

STUDENT PERSPECTIVES IN AGRICULTURAL
LEADERSHIP EDUCATION: A Q METHODOLOGY
STUDY

By

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Abstract: Agriculture serves as one context where leadership education programs are implemented in collegiate curriculum. Agricultural leadership education programs are becoming prevalent, with 26 existing programs across the nation (Alexander et al., 2017). Coursework in agricultural leadership education programs differs from that of other leadership education programs because it teaches the foundations of leadership contextually in agricultural sciences (Weeks & Weeks, 2020).

The importance of leadership to students could be a reason why agricultural leadership education is chosen as an undergraduate major (Schumacher & Swan, 1993); however, a variety of factors go into selecting majors (Beggs et al., 2008; Germeijis et al., 2012; Herren et al., 2011; Malgwi et al., 2005.) Many factors can contribute to students choosing a specific major (Galotti, 1999), but reasons students decide to major in agricultural leadership is largely unknown.

Decision-making style (Scott & Bruce, 1995) was used as the conceptual framework for this study. Although decision making is habit-based, it can change based on the situation and be represented by five different decision making styles. This framework helped the researcher to interpret and understand students' perspectives of their choice to major in agricultural leadership.

Q methodology allows for a better understanding of the varying student perceptions of their undergraduate agricultural leadership education program. Q methodology works to reveal individuals' diverse and distinctive viewpoints instead of displaying only one specific perspective of a group of individuals (McKeown & Thomas, 2013). Participants with varying experiences and perspectives were selected (Watts & Stenner, 2012). All participants were currently enrolled in undergraduate agricultural leadership education programs at three universities.

This study identified two perspectives of student opinions within undergraduate agricultural leadership education. The first perspective represents those students with leadership experience before college and appreciate the personal and professional development that the major offers. The second perspective represents students who are relationship oriented and agree the degree is transferrable between disciplines. All students within the second perspective changed their major to agricultural leadership from something else during their college career. Findings are consistent with Schmacher and Swan (1993) in determining students agree that leadership is important to their college education.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.....	1
Background to Research Problem.....	3
Statement of the Problem.....	4
Purpose and Significance of the Study	5
Research Objective	5
Assumptions of the Study	6
Definitions of Terminology	6
II. REVIEW OF LITERATURE.....	8
Leadership.....	8
Leadership Education.....	10
Agricultural Education and Youth Leadership History	12
Need for Agricultural Leadership Education at Universities.....	14
Development of Agricultural Leadership Education Programs.....	16
Choosing a Major.....	17
Conceptual Framework.....	19
III. METHODOLOGY	21
Rationale for Q Methodology	21
Validity and Reliability.....	23
Context of the Study	23
Participants.....	25
Instrument Development.....	25
Development of Concourse.....	25
Q Set.....	26
Condition of Instruction	27
Development of Form Board	28
Demographic Questionnaire	28
Data Collection and Procedures.....	29
Materials	29
Q Sorting.....	29
Data Analysis	31

Chapter	Page
IV. FINDINGS.....	32
Participants.....	32
Data Analysis Results	33
Interpretation of Arrays.....	36
Factor 1 Array	36
Appreciative of Major.....	38
Personal Development	39
Flexibility.....	40
Job Characteristics: Appealing	41
Understanding of Degree	41
Factor 2 Array	42
Transferability.....	44
Job Characteristics: Uncertainty	45
Lack of Recognition.....	46
Relationship Orientation	47
Personal Growth.....	47
Consensus Statements.....	48
V. CONCLUSION.....	51
Summary of the Findings.....	51
Discussion.....	52
Implications for Future Research.....	55
Implications for Practice	56
REFERENCES	57
APPENDICES	65

LIST OF TABLES

Table	Page
1. Sample Q Statements Categorized by Decision-making Style	27
2. Factor Matrix Showing Defining Sorts	34
3. I Can's Most Like and Most Unlike Statements	38
4. I Will's Most Like and Most Unlike Statements	44
5. Consensus Statements	49

LIST OF FIGURES

Figure	Page
1. Form Board	28
2. I Can Perspective's Experience in Leadership and Agriculture	37
3. I Will Perspective's Experience in Leadership and Agriculture.....	43

CHAPTER I

INTRODUCTION TO THE STUDY

Leadership is a social influence that strives for change by providing motivation and direction (Manning & Curtis, 2007) and is largely valued for employment across the world (Northouse, 2013). Three common elements are often seen in definitions of leadership: (a) leadership is a group phenomenon; (b) leadership is goal directed and action oriented; and, (c) leadership creates hierarchy within a group setting (Nahavandi, 2012). Northouse (2013) defined leadership as “a process whereby an individual influences a group of individuals to achieve a common goal” (p. 5).

Individuals work to improve their leadership skills and experience due to their choices of workplace institutions and demands of education (Northouse, 2013). Employers seek students who possess effective leadership skills to improve their organization (Lenhardt et al., 2011). In all industries, employers deem leadership qualities important and tend to focus on honesty, attitude, trustworthiness, self-confidence, and dependability (Smalley et al., 2016). Some believe leadership has such an influence, that “no other factor is more important for work morale and job performance” (Manning & Curtis, 2007, p.1).

Leadership education programs are developing and attracting students across the United States and world. The first to introduce the study of leadership as a college major option was the McDonough Center for Leadership and Business at Marietta College in Ohio in 1987 (McManus, 2009). Since then, a new appreciation for leadership education has developed within students and collegiate faculty (Dugan & Komives, 2010). Students believe the development of their leadership is an important part of their college education (Schumacher & Swan, 1993). Across the nation, leadership classes are being taught in a variety of disciplines due to the increased interest (Vecchio, 1997).

Agriculture and natural resources serves as one context in which leadership education programs are implemented in collegiate curriculum. As of 2017, agricultural leadership education programs exist in 26 land-grant universities across the nation, serving as a prevalent option for students. (Alexander et al., 2017). Leadership has been taught in agricultural education departments dating to the early 1900s, with a variety of courses available throughout the United States (Fritz et al., 2003). Agricultural leadership education programs prepare university-educated professionals to assume roles in agricultural education (broadly defined), both in the classroom and as Extension educators (Weeks & Weeks, 2020).

Before the development of agricultural leadership education programs, coursework in agricultural education programs often focused on teaching methods, project supervision, and student advising, while stressing the importance of leadership development (Weeks & Weeks, 2020). Due to a decreasing number of students graduating with an agricultural education degree and pursuing a school-based teaching career (Lawver et al., 2018), universities began offering a non-teaching major designed

for those students not interested in a career as a school-based agricultural education teacher. The non-teaching option within most agricultural education departments transformed into agricultural leadership education as a major, degree option, or minor at the undergraduate level (Weeks & Weeks, 2020).

Coursework in agricultural leadership education programs differs from that of other leadership education programs (i.e., educational leadership, business leadership), because it teaches the foundations of leadership contextually in agricultural sciences (Velez et al., 2014). Often, courses such as organizational leadership, diversity in agriculture, leadership theory, and personal leadership development are found in agricultural leadership education undergraduate curricula (Cletzer et al., 2020). In these programs, students can develop their leadership capacity while expanding their own life experiences (Velez et al., 2014). Agricultural leadership education programs provide leadership knowledge and a broad introduction to agricultural sciences by focusing in areas of students' interests (Pennington & Weeks, 2006). Students complete courses in technical sciences (i.e., animal science, plant science, agricultural economics) in addition to leadership coursework (Cletzer et al., 2020). Students develop a breadth of knowledge in both leadership and agriculture, which prepares them to take on careers in any sector of agriculture across the nation (Morgan et al., 2013).

Background to the Research Problem

The importance of leadership to students could be a reason agricultural leadership education is chosen as an undergraduate major or degree option (Schumacher & Swan, 1993); however, a variety of factors go into selecting majors (Beggs et al., 2008;

Germeijis et al., 2012; Herren et al., 2011; Malgwi et al., 2005.) Factors students consider when choosing a major include: (a) information search, (b) match with interests, (c) job characteristics, (d) financial considerations, (e) psycho/social benefits, and (f) major attributes (Beggs et al., 2008). Discussion with other students, instructors, and parent/guardian influence are other possible factors affecting student major decisions (Malgwi et al., 2005). Research suggests students may not explore many alternatives before choosing a major (Germeijis et al., 2012) or simply choose a major based on external factors like the quality of facilities (Herren et al., 2011).

Enrollment trends at Oklahoma State University indicate students often enroll in the agricultural leadership education program after transferring from another program or institution (Institutional Research and Analytics, 2022). With agricultural leadership education programs still considered new in the profession (Weeks & Weeks, 2020), the reason underpinning students' choice of the major is not fully understood and needs to be explored.

Statement of the Problem

Agricultural leadership education programs have developed due to the combined need for leadership in the agricultural industry (Alexander et al., 2017) and growth of student interest in leadership education (Foreman & Retallick, 2012; Fritz et al., 2003; Kovar & Simonsen, 2019). As agricultural workforce demands change, leadership skill development in students is a priority (Velez et al., 2014). Across the nation, the number of agricultural leadership education opportunities are growing (Velez et al., 2014). A gap

in research exists when determining why students chose agricultural leadership education programs as their major, degree option, or minor at the undergraduate level.

Purpose and Significance of the Study

The purpose of this study was to explore the opinions of undergraduate students enrolled in an agricultural leadership education program. Using Q methodology to examine perceptions of students currently enrolled in the major allowed the researcher to gain a deeper understanding of the variety of student perceptions toward a growing major. A more intense focus on students' perceptions of their major may allow agricultural leadership education program faculty to improve recruitment and retention efforts and better adapt to an increasingly changing educational environment.

The conceptual framework for this study was the General Decision Making Style instrument (Scott & Bruce, 1995). This instrument assesses and categorizes decision-making style into to five behavioral styles. The styles of decision-making are named rational, intuitive, dependent, avoidant, and spontaneous.

Research Objective

The objective of this study was to describe agricultural leadership education student perceptions toward their undergraduate degree program. The condition of instruction for this Q study was, "What are your thoughts about your major?" The condition of instruction serves as a guiding question for participants as they sort statements according to their own viewpoints (Brown, 1980).

Assumptions of the Study

While planning this study, two assumptions were made:

1. Participants made a conscious effort to provide authentic responses during the Q sort.
2. All participants provided honest demographic information regarding their involvement in agricultural leadership education.

Definitions of Terminology

The following terms were identified as relevant to this study:

Array Position: The number indicating the column in which each statement exists in the composite array, ranging from -5 to +5 for this study (Brown, 1980).

Concourse: A comprehensive collection of facts, opinions, ideas and beliefs surrounding a concept, from which Q samples are drawn (Stephenson, 1986).

Condition of instruction: Guiding question for participants to sort the presented Q set (Watts & Stenner, 2012).

Consensus statements: Statements that have a non-significant difference in the z-score between the two arrays (Stricklin, 2005).

Distinguishing statements: Statements with the greatest difference between the two arrays (McKeown & Thomas, 2013).

Factor array: A composite Q sort representing the viewpoint of a particular factor, which forms the basis of factor interpretations (Watts & Stenner, 2012)

Factor loading: A factor loading serves as a correlation coefficient, indicating how similar each Q sort is to its respective factor array (McKeown & Thomas, 2013).

Leadership: A process whereby an individual influences a group of individuals to achieve a common goal (Northouse, 2013).

P set: The participant sample which takes part in the study (Brown, 1993).

Q set: A set of statements that broadly represents the research area, sample from the concourse to be sorted by participants (Watts & Stenner, 2012).

Q sort: The process by which data are collected; a participant's rank-ordering of the Q set (Brown, 1993).

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study is to explore the opinions of undergraduate students enrolled in an agricultural leadership education program. This chapter examines relevant research related to agricultural leadership education programs for undergraduate students. The research was reviewed in terms of leadership as a general topic, the development of leadership education, the history of leadership education in agriculture, the need for agricultural leadership education programs, and how students decide on their college major.

