But if I wanted to make a horse a part of my life, I decided that that was something that I wanted to do to continue my education. So then I transferred majors and I transferred schools." (Interview 4, p. 3).

Theme #2	Code Name	Definition	When to use	When not to use	Example of a segment of text from study
Pull Factors of WTAMU Agriculture	Facilities	Any evidence supporting student's decision to major in an agricultural degree as a result of the WTAMU Ag facilities	Use when referring to students that chose to major in ag at WTAMU because of the facilities	When referencing to recruitment efforts unrelated to the WTAMU Ag Sciences building	"I fell in love with the complex. I fell in love with the idea of being here. So now I am here." (Interview 7, p. 5)
	Faculty/Staff	Any evidence recognizing a positive interaction of a WTAMU Faculty or Staff	Use when interaction led to student switching to an agricultural degree at WTAMU	When referring to other forms of recruitment to WTAMU Dept. of Ag Sciences	"I felt like the faculty was very dedicated to my success and my learning, and that they were going to help in any way to make sure I accomplish that." (Interview 9, p. 7).
	Hands-on Learning	Any evidence supporting hands-on learning as an influential factor for pursuing an ag degree	Use when hands-on learning opportunities influenced student to choose an agricultural major	When referencing learning opportunities without a hands-on learning aspect	"So, just the going to class was a big deal to me. I hate online classes. So just the interactions. And then I'm a very hands-on learner... That's how I learn best..." (Interview 6, p. 4).
	Proximity	Any evidence recognizing the proximity of WT Ag is	Use when a student changes from an non-	When referencing students starting or	"Before I was in agriculture, I had this dream of being a dentist. And then I came to college and I was like, 'Organic chemistry, no thank

		the main reason students chose to pursue an agricultural degree at WTAMU	agricultural degree at WTAMU to pursue a degree in agriculture at WTAMU	transferring to WTAMU because of the agricultural degrees offered	you!' It really wasn't for me. I just felt like I was trying to insert myself somewhere I didn't belong." (Interview 2, p. 1)
Pull Factors of WT Ag cont.	Specialization	Any evidence supporting incoming or transfer students coming to WTAMU to pursue an agricultural degree because it was one of the few colleges with such degree	Use when a student chose to attend WTAMU and pursue a degree in agriculture because WTAMU is one of few colleges offering the degree	When referring to non-traditional students pursuing an ag degree at WTAMU after changing majors from a non-agricultural degree at WTAMU	"... going into junior and senior year of high school, I knew I wanted a degree in equine, either science or business or something equine related, but not the pre-vet route. And so that very much limited the amount of schools that I could go to just with the degree... And I also knew that I wanted to be a part of an equestrian team. So that narrowed down my choices even more with the universities that had the degree and had the equestrian team. I think there were only four colleges in the whole country that offered both of those." (Interview 9, p. 6).

Theme #3	Code Name	Definition	When to use	When not to use	Example of a segment of text from study
Transitional Learning Experiences	Opportunities	Any evidence recognizing the numerous career possibilities as a result of pursuing an agricultural degree	Use when non-traditional student reference opportunities for agricultural graduates	When referring to individuals unable to recognize the potential career opportunities as a result of pursuing an agricultural degree	“There’s a wide variety of concepts that go into agriculture. I was somewhat a part of the stereotype that they were just farmers and cattle ranchers. No one really told me and my parents were so clueless. No one really told me that there’s so much more to it than just those two areas.” (Interview 9, p. 8).
	Interests	Any evidence supporting student attraction to an agricultural degree	Use when student chooses to pursue an agricultural degree because of passion agriculture	When referencing students pursuing an agricultural degree for any reasons other than personal interest	Opportunities in relation to coursework influenced participant interest in the course (Milsom & Coughlin, 2015). Milsom & Coughlin (2015) found participants likely would have discovered interests sooner if they had taken a variety of courses early in college.
	Abilities	Any evidence recognizing skills that helped student when majoring in agriculture	Use when previous skills or abilities positively influence a student in pursuit of an	When referring to unintended challenges or difficulties a student faced while pursuing an	Participants were able to demonstrate skills through coursework, internships, and related experiences (Milsom & Coughlin, 2015). “I think that’s where a lot of my team leadership, things of those sorts, skills came from, or my

			agricultural degree	agricultural degree	extracurricular that I did were not ag related, but they also are relevant to what I do now. I mean, a lot of those skills that I built through Girl Scouts actually was the biggest thing that really brought all of those skills out of me.” (Interview 10, p. 1).
	Values	Any evidence recognizing morals and values are significant within the agricultural industry	Use when student realizes morals and values are significant to the agricultural industry	When referring to actions not reflecting positive morals and values	Milsom & Coughlin (2015) discovered participants “gained awareness of their values through class content, internship experiences, and interactions with peer and instructors” (p. 9). “I thought it was a really honest career path everyone that I knew before I was an Ag major, that was an Ag major, was always super nice. They always spread awareness about the industry and everything like that. And that’s what drove me to switch my major to Ag.” (Interview 2, p. 1). “So, I was raised religious, so obviously Sunday’s are for church, but here it’s a much bigger thing since it’s the Bible Belt, and I know especially in agriculture a lot of things are based by going to church on Sundays.” (Interview 3, p. 5).

Theme #4	Code Name	Definition	When to use	When not to use	Example of a segment of text from study
Unintended Discoveries	Exclusion	Any evidence recognizing feelings of disconnect between non-traditional agriculture student and peers	Use when student feels isolated or left out in pursuit of an agricultural degree	When referencing students with high self-efficacy in their career choice	"Because there's a lot of people that was in FFA and then 4-H. And I feel really left out. And I didn't grow up with any cattle or horse ranches or anything. And so I feel left out from, I guess, the rest of the community that I'm still trying to learn." (Interview 1, p. 6).
	Repercussions of COVID-19	Any evidence recognizing the consequences of being a college student during the pandemic	Use when student feels as though the COVID-19 pandemic has affected their education	When referencing to educational experiences unrelated the pandemic.	"And so, then COVID hit and completely flipped everything on its head. And I was like, 'You know what? Ag is going to be my new home.' Just because of how everybody was handling it..." (Interview 8, p. 1).