Leadership

Leadership can be defined in a variety of ways. Almost all definitions, however, conclude leadership involves the process of influence (Vroom & Jago, 2007). Nahavandi (2012) describes leadership as having three common elements, regardless of the definition. First, leadership is a group phenomenon (Nahavandi, 2012), meaning all leaders have one or more followers (Vroom & Jago, 2007). Second, leaders use influence

to develop goals and create action to meet those goals with others (Nahvandi, 2012).

With influence, comes the third element of leadership: a leader creates hierarchy within a group, in some fashion (Nahvandi, 2012). The type of hierarchy and influence a leader has can vary greatly depending on the situation (Vroom & Jago, 2007).

In the 20th century, leaders were determined based on leadership traits a person conveyed (Northouse, 2022). The *great man* theory focused on determining what traits make up a leader, often mirroring those traits of people in power, such as political and military leaders (Northouse, 2022). The trait approach was later challenged by researchers, due to the inconsistency of leadership traits considered effective (Northouse, 2022). In the mid-1940s, researchers found behaviors to be more important than traits (Nahavandi, 2012). The task and relationship theory focused on the relationship created and actions taken (Manning & Curtis, 2007) instead of traits a leader may possess. Vroom & Jago (2007) argue leadership should be guided by situations, not by traits or behaviors. Situational leadership theory approach requires a leader to adapt their leadership style to follower readiness to be considered an effective leader (Northouse, 2022). Research has since found the situation can be as important as a leaders' traits and behaviors (Vroom & Jago, 2007). The development of contingency approaches builds on situational contexts, traits, followers, and behaviors focused on the importance of matching a leaders' traits to situations for effective leadership (Northouse, 2022).

Some approaches to leadership cause many to challenge whether leadership can be developed (Thomas, 2014). Research suggests leaders can be developed (Byrne, 2003; McIntyre, 2019; Pandya, Dirks, & Kwok, 2017; Sadayappan, 2019; Simon & Stautzenbach, 2003). Although leadership development is a complex process with a

multitude of outcomes, it is necessary to prepare leaders for the future work force (Dugan, 2011). Each person faces opportunities daily to serve as a leader, regardless of having a formal leadership title (King et al., 2011). Leaders are needed to improve the development of individuals and companies across the globe (Wagner, 2007).

Leadership Education

The workplace has increased demands for graduates to hold soft skills (Lenhardt et al., 2011). Soft skills are often referred to as life skills, but can be defined and classified in different ways. Succi and Canovi (2020) define soft skills as:

Soft skills represent a dynamic combination of cognitive and meta-cognitive skills, interpersonal, intellectual and practical skills. Soft skills help people to adapt and behave positively so that they can deal effectively with the challenges of their professional and everyday life. (p. 1835)

The ability to motivate and lead others was identified as a skill not learned in college (Crawford & Fink, 2020). In some cases, universities were approached by agricultural industry leaders and asked to improve leadership education and development (Alexander et al., 2017). Curricula could be improved with continued communication from agricultural industry employers (Smalley et al., 2016). Research has noted, employers seek students with leadership skills (Lenhardt et al., 2011). Agricultural industry employers have deemed all leadership skills important and have tended to focus on honesty, attitude, trustworthiness, self-confidence, and dependability (Smalley et al., 2016). Effective leadership has proven even more important to employers and has been deemed necessary for success within the agricultural industry (McKinley et al., 1993).

Leadership characteristics like managing conflict and building relationships were placed in the top 15 of importance for employers in 2020 (Crawford & Fink, 2020).

Undergraduate students believed the development of their leadership is an important part of their college education (Schumacher & Swan, 1993). Shertzer and Schuh (2004) found students consider: “(a) leadership as an individual possession; (b) leadership is positional; (c) leaders possess particular qualities and skills; and, (d) leaders act from internal motivations” (p. 116). After completing a leadership course, students perceive themselves as retaining higher leadership skills in areas including: (a) administration; (b) achievement; (c) community; (d) empathy; and, (e) problem solving (Layfield et al., 2000). Leadership coursework has improved student ability to develop leadership qualities and skills in those around them due to their increased knowledge of leadership theory (Zimmerman-Oster & Burkhardt, 1999). When exposed to leadership development, students’ self-perceived ability to lead themselves and others has increased significantly (Muammar, 2021). Often an advancement in achievement was seen with the increased development of leadership within students (Waters et al., 2003).

The development of leadership has proven to be attractive to students which increases their desire to enroll in leadership development and education programs across the United States (McManus, 2009). Leadership development allowed students to increase their leadership ability in areas like conflict management and interpersonal relationships (McManus, 2009). Leadership education programs take a scholarly approach to leadership, focusing on theory and skills (McManus, 2009). Leaders are best created when the two merge to create students who can think critically about theory taught and act outside of the classroom environment (McManus, 2009).

Leadership development and education programs can be found across the country (Riggio et al., 2003). Some programs focus on general leadership, while others focus on leadership in the context of a technical science such as educational leadership, business leadership, and agricultural leadership (Riggio et al.). The first undergraduate leadership education program was developed in 1987 and has served as a pioneer for leadership education programs across the country (McManus, 2009).

Agricultural Education and Youth Leadership History

In 1862, the Morrill Land-Grant Act was passed, allowing each state in the United States to create a land-grant institution (Morrill Land-Grant Act, 1862). These institutions were created to promote higher education and research throughout America, while focusing on agricultural, scientific, and technological interests (Collier, 2002). The Hatch Act was passed by Congress in 1887, providing federal funds to conduct research at agricultural experiment stations (Hatch Act, 1887). Today, more than 600 experiment stations partner with land-grant institutions to research agricultural issues the industry faces on a daily basis (Pearson & Atucha, 2015). The second Morrill Land-Grant Act was passed in 1890 (Morrill Land-Grant Act, 1890). This act created land-grant institutions for African Americans, which became the second land-grant institution in many states (Seals, 1991). Federal support was given to tribal colleges' agricultural curricula after the passage of the Equity in Education Land-Grant College Act in 1994 (Thompson, 2010). These acts allowed for an increased ability to educate at the higher level, specifically in agriculture.

Programs designed for youth were developed during the creation of higher education institutions. In 1902, the first 4-H clubs were developed as after-school agricultural education programs for students (4-H, n.d.). 4-H clubs were created for school-aged youth to participate in hands-on learning in agriculture after school. Youth programming grew with the development of the cooperative extension system in 1914 (4-H). The Smith-Lever Act created the unique Extension system which developed partnerships between federal, state, and local entities to educate American citizens in agriculture, home economics, and other technical professions (Smith-Lever Act, 1914). 4-H serves as one piece delivered by cooperative extension and allows young people to learn by doing (4-H, n.d.).

Federal funds were provided for vocational education with the passage of the Smith-Hughes Act in 1917 (Fristoe, 2017). This act created the opportunity for high school students, grades 9 to 12, to be involved in school-based agricultural education (Fristoe). Education was then provided in rural areas across the United States to create skilled farmers, industry workers, and homemakers (Moore, 2017).

After passage of the Smith-Hughes Act, agricultural classes were adopted into the school day and educators saw a need for an extracurricular to go along with school-based education (National FFA, n.d.). One of the first extracurricular organizations was created in 1925 known as the Future Farmers of Virginia (National FFA). This organization served as the model for the national organization known as Future Farmers of America developed in 1928 (National FFA). The organization still exists today and is known as the National FFA Organization after a name change in 1988 (National FFA). The National FFA organization reaches over 735,000 students as an intracurricular for middle

and high school students involved in school-based agricultural education with focuses on premier leadership, personal growth, and career success (National FFA).

Need for Agricultural Leadership Education at Universities

Land-grant universities began training school-based agricultural instructors and extension professionals after the passage of the Morrill Land Grant Act (Fritz et al., 2003). Agricultural education coursework highlighted teaching methods, project supervision, and student advising, all while stressing the importance of leadership development (Weeks & Weeks, 2020). During the 1960s, it was found many students majoring in agricultural education were not taking teaching jobs after graduation (Weeks & Weeks). Lawver et al. (2018) reported less than one-half of agricultural education graduates took a teaching position from 1965-1985. Due to this decreasing number of students graduating with an agricultural education degree and pursuing a school-based teaching career, universities began offering a non-teaching major designed for those without teaching interests (Weeks & Weeks, 2020). To replace the non-teaching major at the undergraduate level, many agricultural education departments created an agricultural leadership education program (Weeks & Weeks, 2020).

Although agricultural youth development programs such as 4-H and National FFA focused on leadership development in the context of agriculture (Weeks & Weeks, 2020), little leadership was taught at the secondary level (Velez et al., 2014). Developing leadership skills is one of the main components of agricultural education since it began (Phipps et al., 2008). Often, however, too much emphasis is put on these youth organizations for the development of leadership (Velez et al., 2014). The assumption

students are exposed to leadership development in these organizations also harms the development of post-secondary students (Barrett, 1983). Exposure to leadership through organizations is helpful, but does not guarantee a student is prepared to serve as an agricultural leader (Barrett).

Swanson (1991) called for recognition and action on agriculture's leadership crisis, stating: "what is imperative for the future is the ability to identify and hone the creative talents of people and to direct these toward elevating human possibilities" (1991, p. 7-8). As a response to Swanson in 1993, a conceptual model was developed to help with the leadership crisis to ensure agricultural education departments were focusing on four things: (a) teaching and learning; (b) human resource development and management; (c) communication; and, (d) research methodology and data analysis (Barrick, 1993). Barrick agreed with Swanson and highlighted the need for development in leadership. He recommended teacher preparation programs be reconstructed to include training for students who hope to work outside of the agricultural classroom and in settings like Extension education. In 1993, no agricultural degree programs existed for the area of human resource development (Barrick). The call from Barrick, combined with other research, suggested agricultural leadership education programs were needed to help provide a direct connection to agricultural and Extension education, as well as develop leadership skills in the agricultural industry (Alexander et al., 2017). Many agricultural leadership programs were developed as a branch of human resource development to better train teacher educators and Extension agents (Alexander et al.).

Development of Agricultural Leadership Education Programs

Agricultural leadership education programs are developing in institutions across the nation to improve the lack of leadership knowledge. As of 2003, leadership was taught in agricultural education departments for more than 17 years, with at least 82 different courses available throughout the United States (Fritz et al., 2003). Oklahoma State University began offering agricultural leadership as an undergraduate major in 2005, the first to officially do so (Pennington & Weeks, 2006). With this development, the focus of leadership education was emphasized in educating undergraduate agricultural students (Velez et al., 2014). As of 2017, 26 land-grant institutions housed agricultural leadership education programs and 10 offered agricultural leadership as an undergraduate major (Alexander et al., 2017). The development of the undergraduate agricultural leadership degree allows students to gain a broad knowledge of agricultural sciences and develop leadership skills and techniques (Pennington & Weeks, 2006). At many universities, agricultural leadership education programs replaced general agriculture degrees because of their appeal to those students unsure of their degree path (Alexander et al., 2017).

Coursework in agricultural leadership differs from that of leadership education because it teaches the foundations of leadership contextually in agricultural sciences (Weeks & Weeks, 2020). Institutions now offer up to 24 courses focusing on leadership within the context of agriculture at an individual program level, with 227 leadership courses offered nationwide (Cletzer, 2020). Agricultural leadership courses fit into three main categories: (a) individual-level focus; (b) organizational-level focus; and, (c) societal-level focus (Cletzer). In these courses, students develop their leadership capacity

while expanding their own world and experiences (Velez et al., 2014). Not only do agricultural leadership education programs provide leadership knowledge, but also a broad introduction to agricultural sciences by focusing in areas of students' interests (Pennington & Weeks, 2006).

Students with an agricultural leadership degree are competitive in the professional world based on their training (Moore et al., 2013). Agricultural leadership allows students to develop communication skills while learning to be a diverse, flexible leader in all situations (Moore et al.) Agricultural leadership expands and challenges students' knowledge by offering a wide variety of subjects. Students believe it is a hands-on major which allows for simple transfer of knowledge from classroom to real-world (Moore et al.). Students who graduate with an agricultural leadership degree choose a wide variety of careers, but are well prepared in many areas including facilitation, motivation, and self-confidence (Moore et al.).

Choosing a Major

Students believe leadership is important (Schumacher & Swan, 1993), possibly causing them to major in a leadership education program; however, a variety of factors go into selecting majors. While studying the psychological process students use to choose their major, Beggs et al. (2008) determined six factors students consider. The first factor was named *information search*. Traditionally, students relied on personal sources of information like direct or indirect recommendations from people around them. Career planning tools, like career assessment tests, served as another form of information search. *Match with interests* was the second determining factor, highlighting, reputation of the

major and likely job prospects. Students match their major to those things they are interested in. The *characteristics of the job* post education became the third determining factor. Availability, flexibility, and security of jobs were key influences for selecting a major and career path. *Financial considerations* were determined as the fourth factor and focused on functional outcomes associated with a major and career path. Financial security was often noted as an important characteristic when choosing a major. Some students choose a major based on the future psychological and perceived social benefits. The fifth factor focused mainly on the *possibility of positive emotions* gained from the support of others and benefits within a major and subsequent career path. The final factor, with little emphasis given by participants, was determined by students' opinion on the *reputation* of the program, faculty connection, and coursework offered in a degree program. Match with interests was the most important factor for students and information search was the least important factor when selecting a major (Beggs et al.).

Many factors contribute to students' college major decision-making process which can be challenging and demanding (Galotti, 1999). Finding information about possible colleges and majors serves as the first challenge. Research suggests students may not explore many alternatives before choosing a major (Germeijis et al., 2012). Those students who do explore their options often find the most information about a major during a college campus visit (Herren et al., 2011). However, students may also learn about majors offered from professors, information on the college website, and printed sources distributed by a university (Herren et al.). Galotti (1999) found 26 categories of factors were found to influence major choice including interest, ability, values, curriculum requirements, departmental reputation, and advice from parents.

Students note opportunities after graduation were the most influential characteristic when choosing an institution and major (Herren et al., 2011). Other noted influences to major choice included academic reputation, quality of facilities, environment within the campus, and available scholarships (Herren et al.). Parents and guardians serve as the most influential individuals for students when selecting a college and major (Herren et al.). Discussion with other students and instructors are other possible factors affecting student major decisions (Malgwi et al., 2005). When choosing a degree program, career opportunities after graduation were the most influential characteristic (Herren et al., 2011). Quality of facilities, coursework quality, and faculty were other important influential characteristics (Herren et al.). For those students choosing a major in agriculture, prior experience and relatives involved in the industry have served as influencers (Wildman & Torres, 2001).

Conceptual Framework

Decision-making style (Scott & Bruce, 1995) was used as the conceptual framework for this study. Decision-making style operationalizes the “learned, habitual response pattern” (Scott & Bruce, 1995, p. 820) a person exhibits when making a choice. Although decision making is habit-based, it can change based on the situation. Scott and Bruce (1995) developed the General Decision Making Style (GDMS) instrument to assess decision-making. Four decision-making styles were initially recognized in behavioral terms (i.e., rational, intuitive, dependent, and avoidant) from previous literature (Scott & Bruce, 1995; Thunholm, 2004). As a result of instrument validation across four sample populations, a fifth decision-making style, spontaneous, was added to

the framework (Scott & Bruce, 1995). The instrument has been used to research college major choice (Galotti et al., 2006), establishing relevancy for use in this study.

A rational style is characterized by logical evaluation and a comprehensive search of alternatives. When students rely on feelings and hunches instead of a systematic search for information an intuitive style is used. A dependent style is illustrated by a search for guidance and direction from others. To avoid decision making an avoidant style is used. Spontaneous styles are depicted by a desire to complete the decision-making process as quickly as possible and a feeling of immediacy (Scott & Bruce, 1995; Thunholm, 2004).

CHAPTER III

METHODOLOGY

The purpose of this study was to explore the opinions of undergraduate students enrolled in an agricultural leadership education program. This chapter explains the rationale for using Q methodology for the purpose of this study. Sections following describe the issues of validity and reliability in the methodology, the university context of the study, the intended participants, the instrument development processes, data collection procedures, and data analysis.

Rationale for Q Methodology

Q methodology is used in research as it allows for a subjective and holistic view of viewpoints on any topic of study. For this study, a better understanding of the varying student perceptions of their undergraduate agricultural leadership education program was of interest. Q methodology works to reveal individuals' diverse and distinctive viewpoints instead of displaying only one specific perspective of a group of individuals (Brown, 1980). The methodology provides a unique way to explore perceptions of decision making "from the vantage point of self-reference" (McKeown & Thomas, 2013,

p. 1). Q methodology bridges the strengths of quantitative and qualitative research traditions (Brown, 1996) to generate a holistic understanding of what students perceive about agricultural leadership education in their undergraduate program. Due to the inherent ability to reveal subjectivity during participation (Brown, 1980), Q methodology was determined as an appropriate research approach for this study. This methodology has been recommended for use in further research for studies of perspectives in leadership (Woods, 2011), to understand leadership development (Militello & Benham, 2010), and to evaluate leadership (Owusu-Bempah, 2014). The use of Q methodology is recommended for research of diverse perspectives of agricultural issues and topics (Leggette & Redwine, 2016).

A five-step research procedure is followed in Q methodology (McKeown & Thomas, 2013): (a) the concourse and Q set are developed; (b) participants in the research are determined; (c) data is collected by participants sorting the Q set; (d) the data is analyzed; and, (e) the data is interpreted. The Q set was determined by sampling a concourse of opinions created surrounding the phenomenon being studied and the research question of this study (Watts & Stenner, 2012). The participants, or P set, ranked Q set statements based on their own personal understanding and feelings, with no input from the researcher (Brown, 1980). Data analysis was completed with PQMethod developed by Schmolck (2014) and interpretation was completed with the analyzed data and other collected information.

Validity and Reliability

The results of a Q study represent only the opinions held by participants at the time of data collection (McKeown & Thomas, 2013). The concepts of validity and reliability vary greatly between R methodologies and Q methodology, in that data analysis is not equivalent (Watts & Stenner, 2012). Brown (1980) stated, “There is no outside criterion for a person's own point of view” (p. 4), arguing validity has little relevancy to Q methodology. Validity can be achieved by using a consistent condition of instruction for all participants (Watts & Stenner, 2012). Reliability is found within the participant’s viewpoint, instead of in the Q study itself (Watts & Stenner, 2012).

Context of the Study

Three universities with agricultural leadership education programs were used in the study. Oklahoma State University was the first land-grant university to officially offer agricultural leadership as an undergraduate major in 2005 (Pennington & Weeks, 2006). At the time of data collection, there were 67 students enrolled in the undergraduate program (Institutional Research and Analytics, 2022). Oklahoma State University is unique in offering the opportunity to complete the last 60 credit hours of the degree program online through a degree completion program in agricultural leadership (L. Cline, personal communication, February 1, 2022). These students graduate with the same bachelor of science degree as students on campus but complete their work remotely. Thirteen agricultural leadership courses are taught at Oklahoma State University in both online and face-to-face formats (Undergraduate Academics, 2022). All agricultural leadership undergraduate students complete 120 credit hours of course work, with 28

credit hours focusing in leadership, 21 credit hours in technical agricultural sciences, and the remaining credit hour requirements filled by general education courses and electives (Undergraduate Academics). In Spring 2022, one full-time faculty member taught agricultural leadership courses (Undergraduate Academics).

Texas A&M University began offering agricultural leadership and development as an undergraduate major in 2008 (S. Odom, personal communication, February 1, 2022). Odom noted 256 students who are currently enrolled in the undergraduate program complete 120 credit hours of course work. Twenty-nine credit hours are leadership-focused and 27 are focused in technical agricultural sciences (Department of Agricultural Leadership, Education and Communications, 2022). Nine faculty work in the agricultural leadership program, some serving for both agricultural leadership and other majors within the department (Department of Agricultural Leadership, Education and Communications).

Fifty-eight undergraduate students are enrolled in the agricultural leadership concentration at the University of Arkansas (J. Rucker, personal communication, February 1, 2022). Students in this program graduate with a bachelor of science degree in agricultural education, communications, and technology with a concentration in agricultural leadership (Agricultural Education, Communications, and Technology, 2022). Two faculty work to teach six courses in agricultural leadership (Agricultural Education, Communications, and Technology). Similar to the other universities in this study, students in the program complete 120 credit hours of coursework, with 24 leadership-concentration hours and 27 technical agricultural science credit hours (Agricultural Education, Communications, and Technology).

Participants

The P set, or participants, for this study were recruited to provide an understanding of the student perceptions in the undergraduate agricultural leadership education programs. According to McKeown and Thomas (2013) participants with varying experiences and perspectives related to the study concourse should be selected. To ensure diversity in the P set, attention was paid to participant gender, student classification, and university. It is recommended at least half as many as the Q set statements should make up the number of participants, in this case roughly 20 (Watts & Stenner, 2012). All participants were currently enrolled in undergraduate agricultural leadership education programs at three universities: (a) Oklahoma State University; (b) Texas A&M University; and, (c) University of Arkansas. The procedures and statements for this study were approved by the Oklahoma State University Institutional Review Board on November 21, 2021 (Appendix A).

Instrument Development

The research instrument in Q methodology is the Q sort activity (Brown, 1996). During the Q sort, the Q set, or a series of opinion statements, are rank-ordered according to those most like the participant's opinion (Brown, 1996). During the first step of Q methodology, a concourse was created (McKeown & Thomas, 2013). From this concourse, the Q set was sampled.

Development of Concourse

Q items used in this study are in the form of statements, and aim to provide a balanced coverage of the research area (Watts & Stenner, 2012). A thorough listing of all

possible opinions related to the study is known as a concourse (Stephenson, 1986). The concourse for this study was assembled from literature on agricultural leadership and student perceptions, observations within the agricultural leadership program, and informal conversations with faculty and students involved in the program, which ended in 167 statements.

Q Set

The conceptual framework of decision-making styles (Scott & Bruce, 1995) provided the constructs in which 167 opinionated statements were organized. Through the principle of *homogeneity* (Brown, 1980), statements were grouped into categories based on the five decision-making styles outlined within the General Decision Making Style instrument (Scott & Bruce, 1995). Each statement from the concourse was categorized into one of the five decision-making styles: (a) rational; (b) intuitive; (c) dependent; (d) avoidant; and (e) spontaneous. For example, “Agricultural leadership classes are an easy A,” was categorized as a rational statement. This statement describes an action that would be taken with rationalism in mind, thus determining its category. “I had to stick with this degree choice to graduate on time,” was categorized as an avoidant statement as the decision-maker likely decides to stay in the degree to avoid adding semesters onto their college career. A sample of categorized statements is found in Table 1.

Once the concourse was grouped into five categories, the principle of *heterogeneity* (Brown, 1980) was employed. Statements in each category were refined to include only those with the greatest differences. Watts and Stenner (2012) note 40-60 Q

items sampled from the concourse are adequate for a Q set to cover a topic in which respondents exhibit strong feelings or knowledge. Thirty-seven statements ensure coverage of opinions found within the concourse but eliminates repetition. Graduate students within an agricultural leadership program sorted the initial Q set to ensure readability. A final Q set of 37 statements was used in this study (Appendix B).

Table 1

Sample Q Statements Categorized by Decision-making Style (Scott & Bruce, 1995)

Rational	Agricultural leadership classes are an easy A.
	It is well known that companies actively seek out agricultural leadership graduates.
Intuitive	This major has more of an impact on the agriculture industry than others.
	The things taught in agricultural leadership are just common sense.
Dependent	This degree reflects my personal values.
	Because I had leadership experience, I knew I could be successful in this degree.
Avoidant	I just want my degree to be agriculture related, I don't care what it is.
	I had to stick with this degree choice to graduate on time.
Spontaneous	Leadership is learned on the job, not in a classroom.

Condition of Instruction

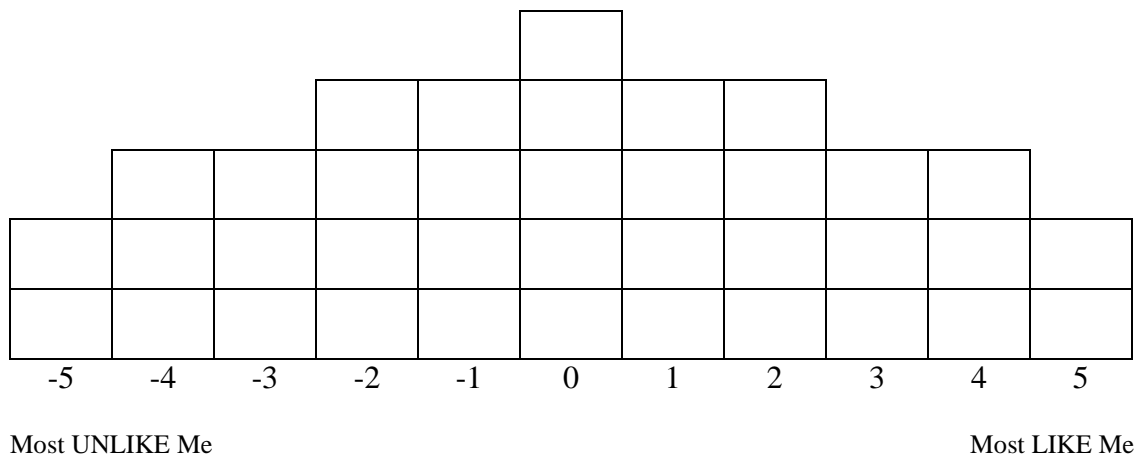
A condition of instruction is a question which guides participants in thinking about sorting the Q set (McKeown & Thomas, 2013) and ensures all participants consider statements the same way (Brown, 1980). The condition of instruction for this study is, “*What are your thoughts about your major?*” Statements were rank ordered by participants from “Most Like Me” to “Most Unlike Me” while using the condition of instruction.

Development of Form Board

A form board was created based on the number of statements to be sorted in the Q set. A pyramid-shape creates a forced normal distribution of statements and allows for the best application of the Q sorting technique (Brown, 1980). The form board guided participants to place the strongest priority statements on the outer sides of the board and work inward with lower-priority statements. For this study, a form board was developed with 11 columns labeled from -5 to +5, allowing placement for each of the 37 statements. Figure 1 shows a blank form board, each square serves as a place for participants to organize their statements.

Figure 1

Form Board



Demographic Questionnaire

To collect additional information about the participants, a demographic questionnaire was created (Appendix C). Once the sorting process concluded, participants completed questions related to gender, year in school, and agricultural background.

Participants were asked when they began agricultural leadership course work, if they had ever changed their collegiate major, and what job they hope to pursue in the future. Any other comments the participant had regarding the statements included in the sort could be left at the end of the demographic questionnaire.

Data Collection and Procedures

This section describes how data were collected. Materials were created and procedures were determined. The procedures for collecting data were taken from the suggested procedures by Watts and Stenner (2012).

Materials

Participant packets were assembled, placed in an envelope, and included the following: (a) a printed form board (Figure 1) with the demographic questionnaire (Appendix C) printed on the back; (b) the participant information form; and, (c) one envelope with 37 statement cards. Each participant received a packet before consenting by beginning the sorting process and completing the demographic questionnaire.

Q Sorting

After participants received the materials they were asked to review the participant information form which explained the study and consent process. Once consent was received, participants were given detailed instructions by the researcher, adapted from those instructions recommended by Watts and Stenner (2012). To begin the Q sort, participants first sorted the Q set by organizing 37 statements into three piles. Participants were instructed to organize statements based on the condition of instruction, “What are

your thoughts about your major?" Three piles were created based on those statements: 1) most like them; 2) most unlike them; and, 3) that they felt indifferent about, with no limits of on the number of items in each pile (Watts & Stenner, 2012).

Once three piles were created, participants were asked to sort the statements onto the form board by finding the two statements absolutely most like them and absolutely most unlike them. Participants continued to arrange the statements into the 11 columns on the form board. Rank ordering was important as it forced participants to compare each of the statements in terms of how they correspond to their personal opinions (McKeown & Thomas, 2013).

Once the sorting was complete, the participant had the opportunity to rearrange statements as needed. The Q sort was then recorded by writing the statement number into the square on the form board where the statement card was placed. Participants were then asked to complete the demographic survey. Watts and Stenner (2012) stress the importance of gathering all information likely to influence a participants' viewpoint.

Due to time constraints and travel limitations, two sorts were completed via Zoom. Students received the participant packet of materials from the researcher while visiting their university. Zoom meetings were then scheduled to facilitate the Q sort. Facilitating sorting via Zoom remained the same as in person. The participant used the same materials and procedures as in-person sorters. Once they had placed all statements, the participant read statement numbers and demographic question answers to the researcher, which was then recorded.

Data Analysis

All completed sorts, 28 for this study, were analyzed using PQMethod, a software program specifically for Q method analysis (Schmolck, 2014). The program created a correlation matrix to demonstrate the correlation of all sorts. Factor analysis was then conducted by using principal components analysis and varimax rotation. Standard scores for each statement within each factor were calculated to result in the factor array of statements. After the process of data analysis, interpretation began. To help interpret the statistically analyzed data, demographic question answers, and post sort interviews were used.

Once data analysis was complete, exemplar participants were contacted for a post-sort, post-analysis interview as recommended in the procedures of McKeown and Thomas (2013). Exemplar participants are those who loaded the highest and purest on their respective factor (Brown, 1980). Purest meaning that sorts do not show significant association with any other factor (Brown, 1980). Four participants were selected as exemplar sorters. These participants had provided voluntary contact information during the initial sort and were available for interviews.

CHAPTER IV

FINDINGS

The purpose of this study was to explore the opinions of undergraduate students enrolled in an agricultural leadership education program. This chapter explains the findings of the research study, focusing on participant demographics and factor array interpretations.

Participants

Twenty-eight participants performed sorts for this study. Recruitment was completed by the researcher through personal contacts and class presentations. All sorts were completed by the researcher with most sorts taking place in person. Two sorts were conducted via Zoom due to scheduling conflicts.

In this study, 28 participants completed a demographic questionnaire. From the demographics collected, all participants were currently enrolled in agricultural leadership undergraduate coursework and ranged in age from 18 to 26 years old. Seventeen participants identified as female and 11 as male. Among the participants, two were freshmen, five were sophomores, ten were juniors, nine were seniors, and two were in undergraduate courses for five or more years. Ten of the participants started

undergraduate coursework in agricultural leadership and 18 participants began in another discipline but changed their major to agricultural leadership. A majority of participants were members of agricultural leadership youth organizations prior to college. Fifteen were members of 4-H and 17 participants were members of the National FFA Organization. Nine participants were involved in more than one organization. Three participants were not involved in leadership development organizations prior to college.

Data Analysis Results

The 28 completed sorts were entered into Peter Schmolck's (2014) PQMethod, a Q methodology software to analyze Q data. The software first correlated all sorts. The results of the matrix were examined to determine a cursory understanding of relationships between sorters. Principal components analysis was then used to extract six initial best-fit factors. Varimax rotation was used to find the best solution among the sorts. After a three-factor solution was reviewed, a large number of confounding sorts led the researcher to try a two-factor solution.

Judgmental rotation was not as effective as using varimax rotation with the significance level slightly raised to identify defining sorts that would best represent each factor. The significance level was calculated using the formula $(1/\sqrt{n}) * 2.58$, where n represents the number of statements in the Q set (Brown, 1980). The level of significance for this study was found to be 0.42, but was raised to 0.43. The significance was raised to provide the most distinction between the factors or viewpoints (Brown, 1980). The significance level identifies those sorters that defined the factor by loading at 0.43 or higher (Brown, 1980).

Both the two- and three-factor solutions were reviewed. Analysis of the number of defining sorts, correlation of factor scores, variance, and initial interpretation of factor solutions led a two-factor solution. The two-factor solution was chosen for full interpretation due to the greater significance between the two perspectives rather than the highly-correlated factor scores found in the three-factor solution. Rotation of the 28 sorts resulted in 23 significant factor loadings. For the five remaining sorts, three were confounded and two were found to be nonsignificant on either factor. Confounded sorts achieve significance on more than one factor (Watts & Stenner, 2012). Table 2 lists the participants' loading on each factor. **Bold** represents a defining sort for that factor and * represents an exemplar sort.

Table 2

Factor Matrix Showing Defining Sorts

Q Sort	Descriptors	Factor A	Factor B
17	20, Female	0.92*	0.03
19	21, Female	0.87*	0.15
22	19, Female	0.85	0.17
8	20, Male	0.82	0.30
18	19, Female	0.82*	-0.004
11	21, Female	0.78	0.27
20	19, Female	0.74	0.25
3	21, Male	0.73	0.24
5	20, Male	0.73	0.12
24	20, Female	0.70	0.22
1	19, Female	0.69	0.11

Q Sort	Descriptors	Factor A	Factor B
16	21, Female	0.66	0.35
4	22, Male	0.65	-0.13
6	19, Female	0.57	0.42
27	18, Female	0.51	0.39
12	24, Male	0.50	0.23
10	23, Male	0.14	0.70*
9	21, Male	0.07	0.62
21	24, Male	0.23	0.59
25	21, Male	0.38	0.54
15	26, Female	0.34	0.49
13	22, Female	0.07	0.44
2	22, Male	-0.17	0.43
7	20, Female	0.66	0.51
14	23, Female	0.52	0.55
26	21, Female	0.60	0.50
23	21, Male	0.03	0.36
28	20, Female	0.36	0.37

Note. **Bold** represents a defining sort. * represents an exemplar sort of students interviewed.

The final analysis procedure was to calculate standard scores for each statement in each factor to provide the foundational data to be interpreted. These scores were used to order the statements in descending order and placed on a form board providing the array for understanding the student perspective. Post-analysis interviews of exemplars, demographic differences, distinguishing and consensus statements, and field notes were used to interpret each of the factor arrays.

Interpretations of Arrays

This study explored nuances between two perspectives of current undergraduate students in agricultural leadership. The condition of instruction used in this study was “What are your thoughts about your major?” A combination of the factor solutions, demographics, and post-sort interviews were used to interpret the findings. The two perspectives were named *I Can Go Anywhere With This Degree* and *Wherever I Go, I Will Take This Degree With Me*. Themes were highlighted to represent the feelings of current agricultural leadership undergraduate students.

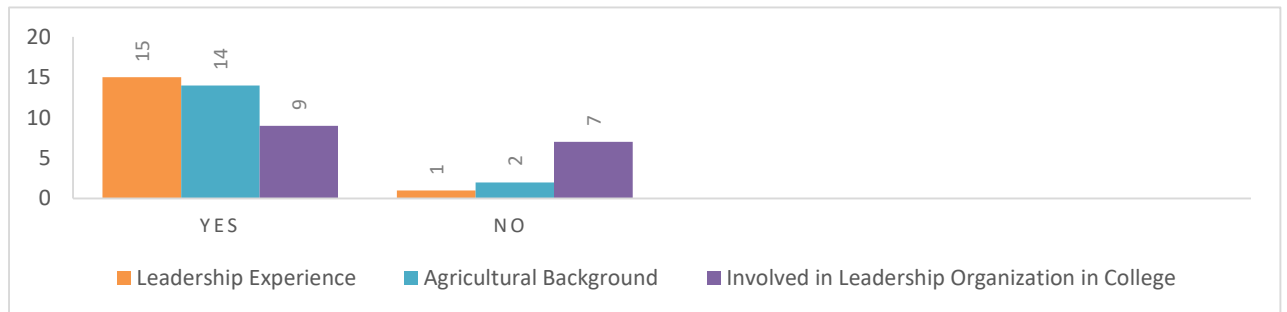
Factor Array 1: “I Can Go Anywhere With This Degree.”

The first perspective was defined by 16 sorts and named “I Can Go Anywhere With This Degree”, and will be referred to as the *I Can* perspective. In this perspective, demographics revealed 11 sorters identified as female and five sorters identified as male. Sorters’ student classifications were: two freshmen, three sophomores, eight juniors, and three seniors. Eight sorters in this perspective changed their major to agricultural leadership from something else during their college career and eight sorters were in the agricultural leadership major since the start of their collegiate coursework.

Demographic questioning included the sorters’ experience in leadership and agriculture prior to college and during college (Figure 2). Compared to the other perspective, *I Can* sorters had more leadership and agricultural experience.

Figure 2

I Can Perspective's Experience in Leadership and Agriculture



Conceptual themes were identified using this factor array to better define the opinions in this perspective. The predominate opinions found in this perspective include (a) appreciative of major; (b) personal development; (c) flexibility; (d) job characteristics; and, (e) understanding of the degree. These thematic concepts are described below. The “Most Like” and “Most Unlike” statements for this perspective are listed in Table 3.

Table 3*I Can's Most Like and Most Unlike Statements*

No.	Statement	Array Position
Most Like Statements		
23	This degree best aligns with my long-term goals.	+5
28	This degree reflects my personal values.	+5
4	There is a critical need for strong leaders in the agriculture industry now, more than ever before.	+4
12	This degree helps me identify strengths I had no idea that I had.	+4
19	Because I had leadership experience, I knew I could be successful in agricultural leadership.	+4
Most Unlike Statements		
18	Agricultural leadership majors are power hungry.	-4
20	Agricultural leadership was the last degree I pictured myself in.	-4
32	In my department, agricultural leadership is the least important program.	-4
29	I had to stick with this degree choice to graduate on time.	-5
31	This degree promotes a liberal agenda.	-5

Note. Distinguishing statements are bolded.

Appreciative of Major

This perspective is grateful to be a part of the degree program. Sorters agree this degree is fit for them and their long term goals. For sorters in the *I Can* perspective the values of the degree program match the values they hold themselves. For half of the *I Can* sorters this was their first degree choice, and appreciate how well the major fits their interests. The other half of the *I Can* sorters are also appreciative of how well the major fits their interests and are happy they ended up in this degree program. Sorter 18 stated, “I am so happy I found this major.” This perspective also agrees agricultural leadership is

undervalued within the college. Statements in support of this theme are listed below;
those considered distinguishing for this array are listed in bold:

No.	Statement	Array Position
23	This degree best aligns with my long term goals.	+5
28	This degree reflects my personal values.	+5
12	This degree helps me identify strengths I had no idea that I had.	+4
33	Agricultural leadership is undervalued in the college.	+2
35	I needed an agriculture degree with the least amount of science and math.	-1
30	I just want my degree to be agriculture related, I don't care what it is.	-2
20	Agricultural leadership was the last degree I pictured myself in.	-4
29	I had to stick with this degree choice to graduate on time.	-5

Personal Development

Personal development is a direct benefit of the degree as it offers an opportunity to develop leadership skills applicable to all situations. In a post sort interview, Sorter 18 said, “Personal development is crucial to leadership and I am happy I get the chance to work on that piece before going into the work force.” Personal development offered within the degree allows students to be prepared for many jobs in any industry and situation. Sorter 19 stated, “Personal development allows for the degree to be applicable in many aspects.” This perspective agrees agricultural leadership allows for both professional and personal development. Sorter 17 shared, “I enjoy the fact that we get to develop as a person and not just as a leader.” Sorters in this perspective agree this degree provides the opportunity to learn about themselves as they prepare to lead others. Statements in support of this theme are listed below; bolded statements identify those distinguishing for this array:

No.	Statement	Array Position
12	This degree helps me identify strengths I had no idea that I had.	+4
2	My major is equal parts professional development and personal development.	+3
10	I like that I am able to tailor my degree plan to my interests.	+3
3	This degree prepares me to be a leader in any situation.	+2

Flexibility

Sorters within the *I Can* perspective agree agricultural leadership is flexible to their needs. Agricultural leadership allows for students to work toward long term goals while tailoring courses to specific interests. This degree allows students to take courses in many agricultural departments. Students are able to take courses in those areas of agriculture that interest them, such as horticulture or animal science. In a post sort interview, Sorter 17 said, “I appreciate how my electives allow for a broad knowledge of agriculture and allow me to develop new interests in agriculture that I didn’t have before.” Sorters within this perspective also agree career flexibility is a benefit of this degree. Sorter 19 stated,

“I changed into agricultural leadership from a very specific major, where I would have one job for the rest of my life. I appreciate that this major allows me to do whatever I want really. I know that I can choose a career that I will be happy with and can change it to something else if needed.”

Agricultural leadership allows students to continue to develop passions in agriculture while learning to become a leader in any situation. Statements in support of this theme are listed below; those considered distinguishing for this array are listed in bold:

No.	Statement	Array Position
23	This degree best aligns with my long term goals.	+5
10	I like that I am able to tailor my degree plan to my interests.	+3
3	This degree prepares me to be a leader in any situation.	+2
7	Alumni with this degree have a flexible work schedule.	+1
25	I am disappointed that courses in this degree barely focus on agriculture.	-3

Job Characteristics: Appealing

I Can sorters find the potential job characteristics from this degree appealing.

Sorters within this perspective are not concerned about finding a well-paying job from this degree. They also agree they will have a flexible work schedule and will be prepared to take any job they want post-graduation. Statements in support of this theme are listed below; those considered distinguishing for this array are listed in bold:

No.	Statement	Array Position
5	Graduates of this program can get any job they want.	+1
7	Alumni with this degree have a flexible work schedule.	+1
6	It is well known that companies actively seek out agricultural leadership graduates.	0
9	I worry about finding a well-paying job with this degree.	-3

Understanding of Degree

Within this perspective, sorters find themselves explaining what the major is to people around them. Sorters from the *I Can* perspective do not mind explaining the degree to others and try to promote it as much as possible. In a post sort interview, Sorter 17 said, “It does not bother me to explain what the degree is. It brings me joy to share about agricultural leadership because I love it so much.” This perspective agrees relationships are important and often describes the degree to others. Sorter 18 stated, “I don’t see a lot of negative misconceptions about the degree but a lot of people do not

fully understand.” Sorters within this perspective have people around them that understand agricultural leadership. For example, Sorter 19 said, “A lot of my family and friends are very familiar with the degree and some even were agricultural leadership majors previously.” Having people around them, possibly their mentors, who understand the degree, alleviates the stress of continually explaining it to others. Sorters in this perspective do not agree the degree is simply common sense and work to promote the degree by describing it to others. Statements in support of this theme are listed below; those considered distinguishing for this array are listed in bold:

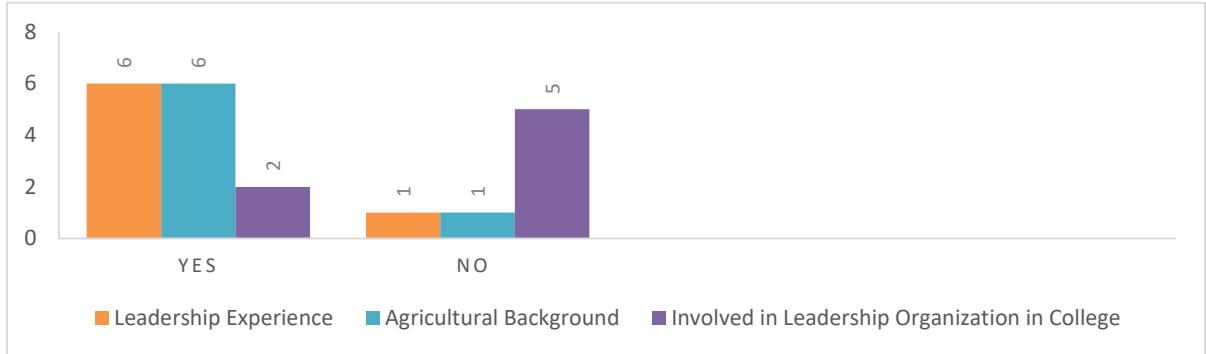
No.	Statement	Array Position
17	Relationships are key in the agricultural leadership degree.	+3
16	A mentor of mine influenced my decision in majoring in agricultural leadership.	+2
27	The things taught in agricultural leadership are just common sense.	-2
26	I am tired of describing my degree to people.	-3

Factor Array 2: “Wherever I Go, I Will Take This Degree With Me.”

The second perspective was named “Wherever I Go, I Will Take This Degree With Me” and was defined by seven sorters. This perspective will be referred to as the *I Will* perspective. Two sorters in this perspective identified as female and five as male. The *I Will* sorters included the following student classifications: one sophomore, one junior, three seniors, and two with five or more years of coursework. All seven sorters in this perspective changed their major to agricultural leadership during their college years. The sorters’ leadership and agricultural experience from demographic questioning can be found in Figure 3.

Figure 3

I Will Perspective's Experience in Leadership and Agriculture



When the factor array was reviewed several conceptual themes arose and were identified. The opinions found in this array have been summarized as themes including (a) transferability; (b) lack of recognition; (c) job characteristics; (d) relationship orientation; and, (e) personal growth. These thematic concepts are described below. The *I Will* perspective's "Most Like" and "Most Unlike" statements can be found in Table 4.

Table 4*I Will's Most Like and Most Unlike Statements*

No.	Statement	Array Position
Most Like Statements		
15	I am more than a number in this program, faculty actually know my name.	+5
26	I am tired of describing my degree to people.	+5
2	My major is equal parts professional development and personal development.	+4
4	There is a critical need for strong leaders in the agriculture industry now, more than ever before.	+4
20	Agricultural leadership was the last degree I pictured myself in.	+4
Most Unlike Statements		
1	My major has made me better with people, but that's about it.	-4
6	It is well known that companies actively seek out agricultural leadership graduates.	-4
30	I just want my degree to be agriculture related, I don't care what it is.	-4
18	Agricultural leadership majors are power hungry.	-5
31	This degree promotes a liberal agenda.	-5

Transferability

Sorters within this perspective see the degree as transferrable to other disciplines. They agree they can take the degree with them wherever they go and become successful. Agricultural leadership teaches many foundational skills to challenge student thinking and traditional agriculture. Sorter 10 stated, "If not majoring in it, I think other people should take classes in the major to become more aware of leadership. Because, they will likely serve as a leader at some point and time." The *I Will* perspective does not see this degree as best aligning with their long term goals or having more of an impact than other degrees, meaning they may not want to work solely in agricultural leadership post-graduation. Sorter 10 stated, "I do not think you have to work in traditional agriculture to

major in this degree.” When asked in demographic questioning what jobs they hope to pursue, two sorters responded with jobs outside of the agricultural industry (i.e., general education and the legal field). Other sorters hope to stay in the agricultural industry but not necessarily in leadership. The remaining three sorters in this perspective were unsure of their future career. *I Will* sorters agree this degree sets them up to be a leader in any situation and allows them to take this degree to whatever career they may result.

Statements in support of this theme are listed below:

No.	Statement	Array Position
3	This degree prepares me to be a leader in any situation.	+3
24	This major challenges traditional agriculture ideas.	+2
13	Agricultural leadership challenges my beliefs and what I think I know.	+1
21	This major has more of an impact on the agriculture industry than others.	-1
23	This degree best aligns with my long term goals.	-1
35	I needed an agriculture degree with the least amount of science and math.	-2
25	I am disappointed that courses in this degree barely focus on agriculture.	-3
30	I just want my degree to be agriculture related, I don't care what it is.	-4

Job Characteristics: Uncertainty

Job characteristics arose as a theme in this perspective. Sorters within the *I Will* perspective worry about their future career and career aspects. They are not sure they can get any job they want with this degree nor if they will have a flexible work schedule. This perspective does worry about finding a well-paying job post-graduation. They also agree companies do not actively seek out agricultural leadership students for job positions.

Statements in support of this theme are listed below:

No.	Statement	Array Position
9	I worry about finding a well-paying job with this degree.	+1
5	Graduates of this program can get any job they want.	-1
7	Alumni with this degree have a flexible work schedule.	-1
6	It is well known that companies actively seek out agricultural leadership graduates.	-4

Lack of Recognition

I Will sorters wish the agricultural leadership degree was more widely understood and recognized. Their worry about job characteristics also plays a factor within this theme. Sorters agree companies do not seek out agricultural leadership students. This could be because companies do not fully understand the degree and its attributes. Sorters within this perspective see a need for agricultural leaders in the industry, but agree others may not. Sorters in the *I Will* perspective think this degree is undervalued in the college. Sorters within this perspective are also extremely tired of describing their degree to others. In a post sort interview, Sorter 10 stated,

“Definitely, no one understands what agricultural leadership is. I got so tired of describing my degree that I have stopped fully describing it. For most people, I just say that I am majoring in agriculture and that is a good enough answer for them. I wish that more people understood what the degree offers.”

Statements in support of this theme are listed below:

No.	Statement	Array Position
26	I am tired of describing my degree to people.	+5
4	There is a critical need for strong leaders in the agriculture industry now, more than ever before.	+4
33	Agricultural leadership is undervalued in the college.	+2
5	Graduates of this program can get any job they want.	-1
6	It is well known that companies actively seek out agricultural leadership graduates.	-4

Relationship Orientation

This perspective places value in relationships. In a post sort interview, Sorter 10 mentioned, “I consider myself relationship oriented, mainly because I believe communication is important.” Within this major, students are able to develop relationships with other students, faculty members, and industry professionals. Things like communication and team work are often discussed in agricultural leadership coursework, which can be applied within any career. The statements supporting this theme are listed below:

No.	Statement	Array Position
15	I am more than a number in this program, faculty actually know my name.	+5
3	This degree prepares me to be a leader in any situation.	+3
17	Relationships are key in the agricultural leadership degree.	+2

Personal Growth

The final theme found in the *I Will* perspective is the benefit of personal growth. Sorters agree they have grown in many ways during their time within agricultural leadership. While the *I Will* perspective holds value in relationships, they believe they have developed in more skills than those. They agree agricultural leadership coursework is challenging and beneficial to them outside of classroom time. They appreciate the ability to focus on their interests through electives. The statements supporting this theme are listed below:

No.	Statement	Array Position
2	My major is equal parts professional development and personal development.	+4
3	This degree prepares me to be a leader in any situation.	+3
10	I like that I am able to tailor my degree plan to my interests.	+3
28	This degree reflects my personal values.	+3
13	Agricultural leadership challenges my beliefs and what I think I know.	+1
8	Agricultural leadership classes are an easy A.	-3
1	My major has made me better with people, but that's about it.	-4

Consensus Statements

Consensus items allow for emphasis on similarities between the two perspectives.

Consensus statements are those statements with similar placements in both of the two perspectives (McKeown & Thomas, 2013). The array results for this study resulted in 18 consensus statements. For these statements, a non-significant difference in the z-score will exist between the two arrays (Stricklin, 2005). Consensus statements allow for identifying those similarities between the two perspectives, but also highlights key differences by comparing how each perspective prioritized statements (McKeown & Thomas, 2013). Consensus statements and their array position for each perspective are found in Table 5.

Table 5*Consensus Statements*

No.	Statement	<i>I Can</i> Array Position	<i>I Will</i> Array Position
4	There is a critical need for strong leaders in the agriculture industry now, more than ever before.	+4	+4
10	I like that I am able to tailor my degree plan to my interests.	+3	+3
17	Relationships are key in the agricultural leadership degree.	+3	+2
3	This degree prepares me to be a leader in any situation.	+2	+3
14	The agricultural leadership program has a great reputation.	+2	+2
33	Agricultural leadership is undervalued in the college.	+1	+2
13	Agricultural leadership challenges my beliefs and what I think I know.	0	+1
34	Leadership is learned on the job, not in a classroom.	0	0
22	To succeed as an agricultural leadership student, it helps to have the maturity of a junior or senior.	-1	0
21	This major has more of an impact on the agriculture industry than others.	+1	-1
35	I needed an agriculture degree with the least amount of science and math.	-1	-2
8	Agricultural leadership classes are an easy A.	-1	-3
11	Agricultural leadership coursework is essentially the same class taught over and over.	-2	-2
27	The things taught in agricultural leadership are just common sense.	-2	-2
1	My major has made me better with people, but that's about it.	-2	-4
30	I just want my degree to be agriculture related, I don't care what it is.	-2	-4
25	I am disappointed that courses in this degree barely focus on agriculture.	-3	-3
31	This degree promotes a liberal agenda.	-5	-5

Both perspectives of students find importance in statement 4, believing there is a critical need for leaders within the agricultural industry. This can explain in a way, why students have found themselves in this major. This degree helps fill the need for agricultural leaders. The two perspectives also reach consensus on statement 31. Neither of the perspectives agree this degree promotes a liberal agenda. Sorters also agree this

degree does a good job of balancing leadership and agricultural topics within their courses (statement 25). In a post sort interview, Sorter 19 stated, “I appreciate that leadership is applied directly to agriculture.” Sorters also agree each course provides something different (statement 11).

CHAPTER V

SUMMARY, DISCUSSION, AND IMPLICATIONS

The purpose of this study is to explore the opinions of undergraduate students enrolled in an agricultural leadership education program. This chapter summarizes the findings, provides discussion, and offers implications for practice and future research.

Summary of the Findings

This study found two perspectives of undergraduate students enrolled in agricultural leadership education: *I Can Go Anywhere With This Degree* and *I Will Take This Degree With Me, Wherever I Go*. Both perspectives enjoy many attributes found within the major. Both perspectives highlight, the ability to tailor the degree to their interests. Students in agricultural leadership can choose electives, allowing them to increase their knowledge in topics of interest.

The main difference between the two perspectives is how they plan to use the degree after graduation. The agricultural leadership degree sets up a career path for the *I Can* perspective. Participant demographics in this perspective reveal students plan to pursue jobs within the agricultural industry. They agree this degree matches their long-term goals and values and allows them to have a job they enjoy. The *I Will* perspective

plans to take their degree with them wherever they end up. They may not work in the agricultural industry, but still believe they will be equipped to serve as a strong leader. This perspective is less focused on long-term goals and find this degree to be adaptable and transferrable. They are more concerned about finding a well-paying job after graduation, which could be due to the lack of recognition they believe the degree receives.

Discussion

All participants agree leadership development is important for their future careers, similar to the findings of Schumacher and Swan (1993). Participants agree there is a critical need for leaders within the workplace, across both perspectives.

Findings of this study are consistent with those of Alexander et al. (2017) in determining that agricultural leadership education programs are suited for all students. The two perspectives in this study are similar to the categories described by Alexander et al. Agricultural leadership can appeal to those students who have a plan for their future careers and to those students that are unsure of their future careers. Agricultural leadership education programs are appealing to students from all disciplines which was discussed in this study and in the findings of Alexander et al. Agricultural leadership can appeal to a variety of students and allow all students to develop a broad skill set (Alexander et al.; Moore et al., 2013).

Students in the *I Can* perspective find the aspect of personal development appealing, which is consistent with the findings of Moore et al. (2013) and Morgan et al. (2013). For example, students plan to use their degree both personally and professionally

(Moore et al., 2013). Agricultural leadership also allows students to develop understanding of their personal leadership strengths and how to apply them to the work place (Morgan et al., 2013). Similarly, all three studies noted agricultural leadership education challenges what students know and their traditional agricultural ideas. The personal development aspects of agricultural leadership curriculum, is transferrable among disciplines and students feel equipped to serve as a leader in any situation.

Cletzer (2020) organized agricultural leadership courses into three main categories: (a) individual-level; (b) organizational-level; and, (c) societal-level. Students in the *I Can* perspective may gravitate toward classes in the individual-level category which often focus on personal leadership development. This perspective focuses on how they can improve themselves before serving as a leader. *I Will* students are more relationship focused and may enjoy courses with an organizational-level focus. Courses at the organizational-level work to develop team building skills, which is a priority of the *I Will* perspective.

Previous research determined students need more leadership development and training than extracurricular activities can provide (Barrett, 1983). Students in the *I Can* perspective value the entirety of their leadership experiences, including those from high school, and stay involved in leadership organizations outside of the college classroom. These students value all experience as being valuable to their future careers. Students in the *I Will* perspective had less exposure to leadership development in the form of extracurricular activities but value the classroom as being a benefit to their leadership development. Barrett found that students can not solely rely on organizations for

leadership development. Courses in agricultural leadership create much better leaders, comparatively (Barrett).

With a heavy influence from family involved in the agricultural industry, students in the *I Can* perspective align with Wildman and Torres (2001) work identifying family in the agricultural industry as a strong influence on a student's decision to major in an agriculture-related discipline. Students in the *I Will* perspective have less influence from family. All students in this perspective changed their major into agricultural leadership from something else, indicating that they likely found this major once arriving to the campus.

Match with interests has proven to be the most important factor for students when selecting a major (Beggs et al., 2008). Students in both perspectives agree the agricultural leadership degree allows them to apply their knowledge gained to the broader leadership and agricultural disciplines. Both perspectives found in this study, emphasized the flexibility of the agricultural leadership degree plans and ability to match topics to students' interest, regardless of agricultural context. Students in agricultural leadership degree programs are able to challenge what they know and apply the skills to the real world, even if they select a career outside of agriculture (Moore et al., 2013).

Job characteristics prove to be another determining factor for students when selecting an undergraduate major (Beggs et al., 2008). The *I Can* perspective agrees a degree in agricultural leadership can allow for a flexible work schedule and well-paying job. Students in the *I Will* perspective are more uncertain of the job characteristics they may have and tend to enjoy agricultural leadership because it is flexible to their needs.

Implications for Future Research

Understanding student perceptions allows faculty and administration in agricultural leadership education programs to adjust curriculum. To better align coursework with industry needs, research could be conducted to analyze employer perceptions of agricultural leadership education program graduates. Participants in both perspectives agree agricultural leadership majors are not sought after by companies, studying employer perceptions can provide understanding regarding why current undergraduate students believe this.

Research could also be done with alumni of agricultural leadership education programs to understand how they found their career path and which attributes of their degree program are most beneficial. Current undergraduate students have varying opinions when it comes to job characteristics. Studying alumni perceptions could determine if careers can meet the ideal job characteristics students have. This research could also assist in tailoring curriculum to better suit the work force agricultural leadership majors go into.

In the *I Will* perspective, this study found several participants are not seeking careers within the agricultural industry. Another opportunity for research lies within understanding more about students currently enrolled in an agricultural leadership degree program with no plans to work in agriculture. Research could be done to determine what future plans these students may have and how their agricultural leadership major will allow them to be successful. Further, understanding why they have chosen to pursue other careers may be a topic of interest.

Implications for Practice

Findings from the study can allow for adjustments in recruitment of students to agricultural leadership education programs. Demographics reveal many students change their major to agricultural leadership from something else during their college career. This could be because students are unaware of the degree program until arriving on campus. Since the degree is relatively new, the degree often gets grouped with school-based agricultural education recruitment. However, agricultural leadership has grown into its own discipline. Recruitment should be improved for both high school seniors and junior college sophomores, to better educate students on opportunities within the program.

Awareness of the degree could be improved. One way to increase awareness is by requiring students within the college of agriculture to take at least one agricultural leadership course focused on broad concepts transferable to any discipline. Coursework should be developed to ensure improvements in student leadership abilities and bring awareness to agricultural leadership degree attributes. If the required course is seen positively among students, an increase of enrollment and recognition may be seen for the agricultural leadership degree program.

REFERENCES

- 4-H. (n.d.) *4-H History*. <https://4-h.org/about/history/#!menu>
- Agricultural Education, Communications and Technology. (2022). *Leadership*.
<https://agricultural-education-communications-and-technology.uark.edu/programs/leadership.php>
- Alexander, J. C., Rucker, K. J., Graham, D. L., Miller, J. D., & Apple, J. K. (2017). Perceptions of agricultural leadership academic programs of 1862 land-grant universities. *Journal of Agricultural Education*, 58(4), 65-82.
<https://doi.org/10.5032/jae.2017.04065>
- Barrett, L. A. (1983). Leadership education for agricultural students. *NACTA Journal*, 27(1), 6-8. <https://www.jstor.org/stable/43763912>
- Barrick, R. K. (1993). A conceptual model for a program of agricultural education in colleges and universities. *Journal of Agricultural Education*, 34(3), 10-16.
<https://doi.org/10.5032/jae.1993.03010>
- Beggs, J. M., Bantham, J. H., & Taylor, S. (2008). Distinguishing the factors influencing college students' choice of major. *College Student Journal*, 42(2), 381-394.
<https://link.gale.com/apps/doc/A179348418/AONE?u=anon~9749a61d&sid=googleScholar&xid=20562ba2>
- Brown, S. R. (1980). *Political subjectivity: Applications of Q methodology in political science*. Yale University Press.
- Brown, S. R. (1996). Q methodology and qualitative research. *Qualitative Health Research*, 6(4), 561-567. <https://doi.org/10.1177/104973239600600408>
- Byrne, J. A. (2003). Leaders are made, not born. *Businessweek*, 3820, 16.
<http://argo.library.okstate.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=bsh&AN=9060268&site=ehost-live>

- Cletzer, D. A., Mott, R. L., Simonsen, J. C., Tummons, J. D., Peckman, J., & Preston, K. (2020, September 29-October 2). *Agricultural leadership: A national portrait of undergraduate courses* [Paper Presentation]. North Central Region American Association for Agricultural Education Conference, Virtual.
http://aaaeonline.org/resources/Documents/North%20Central/2020Conference/2020_Research_Conference_Proceedings.pdf
- Collier, J. (2002). Scripting the radical critique of science: The Morrill Act and the American land-grant university. *Futures: The Journal of Policy, Planning, and Futures Studies*, 34(2), 182-191. [https://doi.org/10.1016/S0016-3287\(01\)00057-X](https://doi.org/10.1016/S0016-3287(01)00057-X)
- Crawford, P., & Fink, W. (2020). *From academia to the workforce: Critical growth areas for students today*. Association of Public and Land-grant universities.
<https://www.aplu.org/library/from-academia-to-the-workforce-critical-growth-areas-for-students-today/file>
- Department of Agricultural Leadership, Education and Communications. (2022). *Agricultural leadership and development*.
<https://alec.tamu.edu/academics/undergraduate/afleadershipaled/>
- Dugan, J. (2011). Pervasive myths in leadership development: Unpacking constraints on leadership learning. *Journal of Leadership Studies*, 5(2), 79-84.
<https://doi.org/10.1002/jls.20223>
- Dugan, J. P., & Komives, S. R. (2010). Influences on college students' capacities for socially responsible leadership. *Journal of College Student Development*, 51(5), 525-529. <https://doi.org/10.1353/csd.2010.0009>
- Foreman, E. A., & Retallick, M. S. (2012). Undergraduate involvement in extracurricular activities and leadership development in college of agriculture and life science students. *Journal of Agricultural Education*, 53(3), 111-123.
<https://doi.org/10.5032/jae.2012.03111>
- Fristoe, A. (2017). Smith-Hughes act transforms agricultural education. *Techniques: Connecting Education & Careers*, 92(2), 28-31.
<https://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=120961691&site=ehost-live>
- Fritz, S., Townsend, C., Hoover, T., Weeks, W., Carter, R., & Nietfeldt, A. (2003). An analysis of leadership offerings in collegiate agricultural education departments. *NACTA Journal*, 47(3), 18-44. <https://www.jstor.org/stable/43765775>

- Galotti, K. M. (1999). Making a “major” real-life decision: College students choosing an academic major. *Journal of Educational Psychology*, *91*(2), 379-387.
<https://doi.org/10.1037/0022-0663.91.2.379>
- Galotti, K. M., Ciner, E., Altenbaumer, H. E., Geerts, H. J., Rupp, A., & Woulfe, J. (2006). Decision-making styles in a real-life decision: Choosing a college major. *Personality and Individual Differences*, *41*(4), 629-639.
<https://doi.org/10.1016/j.paid.2006.03.003>
- Germeijs, V., Luyckx, K., Notelaers, G., Goossens, L., & Verschueren, K. (2012). Choosing a major in higher education: Profiles of students’ decision-making process. *Contemporary Educational Psychology*, *37*(3), 229-239.
<https://doi.org/10.1016/j.cedpsych.2011.12.002>
- Hatch Act of 1887, 7 U.S.C. § 361a *et seq* (1887).
<https://www.govinfo.gov/content/pkg/COMPS-10292/pdf/COMPS-10292.pdf>
- Herren, C. D., Cartmell, D. D., & Robertson, J. T. (2011). Perceptions of influence on college choice by students enrolled in a college of agricultural science and natural resources. *NACTA Journal*, *55*(3), 54-60.
<https://www.jstor.org/stable/10.2307/nactajournal.55.3.54>
- Institutional Research and Analytics. (2022). *Academic code descriptions*.
<https://ira.okstate.edu/cdr/reports/academiccodedesc.html>
- King, S. N., Altman, D., & Lee, R. J. (2011) *Discovering the leader in you: How to realize your leadership potential*. John Wiley & Sons, Incorporated.
- Kovar, K. A., & Simonsen, J. C. (2019). Factors influencing socially responsible leadership development in college of agriculture students. *Journal of Agricultural Education*, *60*(4), 88-100. <https://doi.org/10.5032/jae.2019.04088>
- Lawver, R. G., Foster, D. D., & Smith, A. R. (2018, May 15-18). *Status of the U.S. supply and demand for teachers of agricultural education: 2014-2016* [Paper Presentation]. National conference of the American Association for Agricultural Education, Charleston, SC, United States.
http://aaaeonline.org/resources/Documents/National/2018_AAAE_Proceedings.pdf
- Layfield, K. D., Radhakrishna, R. B., & Andreasen, R. J. (2000). Self-perceived leadership skills of students in a leadership programs in agriculture course. *Journal of Southern Agricultural Education Research*, *50*(1), 62-68.
<http://www.jsaer.org/pdf/vol50Whole.pdf#page=62>

- Leggette, H. R., & Redwine, T. (2016). Using Q methodology in agricultural communications research: A philosophical study. *Journal of Applied Communications*, 100(3), 57-67. <https://doi.org/10.4148/1051-0834.1230>
- Lenhardt, M., Ricketts, J. C., Morgan, A. C., & Karnock, K. J. (2011). Leadership behaviors of Georgia golf course superintendents: Implications for post-secondary programs. *NACTA Journal*, 55(4), 23-30. <https://www.jstor.org/stable/10.2307/nactajournal.55.4.23>
- Malgwi, C. A., Howe, M. A., & Burnaby, P. A. (2005). Influences on students' choice of college major. *Journal of Education for Business*, 80(5), 275-282. <https://doi.org/10.3200/JOEB.80.5.275-282>
- Manning, G., & Curtis, K. (2007). *The art of leadership* (2nd ed.). McGraw-Hill/Irwin.
- McIntyre, E. (2019). Leaders are made, not born. *Crain's Cleveland Business*, 40(5), 8. <https://www.crainscleveland.com/elizabeth-mcintyre-blog/leaders-are-made-not-born>
- McKeown, B., & Thomas, D. B. (2013). *Q methodology* (2nd ed.). SAGE.
- McKinley, B. G., Birkenholz, R. J., & Stewart, B. R. (1993). Characteristics and experiences related to the leadership skills of agricultural students in college. *Journal of Agricultural Education*, 34(3), 76-83. <https://doi.org/10.5032/jae.1993.03076>
- McManus, R. M. (2009). The importance of leadership education and leader development. *Journal of Administration of UNIMEP*, 7(2), 47-56. <http://argo.library.okstate.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=bsh&AN=50303460&site=ehost-live>
- Militello, M., & Benham, M. K. P. (2010). "Sorting Out" collective leadership: How Q-methodology can be used to evaluate leadership development. *The Leadership Quarterly*, 21(2010), 620-632. <http://doi.org/10.1016/j.leaqua.2010.06.005>
- Moore, G. (2017). Why was the Smith-Hughes Act needed? *The Agricultural Education Magazine*, 89(4), 4. <http://argo.library.okstate.edu/login?url=https://www.proquest.com/trade-journals/why-was-smith-hughes-act-needed/docview/1892767114/se-2?accountid=4117>
- Moore, L. L., Odom, S. F., & Moore, K. T. (2013). What a degree in agricultural leadership really means: exploring student conceptualizations. *Journal of Agricultural Education*, 54(4), 1-12. <https://doi.org/10.5032/jae.2013.04001>

- Morgan, A. C., King, D. L., Rudd, R. D., & Kaufman, E. K. (2013). Elements of an undergraduate leadership program: A delphi study. *Journal of Leadership Education, 12*(1), 140-155. <https://doi.org/10.12806/V12/I1/R10>
- Morrill Land-Grant Act of 1862, 7 U.S.C. § 301 *et seq.* (1862). <https://www.archives.gov/milestone-documents/morrill-act#:~:text=Citation%3A%20Act%20of%20July%202,United%20States%20Government%3B%20National%20Archives>.
- Morrill Land-Grant Act of 1890, 7 U.S.C. § 321 *et seq.* (1890). <https://www.govinfo.gov/content/pkg/COMPS-10284/pdf/COMPS-10284.pdf>
- Muammar, O. (2021). Exploring students' perceptions of leadership skills in higher education: An impact study of the leadership training program. *Gifted Education International, 0*(0), 1-14. <https://doi.org/10.1177/02614294211055987>
- Nahavandi, A. (2012). *The Art and Science of Leadership*. (6th ed.). Pearson Education.
- National FFA. (n.d.) *About FFA*. <https://www.ffa.org/about/>
- Northouse, P. G. (2013). *Leadership: Theory and practice*. (6th ed.). SAGE.
- Northouse, P. G. (2022). *Leadership: Theory and practice*. (9th ed.). SAGE.
- Owusu-Bempah, J. (2014). How can we best interpret effective leadership? The case for Q method. *Journal of Business Studies Quarterly, 5*(3), 47-58. <http://argo.library.okstate.edu/login?url=https://www.proquest.com/scholarly-journals/how-can-we-best-interpret-effective-leadership/docview/1520924280/se-2>
- Pandya, T., Dirks, R., & Kwok, A. (2017). Leaders are made, not born: A leadership development curriculum for general surgery residents. *Journal of the American College of Surgeons, 225*(4), 154-155. <https://doi.org/10.1016/j.jamcollsurg.2017.07.945>
- Pearson, C. H., & Atucha, A. (2015). Agricultural experiment stations and branch stations in the United States. *Natural Sciences Education, 44*(1), 1-5. <https://doi.org/https://doi.org/10.4195/nse2013.10.0032>
- Pennington, P., & Weeks, W. G. (2006). Agricultural leadership: Oklahoma State University's new major for undergraduate students. *NACTA Journal, 50*(4), 44-46. <https://www.jstor.org/stable/43766172>
- Phipps, L. J., Osborne, E. W., Dyer, J. W., & Ball, A. (2008). *Handbook on agricultural education in public schools* (6th ed.). Thomson Delmar Learning.

- Riggio, R. E., Ciulla, J. B., & Sorenson, G. J. (2003). Leadership education at the undergraduate level: A liberal arts approach to leadership development. In S. E. Murphy & R. E. Riggio (Eds.), *The Future of Leadership Development* (1st ed., pp. 249-262). Psychology Press. <https://doi.org/10.4324/9781410608895>
- Sadayappan, S. (2019). Cardiovascular leaders are made, not born. *Circulation Research*, 124(4), 484-487. <https://doi.org/10.1161/CIRCRESAHA.118.314611>
- Schmolck, P. (2014) PQMethod. Version 2.35. University of the Bundeswehr Munich, Neubiberg. <http://schmolck.org/qmethod/>
- Schumacher, L. G., & Swan, M. K. (1993). Need for formal leadership training for students in a land-grant college of agriculture. *Journal of Agricultural Education*, 34(3), 1-9. <https://doi.org/10.5032/jae.1993.03001>
- Scott, S. G., & Bruce, R. A. (1995). Decision-making style: The development and assessment of a new measure. *Educational and Psychological Measurement*, 55(5), 818-831. <https://doi.org/10.1177/0013164495055005017>
- Seals, R. G. (1991). The formation of agricultural and rural development policy with emphasis on African-Americans: II. The Hatch-George and Smith-Lever Acts. *Agricultural History*, 65(2), 12-34. <http://www.jstor.org/stable/3743705>
- Shertzer, J. E., & Schuh, J. H. (2004). College student perceptions of leadership: Empowering and constraining beliefs. *NASPA Journal*, 42(1), 111-131. <https://doi.org/10.2202/1949-6605.1417>
- Simon, M. A., & Stautzenbach, T. E. (2003). Leaders are made, not born: The role of the American orthopaedic association leadership traveling fellowships and leadership development programs. *Journal of Bone and Joint Surgery*, 85(9), 1833-1836. <https://doi.org/10.2106/00004623-200309000-00029>
- Smalley, S. W., Retallick, M. S., Metzger, D., & Greiman, B. (2016). Analysis of leadership perceptions, skills and traits as perceived by agribusiness and industry professionals. *NACTA Journal*, 60(1), 43-48. <http://argo.library.okstate.edu/login?url=https://www.proquest.com/scholarly-journals/analysis-leadership-perceptions-skills-traits-as/docview/1791660506/se-2?accountid=4117>
- Smith-Lever Act of 1914. 7 U.S.C. § 343 *et seq.* (1914). <https://nifa.usda.gov/sites/default/files/program/20190917-Smith-Lever-Act.pdf>
- Stephenson, W. (1986). Protoconcurus: The concourse theory of communication. *Operant Subjectivity*, 9(2), 37-58. <http://www.operantsubjectivity.org/pub/309/>

- Stricklin, M. (2005). Correlating persons instead of tests: My favorite Stephenson article. *Operant Subjectivity*, 28, 177-180. <https://doi.org/10.1111/j.1467-6494.1935.tb02022.x>
- Succi, C., & Canovi, M. (2020). Soft skills to enhance graduate employability: Comparing students and employers' perceptions. *Studies in Higher Education*, 45(9), 1834-1847. <https://doi.org/10.1080/03075079.2019.1585420>
- Swanson, G. I. (1991). The future of agricultural education: A view from the bleachers. *Journal of Agricultural Education*, 32(3), 2-8. <https://doi.org/10.5032/jae.1991.03002>
- Thomas, Y. A. (2014). *A grounded theory study on the importance of leadership education and student preparation for entry-level leadership roles* (Publication No. 3641261) [Doctoral dissertation, Capella University]. ProQuest, LLC.
- Thompson, A. (2010). *Effect of 1994 land-grant act on tribal college agricultural and native-knowledge-based curricula* (Publication Number 3432544) [University of South Dakota]. ProQuest LLC.
- Thunhom, P. (2004). Decision-making style: Habit, style, or both? *Personality and Individual Differences*, 36(4), 931-944. [https://doi.org/10.1016/S0191-8869\(03\)00162-4](https://doi.org/10.1016/S0191-8869(03)00162-4)
- Undergraduate Academics. (2022). *Agricultural leadership*. <https://go.okstate.edu/undergraduate-academics/majors/agricultural-leadership.html>
- Vecchio, R. P. (1997). *Leadership: Understanding the dynamics of power and influence in organizations*. University of Notre Dame Press.
- Velez, J. J., Moore, L. L., Bruce, J. A., & Stephens, C. A. (2014). Agricultural leadership education: Past history, present reality, and future directions. *Journal of Leadership Studies*, 7(4), 65-70. <https://doi.org/10.1002/jls.21312>
- Vroom, V. H., & Jago, A. G. (2007). The role of the situation in leadership. *American Psychologist*, 62(1), 17-24. <https://doi.org/10.1037/0003-066X.62.1.17>
- Wagner, T. (2007). Why leaders are needed: The value of good leadership can be measured in profit, and is especially compelling for companies competing in the built environment. *South Central Construction*, 56(7), 39. <https://global.factiva.com/ga/default.aspx>

- Waters, T., Marzano, R. J., & McNulty, B. (2003). Balanced leadership: What 30 years of research tells us about the effect of leadership on student achievement: A working paper. <http://www.naesp.org/sites/default/files/LeadershipMatters.pdf>
- Watts, S., & Stenner, P. (2012). *Doing Q Methodology: Theory, method and interpretation*. SAGE.
- Weeks, W. G., & Weeks, P. P. (2020). Agricultural sciences and natural resources: Developing future agricultural leaders. In M. Sowcik & S. R. Komives (Eds.), *How academic disciplines approach leadership development* (Vol. 2020, pp. 37-48). New Directions for Student Leadership. <https://doi.org/doi.org/10.1002/yd.20367>
- Wildeman, M., & Torres, R. M. (2001). Factors identified when selecting a major in agriculture. *Journal of Agricultural Education*, 42(2), 46-55. <https://doi.org/10.5032/jae.2001.02046>
- Woods, C. E. (2011). Using Q methodology to explore leadership: The role of the school business manager. *International Journal of Leadership in Education*, 14(3), 317-335. <https://doi.org/https://doi.org/10.1080/13603124.2010.507877>
- Zimmerman-Oster, K., & Burkhardt, J. (1999). Leadership in the making: A comprehensive examination of the impact of leadership development programs on students. *The Journal of Leadership Studies*, 6(3/4), 50-66. <https://doi.org/10.1177%2F107179199900600304>

APPENDICES

APPENDIX A

IRB Approval



Oklahoma State University Institutional Review Board

Date: 11/23/2021
Application Number: IRB-21-503
Proposal Title: Student Perspectives in Agricultural Leadership Education: A Q Methodology Study

Principal Investigator: Caitlin L Dreher
Co-Investigator(s):
Faculty Adviser: Angel Riggs
Project Coordinator:
Research Assistant(s):

Processed as: Exempt
Exempt Category:

Status Recommended by Reviewer(s): Approved

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in 45CFR46.

This study meets criteria in the Revised Common Rule, as well as, one or more of the circumstances for which continuing review is not required. As Principal Investigator of this research, you will be required to submit a status report to the IRB triennially.

The final versions of any recruitment, consent and assent documents bearing the IRB approval stamp are available for download from IRBManager. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be approved by the IRB. Protocol modifications requiring approval may include changes to the title, PI, adviser, other research personnel, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any unanticipated and/or adverse events to the IRB Office promptly.
4. Notify the IRB office when your research project is complete or when you are no longer affiliated with Oklahoma State University.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact the IRB Office at 405-744-3377 or irb@okstate.edu.

Sincerely,
Oklahoma State University IRB

APPENDIX B

Q Set

<i>No.</i>	<i>Statement</i>	<i>I Can Array Position</i>	<i>I Will Array Position</i>
1.	My major has made me better with people, but that's about it.	-2	-4
2.	My major is equal parts professional development and personal development.	3	4
3.	This degree prepares me to be a leader in any situation.	2	3
4.	There is a critical need for strong leaders in the agriculture industry now, more than ever before.	4	4
5.	Graduates of this program can get any job they want.	2	-1
6.	It is well known that companies actively seek out agricultural leadership graduates.	0	-4
7.	Alumni with this degree have a flexible work schedule.	1	-1
8.	Agricultural leadership classes are an easy A.	-1	-3
9.	I worry about finding a well-paying job with this degree.	-3	1
10.	I like that I am able to tailor my degree plan to my interests.	3	3
11.	Agricultural leadership coursework is essentially the same class taught over and over.	-2	-2
12.	This degree helps me identify strengths I had no idea that I had.	4	0
13.	Agricultural leadership challenges my beliefs and what I think I know.	0	1
14.	The agricultural leadership program has a great reputation.	2	2
15.	I am more than a number in this program, faculty actually know my name.	1	5
16.	A mentor of mine influenced my decision in majoring in agricultural leadership.	2	1
17.	Relationships are key in the agricultural leadership degree.	3	2
18.	Agricultural leadership majors are power hungry.	-4	-5
19.	Because I had leadership experience, I knew I could be successful in agricultural leadership.	4	1
20.	Agricultural leadership was the last degree I pictured myself in.	-4	4
21.	This major has more of an impact on the agriculture industry than others.	1	-1
22.	To succeed as an agricultural leadership student, it helps to have the maturity of a junior or senior.	-1	0

23.	This degree best aligns with my long term goals.	5	-1
24.	This major challenges traditional agriculture ideas.	0	2
25.	I am disappointed that courses in this degree barely focus on agriculture.	-3	-3
26.	I am tired of describing my degree to people.	-3	5
27.	The things taught in agricultural leadership are just common sense.	-2	-2
28.	This degree reflects my personal values.	5	3
29.	I had to stick with this degree choice to graduate on time.	-5	0
30.	I just want my degree to be agriculture related, I don't care what it is.	-2	-4
31.	This degree promotes a liberal agenda.	-5	-5
32.	In my department, agricultural leadership is the least important program.	-4	0
33.	Agricultural leadership is undervalued in the college.	1	2
34.	Leadership is learned on the job, not in a classroom.	0	0
35.	I needed an agriculture degree with the least amount of science and math.	-1	-2
36.	This degree prepares me to be a facilitator instead of a teacher.	0	-2
37.	I watched my family serve as strong leaders in the agriculture industry and I want to do the same.	-1	-3

APPENDIX C
Demographic Questionnaire

1. How old are you? _____years
2. What is your current year in school?
 Freshman
 Sophomore
 Junior
 Senior
 5+ years
3. Which year in college did you begin agricultural leadership course work?
 Freshman
 Sophomore
 Junior
 Senior
 5+ years
4. Please check the item that best describes your ethnicity. Check all that apply.
 African American
 Hispanic/Latino(a)
 White
 Asian American
 American Indian
 Other, please specify: _____
5. Are you from a rural, suburban, or urban city (check one)?
 Rural (Less than 2,500 people)
 Suburban (More than 2,500 and less than 50,000)
 Urban (Greater than 50,000 people)
6. Did you transfer to your current university from a community college or other school?
___ yes, ___ no
7. Did you change your major to agricultural leadership at some point during college?
___ yes, ___ no
a. If yes, what was it before? _____
8. Are you pursuing a dual major or minor? ___no, ___dual major, ___ minor
a. If yes, what is it? _____
9. How did you hear about this degree program?

10. Describe your background in agriculture, if any.

11. Were you involved in leadership development programs prior to agricultural leadership?

____ 4-H

____ FFA

____ Other, please specify: _____

12. Are you currently involved in any organizations or teams on campus? ____ yes, ____ no

a. If yes, what are they? _____

13. What type of job do you hope to pursue post-graduation?

14. What else would you like to say about the ideas on the statements you sorted?

A follow-up phone interview may be conducted to clarify results. If you would be willing to participate in a phone interview, please write your first name (or a code name that you will know) and a telephone number at which you can be reached.

(CODE) NAME _____ PHONE _____

VITA

Caitlin L. Dreher

Candidate for the Degree of

Master of Science

Thesis: STUDENT PERSPECTIVES IN AGRICULTURAL LEADERSHIP
EDUCATION: A Q METHODOLOGY STUDY

Major Field: Agricultural Education and Leadership

Biographical:

Education:

Completed the requirements for the Master of Science in Agricultural Education and Leadership at Oklahoma State University, Stillwater, Oklahoma in May 2022.

Completed the requirements for the Bachelor of Science in Agricultural Education at Kansas State University, Manhattan, Kansas in 2020.

Experience:

Graduate Teaching Assistant, Oklahoma State University Department of Agricultural Education, Communications and Leadership, 2020-2022

Professional Memberships:

American Association of Agricultural Education
Oklahoma State University Agricultural Education, Communications, and Leadership Graduate Association